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# Contributions of a feminist perspective to the analysis of farm viability: the livelihoods reproduction framework

Judit Manuel<sup>a</sup>, Marta G. Rivera-Ferre <sup>b</sup> and Feliu López-i-Gelats<sup>a</sup>

<sup>a</sup> University of Vic – Central University of Catalonia – Chair Agroecology and Food Systems, Vic, Spain;

<sup>b</sup>CSIC – INGENIO (CSIC-Universitat Politècnica de València) Edifici 8E, acc. J, 4<sup>a</sup> planta Ciutat Politècnica de la Innovació (CPI) Universitat Politècnica de València Camí de la Vera s/n, Valencia, Spain

## ABSTRACT

The agrarian question dealing with peasants' reproduction in adverse global conditions is a topic of deep debate closely linked to farm viability. Approaches that define viability in monetary terms cannot explain peasants' way of farming. Holistic approaches can better analyse this question but existing frameworks leave aside aspects of reproduction. Here, we revise sustainable livelihoods and resilience frameworks through a feminist lens and propose livelihoods reproduction to address some blind spots. We do so through a literature review and a case study of olive oil farms in Spain. Our analysis highlights the importance of household labour distribution for farm viability.

## KEYWORDS



livelihood resilience; feminist economics; agrarian question; peasantry; sustainable livelihoods

## I. Introduction

When the industrialization of agriculture and the consolidation of capitalism as the dominant global socio-economic system began to push small farms to the corners, several agrarian questions emerged, debating the survival and viability of peasantry (Akram-Lodhi 2021; Bernstein 2006a; Bernstein et al. 2018). Particularly, with the persistence of peasantry in a context of corporate dominance (Akram-Lodhi and Kay 2009; van der Ploeg 2018), discussions analyzed whether peasantry would cease to exist due to the development of capitalism or, on the other hand, peasantry could exist alongside capitalism and even offer an alternative or resistance to it (Darnhofer 2010; Sevilla Guzmán and Woodgate 2013). Researchers, from different perspectives, have been trying to address the question of how peasants and small farmers 'hung on to their farms and their way of life' (Holt-Giménez, Shattuck, and Van Lammeren 2021, 2) under the threat and pressure of industrial agriculture and capitalist economy (Bernstein et al. 2018; Cabell and Oelofse 2012).

The current globalized economic system is an increasing challenge for small and peasant farms (Hazell 2005). The production model of big producers and retailers is

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**CONTACT** Marta G. Rivera-Ferre  [mgrivfer@ingenio.upv.es](mailto:mgrivfer@ingenio.upv.es)  CSIC – INGENIO (CSIC-Universitat Politècnica de València), Valencia, Spain

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forced upon them (Aubert and Perrier-Cornet 2009; Sevilla Guzmán and Woodgate 2013) and they are vulnerable to land encroachment and loss of resources due to extractive industries (Holt-Giménez, Shattuck, and Van Lammeren 2021). With the seepage of the principles of the Green Revolution into the agricultural domain, small farms have been subsumed and subordinated to capitalist agriculture, predominantly adopting the role of suppliers of cheap labor (Holt-Giménez and Altieri 2013), while their local knowledge, practice and institutions have been negated (Sevilla Guzmán and Woodgate 2013). Small farms also feel the squeeze of agriculture caused by the decrease of off-farm prices and increase in farm costs (Akram-Lodhi 2021; van der Ploeg et al. 2019), and nowadays, we need to add the social and ecological emergency generated by climate change, a global challenge that also (if not more acutely) affects small farms (Azadi et al. 2021; Holt-Giménez, Shattuck, and Van Lammeren 2021; Morton 2007).

However, the peasantry remains, in both the Global South and the Global North, and small farmers still engage in alternative strategies that gives them autonomy from the capitalist market (Holt-Giménez, Shattuck, and Van Lammeren 2021; van der Ploeg 2011, 2018). Some authors maintain that peasant agriculture is bound to disappear or at least go through a process of differentiation, as capitalist dynamics become internalized in farming households and the process of farming abandonment continues (Bernstein 2006b). However, a different perspective shows that, along with a process of depeasantization, there is a process of repeasantization and new peasantries emerging (Góngora, Milán, and López-i-Gelats 2019; Monllor 2013; van der Ploeg 2018). From this approach, peasant and small farms, hand in hand with agroecology, are pointed to as a pathway to more sustainable food systems (Akram-Lodhi 2021; Holt-Giménez and Altieri 2013; van der Ploeg et al. 2019).

Peasant agriculture is defined as a distinct mode of farming carried out by small farms, based on family labor and guided by moral economy (Chayanov 1966). In peasant farms, the owners are the ones managing and working the farm, which cannot be separated from the farm's family unit (or akin social group) (Bernstein et al. 2018; van der Ploeg 2013). These farms are characterized by some autonomy from the market and a reliance on internal resources, which are fundamentally self-reproduced and self-controlled (Bernstein et al. 2018; van der Ploeg 2011), and the goal of their economic activity is not only the generation of profit but also the reproduction of the farm itself (Padró et al. 2019; van der Ploeg 2013) and thus, maintaining farming as their livelihood.

Behind the different views on the persistence of peasantry in adverse contexts lie different conceptualizations of viability. The use of different conceptions of viability entails reaching contradictory resolutions to this agrarian question. If a narrow approach to viability is taken, reducing it to the monetary dimension, peasant farms show worse performance than industrial farm enterprises. Viability in this case refers to continued economic growth. Thus, viable farms are those that manage to increase in farm size, in terms of either land or labor (Aubert and Perrier-Cornet 2009). In this approach, farm viability is equated to profitability (Latruffe et al. 2016; Spicka et al. 2019). This approach to viability is incapable of explaining the endurance of peasant farming as it is seen as largely unviable (van der Ploeg 2013). This is because this view of viability largely simplifies the complexity of peasant farming, and it is not able to explain, for example, the gap between income generated by the farm and the expenses of the farm household (Spicka et al. 2019). While big industrial farm holdings are governed by a capitalist

economy and a profit-producing logic, small farmers follow the logic of peasant economy (van der Ploeg 2013) of maintaining farm's livelihood, their way of life, as their long-term goal (Darnhofer 2010).

The livelihoods framework, developed by Ian Scoones to understand the assets and strategies that lead to sustainable livelihood in impoverished areas (Scoones 1998), draw a more complex picture, moving the debate from a monetary focus toward the household. Yet this framework was, rather, a description of the complexity of livelihoods; it lacks the temporal dimension and fails to explain why peasant farms endure despite the existence of adverse conditions – that is, why and how they are resilient. Peasant farms' viability has also been studied using resilience approaches that analyze viability as something dynamic (Cabell and Oelofse 2012; Darnhofer 2010; Holt-Giménez, Shattuck, and Van Lammeren 2021). However, when resilience approaches examine the social dimensions of farm systems, they fail to incorporate the analysis of relationships and issues that take place within the household and farm, leading to definitions of viability sometimes at the expense of women and other actors in the farm.

In understanding farm viability, beyond monetary and production terms and including reproductive strategies that allow the project to sustain itself (Padró et al. 2019; van der Ploeg 2013) a feminist approach is needed. Feminist approaches bring in reproduction as the domain of the essential elements for social continuity and well-being, and place nature and care at the base of the sustainability of life (Carrasco Bengoa 2017; Carrasco and Tello 2013). The focus on reproduction of feminist approaches also links to a peasant economics focus. Feminist approaches have seldom been applied to food systems, but their contributions are essential in the context of a global sustainable transition. Taking a feminist perspective brings in issues of equality and justice, not only in the relationship between farms and other agents in the broader system, but also within the farm and the household. Thus, feminist approaches stress traditionally overlooked dimensions of farm viability, such as relationships within the household, gender equality or well-being (Carrasco Bengoa 2017; Siliprandi 2018), and put reproduction as the goal of small farm viability at the center of the debate.

In view of all this, and considering the need to implement a holistic approach capable of capturing the complexity behind the viability of peasant farming and the strategies that small farmers use to reproduce their livelihoods, we propose to critically revise the livelihood resilience framework (Ifejika-Speranza, Wiesmann, and Rist 2014) from a feminist perspective to better capture the different dimensions of farm viability. Considering all the above, the objectives of this paper are twofold: (1) to identify what viability strategies peasant farmers use to guarantee the reproduction of their livelihoods; and (2) to determine whether such strategies can be explained by existing conceptual frameworks, identifying potential gaps in those frameworks, and proposing changes that allow capturing the strategies that could be overlooked using a feminist perspective. We do so by identifying the viability strategies used by peasant farmers in the particular case study of small olive farms in Terres de Ponent (Spain). We understand viability strategies as the practices through which farmers access and implement resources and manage the farm in order to reproduce and sustain both the farm and the household or social group. The identification of strategies has run in parallel with a feminist analysis of the sustainable livelihoods and livelihoods resilience frameworks. These two processes were conducted in an iterative way, combining both deductive and inductive analyses, resulting in the

development of the livelihood reproduction framework to examine peasant and small farms' viability. In the following sections, we present the main critiques of the sustainable livelihoods and livelihoods resilience framework, we present the livelihoods reproduction framework (LRF) and we operationalize that framework for the case of small-scale olive farmers in Terres de Ponent. We end the paper with a discussion of the framework and outline the limitations of this work and future research needs.

## **II. The sustainable livelihoods and livelihoods resilience frameworks: main characteristics and limitations**

The sustainable livelihoods framework (SLF) and resilience theory are not approaches limited to peasant farms or even food systems, but they have frequently been applied to these fields with success (Scoones 2015; Tendall et al. 2015). Both approaches offer holistic frameworks for farm viability, inasmuch they take into account ecological, social and economic dimensions of farms and viability, and they integrate the notion of reproduction of a system in the definitions of resilience and sustainable livelihoods. They understand viability as the capacity of a farm system to generate the conditions and resources needed for reproduction and to provide a dignified life to all.

The SLF aims to understand how sustainable livelihoods are achieved (Scoones 1998). In SLF, livelihood strategies lead to sustainable livelihood outcomes and are explained as dependent on access to capital assets – that is, ‘the basic material and social, tangible and intangible assets that people have in their possession’ (Scoones 1998, 7), where access is conditioned by institutional processes and organizational structures (Scoones 1998). The definition of livelihoods and the focus on means of living in SLF (Chambers and Conway 1992) are appropriate for the examination of peasant farms, in which the economic goal is sustaining farming as a means of living and a way of life. Much like peasant economics, the sustainable livelihoods approach showed that rural and farming livelihoods can't be reduced to income (Natarajan et al. 2022; van der Ploeg 2013).

Peasant farms' viability has also been approached from the point of view of resilience theory, in which viability is a combination of resistance and adapting to change and disturbance, and therefore is something dynamic (Darnhofer 2010; Holt-Giménez, Shattuck, and Van Lammeren 2021). These approaches introduce *self-organization* and *capacity for learning* as elements of resilience (Cabell and Oelofse 2012; Ifejika-Speranza, Wiesmann, and Rist 2014), and a resilient farm ‘cannot privilege the social nor the ecological’ (Darnhofer et al. 2016, 113). Resilience approaches can, then, be used to understand socio-ecological systems as ‘the dynamic relationship between humans and the environment’ (Cabell and Oelofse 2012, 1), a definition that resonates with peasant economics' understanding of farming as a co-production between society and nature, in a relationship of reciprocity (van der Ploeg 2013). When applied to an agroecosystem, resilience emerges from the interaction between farm, farmer and context, which, similarly to sustainable livelihoods, is locally specific (Cabell and Oelofse 2012).

The livelihood resilience framework is particularly interesting to analyze how peasant farmers sustain themselves, as it merges SLF with resilience approaches. Introduced by Ifejika-Speranza, Wiesmann, and Rist (2014), this framework is based on a comprehensive definition of resilience as the ‘capacity of individuals, social groups or socio-ecological systems to accommodate stresses and disturbances, to self-organize, and to learn in

order to maintain or improve essential basic structures and ways of functioning' (Ifejika-Speranza, Wiesmann, and Rist 2014, 110). The framework operationalizes the livelihoods approach through the lens of resilience, thus taking into account the components of livelihood and their interactions (Ifejika-Speranza, Wiesmann, and Rist 2014). Livelihood resilience positions livelihood and not just the farm system as the object of resilience, connecting the indivisibility between household and farm characteristics of small and peasant farms.

The livelihood resilience of a farm system is based on four comprehensive dimensions: buffer capacity, self-organization, capacity for learning and diversity (Ifejika-Speranza, Wiesmann, and Rist 2014). Each of these dimensions has several defining attributes. Buffer capacity determines the farm's ability to endure in case of disturbances and to absorb change and opportunities while sustaining itself. It is mainly related to resource availability and accessibility, and such resources are categorized as human, social, natural, physical and financial, based on the SLF. Following the original definition of the framework (Ifejika-Speranza, Wiesmann, and Rist 2014), self-organization refers to a socio-ecological system's ability to manage and regulate itself and establish networks with other agents in the broader food system, allowing it to control system processes and giving it agency in controlling the outcome of such processes and emerging social structures. Attributes of self-organization are institutions; societal norms and rules, local or enforced by government agents; cooperation and networks; and reliance on own resources and network structure, which is context specific. Capacity for learning covers the system's actors' ability to access and transfer knowledge, as well as their ability to apply knowledge and information toward the improvement of their livelihood. Capacity for learning is indicated by the actors' knowledge of threats and opportunities, a shared vision, commitment to learning, functioning feedback mechanisms and actors' capability for knowledge identification, sharing and transferring. Lastly, diversity is a slightly different dimension of livelihood resilience cross-cutting that can be assessed in terms of the other three dimensions (see Table 1). In spite its comprehensive approach, the livelihoods resilience framework shows some shortcomings, inherited from SLF and resilience approaches. One of the main criticism of SLFs is how they tend to overlook or underexplain power relationships and institutions, which are relegated to context (Natarajan et al. 2022; Scoones 2015). Like seminal SLFs, livelihood resilience (Ifejika-Speranza, Wiesmann, and Rist 2014; Jacobi et al. 2018) includes attributes such as institutions, network structure, decentralization and independence that should bring power relationships and social inequalities to the analysis, but the political – including gender inequalities – ends up being treated as 'background noise' (Natarajan et al. 2022, 5). Furthermore, livelihood resilience, like most approaches to farm viability, leaves out important aspects of livelihoods, such as domestic and care work, job distribution and work conditions, division of labor or time organization. This blind spot is partly due to the fact that the household or family, which the farm system is based on, is taken as a monolithic agent, rather than a social group made up of different individuals, where inequalities occur (Ferreira, Barros, and Bevilacqua 2020; Natarajan et al. 2022). This leads to overlooking gender inequalities and the prominence of women in the assumption of care and non-productive tasks, which sustain the reproduction of the farm and household (Álvarez-Vispo and Begiristain 2019; Siliprandi 2018). The household, as a

**Table 1.** Dimensions and attributes of the livelihoods reproduction framework.

<i>Livelihood resources</i>	
Natural capital	Natural resources (soil, water, land, etc.) and ecosystem services (Jacobi et al. 2018; Scoones 1998).
Human capital	Labor availability, skills and education, state of health of the members of the household and people involved in the farm (Jacobi et al. 2018; Scoones 1998).
Social capital	Associations, social networks and affiliations to groups, also reciprocity relations and autonomy in decision-making (Jacobi et al. 2018; Scoones 1998).
Physical capital	Infrastructure, machinery and tools (Jacobi et al. 2018).
Financial capital	Financial resources in the form of income, savings or subsidies (Jacobi et al. 2018; Scoones 1998).
Symbolic capital	Includes non-material resources tied to identity and status (Conway et al., 2016), farming and the farm as patrimony and subjective values such as beauty or good (van der Ploeg 2013), and to processes of differentiation and quality creation (Moragues-Faus and Sonnino 2012).
<i>Capacity for learning</i>	
Different types of knowledge and learning	Farmers need to stay informed and be able to identify both threats and opportunities to or for their livelihoods (Ifejika-Speranza, Wiesmann, and Rist 2014; Jacobi et al. 2018). They do so by combining different sources of knowledge and learning spaces, which means engaging in more technical or scientific sources, but also using local and traditional knowledge (Altieri and Nicholls 2012; Darnhofer 2010).
Shared vision	How the vision for the farm of each of its members is adapted to a relation of reciprocity with living nature (ecodependence), is shared with other members of the farm (as fostered by a collective household (or social group) and fair labor relationships) and with other local agents and social networks (Altieri and Nicholls 2012; Ifejika-Speranza, Wiesmann, and Rist 2014; Jacobi et al. 2018).
Reflected and shared learning	Reflected as it is based on past experience and not a mere response to present conditions and shared as it is created and spread based on the relationships with other local agents (Cabell and Oelofse 2012; Darnhofer 2010; Jacobi et al. 2018). Also, exchange of knowledge between farm and household members (across genders and generations) and ability to learn from other members within the farm, which fosters a collective household or social group.
<i>External self-organization and interdependence</i>	
Decentralization and independence	Refers to the autonomy of the farm and household 'from controls that are outside the agroecosystem's sphere of influence', when it comes to designing the agroecosystem, managing and generating resources and making decisions (Cabell and Oelofse 2012). It is achieved, for example, through trade relations that do not rely on middlemen and through local economy cycles, rather than fully depending on globalized markets (Ifejika-Speranza, Wiesmann, and Rist 2014; van der Ploeg et al. 2019).
Reliance on own and local resources	Low dependence on external inputs for farm management and prioritizing self-provisioning (Darnhofer, Fairweather, and Moller 2010). This translates to an agroecosystem that is adapted and fosters local natural resources and ecosystem services and manages waste and by-products locally (Cabell and Oelofse 2012; Ifejika-Speranza, Wiesmann, and Rist 2014).
Cooperation and networks	The farm and household are part of local social networks and establish relationships of cooperation and trust with different agents and groups in the local food system (Cabell and Oelofse 2012; Ifejika-Speranza, Wiesmann, and Rist 2014; Jacobi et al. 2018). The agroecosystem benefits from such connectedness, which generates social resources, promotes flexibility and adaptiveness and fosters a shared vision at a local level (Lucas, Gasselín, and van der Ploeg 2019).
<i>Internal self-organization and interdependence</i>	
Work satisfaction	Work pace and workload are satisfactory when farmers are satisfied with them and are healthy (mentally and physically) (Dumont and Baret 2017; Dupré, Lamine, and Navarrete 2017). Satisfaction includes issues such as enjoying tasks and taking pride in or identifying with the work. In all its complexity, work satisfaction directly impacts the reproduction of the farm as a livelihood for future generations, as it influences the desirability of farming as a livelihood.
Collective and flexible household (or social group)	Collective refers to the number of people able (and healthy) to actively participate in the farm, but also to a flexible task distribution between members of the household or social group. In this way, it allows for farm to have more labor available, fosters equal relationships between household members and allows household members to share their workload and have a more flexible schedule, contributing to work satisfaction.

Fair labor relationships	Fairness is reflected in a fair task distribution, not based on restrictive gender roles. It also includes salaried workers and labor outside the household, and would include a fair salary or compensation and safe and healthy working conditions (Dumont et al. 2016; Dumont and Baret 2017; Shortall, McKee, and Sutherland 2020; Trevilla Espinal et al. 2021).
Ecologically self-regulated	While in an agroecosystem human intervention is needed to ensure that the system provides for human needs, as agroecology shows, 'it is possible for farms and food systems that are organized by humans to have the capacity to regulate energy and nutrient flows, control pests, and regenerate with much less need for human intervention than the conventional model of agriculture' (Cabell and Oelofse 2012, 3; Jacobi et al. 2018). This means that the agroecosystem relies on the regulation of ecosystem services on which terrestrial communities (including humans) depend.
<i>Diversity (cross-cutting)</i>	
Diversity of system elements, across the other dimensions, generally contributes to autonomy, flexibility and differentiation, taking shape in different viability strategies which strengthen and contribute to different attributes across dimensions of livelihood reproduction. This may include biodiversity and agrobiodiversity, diversity of income or diversity of knowledge.	
<i>Power relations and institutions (cross-cutting)</i>	
These are the political processes and formal institutions, including policies, political agents, regulations and administrations (not an exhaustive list), but also informal social structures and institutions, such as family, class or gender roles. These affect livelihood's reproduction of the farm not only as a context, but seeping into all other dimensions: for instance, they condition the access to and use of resources, they influence a farm's ability to self-organize locally and in how it relates to global agents, and they could shape the relationships and self-organization within the household.	

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community, needs to be theoretically opened up in the examination of peasant livelihoods; gender analysis needs to be incorporated into resilience thinking because gender roles have an impact on farm resilience as they might limit access to land, resources, and knowledge diversity and undermine social institutions (Aregu et al. 2016); and power relations and institutions have to be emphasized in the study of sustainable livelihoods (Natarajan et al. 2022).

### III. The livelihoods reproduction framework

To address the shortcomings of the livelihoods resilience framework, we propose adding a feminist economics and ecofeminist perspectives to the analysis. The relevance of gender inequalities in the management and viability of peasant farms is acknowledged but not fully considered in peasant economics (van der Ploeg 2013). Feminist economics expands the notion of reproduction already present in peasant economics. Much like peasant studies, feminist economics arises from the critique of modernization and the capitalist system, exposing their failure to provide a dignified life for all human communities (Álvarez-Vispo and Calle-Collado 2019; Carrasco Bengoa 2017; Herrero 2015). Feminist economics highlights the reproductive sphere of labor and economy (Carrasco Bengoa 2017), which includes domestic labor and care work (of both humans and nature), essential to fulfill basic human needs, and enabling the so-called productive sphere (Álvarez-Vispo and Begiristain 2019; Carrasco Bengoa 2017). Reproductive labor is often assumed by women in the patriarchal division of labor (Herrero 2015): women are appointed as caretakers while care labor is devalued (Rivera-Ferre and Álvarez-Vispo 2017). Reproductive tasks, which care for life and sustain a social organization, are made visible and put at the center of the economy (Herrero 2015; Rivera-Ferre 2018).



In addition, ecofeminism, as a social movement and theory that integrates feminist economics and political ecology, brings out human and social life as interdependent, as human beings dependent on each other for care at different points in our life cycle; and ecodpendent, as dependent on nature and ecosystems (Herrero 2015). The introduction of a feminist approach to the examination of the viability and resilience of small farm livelihoods offers a broader horizon and answers the question, often raised in resilience frameworks of ‘resilience for what’ (Darnhofer, Fairweather, and Moller 2010; Jacobi et al. 2018), by placing life at the center.

The LRF (Table 1) is built on the livelihoods resilience framework (Ifejika-Speranza, Wiesmann, and Rist 2014), also using insight from the SLF, and adding new dimensions and attributes – understanding dimensions as the areas of a socio-ecological system that are relevant in the ability of a farm to be reproduced and attributes indicating how each dimension can be characterized. The LRF uses two dimensions defined in the livelihoods resilience framework (Ifejika-Speranza, Wiesmann, and Rist 2014), capacity for learning and self-organization, with diversity as a cross-cutting dimension (Ifejika-Speranza, Wiesmann, and Rist 2014). It splits self-organization into internal and external self-organization and interdependence and categorizes the different capitals at play under the dimension livelihood resources. The LRF adds power relations and institutions as a sixth dimension, also cross-cutting, that needs to be emphasized in the analysis of livelihoods (Natarajan et al. 2022)

Diversity is a cross-cutting dimension (Ifejika-Speranza, Wiesmann, and Rist 2014), since the diversity of system elements generally contributes to autonomy, flexibility and differentiation, taking shape in different viability strategies which strengthen and contribute to different attributes across dimensions of livelihood reproduction (Darnhofer 2010). This may include biodiversity and crop diversity, diversity of income or diversity of knowledge. Power relations and institutions, which include political processes and formal institutions (e.g. policies, political agents, regulations and administrations, etc.) as well as informal social structures and institutions (e.g. family, class or gender), affect livelihood reproduction. They seep into all other dimensions of LRF (Natarajan et al. 2022), and as a dimension, power relations and institutions includes the intersecting systems of oppression affecting agroecosystems and particularly small farms (Holt-Giménez, Shattuck, and Van Lammeren 2021; Trevilla Espinal et al. 2021).

We follow the SLF to define livelihood resources as based on the livelihood assets (Scoones 1998) while considering buffer capacity of the resilience framework as a broader outcome achieved not only through assets but also through organizational and learning attributes of livelihood reproduction. We expand capacity for learning (Ifejika-Speranza, Wiesmann, and Rist 2014) as the system’s actors’ ability to access and transfer knowledge outward and within the farm, as well as their ability to apply knowledge and information toward the improvement and reproduction of their livelihood (Cabell and Oelofse 2012; Darnhofer 2010), in a way that allows farmers and their community to adapt to their specific circumstances and generate situated knowledge (Darnhofer 2021). A farm’s capacity for learning is largely grown through social networks and the attributes within this dimension are developed within the farm and in the embeddedness of the farm in its socio-ecological context. This is why capacity for learning can be explained as acting as a hinge between internal and external self-organization and

interdependence, emphasizing how the different dimensions seep into each other and achieve livelihood reproduction in their interlinkage.

Self-organization, as a quality of a resilient socio-ecological system, refers to how system managers are able to organize the system in a particular manner, that is adapted to their needs and desires (Cabell and Oelofse 2012). In our attempt to theoretically open up the household, and taking a feminist approach in the examination of livelihoods reproduction, we consider two self-organization dimensions – one external, the other internal – and highlight the interdependence aspect also present in this dimension of autonomy (Cabell and Oelofse 2012; Jansen, Vicol, and Nikol 2022). In other words, to increase autonomy from global actors, it is necessary to increase interdependence at the local level, being interdependence as important as self-organization. Thus, external self-organization considers system organization in relation to external agents (Ifejika-Speranza, Wiesmann, and Rist 2014). This translates into an agroecosystem that is globally autonomous (system organization and resource management are not determined by external institutions or power relations) (Cabell and Oelofse 2012; van der Ploeg et al. 2019) and locally interdependent, as it fosters networks and connections at a local scale (Ifejika-Speranza, Wiesmann, and Rist 2014; Cabell and Oelofse 2012), in a way that it can be relatively autonomous from global controls (Cabell and Oelofse 2012; Jacobi et al. 2018; van der Ploeg et al. 2019), reliant on the use of internal or local resources (Cabell and Oelofse 2012; Darnhofer, Fairweather, and Moller 2010) and foster local interdependence through cooperation and trust (Cabell and Oelofse 2012; Jacobi et al. 2018; Lucas, Gasselín, and van der Ploeg 2019).

Self-organization and interdependence also take place in how the system is managed internally, as the household or the social group managing a farm is not an indivisible agent but a community (Ferreira, Barros, and Bevilacqua 2020). This dimension highlights the need to look into the household when analyzing livelihoods (Aregu et al. 2016; Natarajan et al. 2022) and food systems (Trevilla Espinal et al. 2021) and to be able to delve further into social dimensions, as they have tended to be less explained when assessing agroecosystems (Dumont et al. 2016). This dimension refers to how system managers organize their own work and the work of other members of the farm in a way that fosters well-being (of human and non-human life) and equity and promotes a self-regulated ecosystem. Both the cited literature and the strategies identified in the case study guided the definition of the attributes within this dimension. Firstly, work satisfaction directly conditions how an agroecosystem is managed and affects its viability (Dumont and Baret 2017; Dupré, Lamine, and Navarrete 2017); it is constructed through tangible aspects such as workload but also through enjoyment or pride. A collective and flexible farm household (or other type of social unit) can make the agroecosystem more resilient by bringing in more resources. However, this attribute is not only a matter of how many people are in a farm household, but also how work is distributed and knowledge exchanged within the household, as flexibility and horizontality further contribute to labor availability and satisfaction. Fair labor relationships refer to social equity in the working conditions and relationships established in an agroecosystem, within the household and including farm workers – working conditions, financial situation, salary conditions and, fairness of labor relationships (Dumont and Baret 2017), but also gender equality in work distribution (Shortall, McKee, and Sutherland 2020; Trevilla Espinal et al. 2021). Finally, we include ecological self-regulation, as defined by Cabell

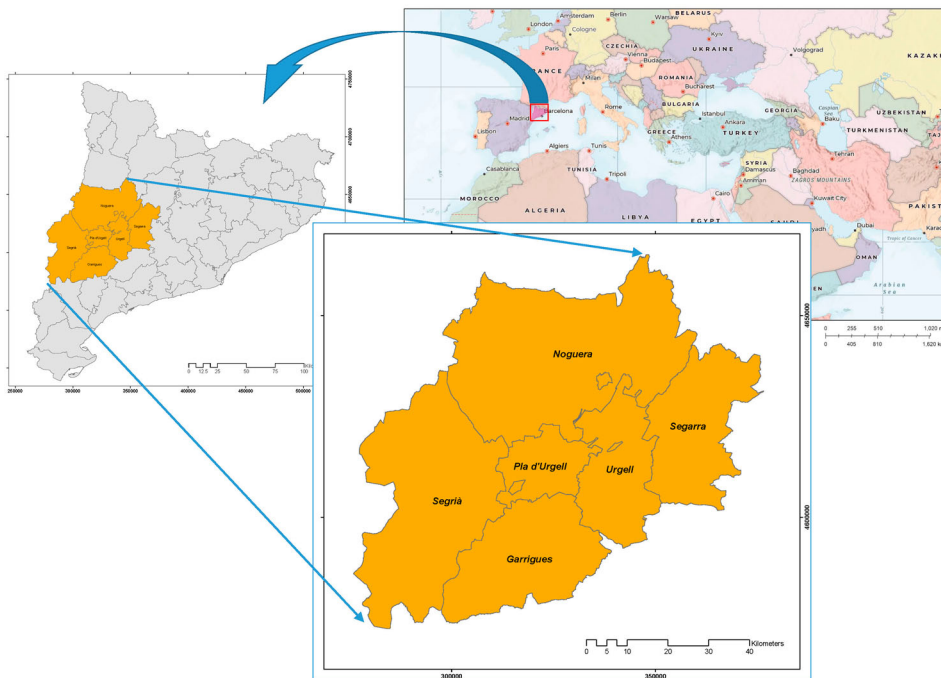
and Oelofse (2012) and integrated into livelihood resilience by Jacobi et al. (2018), within this dimension to highlight how internal self-organization is also related to ecodependence.

## IV. Methodology

### A. The case of olive oil production in the Terres de Ponent region in Mediterranean Spain

Olive farming in the Mediterranean is a traditionally extensive crop, and even after a process of intensification and the existence of a few big olive oil producers and manufacturers, it remains mostly in the hand of small farmers. Terres de Ponent is an administrative area in the region of Catalonia, in the northeast of Spain (Figure 1), whose socio-economic features in terms of agricultural production make it representative of olive oil production in Catalonia and Spain. Olive is one of the most important crops in Catalonia, amounting to 11 percent of harvested area in the region (DARP 2020), and up to 44.4 percent of Catalan farms produce olives (Martín et al. 2014). In Terres de Ponent, olive production is one of the most important agricultural activities, with a long tradition and tied to identity and landscape (Diputació de Lleida 2015), and the region is the second largest olive producer in Catalonia.

Catalan olive oil production is characterized by the importance of peasant farmers in the sector. Most olive farms in the area are small or have only few hectares dedicated to olive crops in a diversified, often extensive, system. Thus, as in the rest of



**Figure 1.** Location of the Terres de Ponent region in Mediterranean Catalonia (Spain).

the country and in the Mediterranean, farmers often complement olives with other extensive crops, with vineyards, cereal or nut trees being the most common, leading to a heterogeneous agricultural landscape. Farmers also often combine olives with animal farming, mostly intensive, or tourist activities. The characteristics of this type of farming (peasant-based) made the case relevant to implement and develop the LRF.

### ***B. Data collection and analysis***

In previous sections, we explained the theoretical development of LRF, building on previous frameworks. The construction of the framework was done through parallel deductive and inductive analysis, with the fieldwork providing information to design the framework as well as to test its suitability. This parallel and iterative process of combining the theoretical development of the framework through literature review (deductive) with the practical implementation in the field (inductive), allowed us to identify relevant attributes that were not identified with the literature review only.

A total of 59 households were interviewed among olive peasant farmers in Terres de Ponent during the summer of 2020, from July to September, resulting in 65 interviewed household members. As inclusion criteria, we used three features: (1) the farm had to manage less than 300 ha of farmland and less than 100 ha of olive orchards; (2) it had to be located within Terres de Ponent; and, finally, (3) the destination of olives produced had to be olive oil production. The starting points used to contact farmers were the Catalan database of farmers who engage in direct selling, and the directory of the Catalan Organic Farmers' Association (Consell Català de la Producció Agrària Ecològica 2021). From there, we used the snowball sampling method (Miles and Huberman 1994). We stopped sampling when we reached the point where additional interviews were not providing additional new responses (viability strategies). It is relevant to mention here that the objective of this paper is to identify the diversity of viability strategies being implemented by small olive oil farms, not to identify the number of farms that ascribe to each of them (which might be approached in future work). The interviews were conducted in person and in Catalan, the native language of the interviewees. The interviews lasted between an hour and an hour and a half, and were recorded and later transcribed. Research notes were also taken in the field-book.

The interview was designed to gather information on the farm resources, both material and immaterial, the agricultural management of the farm and how the farmers connected with other agents in the food system and established networks. Among other aspects, we gathered data on land resources, crops, yield and machinery; on the farmers' training background and on the decision process when it came to farm management; and on commercialization and distribution channels. We also aimed to collect data regarding how work and time are organized within the farms and households or social group (such as cooperatives), as well as how farmers perceive the viability of their farm, the goals they set and the challenges they face. Among other aspects, we asked who is part of the farm project and how they balance the different aspects of their lives, or about the strengths and weaknesses they see in their own farms.

Data was analyzed using qualitative data analysis software (NVivo 1.5.2-2021) to identify the main viability strategies being employed. This examination was done in two steps.

First, we coded the interviews to identify the viability strategies implemented by the farmers in their farms and households. Then, we synthesized the previously identified viability strategies into 34 parent strategies. Later, we examined how the identified strategies strengthen the different dimensions and attributes of the livelihood reproduction framework. When the audio quality was not good enough for transcription, we worked with the research notes.

## V. Results

### A. Overview of the olive oil peasant farms in the case study

Table 2 provides some of the main characteristics of the farms interviewed in this work. Most of the heads of farm were male; they ranged in age from 30 to 66 years old, with most of them being between 40 and 64 years old. A large majority, 45 farmers, took over the farm project from their parents, and 11 took over farming after their grandparents (that is, as a second generation); while new farmers with no direct generational ties to farming were rare ( $n = 3$ ). All the studied projects were family farms, with one exception in which the social group at the base of the farm was organized as a cooperative. The average farm size in the case study was 65.7 ha, but the range was very broad – from 3 to 265 ha. While farms this size are not often categorized as small, given the characteristics of the case study and the extensive and diversified nature of the production system, more land is needed (compared to vegetable production for example), and these farms are considered peasant farms in the area.

### B. Viability strategies implemented and their impact on peasant farm reproduction

A total of 34 viability strategies were identified in the case study (see Table 3). We clustered them into five groups: associativity and diversification of income and crops; manufacturing and control over commercialization; traditional farming; intensification; labor and work management. In what follows, we examine how the strategies impact the different dimensions and attributes of the livelihood reproduction framework and, thus, farm viability.

**Table 2.** Characterization of the farms analyzed in the case study.

Age range of the informants			Gender of the informants		
<40	40–64	>64	Female	Male	
15	40	4	16	49	
Type of olive production (number of farms)			Olive oil manufacturing (number of farms)		
<i>Organic</i>	<i>Conventional</i>		<i>Incorporated</i>	<i>Not incorporated</i>	
29	30		49	10	
Land dedicated to olive production (ha)			Yearly olive production (k)		
<i>Average</i>	<i>Max.</i>	<i>Min.</i>	<i>Average</i>	<i>Max.</i>	<i>Min.</i>
21	80	0.5	45,094	480,000	500
Complementary crops (number of farms)					
<i>Almond</i>	<i>Herbaceous crops</i>	<i>Vineyards</i>	<i>Fruit</i>	<i>Horticulture</i>	<i>Other</i>
38	26	13	6	5	6

**Table 3.** Viability strategies identified and the dimensions and attributes of the livelihood reproduction framework they impact<sup>Ω</sup>.

Viability strategies		Livelihood resources					External self-organization and interdependence			Internal self-organization and interdependence				Capacity for learning		
		Human cap.	Natural cap.	Social cap.	Physical cap.	Financial cap.	Symbolic cap.	Reliance on own resources	Cooperation and networks	Decentralization and independence	Fair labor relationships	Work satisfaction	Collective and flexible household/ social groups	Self-regulated ecosystem	Different types of knowledge and learning	Shared vision
Associativity	Collaboration and exchange with other producers	+		+	+		+		+					+	+	+
	Membership: olive oil cooperative	+		+	+		+		+				+		+/-	+
	Membership: farmers' union			+			+		+					+	+	+
	Membership: ADV*			+			+		+					+	+	+
	Participation in associations			+	+		+		+				-			+
Income diversification	Crop diversification		+			+	+		+				+			+
	External agri-jobs Non-farming jobs	-		+	+	+	-		+	+		-	-			+
Commercialization and manufacturing	Direct selling	-		+		+	+		+	+						+
	Short circuit commercialization			+		+			+	+						+
	Small distributors			+		+			+	+						+
	Diversification of selling channels					+			+	+						
	Wholesale channels															
	Incorporate manufacturing	-					+/-	+		+				+/-	+/-	
Intensification of olive production	Higher use of phytosanitary products					+										-
	Intensive planting frame					+										-
Traditional and extensive olive production	Irrigation				+	+										
	Integration of livestock and crops	-	+				+		+					+	+	
	Lower use of fertilizer and		+						+							

(Continued)

Table 3. Continued.

Viability strategies	Livelihood resources						External self-organization and interdependence			Internal self-organization and interdependence			Capacity for learning			
	Human cap.	Natural cap.	Social cap.	Physical cap.	Financial cap.	Symbolic cap.	Reliance on own resources	Cooperation and networks	Decentralization and independence	Fair labor relationships	Work satisfaction	Collective and flexible household/ social groups	Self-regulated ecosystem	Different types of knowledge and learning	Shared vision	Reflective and shared learning
Labor and work management																
Other																

ADV: Association for crop protection; Ω (+) and (-) means a strategy strengthens or hinders, respectively, different attributes of external and internal self-organization and interdependence and capacity for learning and how a strategy adds (+) or requires (-) certain capitals from livelihood resources, based on the interpretation from the interviews and expert analysis. It is not a quantification of the extent of the impact. Contributions indicated as +/- refer to strategies whose contribution to an attribute of livelihood reproduction is dependent on the internal and specific circumstances of a farm project and its members.

## 1. Associativity

We have identified five strategies focused on associativity (Table 3), that can be grouped into informal association, i.e. farmers collaborating and exchanging with local producers, neighbors or friends; and formal association, through membership and participation in different types of organizations. Associativity strategies build social relationships and thus contribute to a farm's *social capital* and to building *cooperation and networks*. This social capital can turn into other types of assets, more prominently as a source of knowledge, contributing to a farm's *capacity for learning* and *human capital*, and contribute to the *symbolic capital* of the farm. Different associativity strategies act as sources for different types of knowledge and information: informal collaboration with other producers can be a source of *traditional knowledge*, learning locally specific information and from a previous generation of farmers; olive oil cooperatives, farmers' unions or plant protection associations are a way to access technicians or updated information on regulations or subsidies, for example.

Collaboration with other producers is a central strategy in the case study, as this type of cooperation provides knowledge, labor and physical resources to a farm (Lucas, Gasselín, and van der Ploeg 2019). These exchanges, which make very explicit the interdependence of farming, are based on reciprocity and trust rather than monetary compensation, leading to more *decentralization and independence* from external factors. One of the farmers expressed that he and the neighboring farmers 'help each other a lot', as he explained how he had friends taking over harvest or sowing when he had to be away taking care of his sick father. By easing a farmer's workload and allowing him flexibility to be off the farm, informal exchanges and networks contribute to *work satisfaction*.

Membership in olive oil cooperatives allows farmers to access milling and commercialization infrastructures (Moragues-Faus and Sonnino 2012), incorporating these strategies without increasing the workload of farm members, contributing to *work satisfaction*. Olive oil cooperatives can be spaces for consensus contributing to a *shared vision* between the members. However, some farmers viewed cooperatives as spaces of struggle and divided opinions, or as organizations with outdated views that can make innovation difficult. This shows how, despite their potential as a space for farmers to engage in alternative food networks, cooperatives do not always function smoothly (Moragues-Faus and Sonnino 2012).

Similarly, farmers' unions can contribute to both *decentralization and independence*, as they can amplify farmers' voices and lobby in the face of policies or threats, and generate a shared vision among the members. However, some farmers in the case study expressed disenchantment over the impact of unions, feeling 'costs keep rising and nobody does anything'. Finally, while associativity strategies generally have a positive impact on work satisfaction, we also found some farmers that experience participation in associations as overwork, when they feel like they have to put a lot of time and effort into participating in or managing an association but receive few benefits from it: 'I'm there for the sake of it'.

## 2. Diversification of income and crops

Income diversification refers to those strategies through which farmers and household members engage in alternative sources of income, other than the farm. They are



characteristic of small farming (Chaparro Africano and Calle Collado 2017) and in the case study they aim to address the economic inability of the farm project to sustain the household, in a context where farmers feel the squeeze of agriculture. We distinguish three main types of diversification strategies: (1) external agriculture jobs, when farmers perform agricultural tasks for other farmers; (2) non-farming jobs, when farm and household members have off-farm jobs, which range from jobs completely unrelated to farming and agriculture (e.g. nurses, teachers or office workers), to jobs that are related to food or even within the agriculture sector (e.g. restaurant managers, agriculture technicians or industrial engineers specializing in farm machinery); and (3) crop diversification, where olive oil is often combined with other crops and economic activities.

Generally, income diversification strategies contribute to stabilizing and ensuring *financial capital*, financially sustaining small farms and their households (Moragues-Faus 2014), and to building global *autonomy*, as extra income can be invested in the farm (van der Ploeg 2011). External agriculture jobs are tied to *physical capital*, as they require specific machinery. They are also a potential space for *shared learning* and *social capital*, since in the case study, farmers who do external agriculture jobs do so within their local social network. Non-farming jobs can be a source for farmers to learn new skills and opportunities for the farm. One of the farmers combined olive production, using biodynamic agriculture, with an industrial engineer job designing farming machinery, allowing her to design and use machinery better adapted to biodynamic production. Finally, we have found that income diversification strategies through other jobs put pressure on internal self-organization. In general, when farmers and household members engage in other jobs, it limits their availability to work on farm and increases their *workload*, leading to farmers feeling overworked or having to give up farming tasks or strategies.

Crop diversification strengthens *natural capital*, as it contributes to the heterogeneity of the local landscape and reinforces the identity of farmers, contributing to *symbolic capital*. With crop diversification, farmers aim to stabilize and compensate yields and prices; one year a crop can have a lower yield or be sold at a lower price, but having other crops compensates the loss, contributing to *financial capital*. Having different crops opens opportunities to diversify the selling channels and be less dependent on a single buyer or channel, finding *autonomy* from market fluctuations while securing access to buffer resources (van der Ploeg et al. 2019). Farmers in the case study combine seasonally diverse crops, which means that work peaks don't overlap. In this way, despite the increased workload associated with farming different crops, doing so does not increase the work pace and even makes work more enjoyable for farmers, leading to *work satisfaction*.

### **3. Manufacturing and control over commercialization**

Here we include those strategies that allow small farmers to decide the sale price of their products, to control the conditions of the selling channel, to maintain the added value and to have a closer relationship with consumers. We found three strategies (Table 3): direct selling, short-circuit commercialization and selling through small distributors. The alternative strategy is to use wholesale commercialization channels, where farmers sell their product unbranded to big distributors and middlemen, who are the ones setting

the price and commercialization terms. Farmers in the case study combine the two strategies for their products and also diversify their commercialization channels.

Control over commercialization in olive oil production is tied to the incorporation of manufacturing, which allows them to transform olives into an edible product and facilitates direct commercialization. Incorporation of olive oil manufacturing is done in different ways: through membership in an olive oil cooperative, having an olive oil mill (either individually or in partnership with other producers) or hiring the milling service. Different strategies of incorporating manufacturing have different impacts on *human* and *financial assets* (livelihood resources) and *self-organization*, but as a general strategy it makes the farm more self-reliant in using and transforming products within the farm. However, in the case study, its impact as a strategy that contributes to livelihood reproduction is related to the extent to which it allows farmers control over commercialization.

Farmers choose direct and controlled commercialization channels to address the insufficient prices they get through wholesale channels, contributing to their *financial capital*; 'I do direct selling and now, I set the price, [it] is the only way'. In addition, control over commercialization makes it less dependent on global markets and big distributors (*autonomy*). Because it allows a more direct relation with consumers and small retailers, farmers can build *cooperation and networks* (Bezner Kerr et al. 2022) and in that way, it can contribute to both *social capital* and a *shared vision*. On the other hand, wholesale channels make farmers more dependent on the prices set by fluctuating global markets and on conditions set by big retailers and middlemen. However, it is perceived as an easy strategy that doesn't require more human capital; in contrast, using more direct selling channels means learning new skills and introducing additional work to their farming job. Control over commercialization strategies can be detrimental to *work satisfaction*, as they increase the *workload* (Dupré, Lamine, and Navarrete 2017). In fact, some farmers in the case study consider control over commercialization strategies appealing, but do not implement them due to the expected workload increase. They would only consider them if they could do it in cooperation with other producers – that is, sharing the commercialization workload – highlighting again the importance of cooperation and interdependence and pointing to the relevance of workload in livelihood reproduction.

#### 4. Traditional extensive farming

We have identified six strategies in this group (Table 3). Either as an alternative or in combination with intensification strategies, farmers in the case study opt to maintain traditional extensive olive production, using strategies such as rainfed production and wide planting frames. The desire to maintain the local traditional agricultural landscape (*symbolic capital*) or the internal characteristics of the farm, such as orography of the olive groves, and lack of access to irrigation channels are among the reasons to use extensive strategies. We found traditional extensive farming to be tied to organic agriculture. Olive trees are perceived by farmers as a type of crop that doesn't require much in terms of treatments and input application to have a minimum yield. Because of this, organic olive oil production is generally perceived as an easy transition, even if farmers acknowledge that it might mean lower yields (compared to with the use of intensification strategies). Organic olive production appears tied to extensive strategies, which are

connected to lower use of external inputs and to farmers trusting natural rhythms (rather than forcing them) to manage the agroecosystem.

These strategies have a similar impact on livelihood reproduction: they contribute to the reproduction of natural resources and foster biodiversity, contributing to *self-regulation* of the ecosystem. Also, they encourage the use of by-products and recirculation of resources (e.g. use of biomass as green cover), further strengthening a farm's *reliance on its own resources*. If focused on quality, extensive farming strategies can also lead to *financial capital*, allowing for higher selling prices, and can be connected to the desire to *gain control* over how farm products are distributed and sold.

### 5. Intensification

Olive trees are naturally alternate-bearing trees, which means that one year olive yield is higher and the year after the production is lower. This characteristic conditions farm management, with some farmers in the case study intensifying their olive production to compensate for it. With intensification, farmers increase and ensure olive production every year, aiming to increase and ensure *financial capital*, trying to compensate for insufficient sale prices. We found three strategies here (Table 3). Irrigation and intensification of planting frames can increase the *physical capital* of a farm. Intensification strategies also lead to a high use of external inputs (phytosanitary products and fertilizers), as irrigation and denser groves make olive trees more prone to diseases and can put pressure on the agroecosystem's natural resources. The high use of phytosanitary products also arises from the perception that weeds and biodiversity compete with agricultural production. Thus, despite the higher olive yield, intensification strategies increase dependence on external inputs and can be detrimental for natural resources and the agroecosystem in the long term.

Despite the fact that intensification and extensive farming strategies are opposite to each other and have different impacts on livelihood reproduction, farmers in the case study often implement them together. They might do so due to the physical and geographic characteristics of the farm; different fields and groves might require different strategies. Diverse and differing strategies give small farmers flexibility in the management of the farm and household, allowing them to adjust to their circumstances as efficiently as possible and to better absorb disturbances or seize opportunities (Darnhofer 2010) and, in that way, ensure their reproduction. Farmers who generally manage a farm following either an intensification or extensive strategy might incorporate particular strategies from the alternative. One farmer in the case study, who manages his farm following an extensive and quality-focused strategy, asserting the added value of traditional, organic and rainfed production in the selling of his olive oil, opted to incorporate irrigation to deal with situations of drought, which have become more common in the area with climate change.

Experimentation and the desire to try out new strategies is also a reason for farmers to combine alternative strategies. Some farmers had recently planted new olive groves in an intensive planting frame, aiming to try it out as a relatively recent innovation in the region, which could increase their production and make harvest easier. But at the same time, they maintain the other olive groves using a more extensive strategy, avoiding the risk of a big investment into a new strategy that requires a lot of physical, financial and natural capital

– an example of how small farmers carry out viability strategies favoring reliability over productivity (Roe, Huntsinger, and Labnow 1998; Spiegel et al. 2021).

### 6. Labor and work management

We found seven strategies in this group (Table 3). Labor and work management strategies play a central role in livelihood reproduction, and can affect other groups of strategies, or be affected by them. Farms in the case study rely on family labor as the main workforce, and household members take on most of the workload related to agriculture production tasks, commercialization and manufacturing, domestic and care jobs, income diversification jobs and administrative tasks. In work organization between household members, we have identified two opposite strategies: a flexible work distribution and a clear or strict work distribution. With a flexible work distribution, all members of the household can handle most tasks, even if each member has their expertise and they only do other tasks exceptionally, in the case (for example) of a member being sick or having to leave the farm. Similar to associativity practices, flexible work distribution contributes to *human capital*, *work satisfaction* and a *collective and flexible household*. On one farm that also does extensive sheep farming, the two adult sons in the household are the ones taking care of the flock. Their mother usually takes care of other tasks, but if neither of her sons are available, she is the one who takes the flock out to pasture. In this way, the farm increases the labor availability of household members and allows them to have a more flexible work schedule. Flexible work distribution also strengthens *fair labor relationships* between household members, as work is more evenly shared, and because it is related to an exchange of knowledge, it contributes to *shared vision* and *reflective and shared learning*.

In our case study the most common method of task distribution is through sexual division of labor, which traditionally determines who is responsible for what tasks within the farm and household and appoints women as caretakers (Álvarez-Vispo and Begiristain 2019; Rivera-Ferre and Álvarez-Vispo 2017). Women are responsible for domestic labor and male farmers sometimes express that, even though agricultural work can be flexible, they feel too ‘tied to the farm/land’ and struggle to dedicate time to family and care work. However, women are usually the ones who take on jobs outside the farm – jobs with more rigid schedules. They also assume commercialization and manufacturing tasks, especially when the farm project incorporates direct sales or manufacturing strategies for some of the farm products. It is also common for the women in the household to handle all or part of the administrative work tied to the farm project, such as keeping the books or handling contracts. This is a type of work that men farmers describe as burdensome (‘there’s more and more paperwork’), and female farmers do not particularly enjoy it either, one of them stating ‘I don’t enjoy it [administrative tasks], it never ends; farm work is more relaxing’. Women also participate in agricultural tasks, for example during work peak seasons, or tasks that do not require heavy machinery (jobs that are usually taken on by men); even in these cases, women’s agricultural work is described as support to the main farm job carried out by the men, as described in other farming contexts in Europe (Shortall et al. 2017).

This sexual division of labor highly conditions the strategy of having a clear or even strict work distribution between household members, which unlike flexibility, might lead to *unfair labor relationships* and can *hinder work satisfaction*. With few exceptions

found in the case study, women farmers are mainly responsible for the so-called non-productive economic tasks of the farm and household. Following the terminology found in the case study, women have a supportive role around the main productive farm work, in a double sense: first, in the sense of taking over side or auxiliary tasks, which are devalued and where their role in sustaining and reproducing the farm and household is often overlooked (Ferreira, Barros, and Bevilacqua 2020); but also in the sense of being primarily responsible for work and tasks that are essential to sustain the farm and household, make farm or productive work bearable and make possible tasks that bring monetary and symbolic value to the farm (Álvarez-Vispo and Begiristain 2019; Rivera-Ferre and Álvarez-Vispo 2017), such as direct sales, manufacturing or income diversification (van der Ploeg et al. 2019). Thus, a feminist economics approach shows how relevant the unpaid work of women or extended family members is: it is essential in ensuring the viability of the farm and, thus, its reproduction.

When family labor is not enough, small farmers use different labor acquisition strategies. In addition to associativity strategies, farmers hire workers, either long-term or seasonal, and count on the support of relatives outside the household. These strategies contribute to *human capital* and ease the *workload* of family members. However, hiring employees has a financial cost that the farmers perceive as very high. Also, particularly in the case of seasonal workers employed during the olive harvest, farmers offer precarious working conditions, sometimes not offering legal contracts or work insurance. Some farmers struggle with having to offer low salaries, as they would like to offer better working conditions but they feel too financially squeezed to do so. Tied to the struggles of hiring, some farmers opt to adapt farm management to avoid needing employees, focusing on strategies such as crop diversification, harvest mechanization, or prioritizing more control over commercialization, rather than intensifying or increasing agriculture production, or outsourcing some of the jobs. This latter strategy has a financial cost and can make farmers reliant on external agents, but it eases the *workload* of household members and allows them to take on strategies that otherwise couldn't be assumed due to a lack of human resources.

### 7. Other strategies

Counting on farming subsidies, from the European Common Agricultural Policy (CAP) or from regional governments or certification bodies, is similar to income diversification. Subsidies can strengthen *financial* and *physical capital*, as they can be used to acquire machinery and farm infrastructure. However, while subsidies can be seen by farmers in the case study as indispensable to cover the costs of production, they can generate dependence on external agents and are often disliked by the farmers because of that.

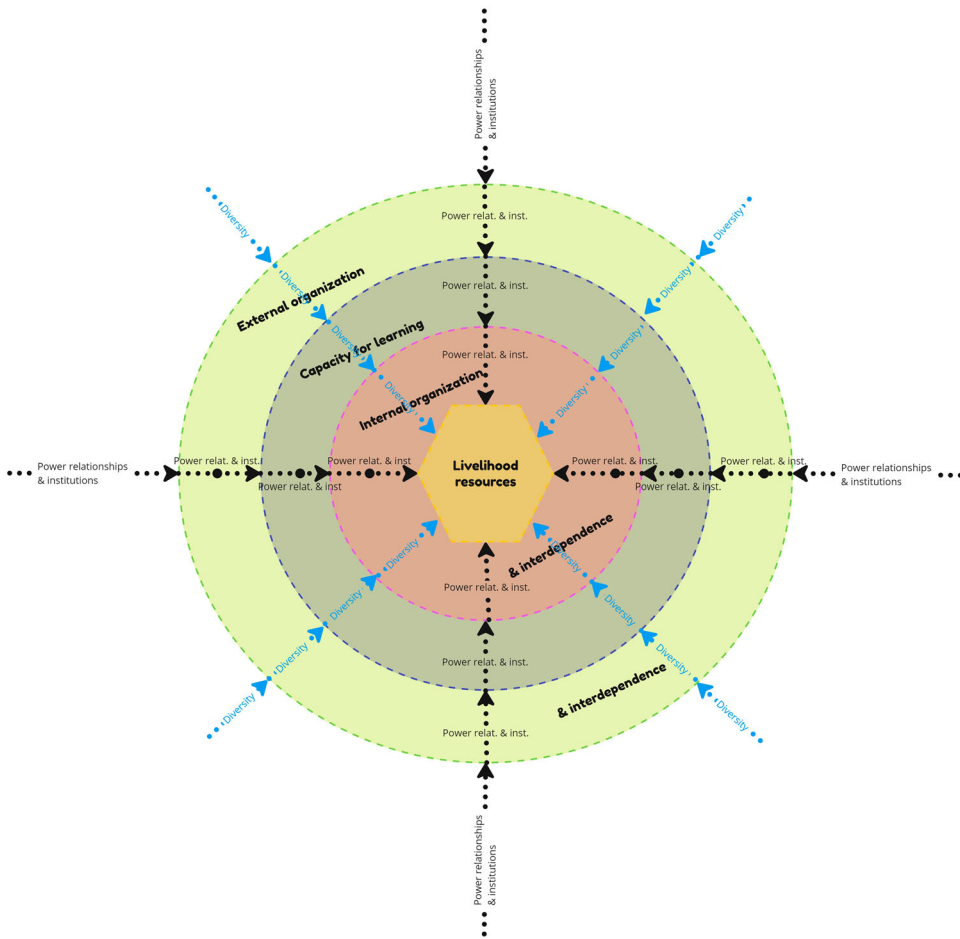
The main work peak in olive production happens during harvest (from late October to early January). We have identified two main harvest methods: mechanized and hand harvesting. Planting frames, tree morphology and age, orography of groves and destination of the olives affect the suitability of the different harvest methods; hence, they are conditional on other viability strategies. Mechanization is generally faster than harvesting by hand, but some farmers feel that mechanized harvesting tends to damage the trees. However, we have found that the impact of harvest methods on livelihood reproduction is highly connected to the work management and labor acquisition strategies and is very dependent on the context. For instance, if harvesting by hand is done

by hiring temporary employees in precarious conditions, it might lead to unfair labor relationships, something that might not happen if it is done with support from extended family. Similarly, mechanization might contribute to reliance on own resources if the farm has the necessary machinery or accesses it through associativity strategies, but it might have the opposite effect if harvest is mechanized through outsourcing the service. Depending on the context, the impact on work satisfaction will also be different.

### ***C. Suitability of the livelihood reproduction framework***

Our work has shown that peasants use a diversity of viability strategies to survive and guarantee their reproduction. These strategies not only depend on external elements and trends, but are also conditioned by the inherent and inherited factors of the farm and agroecosystem. Ecological, structural and socio-economic circumstances internal to the farm influence the viability strategies available to the farmers and shape how farming adapts to or absorbs external factors (Padró et al. 2019). These internal conditions can result in farmers adopting strategies that could be categorized as contradictory (e.g. intensification and extensification), but this shows that in fact, peasant farmers evaluate the different possibilities and organize the diversity of strategies available in novel ways, to ensure their reproduction (Darnhofer 2021). Thus, in the LRF the dimensions should not be understood as isolated nor in a hierarchical order, but rather organized in a way that communicates how livelihood reproduction is context specific, emerging from the particular circumstances and resources of a farm project (Figure 2).

We organized viability strategies into five groups, which strengthen several attributes within the LRF. LRF shows how associativity strategies not only contribute to building cooperation and networks, allowing the farm to self-organize within their local system. Also, by bringing in social and human assets in the form of labor, knowledge and shared infrastructure, associativity impacts internal self-organization, contributing mainly to flexibility and work satisfaction. By introducing well-being and satisfaction aspects in the analysis of farm viability, LRF allows us to identify trends that would otherwise be neglected. For instance, income diversification strategies, which are often seen as positive strategies for resilience and are central to sustain financial assets and farmers' struggle for autonomy, might conversely strain human assets and constrain households' self-organization and work satisfaction. While the shared aspect of the capacity for learning as a dimension of resilience is tied to associativity strategies, in which farmers can also self-organize externally, the LRF also shows how shared and reflective learning is built within the household as well, through strategies such as exchange of knowledge within the farm, which in turn contribute to labor availability and flexibility. The LRF also allows us to understand how some strategies that might increase autonomy, such as control over commercialization, might not be adopted because the increased workload cannot be assumed by the farmer, while associativity strategies can help in overcoming such barriers. Intensification strategies contribute mainly to building financial capital through increased production (unless this is accompanied by increased debt that would further increase farm vulnerability), with no other positive impacts on other dimensions of the LRF and, on the contrary, reducing autonomy and self-regulation of ecosystems. Traditional practices, however, contribute to building natural capital and a self-regulated ecosystem, increasing reliance on



**Figure 2.** Schematic representation of the dimensions of the Livelihoods Reproduction Framework (LRF).

their own resources and the use of different types of knowledge and learning. These practices can be combined by farmers even though they may be perceived as contradictory.

The LRF introduces a feminist perspective that allows for the analysis of strategies that take place within the household and thus accounts for the impact of work and labor management strategies on farm viability, strategies that are often overlooked by other frameworks but are fundamental to ensure the household's reproduction. The application of the LRF in the case study highlights the importance of flexible task distribution in the reproduction of the farm by contributing to equal relations and well-being, but also by strengthening livelihood resources and as a strategy that enables diversification of viability strategies. One problem we have encountered in our work is that the nature of the fieldwork didn't allow for the proper examination of one key dimension in feminist analyses: power relations and institutions. To address this dimension the fieldwork would have required a different methodology than the one we used to identify the strategies. The feminist literature shows this dimension can definitely hamper the reproduction of farms; we could not, however, confirm this empirically.

## VI. Conclusions

Peasant farms endure in a context of agricultural industrialization and mercantilization that threatens their reproduction, fueling the ongoing debate around agrarian questions. By introducing a feminist perspective and delving into the social aspects, LRF is an approach to peasant viability that goes well beyond a monetary notion of viability and accounts for the complexity and centrality of reproduction. As a framework, the LRF is centered on the farm's resource base, including material and non-material resources, and it spreads outwards through dimensions that explore organization attributes and interdependencies within the agroecosystem and the household, how farmers engage in learning and social networking and how the farm and its members organize and foster interdependence in relationship to other agents in the system and as embedded in its local context. By making visible what different dimensions and attributes contribute to the reproduction of peasant farms and particularly, the role that household relations and production play in reproduction, the LRF contributes to the understanding of why and how peasantry endure despite adverse conditions. The LRF introduces in the livelihoods and resilience debates factors such as social reproduction, working conditions, and well-being, that existing frameworks do not take into account. Particularly, social reproduction debates that from a feminist perspective, recognise the existence of unpaid labor as central to reproduction.

The analysis, using the LRF, of the viability strategies identified in small olive oil production sheds some light on how small farms endure. Farmers use different strategies within associativity, income diversification, control over commercialization, intensification and extensification, and work management to reproduce and sustain their farm. These strategies strengthen different dimensions of LRF and in fact, viability strategies that could be considered opposite are implemented simultaneously. The use of the different strategies identified is conditioned by both external factors and internal resources and circumstances of the farm.

Finally, our analysis highlights the importance of interdependence in peasants' viability and the need to examine relationships and strategies that take place within the household. Our work hints at the relevance of power relations and institutions in the study of viability and points to the need for future research in this direction. The attribute of work satisfaction also needs to be further explored. Future work could also focus on the quantification of those reproductive tasks that are essential for the reproduction of peasant farms.

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## Notes on contributors

**Judit Manuel** is a doctoral candidate at the Chair of Agroecology and Food Systems at the University of Vic - Central University of Catalonia. She has a background in Philosophy and Anthropology and early in her academic career, she developed an interest in the study of agroecology and sustainable and fairer food systems, particularly small farming and extensive agriculture.

**Marta G. Rivera Ferre** is research professor at the Spanish National Research Council (CSIC). With a multidisciplinary profile in the analysis of the society and environment interactions within agri-food systems, she has a particular interest in alternative agri-food systems following the food sovereignty paradigm and more recently, in the analysis of feminists and commons theories as to be adopted in agri-food research. She is also interested in the way different mental models and discourses co-exist in agricultural research and management. She has worked on the potential of local traditional agri-food knowledge in adaptation to climate change.

**Feliu López-i-Gelats** is an environmental social scientist trained in ecological economics and political ecology, and agroecology and rural development. At present he is co-director of the Chair of Agroecology and Food Systems at University of Vic-Central University of Catalonia. His fundamental research line is agroecology and a critical view to the agri-food system. He has devoted particular attention to examining the vulnerability and capacity of adaptation of smallholders to global environmental change, particularly pastoralists and beekeepers; examining the crisis of identity of agriculture and rural areas as a whole; examining the effectiveness of agroecological strategies, mainly community-based development strategies and employment of local traditional knowledge, to empower rural dwellers and small-scale producers; and finally examining the phenomenon of food waste.

## ORCID

Marta G. Rivera-Ferre  <http://orcid.org/0000-0001-8183-8398>

## References

- Akram-Lodhi, A. H. 2021. "The Ties That Bind? Agroecology and the Agrarian Question in the Twenty-First Century." *Journal of Peasant Studies* 48 (4): 687–714. doi:10.1080/03066150.2021.1923010.
- Akram-Lodhi, A. H., and C. Kay. 2009. *Peasants and Globalization: Political Economy, Rural Transformation and the Agrarian Question*, edited by A. H. Akram-Lodhi, and C. Kay. London: Routledge. <https://www.routledge.com/Peasants-and-Globalization-Political-economy-rural-transformation-and/Akram-Lodhi-Kay/p/book/9780415588751>.
- Altieri, M. A., and C. I. Nicholls. 2012. "Agroecología: única esperanza para la soberanía alimentaria y la resiliencia." *Agroecología* 7 (2): 65–83.
- Álvarez-Vispo, I., and M. Begiristain. 2019. "Feminismos para los sistemas alimentarios y la agroecología." *Revista Iberoamericana de Economía Solidaria e Innovación Socioecológica - RIESISE* 2: 125–146. doi:10.33776/riesise.v2i1.3658.
- Álvarez-Vispo, I., and Á Calle-Collado. 2019. "Economías-otras: Introducción a un monográfico necesario." *Revista Iberoamericana de Economía Solidaria e Innovación Socioecológica - RIESISE* 2: 5–26. doi:10.33776/riesise.v2i0.3689.
- Aregu, L., I. Darnhofer, A. Tegegne, D. Hoekstra, and M. Wurzing. 2016. "The Impact of Gender-Blindness on Social-Ecological Resilience: The Case of a Communal Pasture in the Highlands of Ethiopia." *Ambio* 45 (Suppl. 3): 287–296. doi:10.1007/s13280-016-0846-x.
- Aubert, M., and P. Perrier-Cornet. 2009. "Is There a Future for Small Farms in Developed Countries? Evidence from the French Case." *Agricultural Economics* 40 (SUPPL. 1): 797–806. doi:10.1111/j.1574-0862.2009.00416.x.

- Azadi, H., S. Movahhed Moghaddam, S. Burkart, H. Mahmoudi, S. Van Passel, A. Kurban, and D. Lopez-Carr. 2021. "Rethinking Resilient Agriculture: From Climate-Smart Agriculture to Vulnerable-Smart Agriculture." *Journal of Cleaner Production* 319 (January): 128602. doi:10.1016/j.jclepro.2021.128602.
- Bernstein, H. 2006a. "Is There an Agrarian Question in the 21st Century?" *Canadian Journal of Development Studies* 27 (4): 449–460. doi:10.1080/02255189.2006.9669166.
- Bernstein, H. 2006b. "Once Were/Still are Peasants? Farming in a Globalising "South."." *New Political Economy* 11 (3): 399–406. doi:10.1080/13563460600841033.
- Bernstein, H., H. Friedmann, J. D. van der Ploeg, T. Shanin, and B. White. 2018. "Forum: Fifty Years of Debate on Peasantries, 1966–2016." *Journal of Peasant Studies* 45 (4): 689–714. doi:10.1080/03066150.2018.1439932.
- Bezner Kerr, R., J. Liebert, M. Kansanga, and D. Kpienbaareh. 2022. "Human and Social Values in Agroecology." *Elementa: Science of the Anthropocene* 10 (1): 1–24. doi:10.1525/elementa.2021.00090.
- Cabell, J. F., and M. Oelofse. 2012. "An Indicator Framework for Assessing Agroecosystem Resilience." *Ecology and Society* 17(1). doi:10.5751/ES-04666-170118.
- Carrasco, C., and E. Tello. 2013. "Apuntes para una vida sostenible." In *Tejiendo alianzas para una vida sostenible: consumo crítico, feminismo y soberanía alimentaria*, edited by X. Montagut, C. Murias, and L. Vega, 11–45. Barcelona: Uvedos.
- Carrasco Bengoa, C. 2017. "La economía feminista. Un recorrido a través del concepto de reproducción." *Ekonomiaz: Revista Vasca de Economía* 91: 52–77.
- Chambers, R., and G. R. Conway. 1992. Sustainable Rural Livelihoods: Practical Concepts for the 21st century. *IDS Discussion Paper*, 296(January 1992).
- Chaparro Africano, A., and Á Calle Collado. 2017. "Peasant Economy Sustainability in Peasant Markets, Colombia." *Agroecology and Sustainable Food Systems* 41 (2): 204–225. doi:10.1080/21683565.2016.1266069.
- Chayanov, A. V. 1966. *The Theory of Peasant Economy*, edited by D. Thorner, B. Kerblay, and R. E. F. Smith. Manchester: Manchester University Press.
- Consell Català de la Producció Agrària Ecològica, C. 2021. CCPAE. <http://www.ccpae.org/>.
- Conway, S. F., J. McDonagh, M. Farrell, and A. Kinsella. 2016. "Cease Agricultural Activity Forever? Underestimating the Importance of Symbolic Capital." *Journal of Rural Studies* 44: 164–176. doi:10.1016/j.jrurstud.2016.01.016.
- Darnhofer, I. 2010. "Strategies of Family Farms to Strengthen Their Resilience." *Environmental Policy and Governance* 20 (4): 212–222. doi:10.1002/eet.547.
- Darnhofer, I. 2021. "Farming Resilience: From Maintaining States Towards Shaping Transformative Change Processes." *Sustainability (Switzerland)* 13 (6), 3387. doi:10.3390/su13063387.
- Darnhofer, I., J. Fairweather, and H. Moller. 2010. "Assessing a Farm's Sustainability: Insights from Resilience Thinking." *International Journal of Agricultural Sustainability* 8 (3): 186–198. doi:10.3763/ijas.2010.0480.
- Darnhofer, I., C. Lamine, A. Strauss, and M. Navarrete. 2016. "The Resilience of Family Farms: Towards a Relational Approach." *Journal of Rural Studies* 44: 111–122. doi:10.1016/j.jrurstud.2016.01.013.
- Departament d'Agricultura ramaderia pesca i alimentació. 2020. *Radiografia de les explotacions agrícoles de Catalunya* (p. 2020).
- Diputació de Lleida. 2015. *L'oli d'oliva, eficiència productiva i internacionalització*.
- Dumont, A. M., and P. V. Baret. 2017. "Why Working Conditions are a Key Issue of Sustainability in Agriculture? A Comparison Between Agroecological, Organic and Conventional Vegetable Systems." *Journal of Rural Studies* 56: 53–64. doi:10.1016/j.jrurstud.2017.07.007.
- Dumont, A. M., G. Vanloqueren, P. M. Stassart, and P. V. Baret. 2016. "Clarifying the Socioeconomic Dimensions of Agroecology: Between Principles and Practices." *Agroecology and Sustainable Food Systems* 40 (1): 24–47. doi:10.1080/21683565.2015.1089967.
- Dupré, L., C. Lamine, and M. Navarrete. 2017. "Short Food Supply Chains, Long Working Days: Active Work and the Construction of Professional Satisfaction in French Diversified Organic Market Gardening." *Sociologia Ruralis* 57 (3): 396–414. doi:10.1111/soru.12178.

- Ferreira, E. L., R. A. Barros, and P. D. Bevilacqua. 2020. "Women Working in Animal Husbandry: A Study in the Agroecological Transition Context." *Ciencia Rural* 50 (1): 1–9. doi:10.1590/0103-8478cr20190149.
- Góngora, R., M. J. Milán, and F. López-i-Gelats. 2019. "Pathways of Incorporation of Young Farmers Into Livestock Farming." *Land Use Policy* 85 (March): 183–194. doi:10.1016/j.landusepol.2019.03.052.
- Hazell, P. B. R. 2005. "Is There a Future for Small Farms?" *Agricultural Economics* 32 (SUPPL. 1): 93–101. doi:10.1111/j.0169-5150.2004.00016.x.
- Herrero, Y. 2015. "Apuntes Introductorios Sobre el Ecofeminismo." *Boletín de Recursos de Información - Centro de Documentación Hegoa* 43: 1–12. <http://boletin.hegoa.ehu.es/mail/37>.
- Holt-Giménez, E., and M. A. Altieri. 2013. "Agroecology, Food Sovereignty, and the new Green Revolution." *Agroecology and Sustainable Food Systems* 37 (1): 90–102. doi:10.1080/10440046.2012.716388.
- Holt-Giménez, E., A. Shattuck, and I. Van Lammeren. 2021. "Thresholds of Resistance: Agroecology, Resilience and the Agrarian Question." *Journal of Peasant Studies* 48 (4): 715–733. doi:10.1080/03066150.2020.1847090.
- Ifejika-Speranza, C., U. Wiesmann, and S. Rist. 2014. "An Indicator Framework for Assessing Livelihood Resilience in the Context of Social-Ecological Dynamics." *Global Environmental Change* 28 (1): 109–119. doi:10.1016/j.gloenvcha.2014.06.005.
- Jacobi, J., S. Mukhovi, A. Llanque, H. Augstburger, F. Käser, C. Pozo, M. Ngutu Peter, et al. 2018. "Operationalizing Food System Resilience: An Indicator-Based Assessment in Agroindustrial, Smallholder Farming, and Agroecological Contexts in Bolivia and Kenya." *Land Use Policy* 79 (February): 433–446. doi:10.1016/j.landusepol.2018.08.044.
- Jansen, K., M. Vicol, and L. Nikol. 2022. "Autonomy and Repeasantization: Conceptual, Analytical, and Methodological Problems." *Journal of Agrarian Change* 22: 489. doi:10.1111/joac.12468.
- Latruffe, L., A. Diazabakana, C. Bockstaller, Y. Desjeux, J. Finn, E. Kelly, M. Ryan, and S. Uthes. 2016. "Measurement of Sustainability in Agriculture: A Review of Indicators." *Studies in Agricultural Economics* 118 (3): 123–130. doi:10.7896/j.1624.
- Lucas, V., P. Gasselin, and J. D. van der Ploeg. 2019. "Local Inter-Farm Cooperation: A Hidden Potential for the Agroecological Transition in Northern Agricultures." *Agroecology and Sustainable Food Systems* 43 (2): 145–179. doi:10.1080/21683565.2018.1509168.
- Martín, A., L. Mercadé, C. Escobar, and J. M. Gil. 2014. *Fitxa sectorial de l'oli d'oliva*.
- Miles, M., and M. Huberman. 1994. "Qualitative Data Analysis: And Expanded Sourcebook." In *Sage Publications*, edited by M. B. Miles, and A. M. Huberman, 16–38. 2nd ed. London: SAGE Publications.
- Monllor, N. 2013. "LA NOVA PAGESIA: VERS UN NOU MODEL AGROSOCIAL." *Quaderns Agraris* 35 (deseembre): 7–24. doi:10.2436/20.1503.01.25.
- Moragues-Faus, A. M. 2014. "How is Agriculture Reproduced? Unfolding Farmers' Interdependencies in Small-Scale Mediterranean Olive oil Production." *Journal of Rural Studies* 34: 139–151. doi:10.1016/j.jrurstud.2014.01.009
- Moragues-Faus, A. M., and R. Sonnino. 2012. "Embedding Quality in the Agro-Food System: The Dynamics and Implications of Place-Making Strategies in the Olive Oil Sector of Alto Palancia, Spain." *Sociologia Ruralis* 52 (2): 215–234. doi:10.1111/j.1467-9523.2011.00558.x.
- Morton, J. F. 2007. "The Impact of Climate Change on Smallholder and Subsistence Agriculture." *Proceedings of the National Academy of Sciences of the United States of America* 104 (50): 19680–19685. doi:10.1073/pnas.0701855104.
- Natarajan, N., A. Newsham, J. Rigg, and D. Suhardiman. 2022. "A Sustainable Livelihoods Framework for the 21st Century." *World Development* 155: 105898. doi:10.1016/j.worlddev.2022.105898.
- Padró, R., I. Marco, C. Font, and E. Tello. 2019. "Beyond Chayanov: A Sustainable Agroecological Farm Reproductive Analysis of Peasant Domestic Units and Rural Communities (Sentmenat; Catalonia, 1860)." *Ecological Economics* 160 (February): 227–239. doi:10.1016/j.ecolecon.2019.02.009.
- Rivera-Ferre, M. G. 2018. "L'agroecologia és feminista?" *Agrocultura*, 1–3.

- Rivera-Ferre, M. G., and I. Álvarez-Vispo. 2017. "Del enfoque mercantil a la centralidad de la vida, un cambio urgente para las mujeres." *Vencer La Crisis Alimentaria Mundial - Observatorio Del Derecho a La Alimentación y a La Nutrición*, 40–45.
- Roe, E., L. Huntsinger, and K. Labnow. 1998. "High-Reliability Pastoralism Versus Risk-Averse Pastoralism." *Journal of Environment & Development* 7 (4): 387–421. doi:10.1177/107049659800700404
- Scoones, I. 1998. "Sustainable Rural Livelihoods: A Framework for Analysis." *IDS Working Paper 72* (January 1998): 22. [http://forum.ctv.gu.se/learnloop/resources/files/3902/scoones\\_1998\\_wp721.pdf](http://forum.ctv.gu.se/learnloop/resources/files/3902/scoones_1998_wp721.pdf)
- Scoones, I. 2015. *Sustainable Livelihoods and Rural Development. Agrarian Change & Peasant Studies*. Fernwood Publishing. [www.practicalactionpublishing.org](http://www.practicalactionpublishing.org).
- Sevilla Guzmán, E., and G. Woodgate. 2013. "Agroecology: Foundations in Agrarian Social Thought and Sociological Theory." *Agroecology and Sustainable Food Systems* 37 (1): 32–44. doi:10.1080/10440046.2012.695763.
- Shortall, S., A. McKee, and L. A. Sutherland. 2020. "The Performance of Occupational Closure: The Case of Agriculture and Gender." *Sociologia Ruralis* 60 (1): 40–57. doi:10.1111/soru.12279.
- Shortall, S., L. A. Sutherland, A. McKee, and J. Hopkins. 2017. *Women in Farming and the Agriculture Sector* (Issue Agriculture, environment and marine).
- Siliprandi, E. 2018. "Reflexiones Teóricas Sobre un Enfoque Feminista en la Agroecología." *Cadernos de Agroecología* 13 (1).
- Spicka, J., T. Hlavsá, K. Soukupova, and M. Stolbova. 2019. "Approaches to Estimation the Farm-Level Economic Viability and Sustainability in Agriculture: A Literature Review." *Agricultural Economics (Czech Republic)* 65 (6): 289–297. doi:10.17221/269/2018-AGRICECON.
- Spiegel, A., T. Slijper, Y. de Mey, M. P. M. Meuwissen, P. M. Poortvliet, J. Rommel, H. Hansson, et al. 2021. "Resilience Capacities as Perceived by European Farmers." *Agricultural Systems* 193. doi:10.1016/j.agsy.2021.103224.
- Tendall, D. M., J. Joerin, B. Kopainsky, P. Edwards, A. Shreck, Q. B. Le, P. Kruetli, M. Grant, and J. Six. 2015. "Food System Resilience: Defining the Concept." *Global Food Security* 6: 17–23. doi:10.1016/J.GFS.2015.08.001.
- Trevilla Espinal, D. L., M. L. Soto Pinto, H. Morales, and E. I. J. Estrada-Lugo. 2021. "Feminist Agroecology: Analyzing Power Relationships in Food Systems." *Agroecology and Sustainable Food Systems* 45 (7): 1029–1049. doi:10.1080/21683565.2021.1888842.
- van der Ploeg, J. D. 2011. "The Drivers of Change: The Role of Peasants in the Creation of an Agro-Ecological Agriculture." *Agroecología* 6: 47–54. doi:10.6018/agroecologia.
- van der Ploeg, J. D. 2013. *Peasants and the art of Farming: A Chayanovian Manifesto*. 1st ed. Fernwood Publishing. [www.fernwoodpublishing.ca](http://www.fernwoodpublishing.ca)
- van der Ploeg, J. D. 2018. *The New Peasantries: Rural Development in Times of Globalization*. 2nd ed. London: Routledge.
- van der Ploeg, J. D., D. Barjolle, J. Bruil, G. Brunori, L. M. Costa Madureira, J. Dessenin, Z. Drag, ... A. Wezel. 2019. "The Economic Potential of Agroecology: Empirical Evidence from Europe." *Journal of Rural Studies* 71 (December 2018): 46–61. doi:10.1016/j.jrurstud.2019.09.003.