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# Spanish women pastoralists' pathways into livestock management: Motivations, challenges and learning

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## ABSTRACT

Rural studies has made considerable theoretical and empirical progress on gender and agriculture, yet almost none of this work focuses specifically on women involved in livestock production in the Global North. To address this gap, we explored the experiences of women involved in extensive livestock farming in Spain, including their motivations, identities, challenges, and sources of learning and support. Using a life-history approach, we interviewed 29 women across four regions of Spain and conducted follow-up participatory workshops in three regions. We investigated how women enter the extensive livestock sector, learn the occupation and business of livestock husbandry, and their experiences of power relations and discrimination, then interpreted our findings through the lens of Feminist Agrifood Systems Theory (FAST). Women's narratives reveal three primary pathways into livestock management: via family, via a partner/spouse, and from zero. Although interviewees shared common experiences and struggles, each pathway is associated with distinct motivations, challenges, and sources of learning. This variety of goals and experiences disrupts stereotypes about women's roles in extensive pastoralism and points to the need for outreach and policy grounded in the diverse realities of women's lived experiences. Our results underscore the obstacles pastoralist women face in gaining and maintaining economic and decision-making autonomy. Our findings partially support all FAST propositions, yet highlight continuing challenges for Spanish women entering a historically male-dominated sector. In the Spanish context, we found strongest support for FAST propositions 5 and 6, which posit that women must carefully navigate agricultural institutions, often encountering exclusion and discrimination, and that women create their own networks to address their specific needs and advance agroecology and rural sustainability. Increased training for officials overseeing new enterprise incorporations, and investment in women's networks could reduce institutional bias and increase support for women operators.

## 1. Introduction

In recent decades, rural studies have increasingly addressed issues related to gender broadly and the experiences of women farmers, specifically. Rural geography and sociology have attended to making women in agriculture more visible in scholarship (Sachs, 1983, 1996; Whatmore, 1991a); understanding their roles and identities (Brandth and Haugen, 1997; Brasier et al., 2014; Little, 2002; Shortall, 2014), their access to resources and decision making (Pilgeram and Amos, 2015; Sachs et al., 2016; Shortall, 1999) and how these are shaped by power relations within and beyond families and farm enterprises

(Shortall, 2017; Whatmore, 1991b). A growing body of work in rural studies and environmental geography applies explicitly feminist theoretical perspectives (Little and Panelli, 2003; O'Shaughnessy and Krogman, 2011; Reed and Mitchell, 2003; Shortall, 2017; Trauger et al., 2008; Whatmore, 1988, 1991b) and methodologies (Pini, 2002, 2004; Trauger et al., 2008). Yet almost none of this work has centered on women involved in livestock production on rangelands in the Global North, a sector where women's participation is growing after decades of decline in the 20th century. This paper aims to address this empirical gap with a qualitative study of Spanish women engaged in extensive livestock production. Before describing the Spanish context and our

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methods, we first briefly review the literature on gender and agriculture in the Global North, and the theoretical approaches through which researchers have analyzed the work and lives of women farmers, ranchers and pastoralists. We conclude this section by introducing the new Feminist Agrifood Systems Theory (FAST) advanced by [Sachs et al. \(2016\)](#), which we apply and extend in this paper.

### 1.1. Women and gender in agriculture

Gender is one among many simultaneous social identities an individual holds, and constitutes a dynamic context-specific social performance. Gender classifies men, women and non-binary people into distinct social categories but does not dictate group membership. Gender can also be understood as a frame or belief system that privileges men over women, creating the incentive for men to maintain the system that benefits them ([Shortall, 2014](#)). Several reviews trace the development of studies of gender and agriculture ([Ball, 2020](#); [Little and Panelli, 2003](#); [Shortall, 2017](#)), environment ([Reed and Mitchell, 2003](#)), and sustainability ([Meinzen-Dick et al., 2014](#)). The “invisibility” of women’s work in farming motivated much early work, which focused on describing and quantifying women’s labor contributions ([Sachs, 1983](#)). Feminist analyses of farm women’s intertwined productive and reproductive roles complicated the notion of the farm household and exposed gender relations of power within farm families and enterprises, leading to the understanding of women’s exploitation as unpaid farm labor ([Whatmore, 1988, 1991b](#)), and more nuanced conceptions of farm decision-making ([Farmer-Bowers, 2010](#); [Whatmore, 1991b](#)). Identification of gender disparities led to calls for greater gender specificity and women’s participation in policy-making ([Reed and Mitchell, 2003](#)), and for analyses of structural sources of gender inequities, such as differential access to, use and management of land, labor, capital, technology and knowledge ([Ball, 2020](#); [Pilgeram and Amos, 2015](#); [Sachs et al., 2016](#); [Trauger et al., 2008](#)). Feminist political ecologists illuminate structural barriers ([Elmhirst, 2011](#); [Meinzen-Dick et al., 2014](#); [Rocheleau et al., 1996](#)), but most of their work centers on the Global South. Feminist research on gender and agriculture increasingly takes an intersectional approach that recognizes the complex ways that different social identities and locations (e.g. gender, race, class, sexuality) interact to shape an individual’s resource access, power or oppression ([Reed and Mitchell, 2003](#); [Sachs, 1996](#); [Thompson-Hall et al., 2016](#)), and resists overgeneralizing the experiences of particular groups of women. The formation and dynamic nature of women’s identities as farmers, farm women and farm wives forms another rich thread of investigation ([Brandth, 2002](#); [Brandth and Haugen, 1997](#); [Brasier et al., 2014](#); [Little, 2002](#); [Shisler and Sbicca, 2019](#); [Trauger et al., 2008](#)), together with women’s goals and motivations for farming ([Sachs et al., 2016](#)), and women’s agency and resistance ([Cush et al., 2018](#); [Sachs, 1996](#); [Trauger, 2004](#)).

Despite advances in documenting and accounting for women’s agricultural work ([Ball, 2020](#); [Fremstad and Paul, 2020](#); [Galiè et al., 2018](#)), and efforts to reduce gender discrimination in agricultural policy, farming women still do not always recognize themselves and identify as farmers, and often remain unrecognized by rural society and agricultural organizations as legitimate farmers ([Fhlatharta and Farrell, 2017](#); [Shortall, 2014](#); [Wright and Annes, 2019](#)). Significant economic inequities persist between farms operated by women and men ([Fremstad and Paul, 2020](#)). Yet farming women in the Global North often play important roles in agricultural innovation and entrepreneurship, especially in enterprise diversification ([Fhlatharta and Farrell, 2017](#); [Seunke and Bock, 2015](#)), value-added processing ([Anthopoulou, 2010](#)), and sustainable agriculture ([Sachs et al., 2016](#); [Trauger, 2004](#)). However, because such women-led farms are often small-scale and non-traditional, they may be dismissed as “hobby farms” ([Sachs, 1996](#)), and receive less or inappropriate government and Extension support ([Trauger et al., 2008](#)). Both first-generation “new peasant” farmers ([Wilbur, 2014](#)) and women entrepreneurs on multifunctional farms

([Anthopoulou, 2010](#)) may find themselves trapped in traditional gender roles even as they advance alternative farm livelihoods.

### 1.2. Women and livestock production

Globally, extensive livestock production is the most wide-spread land use, supporting between 200 and 500 million people ([Mbow et al., 2019](#)), and providing important ecosystem services ([Reid et al., 2014](#)). The gender dimensions of pastoralism and women’s roles in pastoral systems in the developing world have received increasing attention over the past two decades ([Bhasin, 2011](#); [Flintan, 2008](#); [Kipuri and Ridgewell, 2008](#); [Kohler-Rollefson, 2012](#); [Rota et al., 2011](#); [Verma and Khadka, 2016](#)). This work has focused on women’s ecological knowledge ([Flintan, 2008](#); [Kohler-Rollefson, 2012](#)); gendered division of labor and gender relations ([Anbacha and Kjosavik, 2019](#); [Tangka et al., 2000](#)); property rights and natural resource governance ([Po and Hickey, 2018](#); [Wangui, 2014](#)); and gender dimensions of information access including Extension services ([Aderinoye-Abdulwahab et al., 2014](#)). Yet, studies of women and gender in ranching and pastoralism in the Global North remain extremely scarce ([Bruno et al., 2020](#); [Garcia Ramon, 1989](#); [Sachs, 1996](#)). Sachs posits that the invisibility of women livestock farmers results from their work with smaller animals (chickens, sheep) and small-scale animal husbandry; cultural images and stereotypes that associate men with animals; and the commercialization, industrialization and mechanization of livestock farming, which excludes women from many of their traditional roles, as well as from the paid labor force ([Sachs, 1996](#)).

Given the importance of extensive livestock production as a land-use and the number of women who are primary or co-operators of ranches and extensive livestock enterprises ([Instituto Nacional de Estadística, 2016](#); [National Agricultural Statistical Service, 2017](#)), the lack of research on women livestock farmers in the Global North represents a major empirical gap. Existing studies are primarily from the US and Australia. Wilmer and Fernández-Giménez examined how Southwestern US women ranchers’ roles and needs changed over their lifetimes ([Wilmer and Fernández-Giménez, 2016b](#)), and how women sustain rangeland systems by reducing their standard of living in lean times, engaging with non-ranchers in community organizing and advocacy, and facilitating intergenerational transfer of ranches and ranching knowledge ([Wilmer and Fernández-Giménez, 2016a](#)). Finan conducted an in-depth case study of three women who run a Midwestern goat farm, highlighting the challenges they face, their non-conventional affective approach to animal management, and how “alterity” enabled women to avoid sanctions from conventional farmers ([Finan, 2011](#)). In a study of first-generation ranchers in California, Munden-Dixon found that newcomers to ranching were more likely to be women, and were more ethnically diverse than California’s multi-generational ranchers ([Munden-Dixon, 2019](#)). Mirroring findings for other farming women ([Sachs et al., 2016](#); [Trauger et al., 2008](#)), these new ranchers, many of whom are women, struggle to secure access to land and capital, are often underserved by Extension and government agencies, while pursuing more environmental management practices and innovative processing and marketing approaches ([Munden-Dixon, 2019](#)). Interestingly, while women farmers may be less likely to operate machinery or use chemicals than men ([Trauger, 2004](#)), a study of Australian graziers found women livestock producers were more likely than men to adopt new computer-based precision agriculture technology ([Hay and Pearce, 2014](#)). Missing as yet are European studies on women’s experiences in the livestock sector.

### 1.3. Feminist Agrifood Systems Theory (FAST)

To position our work within feminist theories of women in agriculture, we draw on [Sachs et al.’s \(2016\)](#) Feminist Agrifood Systems Theory (FAST), which unifies several of the theoretical streams referenced earlier, including women’s farming identities, structural and cultural

barriers to farming for women, and women's innovations in sustainable agriculture. Sachs et al. (2016) propose FAST to explain women's roles in 21st century agriculture. FAST advances 6 propositions to explain women's emerging roles in US agriculture: women are 1) creating gender equality on farms, 2) asserting their identity as farmers, 3) accessing the resources they need to farm (land, labor and capital), 4) shaping new food and farming systems, 5) navigating often discriminatory agricultural organizations and institutions, and 6) forming networks for women farmers. Wright and Annes (2019) empirically assess this theory in the Michigan context to evaluate its generalizability to other geographies. Similarly, we selected this theory to apply to Spanish pastoral systems to further assess the extent to which the theory is transferable to a different cultural, geographical and production context—extensive livestock production in peninsular Spain.

#### 1.4. Women and extensive livestock production in Spain

Women have long been part of extensive livestock management systems in Spain, although their roles and visibility varied regionally (García Ramon, 1989; García Ramon et al., 1993). Beginning in the mid-20th century, livestock production systems in Spain largely shifted away from traditional extensive management, towards intensive industrial livestock agriculture (Guzman et al., 2018), leading to rural depopulation and land abandonment across large areas, as well as a masculinization of the sector (Camarero and Sampedro, 2008, 2019; González Díaz et al., 2019).

Today, however, Spanish women play a growing role in the livestock sector. A 2011 report (FADEMUR, 2011) states that the number of women working in the livestock sector is nearly equivalent to the number of men, including salaried and non-salaried family labor. Further, the proportion of women operators increased slightly from 28% to 32% by 2016 and over a third of operators in the youngest age group (<25 years) are women (Instituto Nacional de Estadística, 2016). These statistics can be misleading, however, as men often remain primary decision-makers even if the farm is registered in a woman's name. To facilitate women's participation in farming, including legal and economic empowerment, Spain approved the Law of Shared Ownership (Ley 35/2011) in 2011, following organized pressure by women farmers in Galicia, a region where women have long played a prominent role as primary farm operators (García Ramon et al., 1993). Despite high expectations, by 2017 only 339 women had obtained shared ownership under the new law (Senra Rodríguez, 2018), mainly due to the required approval by the husband, the high cost of social security payments for a second worker, and lack of administrative officers trained to assist women.

Little research exists on women's roles, knowledge or experiences in Spain's extensive livestock systems (Fernandez-Gimenez et al., 2019). In this exploratory qualitative study, we investigate how women enter the sector, their motivations and goals for becoming *ganaderas* (livestock producers) or *pastoras* (shepherds), the challenges they experience in starting or joining a livestock operation, and their primary sources of learning, mentoring and support during the transition into the life, work, and identity of *ganadera* or *pastora*. We develop a grounded theory of women's pathways into the livestock sector and interpret our findings through the lens of FAST.

## 2. Methods

### 2.1. Study areas and sample selection

We sought to interview women directly and indirectly involved in extensive livestock management, including women who own or co-own operations or who work with livestock as family members or employees of an operation owned by someone else. We also included women family members of livestock producers because they often provide essential support to the operation and influence production decisions, even when

they don't work directly with land or animals. We focused our study in four geographic areas: Andalucía (southern Spain), the Northwest (Zamora, León, Asturias and Cantabria), the central Pyrenees and lowlands of Aragón, and Catalunya. We identified potential interviewees through existing research and personal contacts, a country-wide network of women pastoralists, Ganaderas en Red (GeR), and a regional network, Ramaderes de Catalunya (Ramaderes.cat). The authors had different relationships to the topic, these networks and the interviewees (see positionality and author contribution statements in Supplemental Materials).

### 2.2. Data collection

Most interviews took place at the participant's residence or farm and included a visit to the operation. Several involved extended participant observation or repeated interactions and interviews. We used a semi-structured life-history interview protocol, beginning with the interviewee's childhood, education and family relationships, and how they entered the livestock industry and learned needed skills. We also asked about operation characteristics, management practices, livestock product processing and marketing, gender division of labor, and challenges related to gender in the home, livestock sector and society. Interviews were conducted in Spanish, lasted 1–3 h and were audio-recorded with the participant's permission. Research was conducted under Colorado State University IRB protocol 350-18H. We sent each participant their interview transcript for review and personal records. All names in this article are pseudonyms.

Following initial data analysis (see below), we convened workshops with interview participants and other members of GeR in Andalucía (n = 11 participants), Northwest Spain (n = 11), and in the Pyrenees (n = 3), and held additional follow-up meetings with other participants. The workshops in Andalucía and the Northwest served as regional gatherings for GeR and focused on strengthening women's relationships and confidence; collectively reflecting on local challenges and opportunities; and setting a common agenda. Workshops also provided an opportunity to discuss preliminary research findings with an expanded group of participants, collect additional data on women's experiences and perspectives, and engage participants in data interpretation. Workshop participants discussed how to use the findings to advance their goals, such as increasing empowerment and visibility of pastoralist women in their families, communities and the sector, improving rural services, and educating society about extensive livestock production.

### 2.3. Data analysis and trustworthiness

Transcribed interviews were imported into and coded in QSR NVIVO (QSR International, 1999). Initial coding revealed three main pathways into livestock production for women in our sample, but many women's stories reflected multiple intertwined pathways. In the workshops, women identified which pathway(s) best described their process. In the second round of coding, we identified representative narratives for each pathway and coded for the specific motivations, challenges, and sources of learning and support associated with primary pathways, scrutinizing the data for discrepant cases. Finally, we examined our findings through the lens of Feminist Agrifood Systems Theory (FAST), coding our findings in relation to the 6 FAST propositions (Sachs et al., 2016).

We ensured trustworthiness through an iterative multi-stage analysis process of initial coding, member-checking, further coding, and peer-debriefing. This process ensured prolonged immersion in the data and repeated interactions with research participants. Though generalization from a qualitative study of 29 interviewees is inappropriate, the regional workshops, which included women we did not interview, support the transferability of our results.

### 3. Findings

#### 3.1. Interviewee characteristics

We completed 29 interviews with women aged 22–96. Key characteristics of interviewees and their operations are summarized in Table 1. Most interviewees are active workers in one or more critical tasks of the operation, whether or not they are official operators. Four others belong to stock-raising families, but are not currently involved in daily management of herds or land. Three of these interviewees are retired and one is a student. Nineteen interviewees are members of GeR or Ramaderes.

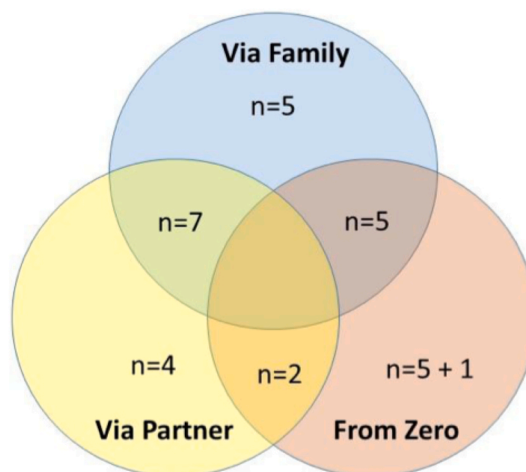
#### 3.2. Pathways into livestock husbandry

Each woman’s story of entry into the livestock sector is unique, but most participants fell into one or two of three main pathways into the sector: 1) inherited family profession/business, land and/or herd, 2) married/partner relationship with a livestock producer/herder, or 3) started “from zero.” (Fig. 1, Table 2).

We illustrate some of the typical patterns in women’s stories that describe each of these pathways (and combinations).

**1) Via Family** (n = 5) Five women described coming to livestock farming solely through inheritance of the family occupation, herd or land. Two of these women were highly dynamic and engaged sole operators of significant livestock enterprises. Juana’s father was a transhumant sheep producer in the Pyrenees. As an only child, she grew up following her father and the sheep, and developed a strong bond with the animals. Juana (age 27) recounted her first full transhumant journey, including disparaging questions about her ability.

*“The first year I went, really went on transhumance, the entire route, which for me was a bit harder because it was climbing to the (place name), I was 13 years old. I remember that everyone told me, ‘look at you*



**Fig. 1.** Venn diagram of different pathways into livestock production for women interviewed. Numbers in the quadrants indicate the number of participants that self-identified or were identified by researchers with each of the quadrants. The +1 in the From Zero circle represents one participant who saw themselves as starting from zero but in a unique context that distinguished her from others in that pathway. (Source: interviews and workshops).

*go, good-for-nothing, you won’t make it, look at you, how will you make it?’ (laughter) And I arrived, perfectly.”*

Thus, Juana demonstrated her transhumance competence, challenging gender norms and contributing to gender equality (FAST proposition 1).

Despite her love of animals and experiences herding with her father, Juana did not aspire to be a pastoralist, and instead pursued training in forestry. At 18, when her father announced his retirement and intention to sell the herd, she suddenly realized she could not bear to part with the sheep, and decided to incorporate as a sole operator, affirming her identity as pastoralist (FAST proposition 2). *“The moment that I realized they were going, they were leaving, well, I decided to keep them.”* Her father, uncle, and boyfriend (also a herder) help her as she continues the transhumant tradition, but she is very much the sole owner, manager and primary decision-maker, advancing gender equality in livestock farming (FAST proposition 1).

María (age 40), from Andalucía, raises cattle and Iberian pigs. Due to her father’s work as a livestock trader, the family livestock was registered in the names of his wife and daughters. María’s father and hired workers managed the farm with frequent help from María, her mother and sister:

*“I remember this, of coming with him, being with the pigs, everything. My father planted alfalfa, and I remember my father harvesting the alfalfa and I was changing the irrigation pipes with him, and my sister the same and my mother too.”*

Like Juana, María did not anticipate taking over the family business, but completed a university degree in agriculture. She first worked in a nearby city, but when her father needed help she moved back home and took a job in a nearby abattoir. She wanted a regular job with a salary and vacations. María continued to help her father, especially with regulatory paperwork, and decided to incorporate to take advantage of the “young farmer” subsidies, even as she continued to work her day job. Finally, her father’s death, the closing of the abattoir, and her decision to purchase more cattle from a tenant who was leaving the business, led María to dedicate herself full time to stock-raising. She now epitomizes a woman shaping new agrifood systems (FAST proposition 4), as she converts her cattle operation to certified organic production, improves the management of the Iberian pigs, and starts direct marketing while also taking leadership roles in several livestock associations (FAST

**Table 1**  
Characteristics of interviews and their operations.

Age group	N
<30	6
30–49	12
50–65	7
>65	4
Region	N
Andalucía	9
Northwest	8
Central Pyrenees & Aragón	10
Catalunya	2
Operator status	N
Sole or joint operator	18
Not official operator	9
Hired shepherd	2
Operation type	N
Sheep	13
Cattle	5
Cattle and sheep	3
Cattle, sheep, bees	1
Cattle and horses	2
Cattle and pigs	1
Goats	1
Goats and sheep	1
Sheep, goats, pigs, rabbits	1
Sheep and pigs	1
Sustainable/innovative management	N
Transhumance	7
Local or heritage breed	13
Agri-tourism/rural tourism	5
Direct marketing/value-added processing	8
Certified organic	3



**Table 2**

Patterns of primary motivations, challenges and sources of learning and support for women who follow different pathways into the extensive livestock production sector.

Pathway	Motivations	Challenges	Sources of learning/support/mentoring
Via Family	Opportunity Family obligation Identity with place, occupation, animals, rural values, traditions and lifestyle	Sometimes family opposition Opposition to innovation	Family members Employees Hands-on experience from childhood
Via Partner	Personal (love) Practical/pragmatic (lack of job alternatives) Affinity for rural lifestyle, animals	Conflicts with in-laws Lack of decision-making and economic autonomy Opposition to innovation	Partner Partner's family Hands-on experience
From Zero	Lifestyle Beliefs Political ideology Affinity for animals Exploit available resources	Incorporation Financial Access to land and infrastructure Learning Family opposition Lack of family and local logistical support/ labor	Formal education or training Self-study (books, etc.) Hands-on experience Virtual networks such as GeR

proposition 6).

**2) Via Partner** (n = 4) A second common pathway was marrying into a herding family. Veronica (age 50) met her husband Raul as a teenager, when he was a transhumant shepherd for a large estate. Early in their marriage, Raul continued to work as a shepherd for the same stock-owner, after which he and Veronica decided to start their own herd. When their two children were young, Veronica's brothers-in-law and a hired shepherd helped with the herd but when the shepherd retired, they decided it made sense for Veronica to work full time with the herd. Veronica is a clear example of a woman creating gender equality on a farm (FAST proposition 1). When joint ownership by spouses became legal in 2011, Veronica had already been fully involved in all aspects of the business for about 15 years, and they were the first couple in their province to file for it. Today they keep two separate flocks of sheep, of different breeds, each managed by a different spouse on different lands throughout the winter (FAST proposition 3). In spring, they merge the flocks and make the transhumant trek to spring and, later, summer mountain pastures. When asked how she learned the business she said,

*“Well, looking at him, because I used to go with him since the first moment. I mean, I would go with him, help him, when I had to be with our little girls I was there, but otherwise I would help him a lot. And then you learn all of a sudden, from experience itself.”*

Like several other interviewees, Lourdes (age 49), completed University and was working professionally when she met and married her husband, who was from a multi-generational herding family. She remarked that having always felt great admiration for women pastoralists, helped her to self-identify as one (FAST proposition 2), despite the effort it took to adapt to life as a stockwoman in a tiny village.

*“At first it was a little hard, hard, but what happens when you are young and in love, and you have all these dreams. Now I am happy, but in the beginning it was a little hard, the adaptation. And then the livestock husbandry, it's a profession for which I have always felt much respect and admiration. For me the women ganaderas have ..., it's a thing that ..., I have always admired. [...] Here we have a word “recias”, recias means hard, strong, for birthing, for working.”*

For Lourdes, and for several other who followed this pathway, her mother-in-law was an important mentor and teacher:

*“I knew and I lived with my mother-in-law for 2 years. And for me she was a role model of a working woman, good, calm. .... And in my own home as well, my grandmother had 10 children and I tell you, they also had land and livestock. Not my parents, but my grandmother, yes.”*

**3) Via Family and Partner:** (n = 7) A number of participants, including three of the four women over age 65, were both raised in and

married into livestock-rearing families. Paula (in her 60s), is one of six children in a farming family of the Pyrenees. She tended cattle from an early age (FAST proposition 2).

*“I was born in a rural environment and with animals. In my house we were and are six siblings. And we were always, I remember when I was little, my granddaughter's age, five years old, they left me in a field and told me, ‘Look, five cows. You have to take care of them.’ Two hours in the morning and two in the afternoon. I did it, before going to school and after coming home from school, while I went to school, and when there were vacations, I organized it.”*

Like several other women of her era in our sample, she left her rural home young (at 14), to seek a living in the city. There, Paula attended night classes and worked in a textile design workshop where she quickly rose to be a highly skilled and well-paid employee. But after 10 years, she tired of city life and returned to the countryside, which she liked, to marry a local cattle producer. *“After living all that I lived there [in the city], I discovered that well, I was capable of molding myself to this life, to live this life, and I have never regretted it,”* she said, asserting her identity as a pastoralist (FAST proposition 2). Her husband proposed living in an apartment in town, but Paula preferred to stay in the village. When Paula joined the large family household, her mother-in-law was a relatively young woman, in her early fifties, and they got along well. Because she grew up with cattle and liked them, it was a natural step for her to focus on the livestock, and leave her mother-in-law the house, advancing gender equality in pastoralism (FAST proposition 1).

*“Well look, I already knew about cows. I had always liked them and I knew them. I knew about calving, how many months they are pregnant, what to do with a little calf. What happened was, in my [childhood] house there were four cows. Here, at that time, there were 70. The management was also different because they were more numerous. But bit by bit, with [my husband] and his father, I incorporated myself. I saw how they did things and I picked up the reins of the parts I wanted to work with. I didn't want to be shut in the house cooking and washing dishes. I didn't really start cooking and washing dishes until ... I took care of my mother-in-law for five years when she had cancer and that's when I started taking care of the house.”*

Sandra (age 51), from Andalucía, also came to herding through both family and marriage. Her own words convey powerfully the legacy she received from her father—the love and knowledge of animals and the land—and from her mother and grandmother—the pride and knowledge of traditions and practices such as traditional bread and cheese-making (FAST proposition 2). When she attended the workshop, Sandra brought with her, carefully wrapped in a traditional cloth, the dried sourdough starter (*“masa madre”* or literally mother-dough) she inherited from her

mother and grandmother. She explained how these objects symbolized her identity as a *ganadera* (FAST proposition 2). From childhood, she never wanted to leave her home territory; she only wanted to follow in their footsteps, and did so while navigating the traditional patriarchal culture (FAST proposition 5).

*“I am the daughter and granddaughter of small farmers, herders, always in this county in the province of A. And always, since I was tiny, I wanted to do what my parents had done, this. And I wanted to stay here, I didn’t want to emigrate ... My father inculcated in me the love of livestock. Since I was little I went with him. I came home from school, dropped my knapsack, and I went with him so he would tell me stories. He was with the sheep, depending on the time of year, in irrigated fields, in the shade, in the terraces, in the [espontas]. It depends on the temperature. And he told me stories, but they weren’t stories, they were a way of inculcating in me this love and this empowerment as a woman. My empowerment as a woman comes from my father, which is a bit surprising in that era because it was a patriarchy. Especially in the deep rural world, it was a great patriarchy. Although later I realized this, and I talked about it with my maternal grandmother. That the patriarchy was from the door of the house outwards and inwards it was the women who managed, directed, and perfectly, OK? But clearly, outwardly, the boss was the man, no? My father inculcated in me the love of livestock-raising and my mother and grandmother inculcated in me the love of the traditions that surround the world of pastoralism, agriculture and livestock husbandry. So I had this very clear. And well, later I married a young man who had been born in the middle of the M. Mountains and was born with his “teeth among the sheep” and who loved and deeply knew about extensive sheep husbandry and to this day sheep are his weakness and his passion.”*

Although recently separated, Sandra and her spouse continue to manage the farm together, and their grown son recently incorporated his own herd as part of the family enterprise. Today, her husband and son take on most of the herding tasks, and Sandra focuses on innovating by sharing her cultural traditions and local history with visitors (FAST proposition 4); advocating for rural interests, women in agriculture (FAST proposition 5), and sustainable and adaptive production systems; collaborating with research institutions; and participating in GeR (FAST proposition 6).

**4) From Zero:** (n = 5) Five participants described themselves as starting “from zero.” These women didn’t benefit from a family history, inherited land, animals or knowledge, or the support and mentoring of a partner’s family. Most of these women are self-described “*neo-rurales*” or newcomers into farming. Many were among the younger participants, and grew up in large cities in families with little connection to rural livelihoods. As such, these women had to access on their own all the necessary resources to farm (FAST proposition 3). All the women who identified with this pattern had some university education.

Mariela (age 30) grew up in the suburbs of a large city and pursued a degree in History. She is the owner-operator of goat and cheese business, and lives with her husband and two small children. For ideological reasons, they declined to participate in “young producers” subsidy programs. Here Mariela, an outsider and newcomer to farming, describes learning the practice by accessing government-run trainings (FAST proposition 3), and articulates a strong vision of revitalizing rural communities, livelihoods and environments (FAST proposition 4), while asserting her own identity as a shepherd (FAST proposition 2).

*“Let’s see, in reality, since I was 10 years old, when people asked me what I wanted to be when I grew up, I said I wanted to be a shepherd, but because everyone laughed at me and said, ‘Shepherd, no, come on, astronaut, because the stars also ...’ Because in reality the rural world always interested me. Later what happened? At 14 I started to have more contact with nature and with shepherds through my brother and I fell in love with the Pyrenees. And I fell in love hard. ... And now the decision to leave all that I was doing was when I was 23 .... And since that year, well, we began to move towards this path and he went to the shepherd’s school*

*in the Basque Country. I went to one in Andalucía, to have different visions of what shepherding was. And we learned a lot because each place has its idiosyncrasies and its way of looking at things. .... That is, in reality, for me being a shepherd is an excuse to do a lot of other things at the same time, which are: make a living, live in the countryside, and do some good for the environment, with what is in my hands. And the other theme is also the culture. I think it’s an occupation that’s in danger of extinction. Not being a livestock producer per se, but being a shepherd and goat-herder and I don’t want to see this go extinct. At the least, keep the flame going, transmit it and continue it.”*

Erika (age 23) from Catalunya entered the livestock sector as a professional shepherd. Erika grew up in a large city and participated in scouts, which fostered her connection to the environment. In late adolescence, she left the city to seek an agriculture and environment degree. Through her program she apprenticed with an older couple on a farmstead (*masia*) in central Catalunya, where she learned more about shepherding (FAST proposition 3). After the end of the formal apprenticeship, she stayed on with the farm, which raises organic heritage breed sheep and sells directly to restaurants and in farmers’ markets (FAST proposition 4). Erika now works as a full-time shepherd, and earns extra income shearing sheep. Like other newcomers to farming, Erika described both ideological and personal reasons for entering the livestock sector, and expressed a commitment to systemic change (FAST proposition 4).

*“And then, I believe the problem is structural. It’s a debate that we have among the “ganaderas” in these days. We are 7 millions of people in Catalunya to feed, but 50% live in big cities. (...) The problems of housing and the tertiarization [of the Catalan economy] play an important role influencing the absence of more initiatives in alternative agrifood systems. We only can find solutions with small actions of resistance.”*

**5) From Zero and Family** (n = 5) In several cases, women were raised in cities or towns with no direct connection to the land or animals, but later inherited family lands or livestock businesses. In other cases, they were raised in a rural, stock-growing household, but left home and spent time in the city, and returned to start their own business from scratch (FAST proposition 3), sometimes in a different village, with or without the benefit of family land, herd or labor.

Linda (age 39) grew up without close connection to land or animals, pursued a career in journalism, and in her early 30s inherited family lands together with her brother, a veterinarian. She describes how suddenly, she realized, on one hand, the privilege and opportunity that her inheritance represented, and, on the other, her sense of ancestral connection to the land and rural life, her emergent identity as a farmer and woman of the land (FAST proposition 2).

*“I worked in the city and I had a great job ... but I wasn’t happy. And suddenly my brother said a sentence that I will never forget, ‘You don’t realize how fortunate you are because you have land.’ And suddenly it all started there. What a friend calls my “Scarlett attack” (referencing *Gone with the Wind*). Which is that I suddenly go crazy for the land. ... We carried my grandparents’ ashes to the cemetery in [town] and we are all very marked by the fact that they are there. And suddenly it’s this sensation that your roots are there and the land is there. I still get emotional because for me it was a moment of truth. It’s a strange feeling, a feeling that you go and you are in your land. ... Suddenly, all I want to do is be in the country and get up early and work on the land.”*

After this realization, Linda began to spend 2 weeks each month on the land, trading off with her brother. Eventually, in 2015, she incorporated as a producer and began to raise cattle and sheep, commuting between her land and the city where she lives with her partner and children and continues to work as a freelancer.

Representing a nearly opposite combination, Marina (in her 40s) grew up on a small innovative dairy farm in northern Spain. “Throughout my childhood I helped in the house from the time I was little, making hay in

the summer, milking the cows, cleaning the tank, cleaning the milking parlor, and, well, what a rural kid does. (...) They inculcated in us the values of work, the values of cultural heritage, of the fields, the land and well, that's a little about my childhood." Marina left home young for the nearby city, eventually training and working as a nurse. She met her partner, a veterinarian, when she was 17 and together they had a child when she was in her early 20s. In 2003, her partner's work took them to a small village in the Cantabrian mountains, where the population is too small to support a secondary school, so their teenaged daughter attends boarding school during the school week. Deprived of the opportunity to mother her child, as she sees it, Marina dedicated her considerable energy to creating "from zero" a large multi-functional livestock and rural tourism business (FAST proposition 4).

*"The first thing I did was to increase the value where I could, what kind of animals could I put here? ... A rustic cow. A rustic cow that doesn't eat much in the winter when it snows and we have to feed them. And we decided on the local endangered breed Asturiana of the mountains. And later, to complement them, and because I have always liked mares, we decided to raise the wild Monchinas mares, a rare local breed of which only 800 animals remain, and 27 operations that raise them. And there began my war and my fight to defend my business."*

The first year was difficult, with deep snow in the winter before they had adequate barns. The year they built new barns with a substantial bank loan, a landslide destroyed them after a heavy rain. Yet Marina persevered and innovated, taking every opportunity to add value to her products through organic certification and location of origin branding, on-farm fattening, and direct marketing (FAST proposition 4). Recently she opened a rural tourism rental home and she also gives guided tours of her farm and the surrounding regional natural park. In 2019 she was elected to the regional parliament.

**6) From Zero and Partner** (n = 2) Like the newcomers, these women often came from educated urban backgrounds. Romantic relationships drew them to a rural life and livestock livelihood. Louisa (age 34) was attracted to her husband in part because of his sheep, and now plays a significant role in their care. *"Well I entered the business because I met my partner. I remember before that, when I was with my ex, I was thinking of getting goats because I really like animals and this life, right? Being in the countryside and working with my hands, ...I've always liked it. Then I met him, and he already had 15 sheep, and so we began together [to grow the business]."* However, Louisa is not a legal co-owner of the herd and struggles to assert herself in on-farm decision-making (FAST proposition 1). For example, she reports that her husband won't let her deal with livestock buyers or begin direct-marketing. *"My husband, it's not that he is really machista, but when I asked him, 'why can't I make a deal?' if he isn't there one day and the buyer comes. And he doesn't want that. He says that's for him to do."*

Nina (age 28) is less involved in the day-to-day management of her fiancée's flock, but abandoned her own professional career to relocate and live with him in a mountain village. She has since found temporary work in rural development, and the couple has discussed a larger role for her in the livestock business, direct-marketing their heritage lamb (FAST proposition 4).

*"Neither my fiancée, his brother or his father could do this if there wasn't another person, who could be me, to help them commercialize, because in the end they are only stockraisers and they only have time available for that work. Not to go to restaurants and stores and butcher shops and ask 'hey, does this interest you?' ... So we have discussed this as a work option for me, but also because I see this as a way to help them and the village too. Because you create a local product as an attraction. ... You give an added value to this product."*

**7) Necessity-driven** (n = 1) Though we might have classified her as "from zero," Ana (age 50) saw herself differently, as she explained at the workshop. She perceived that other women in the "from zero" pathway

entered their profession by choice and from vocational affinity, whereas she began her business from necessity and felt little love for her occupation. *"[My husband] saved and when he had money he bought a farm and put us in trouble. He did not explain to us where we were going ... He came as a child, having grown up in the field and then he knew where he was going, but we didn't."*

An immigrant, Ana moved to Spain as a child. At 18 she became involved with an older man, and soon found herself trapped in a difficult relationship with four children to raise and no economic or personal freedom. They lived in rudimentary conditions without electricity or hot water, and she started a subsistence farm. In the workshop, Ana described learning from library books how to milk a cow, grow a garden, and process and preserve all manner of animal, vegetable and fruit products, from soap to sausage. She raised sheep in order to exploit the untillable parts of the land. When her children grew up and left home, and her common-law husband retired, she incorporated legally as the sole operator of the sheep enterprise (FAST proposition 1). Until then, the land and animals were in his name only, and Ana had never paid into social security during 30 years of hard physical labor on the farm, a common situation for Spanish "farm wives," which made her feel unable to leave her marriage (FAST proposition 5). She now pays into social security, which will provide her a modest pension and independence when she retires in 8 years. She explains how she consciously avoids certain tasks to balance the labor with her husband (FAST proposition 1):

*"I decided not to drive the tractor because otherwise, he would not do it. ... I have driven it when we are sowing, we go with the two tractors (...) but only for that. I don't plan to do the job because I know that if I do so, he will give it to me [to do]."*

### 3.3. Motivations and goals

Wright and Annes (2019) reported that many farmers conveyed dreams of following a lifelong passion to farm, while others showed more recent interest. Similarly, we found different motivations among women who entered livestock husbandry through different pathways. Women who became producers primarily through an inherited family connection often did not initially foresee taking over the family livestock business. Most of them had a post-secondary education or significant off-farm professional experience and work opportunities before becoming farmers. Yet, family inheritance of land (e.g. Linda) or animals (e.g. Juana) created both an opportunity and a sense of obligation to maintain or revive the farm. A strong sense of identity with place, culture, family or occupation also motivated some of these women, as others also found (Baylina et al., 2019). Sandra referenced place identity and cultural heritage, Linda her connection to family and place embedded in the land, and Juana her love of animals and transhumant shepherd identity. Partially similar to findings of Sachs et al. (2016), such women distinguish their farmer/pastoralist identity from that of homemaker or farm wife (e.g. Paula) (Fast proposition 1). They demonstrate the ability to make independent career choices, and to run a farm as primary operator.

Participants who came to herding primarily by joining their life partner's business or family were usually motivated by love. This frequently entailed moving to a remote rural location where opportunities for off-farm work are limited. Thus, the decision to become a ganadera was often a practical choice, driven by lack of alternative income sources and need for additional farm labor. In other cases, women who married into herding pursued a convergence of professional and personal life projects (Baylina et al., 2019). Some, like Louisa, saw rural life and working with animals as part of their attraction to their partner. Others adapted to and developed an affinity for stockgrowing over time (e.g. Lourdes). Similarly to previous studies (Sachs et al., 2016; Wright and Annes, 2019), some of these women cultivated more egalitarian

relationships in farm households, like Veronica.

Today women's entry into livestock farming is not limited to inheritance or marriage, as in the past (Pilgeram and Amos, 2015). In our study, women who chose to enter the extensive livestock sector "from zero" were motivated by the search for a new lifestyle and by political ideologies of new rurality, as other studies of "back-to-the-landers" have found (Wilbur, 2014). Most of our "from zero" participants completed some post-secondary studies, often related directly to their professions. As such, they align with the literature on rural newcomers in Europe, characterized by new profiles (female and university educated), the new barriers they face (access to land, capital and markets), and by the new business models they adopt (diversified and multifunctional) (Baylina et al., 2019; Monllor i Rico and Fuller, 2016; Wilbur, 2013, 2014). Some "from zero" women held idealized visions of rural life and shepherding, while others worked hard to learn the realities of the business through formal or informal apprenticeships before committing to it. For some, setting up the business was a lifetime dream, made little by little with the savings and efforts of many years, or a political decision to organize one's life around agro-ecological and food sovereignty ideals (e.g. Erika). These findings converge with literature from other settings on ideological motivations of newcomers in rural areas and novel social rural movements (Pinto-Correia et al., 2015; Wilbur, 2013, 2014).

Finally, Ana's story provides a contrast to the lifestyle and ideological motivations of most "from zero" interviewees. Ana felt forced into the livestock business by her husband's decision to buy land and the need to feed her family and make a living from it. Ultimately, gaining control of her own sheep enterprise empowered Ana personally and economically, but her story remains an important example of necessity-driven entry into livestock.

### 3.4. Challenges to entry

Women who entered through the family pathway experienced the fewest challenges to entry overall. Nevertheless, some had to find certain resources (FAST proposition 3, e.g. land, capital), or create their space within the farm (FAST proposition 1). Participants often mentioned opposition from family members and difficulties with the bureaucracy of incorporating (FAST proposition 5). Notably, most women who entered the business through the family pathway incorporated as sole operators of their own operations.

Household dynamics were especially challenging for participants who "married into" the extensive livestock sector, like Louisa. Those who came from urban or non-agricultural backgrounds often faced difficult periods of adaptation to rural life and learning about animal husbandry. Tensions associated with joining their partner's parents' household compounded these challenges, including power relations within the extended family. One of the older participants described being treated as a servant rather than a family member. Interestingly, several of these same women described positive relationships with fathers-in-law, whom they credited as primary teachers and mentors. Such household dynamics are common in other pastoralist societies (Bhasin, 2011) and may serve as a space for negotiations, bargaining, and resistance in gender relationships (Verma and Khadka, 2016).

Women who entered the business via their partner also were less likely to hold legal ownership in the operation (contrary to FAST proposition 1). During participant observation we also observed less decision-making autonomy in daily herding tasks, which the husband organized and directed. A woman without legal ownership rights essentially donates her labor to the enterprise and the business does not pay into her social security account (García Ramon, 1989). This situation leaves the woman without economic autonomy or a safety-net, should the marriage deteriorate. Finally, some women who married into traditional rural families in conservative communities and took on non-traditional roles on the farm reported social exclusion from other women in the community.

Women starting from zero face the greatest number of challenges to

entering the sector, with age as a compounding factor. Younger women often lack the financial and social capital to buy or rent land, renovate a barn to regulatory standards needed for incorporation, or purchase sufficient livestock to support themselves. Thus, the youngest women starting from zero in our sample worked as hired shepherds. The intersection of gender with other factors such as young age and urban origin (newcomer) was mentioned by several women independently of their pathway, as Baylina et al. (2019) also reported in Spain, and Flintan (2008) highlights for other pastoral systems.

The bureaucratic process and meeting legal requirements of incorporation created major obstacles for "from zero" participants. Even women who entered through other pathways sometimes experienced difficulties or received bad advice on incorporation. Single women reported discrimination from local officials that married "from zero" women in the same community did not experience. A third challenge for women starting from zero was the lack of a built-in network of physical and moral support. A fourth challenge that some of these women reported, was opposition from family and friends. In contrast to women born into herding, whose families sometimes objected because they understood the all-consuming nature of a stockraising life, the families of women who started "from zero" tended to oppose their choices because they perceived herding as a low-status occupation (Fernández-Giménez and Fillat Estaque, 2012; Manzano Baena and Casas, 2010). A fifth and major challenge was lack of experience and knowledge of livestock husbandry, a key resource needed to farm, which sometimes led to costly mistakes e.g. in the selection of the herd, machinery, land or farm management. This observation suggests that knowledge or human capital may be a critical resource to consider in FAST proposition 3.

### 3.5. Sources of learning, mentoring and support

Women like Juana (the Pyrenees transhumant), María (who took over from her father), and Sandra (who never wanted to leave her community), grew up working in their family's livestock business, and drew from this intergenerational knowledge and their own lifelong experience as they launched their operations alone or with a partner. Each of these women inherited generations of experience, knowledge and skills from both parents, with knowledge of livestock husbandry most often conveyed by their fathers. Women who inherited herds and occupation from their families also were more likely to rely directly on their families for labor and support. Most often this was men in the family, but in some cases it was a sister or mother. Some women who did not grow up in the business (e.g. Nelda, Linda) reported learning from other employees (e.g. hired shepherds, farm managers) on the operation, who became important mentors and confidants.

Women who came to herding via a partner most often learned from the partner and his family. Women learned herding tasks from fathers-in-law and value-added processing work like cheese making or butchering hogs (*matanza*) from mothers-in-law. Many of these women also referenced the "school of hard knocks"—hands-on experience—learning animal management from experience as an adult. With regard to emotional and psychological support, women who followed this pathway often expressed feelings of isolation.

Women who started "from zero" were more likely to rely on formal training, such as an agriculture degree, mandatory incorporation classes, or a "shepherds' school" (*escuela de pastores*), and self-study with books or other online resources. At our workshops in Andalucía and León we asked each participant to bring an object that represented their identity as a *ganadera*. Tellingly, two of the women who followed the "from zero" pathway brought books and explained how they had taught themselves what they needed to know from these texts. "From zero" women experienced the greatest degree of social isolation.

Across all pathways, women in workshops lamented that they had few other women in their communities who shared their experiences. Virtual networks have begun to fill this void, and some women reported



that joining groups like GeR, where they have daily contact with other women herders, significantly improved their lives: “*There it is, suddenly you meet people who have the same problems as you. The problems of being a farmer, which affect men and women ... but also the problems of being a woman. Women and livestock, in this world ..., a totally masculine world*” (Ana). Such networks also facilitate horizontal knowledge sharing: “*There are even people who have spent more time and say ‘I don’t know how to do this’ and I think ‘well, you have to do it like this, ‘...’, but that is what is good about GeR, that we look for ways to help each other*” (Nelda). Such assertions support FAST proposition 6. As Wright and Annes (2019) report in the US, such digital networks demonstrate how women, instead of confronting patriarchal cultures in existing sector organizations, where their interests, skills and resources are subordinate to men’s, are developing their own networks. Finally, echoing findings of Trauger et al. (2008), workshop participants called for professional training and continuing education for women producers tailored to their needs and concerns. For example, Andalucía workshop participants wanted training in value-added food product processing (e.g. charcuterie) to increase profitability of their enterprises.

#### 4. Discussion and implications

##### 4.1. Relevance of FAST to Spanish pastoral systems

Our study contributes to assessing the applicability of the FAST feminist theory of agriculture (Sachs et al., 2016), to the European context, specifically the extensive livestock sector of Spain, and offers new insights that expand the framework.

FAST proposition 1 posits that women are reshaping agriculture by demanding gender equality in farming families, operations and organizations. The increase in the proportion of women as sole or official joint operators supports this proposition (FADEMUR, 2011; Instituto Nacional de Estadística, 2016). Our sample included women like Veronica, the first woman to file for joint-ownership in her region, who epitomize this move towards equity within the family-farm-business, as well as sole operators like Juana, Maria, and Marina. Yet, many of the interview and workshop participants, including several younger women, remain in subordinate positions with respect to decision-making power, legal rights and economic autonomy within family operations, and struggle to assert equality in a historically male-dominated sector. Thus, this element of FAST is present, but not yet fully realized across our sample, affecting women’s self-esteem and identity as pastoralists. Women’s empowerment is a recent process in Spain, where until 1975, a woman could not legally own property without their partner’s permission.

FAST proposition 2 contends that women assert their identities as farmers, distinct from traditional roles like “farm wife.” Our sample included both women who identify fully as farmers/pastoralists (e.g. Juana, Marina) or shepherds (e.g. Erika), and those who see themselves as a herder’s wife or daughter, despite their active roles in the pastoral enterprise. This reluctance of some women to see themselves as pastoralists aligns with findings on women farmers’ identities in Europe (Brandth, 2002; Shortall, 2014). In contrast to Wright and Annes (2019), no participants rejected the identity of pastoralist or livestock farmer. However, they expressed a diversity of pastoralist identities, which often reflected their personal histories and pathways into the sector. The objects women brought to the workshops highlight this diversity, from family heirlooms like a sheep branding iron that represent family heritage and identity as pastoralists, to the books newcomers learned from. Our findings support FAST proposition 2, but also highlight the obstacles many women still face in asserting pastoralist identities, including skepticism about their capacities from other women, male herders, family members and society at large, similar to Wright and Annes (2019). In addition, Spanish women pastoralists experience different degrees of marginalization depending on their age, marital and socio-economic status, among other factors, highlighting the intersectional nature of their experiences (Baylina et al., 2019; Devereux, 2010).

FAST proposition 3 posits that women are accessing resources such as land and capital needed to farm, but often through non-traditional avenues. The majority of participants still access land and animals via their relationship to men—fathers/families or partners, as Wright and Annes (2019) found in Michigan. More women are taking over family livestock businesses as sole operators, however. Furthermore, several of those who identify as starting from zero secured all of the necessary resources independently, like Mariela. In alignment with Sachs et al. (2016), many of these women use creative approaches or run small-scale diversified non-traditional operations (like Mariela’s small-scale goat dairy and artisanal cheese factory). Thus, the evidence here is mixed.

FAST proposition 4 proposes that women shape new agrifood systems. Regardless of their pathway into pastoralism, a significant proportion of our participants adopted a post-productivist orientation by actively and deliberately innovating through a variety of strategies such as maintaining traditional sustainable practices, including trans-humance, heritage livestock breeds and traditional food processing; adopting innovative sustainable/organic practices; producing value-added products; direct marketing/branding; and incorporating on-farm education or agri-tourism (Table 1). Some older women were key innovators in the sector several decades ago, introducing practices in their communities that have since become commonplace, such as multiple lamb crops per year and portable fences. Although many participants are deliberately reshaping food systems, in alignment with Sachs et al. (2016), they sometimes do so in ways that reinforce traditional gender roles of women on Spanish livestock farms, by emphasizing their roles in processing farm products for local sale, as found by others in the US and Europe (Anthopoulou, 2010; Wilbur, 2014; Wright and Annes, 2019). Our Spanish women participants, like other women pastoralists globally (Flintan, 2008; Kipuri and Ridgewell, 2008), and other women farmers in Europe (Anthopoulou, 2010), proved keen to innovate and generate alternative and supplemental income from livestock-related and other activities, including handicrafts and agritourism (Rota et al., 2011).

FAST proposition 5 states that women must navigate agricultural institutions and organizations carefully to address their needs. A number of participants serve in leadership roles in livestock associations or co-operatives. Some reported that other members initially disrespected or ignored them, but later valued and invited them to lead. In contrast, a workshop participant shared how men in her organization consistently dismissed her innovative ideas, leaving her discouraged. Many women reported discrimination from government organizations tasked with assisting in the incorporation process. Thus, our findings support FAST 5 in that Spanish pastoralist women are navigating these organizations, and sometimes leading them, but also continue to experience systematic discrimination. Our findings also align with research from the US (Trauger, 2004; Wright and Annes, 2019) and developing country contexts where women’s participation in agricultural organizations and decision-making is often stymied by gender discrimination (Bhasin, 2011; Flintan, 2008; Kipuri and Ridgewell, 2008).

FAST proposition 6 posits that women create their own unique networks and organizations to meet their needs. We found that Spanish women pastoralists relied on both traditional forms of learning, support and mentorship from family members or male shepherds, and innovated by creating new virtual networks such as GeR and Ramaderes.cat. These networks have become powerful sources of learning, knowledge exchange and mutual support, while serving as platforms for political and social mobilization. Thus, our findings support this proposition and align with research from the developing world that emphasizes how pastoral women rely on informal networks to pursue their interests and innovate (Devereux, 2010).

A key resource that FAST does not explicitly address is knowledge or human capital. We therefore propose that FAST proposition 3 be expanded, or that an additional proposition be added to the FAST theory. Women gain farming knowledge and skills from diverse and often non-traditional sources, and create new hybrid traditional and

innovative knowledge. Our participants demonstrate a diversity of approaches to gaining essential knowledge, including via formal vocational training at shepherds' schools, from both male and female mentors in the sector, self-learning from books and experience, and, increasingly, via social media and virtual networks with other pastoralists.

#### 4.2. Conclusions and implications

Our study begins to fill a significant gap in empirical research on women involved in extensive livestock husbandry in the Global North (Bruno et al., 2020; Sachs, 1996) and specifically in Spain (Herrera et al., 2014), leading to four main conclusions and associated recommendations. First, it thwarts stereotypes of women's roles in the livestock sector, illustrating the variety of roles women play and contributions they make. Our findings challenge the notion that there is only one pathway into extensive livestock husbandry, and highlight women's diverse backgrounds, motivations, goals, and challenges. This diversity calls for communication and outreach that disrupt existing stereotypes of women pastoralists, reflect recent evolution of women's rights and roles, and ground outreach and support efforts in the diverse realities of women's lived experiences. We recommend that future research take a more deeply intersectional approach to analyzing the diversity of Spanish women pastoralists' experiences to include a more explicit focus on the experiences of women of different socio-economic classes, ethnicities/countries of origin, and sexual orientations, and how these factors interact to shape their realities and decisions.

Second, this study highlights the challenges that pastoralist women experience in gaining and maintaining economic autonomy, especially if their pathway into pastoralism involves becoming the partner of a herder. Such challenges to financial independence are common among other women farmers (Wright and Annes, 2019). Economic empowerment contributes to women's self-confidence, agency, experience, networks and access to social capital, thereby supporting their empowerment in a broader sense (Cush et al., 2018; Rota et al., 2011). Therefore, we suggest increased support for women to create and maintain economic autonomy as they contribute to family enterprises or set up their own businesses. Sole or joint ownership helps to ensure decision-making and economic autonomy and supports women's farmer identities (Cush et al., 2018). Legal ownership and associated autonomy also facilitate personal freedom provide security in the event of the loss/divorce of a spouse/partner, and allow women greater space to innovate, especially within existing family-run enterprises. We strongly recommend improved training of government agricultural officers tasked with overseeing new incorporations, so that officials have the awareness, knowledge and incentive to support women entering the extensive livestock sector as sole or joint operators.

Third, many women pastoralists experience social isolation and lack a peer support group in their communities. Participants who belong to GeR and similar networks have found virtual networks critical for overcoming isolation and sharing information, much like women farmers who participate in progressive women's networks and sustainable farming organizations (Sachs et al., 2016; Trauger, 2004; Trauger et al., 2008). Pastoral women's networks globally have proven important safety nets and engines of social and ecological transformation (Rota et al., 2011). We suggest that a further step would be to explore additional forms of mutual cooperation that would allow for work-spelling or labor-sharing, especially for women who are sole operators without family support.

Finally, we encourage continued investment in participatory feminist research that supports researchers to develop long-term reciprocal research and action relationships with women pastoralists, as others have formed with women farmers (Sachs et al., 2016). Such partnerships engage women pastoralists in co-producing research to address their priorities, increase their public visibility and legitimacy, and support them in pursuing their goals for social and economic change.

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#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jrurstud.2021.08.019>.

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