

# CO-CREATING KNOWLEDGE FOR ACTION WITH WOMEN PASTORALISTS IN SPAIN

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TRASHUMANCIA y NATURALEZA



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**TRASHUMANCIA y NATURALEZA**

## EXECUTIVE SUMMARY

This report begins to address the vast gap in knowledge about the roles and experiences of women in extensive livestock management systems in Spain. Throughout recent history women's roles in these systems have been largely invisible and no research has systematically examined the experiences of women pastoralists. We first conducted a systematic evidence map of peer-reviewed, indexed research articles on rural women to determine what research had already been done on this domain. We then addressed this knowledge gap through a qualitative study based on semi-structured life-history type interviews and participant observation. Our key findings follow.

### Chapter 1 - Systematic Map of Research on Women in Rural Spain

Sixty-eight papers were reviewed representing 9 disciplines, dominated by sociology, geography, health and environmental sciences. Research on rural women is unevenly distributed geographically and the fewest studies were conducted in the more mountainous, remote and smaller regions, where extensive livestock is common. No studies specifically focused on women pastoralists. Labor/work and health/well-being are the dominant themes that have been researched related to rural women and gender in Spain. Although the environment and natural resources emerged as a dominant theme, women and gender were a secondary focus in most of these studies. Rural women's entrepreneurship is the focus of growing scholarly attention, but relatively little research focused on women's political empowerment and or women's roles as social change-agents. Within the dominant theme of work/labor, women's changing roles in the formal workforce and in informal work and unpaid care-giving, house-keeping and agricultural work are critical areas for further study. There is reason to believe that the future of rural Spain and of extensive livestock husbandry will depend in large measure on women's continued presence and engagement in rural communities, which in turn depends on opportunities for women to obtain compensated, dignified, personally and professionally rewarding, and socially- and economically-valued work in these places. Women's participation in extensive livestock production offers one such avenue for a fulfilling career, but to date no formal studies have addressed women's roles and experiences in these management systems. We recommend further research specifically on women pastoralists, and a more distributed geographic focus so that remote and mountainous regions are better represented.

## Chapter 2 - Women Pastoralists' Pathways into Extensive Livestock Management: Motivations, Challenges, and Learning

Based on 29 semi-structured interviews using a life-history approach, narratives of women's entries into extensive livestock husbandry reveal three primary pathways through which women enter livestock management: via family, via a partner, and from zero. Many women identify with multiple pathways. Although the interviewees share many common experiences and struggles, each of the primary pathways is associated with distinct motivations, challenges and sources of knowledge and learning. Identifying these pathways and understanding both the common experiences and unique challenges of each can help to improve support for women pastoralists. Key findings include the following. First, the interviews challenge stereotypes of women's roles in extensive livestock husbandry, and the notion that there is only one pathway into extensive livestock husbandry. The diversity of motivations, challenges and experiences calls for communication and outreach that disrupts existing stereotypes of women pastoralists and grounds communication and outreach in the diverse realities of women's real life experiences. Second, this study highlights the challenges that pastoralist women experience in gaining and maintaining economic and decision-making autonomy, especially if their pathway into pastoralism is via a spouse or partner who is a livestock producer. Third, our study points to the particular challenges faced by women starting from zero, as well as those who come from a non-agricultural background and enter the sector through their partner. Women on both these pathways often experience social isolation and lack a peer support group in their local community, especially among other women. Solo women starting from zero face further practical challenges because they lack built-in labor support from other family members, in the event they experience illness or accident or need to take time off for other reasons. Based on these findings we offer the following four recommendations. 1) To provide women with economic security and space to innovate, target outreach and support for women towards establishing and maintaining economic and decision-making autonomy within family businesses. 2) To counteract discrimination against women, especially single women and sole operators, improve training for government agricultural officers who oversee new incorporations. Officials should be trained to proactively support women entering extensive livestock husbandry through any pathway. Greater clarity and transparency in the processes of incorporating and registering for subsidies would benefit both women and men. 3) To help women pastoralists overcome social isolation and the triple or quadruple burdens of agricultural labor, care-giving, civic engagement, and off-farm employment, support and extend women pastoralists' networks and develop experiments in cooperative arrangements like job-spelling. 4) To empower women pastoralists, increase their

visibility and legitimacy, and provide an evidence base for further policy development, invest in long-term participatory research relationships between researchers and women pastoralists.

### Chapter 3 - The Invisible Thread: Women as Tradition-Keepers and Change-Agents in Spanish Pastoral Social-Ecological Systems

Women play diverse and important roles in the conservation, abandonment and transformation of Spanish pastoral social-ecological systems. This study highlights important contradictions, trade-offs and tensions in these roles, as well as potential synergies. The unique and innovative contributions of past and present women pastoralists to both keeping traditions and catalyzing adaptive changes (system transformation) should be recognized and valued beyond women's roles in biological reproduction and care-giving that stem rural depopulation. To leverage women's ideas and energies for transformative change and long-term sustainability of rural landscapes and communities, their genuine participation and power within livestock and agricultural organizations must be increased. However, to assume these and other roles as change-agents, pastoralist women and families need greater support to offset the triple or quadruple burden that women bear. Further, women who enter livestock production as new-rurals, from non-livestock backgrounds, or as single women, need greater support (and less discrimination) from government, the livestock sector and other pastoralists. Several implications for policy and future investments arise from this analysis and from the women in our workshops. Government administration at local, regional and national levels can support women's roles as tradition-keepers and change-agents in the following ways. 1) Maintain and enhance public services in rural areas, especially schools, health care and cell phone/internet coverage. 2) Rehabilitate and subsidize housing for pastoral women and families in rural villages. 3) Provide opportunities for professional development and training targeted to women pastoralists' needs and interests, such as training in value-added processing and direct marketing. 4) Support peer-to-peer mutual support and knowledge exchange networks, which may help women pastoralists, and extensive livestock producers generally, become more self-reliant and less dependent on institutional support. Overall, the major thrust of the changes women called for focused on increasing the visibility, empowerment, participation, and connections among pastoralist women. Women sought to use these emerging and strengthened capacities to: 1) reform formal elementary and secondary education about agriculture and environment; 2) communicate more effectively and directly with decision-makers, especially at the level of autonomous regions, to influence policies that affect women specifically and

extensive livestock production more broadly; and 3) influence broad public awareness of and appreciation for extensive livestock production. These goals speak to the wide-reaching priorities that women hold, geared towards supporting the extensive livestock sector and rural communities more broadly—women, men, children and families. Women's prioritization of community- and sector-level benefits over individual gains or profitability underscore the critical role that women must play in the future of pastoral social-ecological systems in Spain.



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## NOTE ON AUTHORSHIP & CONTRIBUTIONS TO THE RESEARCH AND REPORT

M. E. Fernández-Giménez conducted the systematic review, designed and led the field research in collaboration with E.O.R. and F.R., conducted and analyzed the interviews, and wrote initial drafts of each chapter, and revised and finalized the report.

E. Oteros-Rozas helped to design the research, organized interviews and workshops with Ganaderas en Red participants, conducted and analyzed interviews in Andalucía, and contributed to the writing of chapters 2 and 3.

F. Ravera organized and conducted interviews in Catalunya, provided input on the interview protocol and coding scheme, and reviewed and commented on chapters 2 and 3.



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# 1



## A Systematic Map of Research on Women in Rural Spain

## 1. Introduction

A systematic map provides an overview of the distribution and abundance of evidence related to a particular research question or domain (Environmental Evidence 2019). One purpose of a systematic map is to identify research or knowledge gaps in a particular multifaceted field. A systematic map differs from a systematic review in that it does not attempt to evaluate the evidence or synthesize the results of the studies reviewed. Rather it provides a broad overview of the type of research and evidence that exists related to a particular topic.

The initial goal of this systematic review was to identify existing research on women pastoralists or livestock producers in Spain. As the methods section details, an initial literature search focused on this topic yielded so few results that the focus was broadened to focus on rural women and women in agriculture broadly. The review sought to determine 1) what disciplines are studying rural women in Spain, 2) where are these studies carried out, 3) what research methods are used, and 4) what are the major research topics related to rural women and women in agriculture in Spain. The answers to these questions should help to identify research gaps in terms of topics, geographic regions and methods, and to inform and guide future research.

## 2. Methods

### 2.1 Search

The purpose of this systematic map was to determine what research has been done on women pastoralists or livestock producers in Spain. I conducted an initial search in Web of Science using the following combinations of terms:

Spain AND wom\*n AND pastoral\*  
Spain AND wom\*n AND herd\*  
Spain AND wom\*n AND livestock  
Spain AND gender AND pastoral\*  
Spain AND gender AND herd\*  
Spain AND gender AND livestock

This search yielded only 23 papers (including duplicates). The search was then expanded to include agriculture and rural as additional search terms.

Spain AND wom\*n AND agriculture  
Spain AND wom\*n AND rural  
Spain AND gender AND agriculture  
Spain AND gender AND rural

These combinations yielded an additional 217 papers (including duplicates). Duplicates were eliminated from the total of 244 papers returned from these searches. The remaining papers were subjected to an initial rapid review of titles and abstracts and papers were eliminated that did not meet the following inclusion criteria:

1. focused primarily in Spain
2. address women or gender as a primary or secondary topic
3. address rural spaces/communities, agriculture or natural resources as a primary or secondary topic
4. report original research or synthesis of existing research (e.g. thematic or systematic review)

Seventy-seven papers were retained for a full review. We downloaded PDFs for all papers possible. For the remaining few papers where full texts could not be located, the abstracts were downloaded. After the full review an additional 9 papers were eliminated because they did not meet the inclusion criteria once a full review was conducted. Most of the eliminated papers were book reviews. Sixty-eight papers were included in the final analysis. These papers included works in both English and Spanish. The complete list of papers reviewed is included in the Appendix.

## 2.2 Coding and Analysis

All abstracts were reviewed. When full papers were available and full review was necessary to complete the coding, a full paper review was conducted. Abstracts only were reviewed for 18 papers, a brief review of the full paper was conducted for 2 papers and a full review for 47 papers. Each paper was coded for: gender focus (primary or secondary), discipline (based on the journal and the authors' departmental affiliations), region of Spain where the study was conducted, research design, data collection methods, and data analysis methods. Information on the research design and methods was too varied to code consistently, so the data collection and analysis codes were combined and re-coded into one "methods type" category as quantitative, qualitative, mixed-methods, review, or other. Coding was conducted in MS Excel and the Excel spreadsheet was imported into SPSS for analysis. Frequencies were tabulated for each of the codes.

## 2.3 Content Analysis

To conduct the content analysis, PDFs of each paper or word versions of the paper abstracts were imported into QSR NVIVO. I read each abstract and sometimes additional sections of the paper and coded the abstract and relevant sections under the dominant themes and sub-themes addressed. A paper could be assigned to more than one theme and sub-theme if it clearly addressed both. Dominant themes included Environment and Natural Resources; Gender Roles and Dynamics; Health and Well-being; Labor and Work; Migration and Demographic Change; Politics, Participation and Empowerment; Technology and Communication; Women's Entrepreneurship; and Other. Based on the number of papers coded at each node, I determined the dominant themes across all of the papers.

# 3. Findings

## 3.1 Systematic Map

Of the 68 articles reviewed and coded, 46 (67.6%) had gender as a primary focus and for 22 (32.4%) gender was a secondary consideration. At least 10 different disciplines were represented in the final set of papers (Table 1). Sociology alone or in combination with other disciplines (health, history, or environmental science) accounted for the largest number of papers (15, 22%), followed by geography (13, 19%), and health science (9, 13.2%). Environmental science, anthropology, history and economics each account for a moderate number of papers. While agriculture and education were weakly represented in the article set.

Table 1 Discipline

	Frequency	Percent
Geography	13	19.1
Sociology	12	17.6
Health Science	9	13.2
Environmental Science	7	10.3
Anthropology	6	8.8
History	6	8.8
Economics	5	7.4
Agriculture	3	4.4
Sociology and Health	2	2.9
Education	1	1.5
Other	1	1.5
Sociology and Environmental Science	1	1.5
Sociology and History	1	1.5
Environmental Science and Economics	1	1.5
<b>Total</b>	<b>68</b>	<b>100.0</b>

Table 2 Region of Study

	Frequency	Percent
Andalucia	16	23.5
Catalunya	6	8.8
Galicia	5	7.4
Castile and Leon	3	4.4
Valencia	3	4.4
Castile-La Mancha	2	2.9
Extremadura	2	2.9
Aragon	1	1.5
Basque Country	1	1.5
Murcia	1	1.5
Navarre	1	1.5
<b>Multiple</b>	12	17.6
<b>All</b>	15	22.1
<b>Total</b>	<b>68</b>	<b>100.0</b>

The review identified nearly three times more studies (16) in Andalucía than any other region, with the second most common region being Catalunya (6 papers), followed by Galicia (5), Castile and Leon and Valencia (3 each) and Castile-La Mancha and Extremadura (2 each) (Table 2). One paper each focused on Aragon, the Basque Country, Murcia and Navarre. Twelve articles were carried out in multiple (but not all) autonomous regions, and 15 papers were country-wide studies that encompassed all of Spain.

Studies that used exclusively quantitative methods dominated (55.9% of papers), but there was a good representation of studies using exclusively qualitative methods (23.5%) or mixed methods that combined qualitative and quantitative approaches (13.2%). Quantitative studies documented women’s exposures to pesticides; women’s labor force participation; the importance of gender in shaping values, attitudes and behaviors towards the environment; and rural women’s exposure to or likelihood of health risks such as gender violence, suicide, and adverse pregnancy outcomes. Several of the qualitative studies that used ethnographic (e.g. (Jimenez-Esquinas 2017)) or phenomenological (e.g (Lillo-Crespo and Riquelme 2018)) approaches were especially effective for revealing women’s lived experiences as informal workers or care-givers in rural spaces, and were more likely to consider intersectional dynamics of class, ethnicity and gender, for example.

Table 3 Method Type

	Frequency	Percent
Quantitative	38	55.9
Qualitative	16	23.5
Mixed Methods	9	13.2
Review	3	4.4
Other	2	2.9
Total	68	100.0



**Table 4** Dominant Topics of Papers

Topic	Number of Papers	Percent of Papers
Work and Labor	18	26.5
Health and Well-being	14	20.5
Environment and Natural Resources	14	20.5
Migration and Demographic Change	7	10.3
Women Entrepreneurs	7	10.3
Gender Roles, Dynamics and Meanings	5	7.7
Policy, Participation and Empowerment	3	4.4
Technology and Communication	3	4.4
Socio-economic Gender Gap	2	2.9
Other (transportation, genetic composition of rural population)	2	2.9

### 3.2 Content Analysis

The dominant topics addressed in the literature (Table 4) relate to work and labor (26.5% of papers), health and well-being (20.5%) and environment and natural resources (20.5%). Other topics that were moderately well represented were migration and demographic change (10.3%), women entrepreneurs (10.3%) and gender roles, dynamics and meanings (7.7%). Less well covered were policy, women's participation and empowerment, technology and communication, and the socio-economic gender gap. Few papers addressed agriculture as a dominant topic, although it was a sub-topic within work and labor (e.g. studies' of women's participation or performance in the agricultural laborforce) and in health and well-being (e.g. studies of women's exposure to pesticide and agricultural occupations as a risk factor in pesticide exposure). Agro-forestry (*dehesas*) and pastoralism were addressed in several papers coded in the environment and natural resources theme, but gender was a central concern of only one of those papers.

Sub-topics under the major topic of work and labor included agriculture (4 papers, primarily focused on immigrant workers), gender-based labor discrimination, segregation, workforce participation or wage discrimination (7 papers), new rural women as workers (3 papers), tourism and women's work (3 papers), and child labor (1 paper). Papers coded under this dominant theme generally had gender as a primary focus of the paper.

Papers coded under health and well-being addressed a wide array of sub-topics including pesticide exposure (4 papers), aging and elder care (4 papers), and gender violence (2 papers). One paper was coded in each of the remaining sub-topics: alcohol-related mortality, suicide, maternal and newborn health, health and social service access, and education. Gender was a major focus of the papers focused on health (pesticide exposure, maternal and newborn care), and also in the papers on aging and elderly care, due to the important role of women as care-givers both in the home and in professional settings.

Environment and resources sub-topics included ecological or biological conservation (including protected areas) (6 papers); ethno-ecology or traditional knowledge (4 papers); agroforestry and pastoralism (2 papers); and climate change (1 paper). With a few exceptions, gender was not a primary focus of most papers in coded under this major topic. Rather, gender was one variable among others that was analyzed to predict participant attitudes, for example.

Papers coded in the migration and demographic change topic include those focused on rural to urban migration and the masculinization of rural spaces (4 papers), as well as migration to Spain from other countries (2 papers), and the migration of "new rural" residents from urban to rural areas (2 papers).

#### 4. Conclusions and Implications

This systematic map of published, indexed peer-reviewed research articles on women and gender in Spanish agriculture and rural spaces highlights the lack of research focused on the characteristics, contributions, viewpoints, experiences, knowledge, and challenges faced by women pastoralists or livestock producers/farmers in Spain. No articles were identified that specifically address these topics, although several consider the broader theme of women in agriculture.

The disciplines of sociology and geography lead the majority of studies of women and gender in rural Spain, with significant contributions from health and environmental science, and fewer studies from other disciplines such as anthropology, history, economics and agriculture. The variety of methods used reflects this mix of dominant disciplines. Although purely quantitative studies dominate, more than a third of the studies used qualitative or mixed-methods approaches.



Figure 1.1 Word cloud constructed from the abstracts of the 68 papers analyzed for the systematic map.

The regional balance of research is skewed strongly towards Andalucía, which makes sense because it is a large and highly agricultural region. However, it is telling that there are few or no studies from some of the less-populated and/or more mountainous regions where extensive livestock production may be more prevalent, such as Castile-La Mancha, Extremadura, Aragón, Navarre, Asturias, Cantabria, and La Rioja. Canarias and the Balears also were not represented. One limitation of the geographic analysis is that studies that listed multiple regions were not disaggregated and coded by region, which might obscure some studies in these underrepresented areas. To ensure this was not the case, I reviewed the initial qualitative coding by study site for all articles coded as “multiple” regions. This revealed one study that included Asturias and one additional study that included Aragón, but none for Cantabria or La Rioja, suggesting that overall the coding of studies that had a single-region focus accurately depicted the relative regional emphasis. It may be important to ensure that future studies of women and gender in rural Spain and Spanish agriculture adequately capture regional variability by including some of these smaller, more mountainous, and/or more sparsely populated autonomous regions/communities.

Labor/work and health/well-being are the dominant themes that have been researched related to rural women and gender in Spain. Although the environment and natural resources emerged as a dominant theme, women and gender were a secondary focus in most of these studies. It is encouraging that rural women’s entrepreneurship is the focus of growing scholarly attention, but potentially



concerning that relatively little research focused on women's political empowerment or women's roles as social change-agents. Within the dominant theme of work/labor, women's changing roles in the formal workforce and in informal work and unpaid care-giving, house-keeping and agricultural work are critical areas for further study. There is reason to believe that the future of rural Spain and of extensive livestock husbandry will depend in large measure on women's continued presence and engagement in rural communities, which in turn depends on opportunities for women to obtain compensated, dignified, personally and professionally rewarding, and socially- and economically-valued work in these places. Women's participation in extensive livestock production offers one such avenue for a fulfilling career, but to date no formal studies have addressed women's roles and experiences in these management systems.

# 2



## Women Pastoralists' Pathways into Extensive Livestock Management: Motivations, Challenges & Learning

## 1. Introduction

Agroecosystems of the Mediterranean Basin are threatened by two main drivers of change: rural abandonment of mountainous and less productive areas, and land-use intensification of fertile areas (e.g. (Caraveli 2000)). Both trends are jeopardizing the Mediterranean multifunctional landscape, which originated from historical co-evolution of human societies and the natural environment (e.g. (Blondel 2006)), endangering the high biodiversity of the Mediterranean Basin (Zamora et al. 2007) as well as rural livelihoods and economies. The industrialization of farming came together with intensification, simplification and specialization of land-use practices, which caused the abandonment of extensive farming practices and the expulsion of people from the land. The paradigm of modernity, speed and urban identities changed rural life and succeeded in decoupling people from their environment and cultures (Monllor 2013). The rural exodus and the consequent and progressive abandonment of traditional natural resource management practices such as pastoralism with sedentarization and increasing reliance on technology hastened the replacement of local/traditional ecological knowledge with new forms of knowledge and practices (Gómez-Baggethun et al. 2012). In the case of Spain, agricultural intensification and the associated decline of rural population started between the 1960s and the 1990s, later than in the rest of Southern Europe (Gómez-Sal et al. 2011). Even though rural population has increased in absolute terms (MAGRAMA (Ministerio de Agricultura 2010),

in relative terms, the share of the population living in rural areas of Spain has been decreasing and agricultural employment continues to decline (Burgaz 2009, Gómez-Sal et al. 2011). Some areas are experiencing significant depopulation. Women in particular have migrated from rural areas to larger towns and cities, leaving the smallest and most isolated towns. Isolation, lack of professional opportunities and social pressures were the main drivers of this historical exodus (Camarero and Sampedro 2008), which has left many communities with a skewed gender ratio, and led to the masculinization of rural spaces and agriculture.

Pastoral agroecosystems provide critical functions but are threaten by land-use changes, intensification of management and abandonment (Gibon 2005, Beaufoy et al. 2012). Some consider pastoralism as among the most vulnerable livelihood strategies in the world (Altieri and Koohafkan 2004, Dong et al. 2011) due to integration in the global market, sedentarization policies, land spoiling and land grabbing, and institutional barriers to migration of nomadic populations (Davies and Hatfield 2007, Galvin 2009). Despite these challenges, and the geographic, economic and socio-cultural displacement of pastoralists during the 20<sup>th</sup> century in some regions (Ruiz 2001), pastoral systems persist and are sometimes remarkably resilient (Fernandez-Gimenez and Le Febre 2006, Reid et al. 2014).

Until recently, women have been largely invisible participants in extensive livestock management systems in most areas of Spain, with the exception of Galicia, Asturias and Cantabria, where women have been prominent in the sector historically. Further, little to no research exists on women's roles, knowledge or experiences in these systems, despite the fact that women's participation in agriculture is highest in the livestock sector, together with intensive horticulture in southern Spain (Majoral and Sánchez Aguilera 2002). Yet understanding women pastoralists is critical for several reasons. The lack of women in pastoralism may compromise generational renewal in these management systems, further fostering rural masculinization and ultimately abandonment (Fernández-Giménez and Fillat Estaque 2012, Oteros-Rozas et al. 2013). With the industrialization of agriculture in Spain, women's knowledge and practices were the most affected (Siliprandi and Zuloaga 2014). In pastoralist families, the network of family support, without which pastoralism would be impossible, is largely formed by women whose work remains invisible. Most family members contribute work, if not on a daily basis, in moments of particularly heavy workload, which is critical for the viability of the operation. However, statistics indicate that women make up only 24% of farming labor in Spain (Sabaté 2018). There are large geographical differences in the roles of women in extensive livestock management systems. In Northern regions of the country like Galicia, Asturias, Cantabria, and the Northern areas of Castilla y León, women have traditionally been in charge of caring for cattle. Therefore women pastoralists in these regions are socially visible, but frequently have no legal or economic recognition

of their work. In the rest of Spain diverse situations persist, but overall, women's roles in livestock management are socially, economically and institutionally invisible.

To facilitate institutional and economic acknowledgement of women's contributions to farming, the Law of Shared Ownership (Ley 35/2011) was passed in 2011, largely thanks to the pressure exerted in courts and in the streets by women farmers from Galicia organized in the trade union "Sindicato Labrego". Despite high expectations, only 339 women throughout Spain had requested and obtained shared ownership under the law by the end of 2017 (Senra Rodríguez 2018). Three main reasons contribute to low levels of adoption of joint ownership. First, the main operator (the husband) needs to approve the request (Article 6), which in the current largely patriarchal society, is not always easy. Second, most farms operate on very small profit margins, and it is therefore difficult to pay required social security coverage for a second worker (the woman). Third and finally, when women request support or advice to apply for the shared ownership, they face officers (often men) with little training on the administrative procedure (Senra Rodríguez 2018).

Nevertheless, in recent years, the proportion of farmers who are women as sole operators has increased, particularly among the youngest, while the number of male-run farms has declined. However, women that enter farming often establish very small operations, mostly because they cannot afford larger ones. Frequently they specialize in commercial niches such as organic production, local breeds or high quality food. This feminization of the farming sector is a well-know process at an international scale, in which women gain control over small and low-profitability farms (Sabaté 2018). In Spain this trend is partly related with the European Union (EU) Common Agricultural Policy (CAP), which pays a subsidy based on historic "rights" (on a land or a per animal basis). Under this system, men who retire often transfer the title of their operation to their wives, who are not necessarily bona fide sole operators, in order to retain livestock and/or subsidies. In many such cases, the men continue the day to day management and decision-making in the operation, and the women are the operators on paper only. This complex situation explains why statistics on the proportion of women farm operators do not necessarily reflect reality, and may overestimate the number of truly woman-run operations. In recent studies on new alternative agrifood models, women have been recognized to occupy important and increasingly visible positions, developing innovative practices (Pinto-Correia et al. 2015). In Spain, Reyes-García et al. (2010) documented that women tend to use more agroecological practices. In the USA, Wilmer and Fernández-Giménez (2016) noted how women produce and reproduce ranching knowledge and empower younger generations to choose to stay in ranching. They also noted that "there are cultural norms that women, rather than men, keep and transfer knowledge of certain practices, in part because of women's attention to the long-term financial viability

and ecological sustainability of their ranches". However, so far, to our knowledge, no research had addressed women's pathways, motivations and challenges as they enter extensive livestock management and become pastoralists.

This exploratory qualitative study seeks to document the diversity of women's experiences in the extensive livestock management sector in Spain, and specifically how women came into the business of extensive livestock management and the herder occupation. Specifically, we seek to understand how women enter the extensive livestock management sector, their motivations 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 and work, and assume the identity of a *ganadera* or *pastora*.

## 2. Methods

This qualitative research study is informed by a feminist research philosophy that emphasizes transparency and reflexivity regarding the researchers' positionalities, and aspires to a collaborative and reciprocal relationship with research participants.

### 2.1 Sample selection and study areas

As the first study to focus on the lives of women pastoralists in Spain, we sought to interview a broad range of women to capture the diversity of women's experiences in the extensive livestock sector. Our criteria for inclusion were women who are or were directly or indirectly involved in extensive livestock production, including those who own or co-own their own operations, who work with livestock as family members or employees of an operation owned by someone else, and the family members—wives/partners, daughters, mothers and sisters—of livestock producers. We focused our study in three primary geographic areas that provide contrasting land ownership and management contexts: Andalucía in the south, the Northwest (Zamora, León, Asturias and Cantabria), and the central Pyrenees and Aragón. We later added several interviews in Catalunya. Prospective interviewees were identified through existing research and personal contacts (central Pyrenees and Catalunya), and through a country-wide network of women pastoralists in Spain Ganaderas en Red (GeR). Participants from Catalunya were members of a similar network, Ramaderas.cat, but were not recruited via the network as GeR participants were.

### 2.2 Data collection

Participants were contacted directly by the lead PI (Pyrenees) or by collaborators (GeR members, Catalunya) and invited to participate. For GeR, the research was

directly framed and accepted as supporting one of the network's main objectives, improving the social visibility of women pastoralists. Most interviews took place at the participant's residence or farm and most included both a formal semi-structured interview and an informal visit/tour of the operation. Several involved more extended participant observation, such as accompanying transhumants on part of their journey, staying overnight with the interviewee's family, or repeated interactions and multiple interviews.

The semi-structured interview protocol used a life history approach and covered a variety of topics, beginning with the interviewee's birthplace and year, their childhood, education and family relationships, and how they entered the livestock industry and learned herding and other needed skills. Further questions focused on the characteristics of the operation, animal and land management practices, and processing and marketing of livestock products. The interview also explored gender division of labor in the operation and family; challenges and barriers related to gender in the home, livestock sector and society; more general issues and challenges facing the extensive livestock sector and their potential solutions; and the participants' views on the future of extensive livestock production generally, of their operation specifically and of the role of women in the future of pastoralism. Each participant was asked what they most liked about their profession and life in the extensive livestock sector and what they liked least. Interviews lasted from 1-3 hours, and in some cases continued over multiple days. Formal interviews were audiorecorded with the participant's permission and professionally transcribed. Research was conducted under Colorado State University IRB protocol 350-18H. Participants freely and formally consented to participate after being informed of how data would be collected, stored and used for research purposes, including publication. We sent each participant a copy of their interview transcript for their review and personal records. All the names used in this report are pseudonyms and not the individual's real names. Details of individual backgrounds have been altered to protect participants' confidentiality.

Following initial data analysis (see below), we convened workshops with interview participants and other members of Ganaderas en Red in Andalucía (n=11), Northwest Spain (n= 11), and in the Pyrenees (n=3), and held additional informal follow-up meetings with other Pyrenees participants. These workshops had a twofold objective: on one hand the Andalucía and NW Spain workshops were regional meetings of Ganaderas en Red, aiming at strengthening women's relationships, mutual knowledge and confidence, as well as collectively reflecting on local challenges and opportunities and setting a common agenda. On the other hand, they served as an opportunity to share our preliminary research findings, and to "member-check" our initial analyses with an expanded group of participants, collect additional data on women's experiences and perspectives, and engage participants in further discussion

and interpretation. Most importantly, they provided an opportunity for participants to discuss how they might use the findings to advance their own projects, to increase the visibility of women in the extensive livestock sector, improve services to rural communities, and educate society about the biocultural benefits of extensive livestock production.

### 2.3 Data analysis

Data analysis proceeded in an iterative fashion, beginning with initial coding, workshops with research participants, and then a second round of coding, analysis and writing. First, transcribed interviews were imported into qualitative data analysis program QSR NVIVO. Initial codes focused on personal and family history; the characteristics of the livestock enterprise, including livestock and land management, and other associated on-farm enterprises; entry into and learning about the livestock business and management; social networks and participation in organizations; gendered division of labor and challenges faced; overall challenges; shocks and changes and responses to them; and women's roles in conserving, transforming and abandoning extensive livestock systems. A review of the initial coding revealed three main pathways into livestock production for women in our sample, but many women's stories reflected multiple intertwined pathways. Thus, in the workshops, we asked women to identify which pathway or pathways they felt best described their process. In the second round of coding we went back to the transcripts to identify representative narratives for each pathway and to code for the specific motivations, challenges and sources of learning and support associated with each primary pathway. As we developed a grounded theory of motivations, challenges and learning/support for the different pathways, we sought to evaluate our framework by seeking discrepant cases in the data, and in further workshops.

### 2.4 Trustworthiness

We ensured qualitative rigor through an iterative multi-stage analysis process of initial coding, member-checking via workshops and individual interactions with research participants, further coding, and peer-debriefing. This process ensured prolonged immersion in the data and repeated interactions with many (though not all) of the research participants. As a qualitative study grounded in a sample of 29 interviewees selected to represent a diversity of roles, experiences and perspectives, it would be inappropriate to extrapolate the findings beyond the research participants. However, the three regional workshops, which included women not part of the initial interview sample, lend additional strength to the transferability of our results to the experiences of other women within these regions.

## 2.5 Positionalities of the authors

M.F.G. proposed this research after reflecting on the absence of women's voices and experiences in her prior research with herders in the Pyrenees. To remedy this oversight, she made women's experiences in the extensive livestock sector the primary focus of this study, and sought to partner with organizations composed of women pastoralists in its design and implementation. Trained as an ecologist and human ecologist, with firsthand experience working in the livestock sector, she is committed to developing long-term and reciprocal relationships with research participants that support participants' goals for community and livestock sector development, as well as contributing to science. She led or participated in all of the interviews and workshops, and developed personal relationships with several of the research participants who reside in her long-term study site in the Pyrenees. These relationships and contextual knowledge contribute to her interpretations of the research findings.

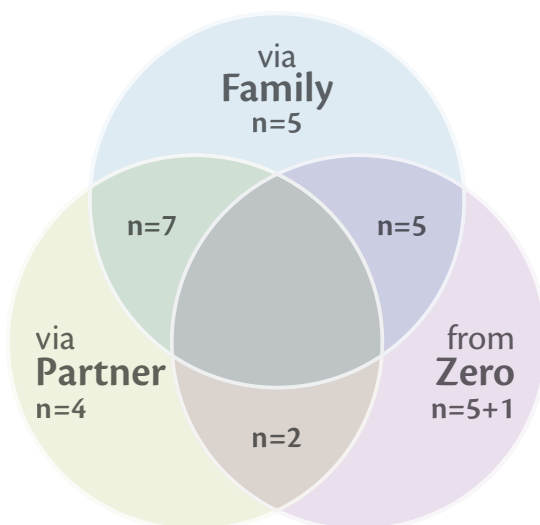
E.O.R. has been developing participatory research with pastoralists in Spain and is a co-founding member and co-facilitator of the Ganaderas en Red network, which situates her between researcher, practitioner and personal lenses. She has a daily and personal relationship with some of the research participants, which frames her interpretation of explicit discourses (interview transcripts and workshop notes) in light of her knowledge of implicit and omitted information in the interviews and workshops. She conducted interviews in Andalucía and organized and led workshops in Andalucía and Northwest Spain.

F.R. works in the Catalan Pyrenees with women pastoralists and global environmental change. Her research highlighted the absence of women's voices and perspectives in analyzing drivers of and responses to change, as well as their invisibility in pastoral decision-making and governance systems. Her scientific work and activism place her in contact with Catalan women pastoralist networks. Her work focuses on recording life histories of women pastoralists following their daily lives and activities. Participant observation and personal relationships with participants influence her data collection and interpretation. For this study, she conducted interviews and workshops with the Catalan participants.

## 3. Results

### 3.1 Participant characteristics

We completed 29 interviews with women aged 22-96. Participants were relatively evenly distributed by age with 6 interviewees under age 30, 5 aged 30-39, 7 aged 40-49, 7 aged 50-65, and 4 over 65. Ten of the participants were from Andalucía, 8 from the Northwest, 9 from the central Pyrenees and Aragón, and two from Catalunya.



**Figure 2.1** 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. See text for further explanation.

Nineteen interviewees were members of GeR or Ramaderas.cat, and the remaining 10 were not. Most of the interviewees identify as *ganaderas* or *pastoras*, i.e. active workers in one or more critical tasks of the operation, and are sole or co-operators (n=17) or professional shepherds working for livestock owners (n=2). Interviewees also included women who are not officially recognized operators and who are partners (n=4), daughters (n=1), or other family members (n=1) who provide significant labor or expertise to the operation. Four other participants are women who are part of families that raise (or raised) livestock and who are neither primary operators or decision-makers nor currently involved in the day to day management of herds or land. Three of these participants are retired and the fourth is a young woman.

Thirteen interviewees were associated with operations that exclusively or primarily raise sheep; five raise only cattle; three keep both sheep and cattle; two raise cattle and horses; two raise primarily goats; one cattle and pigs; one cattle, sheep and bees; and one a diversified small operation including sheep, goats, pigs, and rabbits. Many of them also raise chickens, mostly for home-consumption or direct sale or barter with neighbors. A few of the operations included some crop agriculture, usually fodder crops or olive or almond trees. Six of the interviewees self-identified as transhumants, or aspiring transhumants (one was in the process of incorporating), herders who move their livestock between summer and winter pasture areas in distinct ecological zones and often between administrative or geographic regions. All of these operations make multi-day movements on foot rather than using trucks (most transhumants in Spain use trucks today). At least two make shorter distance (one day) movements between summer grazing and wintering areas. Interviewees

ranged from small subsistence-oriented operations to larger commercial producers. Eight interviewees are engaged in or actively exploring some type of innovative production, processing or marketing processes such as organic/natural production, artisanal cheese-making or other product processing, direct marketing, or local origin branding. Five interviewees are involved in some aspect of rural or agri-tourism as a way to diversify on-farm income streams and/or educate non-farmers about rural life and the environmental benefits and cultural heritage associated with extensive livestock production. Three interviewees are engaged in two or more of these activities (e.g. value added processing and direct marketing, or rural tourism and organic production).

### 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." Most of those starting "from zero" are first-generation *ganaderas*, but some are coming back to a family legacy that has skipped one or more generations. Based on the interviews, we initially classified each participant into one category that seemed to best describe her situation. In our regional workshops, we then asked each participant to locate herself in one quadrant of a venn diagram (Figure 1) where the three overlapping spheres represent these three pathways and all their possible combinations.

To illustrate some of the typical patterns in women's stories we briefly describe each of these pathways (and combinations), illustrated with narratives from our interviews.

#### 1) Via Family (n=5)

Five women described coming to livestock production solely through inheriting their family occupation, herd and/or lands. Two of these three women were highly dynamic and engaged sole operators of significant livestock enterprises. Juana's (pseudonym) father was a transhumant sheep producer in the Pyrenees. She was an only child and grew up spending time with her father and the sheep, developing a strong bond with the animals. She often accompanied him on parts of the transhumant journey as a child, and made the entire journey for the first time when she was 13. *"Of course, they let me go... in theory when my father went we still had school, and I always told him to go on a weekend, but of course that was two days then they let me go for a little piece, a little piece. Up until (town), I don't remember how old I was when I went, but 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 in Pyrenees), I was 13 year old. I*

*remember that everyone told me, "look at you go, good-for-nothing, you won't make it, look at you, how will you make it?" (laughter) And I arrived, perfectly. We went to the valley and I was 13 years old, that summer I turned 14 but I hadn't turned 14 yet."*

Despite loving animals and spending a lot of time working with them and her father, Juana did not initially aspire to be a livestock producer, and instead pursued training in forestry. At 18, when her father announced his retirement and intention to sell the herd, however, she suddenly realized she could not bear to part with the herd, and decided to incorporate as a sole operator. *"No [as a child I didn't think of being a herder]. I liked [the sheep] a lot, I mean I was used to having them in our house and I mean because every weekend I would pass on everything [activities with friends] and I wanted to go to the sheep. And when I was little, even when I was little, I would cry so that they would let me go all day to the sheep with my father. The day they didn't let me go for some reason, I cried and would be angry at everyone. And everyone said to my parents: 'Don't worry, it will pass. When she is 10 years old, it will pass. And when she is 15 years old it will pass, and when she is 18 years old she won't look at a single sheep. But well, they were very mistaken. But no, that is to say, when they asked me, 'what do you want to be when you grow up?' I never said, I want to be a ganadera, no. Or a veterinarian, or whatever. But perhaps because I thought they [the sheep] would be always be there. The moment that I realised they were going, they were leaving [to be sold], well I decided to keep them."*

Juana has now been operating for 9 years and continues to carry on the transhumant tradition of her father and ancestors. Her father and uncle, and more recently, her boyfriend (also a sheep owner) help her when they are able, but she is very much the sole owner, manager and primary decision-maker. Juana loves her work and her life, but acknowledges uncertainty about the future, highlighting concerns echoed by many of the women in our sample. *"I don't know and I don't know because I don't know if in the end I will be able to keep living from this. Because the way things are going, that is, every time it looks worse. The prices for lambs are low, every day you have to do more things, that is there is more paperwork. And right now what worries me most is the wildlife here, because we are in a bear zone and a few days ago I saw a wolf track."*

In addition to the broader concerns outlined above, Juana also would like to start a family, and believes this would require a significant change in the operation, or possibly a change of profession. *"Of course, I want to have children and not when I am older. I've always been clear that if I have kids I want to have them before I turn 30. That's what I thought. But of course, then yes things would have to change because... something would have to change. I don't know. [Partner's] work would change or the number of animals or something, because clearly, you can't..."*

María (age 40), from Andalucía, raises cattle and Iberian pigs. Due to her father's work as a livestock buyer and seller, the family livestock was registered in the names of his wife and daughters. María's father and hired workers took care of the daily



management, with frequent help from María, her mother and sister. As she recalls, *"From the time I was a girl, I have been with my father in the fields. I came the weekends and vacations and I came to feed my mother's cattle, the ones my father kept. I remember this, of coming with him, being with the pigs, everything. My father planted alfalfa, which we don't do now, now we plant oats, 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 initially anticipate taking over the family business, but sought a profession related to the countryside and completed a university degree in agriculture. She initially worked in the closest large city, but her father needed her help so she moved back home and took a job in an abattoir in a nearby town. She wanted a regular job with a salary and vacations. *"I wanted to work in some company. I didn't know what, but I wanted my salary and my vacations, and even though I would keep helping my father in the fields, I wanted my things."* She continued to help her father, especially with the paperwork associated with regulations and subsidies, and decided to incorporate herself to take advantage of the "young farmer" subsidies, even as she continued to work her day job. Finally, a suite of events, including 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 stockraising. She is now focusing on converting her cattle operation to certified organic production, improving the management of the Iberian pigs, and starting small-scale direct marketing while taking leadership roles in local livestock associations.

## **2) Via Partner (n=4)**

A second common pathway to entry into livestock production in our sample was marrying into a herding family. Women of all ages in our sample represented this pathway. Veronica (age 50) met her husband R. as a teenager, when he was a transhumant shepherd working for a large stockowner. R's home village was in the mountains, where the sheep summer, and he brought the sheep down to the agricultural lands in the fall to graze on crop aftermath near Veronica's home village. She was the fourth of five children, and her father worked as a laborer and had a small agricultural plot but no livestock. Veronica and R. fell in love and married when she was 18. For the first three years of their marriage, R. continued to work as a shepherd for the same stockowner, after which he and Veronica decided to start their own herd. When their two children were young, one of R's brothers and a hired shepherd helped with the herd but when the shepherd retired, they decided it made the most sense for Veronica to work full time with the herd. *"...when we had our older daughter, R's brother was with us and we had a hired shepherd and later when the older one was bigger and we had our second daughter and she turned 3, well the shepherd retired and we decided that for me to work in something else... [didn't make sense]. We decided to try it and I liked it and*

*it worked for me. And until today [it works]."* When joint ownership by spouses became legal in 2011, they were the first couple in their province to file for it, but Veronica by that time had already been fully involved in all aspects of the business for about 15 years. Today they keep two separate flocks of sheep, of different breeds, each managed by a different spouse on different lands throughout the winter. In spring the flocks are merged and they 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 education and was working professionally as a social worker when she met and married her husband B., from a multi-generational herding family that lives in a village located inside a national park. She remarked that she always felt a great admiration for women pastoralists, even as it took her effort to adapt to the life of 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..., its a thing that..., I have always admired. The same as other people admire, I don't know. For me the women ganaderas and especially the women in these villages. I saw them so... Here we have a word "recias", recias means hard, strong, for birthing, for working. Now it's nothing like that. Life here today of course is much more like the city. But then, it was an effort for me to adapt."* For Lourdes, and for several other interviewees who followed this pathway, her mother-in-law was an important mentor and teacher, as well as her own grandmother. *"I knew and I lived with my mother in law for 2 years, the mother of B. And for me she was a role model of a working woman, good, calm (unflappable). .... 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 describes being sent out to tend the cattle from an early age. 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. *"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. But already, in my house they were always [rectos] and they always taught us that there was a time to play, a time for your obligations, and a time for your personal things. You had to learn your personal things because if you didn't, I never would have been able to leave. Not me, all of us siblings. We left when we were 13 or 14 years old and we forgot about our parents. In those days there were no cell phones and no one gave you any money, because there wasn't any money. You had to go out and make your own living. So when I left, I left happy to discover a new world."*

In the city, Paula shared an apartment with her older sister, attended night classes, and worked in a textile design workshop where she quickly rose to be one of the most skilled and best-paid employees. But after 10 years, she tired of city life and returned to the countryside to marry her husband, T., a local cattle producer, following a brief 2-month courtship during her summer vacation. *"I came back, one, because the same as I went to the city happy for a change of scene. Because at 14 one sees life in a different color. I was tired of the city. And then I met T. That was an important stimulus and I liked this life. 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."* Her husband proposed that they live in an apartment in the nearby town, but Paula responded that his family, life and work were in the village and she would first try living there with them in the large family house. If it didn't work out, they could move to town. When Paula joined the household, her mother-in-law was a relatively young woman in her early fifties. Paula got along well with her mother-in-law, who saw the home as her domain, and whom Paula regarded as a second mother. As Paula described it, *"So the adaptation went well, the people treated me well. And around the house I did what my mother in law asked of me to help her, but what I liked was the fresh air and the cattle."* 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. *"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 him [her 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. Until then, there was the laundry, but the house, I did what she asked me to do. ... But she was a very active person and she didn't like it much if you got in her territory. So I did what she asked but I didn't wait on her. She led her life and I led mine. 'Listen, see if you can do this.*

*Listen, tomorrow I have to go to the doctor.' Ok, there I was, but if not, my life was in the fresh air."*

Sandra (age 51), from Andalucía, also came to herding through both family heritage 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. 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*. From childhood, she never wanted to leave her home territory; she only wanted to follow in their footsteps.

*"I am the daughter and granddaughter of small farmers, herders, always in this county of V. 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 like my two older brothers, for example. This is the one thing I have been clear on since I was little, since my teens. 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."*

Sandra married a young man from the same region, who shared her passion for sheep. After several years of working as hired shepherds together for a local landowner/

stockowner, they struck out on their own and started their operation. 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 sharing her cultural traditions and local history with visitors from Spain and abroad, and serving as an advocate for rural interests, women in agriculture, and sustainable and adaptive production systems, and collaborating with research institutions.

While many of the women who followed pathways 2 and 3 described close and positive relationships with their in-laws, especially mothers-in-law, some women experienced tensions and even abuse when they joined their husbands' families. Many of the women who followed these patterns into livestock production, even those in the youngest group, continue the historic custom of moving into the husband's family home, where the new couple lives together in the same household with the man's parents and sometimes extended family (grandparents, uncles, etc.). One of the older participants described being treated as a servant rather than a family member, and having to ask her father-in-law for money to make even small personal purchases, like new underwear. A younger participant who moved in with her partner's family reported that her 4-person nuclear family, including two school-aged children, continue to live in one room in the in-laws' family home. In contrast, in the more matriarchal culture of northwest of Spain, one participant continues to live in the house where she was born, and her husband of many years moved in with her family when they married. When her husband was disabled relatively young and she took on a large part of the day to day farm and herd management, her parents provided invaluable child-rearing support.

#### **4) From Zero (n=5)**

Five of our participants could be described as starting "from zero" without the benefit of either a family history, and 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 new-rurals. Many (though not all) of these women were among the younger participants (under age 30), and they were often raised in a large city by families with little direct or recent connection to rural livelihoods. All the women who identified with this pattern had pursued at least a few years university education, and one holds a PhD. The one older woman in this group had worked as a post-secondary teacher of environment and agriculture, and began her business after retirement. The younger women often articulate explicit political-economic (often anti-capitalist) motivations or projects.

Mariella grew up in the suburbs of a large city and pursued a degree in History. She described wanting to be a shepherd at an early age, and fell in love with the

Pyrenees while visiting her older brother who lived there. After living independently in the city for five years, she persuaded her partner to leave the city with her when she was 23. After an early failed experiment in communal living outside the city, they made the move to a small village in the Pyrenees two years ago, with the intention of raising goats and opening an artisanal cheese business. Mariella is the owner-operator of the livestock and cheese business, and lives with her husband and two small children. Below she describes her pathway into herding and her motivations in her own words.

*“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. Then all the frustration of not being able to live here created in me an anxiety and an expectation and a kind of brutal realization that I lived in the city with a sensation that I was doing something I didn’t want to do but that I had to finish it because of my age. And also, I am happy to have lived that experience because I now have no necessity of returning there. I learned a lot of things. And now the decision to leave all that I was doing was when I was 23. At 18 I left home and lived my experiences in [the city] studying and working and living with other people. That is, I lived some very nice education projects and urban gardens. Always things related to the countryside but from an urban vision. And still wanting to come here, well at 23 I said ‘come on.’ In reality, I had been introducing the idea to my partner, who I knew since I was 18, and for a long time at the beginning he didn’t [want to go]. And I, in reality always have had this firm idea that I would end up in the country, so I was very relaxed and calm and I went about introducing it bit by bit, until he began assimilating the idea. And one day we were going on a walk in the north and he realized that he also loved the countryside. 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 idiosyncracies and its way of looking at things. [describes the differences between the two schools....] So to sum up, our idea is not simply to make money and live in the countryside, but rather to do some good to the environment here. 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-herd and I don't want to see this go extinct. At the least, keep the flame going, transmit it and continue it."*

Erika and Carmela, both from Catalunya, entered the livestock sector as professional shepherds. Erika grew up in a large city and participated in scouts, which contributed to her interest in and connection to the environment. During her late adolescence as tensions with her parents rose, she left the city to seek a degree in agriculture and environment. Through her program she apprenticed with an older couple on a farmstead (*masia*) in central Catalunya, where she learned more about shepherding. After the end of the formal apprenticeship she stayed on working with the couple, who raise a local heritage breed of sheep using organic methods, and direct market their product to restaurants and in farmers' markets. Erika now works as a full-time shepherd for the operation, as well as earning some extra income shearing sheep. Her shepherd work also allows her to pursue her interest in collecting and preparing medicinal plants. Here, she describes the push and pull factors that led her into her current position.

*"I was born in [the city] and I lived there until I was 17, when I moved here to [town name] to study in the agricultural school. And that decision to leave the city I had made up my mind some time before. I don't know why, but I felt like the wall were closing in on me and in my second year of high school I had a bad time because I didn't like the city and I wasn't getting along with my parents, the typical adolescent phase that we all go through, no? So then I thought about being a volunteer somewhere outside the city and also, during all my life I had participated in the scout movement and that also influenced me a lot. And my adult role models in the scouts worked in environmental sciences in the country, right? I think that had a big influence in my interest in coming to study agriculture. More agriculture than herding in the beginning. Then in the middle grade I did agro-ecological production, which is a degree and a professional development program where you have to do an internship or practical application in a business. In 2012 I came here with J and R ... and it was the beginning of my passion for a different way of living in the countryside, beyond agriculture itself, and this captivated me a lot. Well, because I had a real connection with them. And I was still going to classes and I would come some weekdays to help and other specific times I came as well to help out. And I have a lot of interest in producing medicinal plants to treat menstrual pain and things like that. And my work here allows me to continue doing that. Because I'm in the forest and I can make my potions at my house. I am very satisfied being here."*

### 5) From Zero and Family (n=5)

Some women identified their pathways as a combination of starting from nothing and having some family tie to land or livestock husbandry. In several cases, these women were raised in cities or towns with no direct connection to the land or animals, but later inherited family lands or stock-growing 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, sometimes in a different village, with or without the benefit of family land, herd or labor.

Linda 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.

*"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. And it also has a dimension of class conflict of saying 'and if I don't believe in private property?' It's like a radical shock. I who live in [a fancy apartment that I pay a lot of money for and I spend my time going out and partying and hob-nobbing with the cultural elite]. I move in this environment and 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, still commuting between the city where she lives with her partner and child and continues to work as a freelancer, and her land and herd.

Representing a nearly opposite combination, Marina (in her 40s) grew up on a small dairy farm in northern Spain, and 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, where she raises heritage cattle and horse breeds, and has recently opened a rural tourism rental home. She also gives guided tours of her farm and the surrounding regional natural park. Marina describes her early life in a stock-raising family as the source of her livestock knowledge and work ethic.

*“My father in 1984 decides to build some major infrastructure for milking. He was among the pioneers in applying innovation in the countryside, building a milking parlor with 14 milking points and automatic milking machines, which no one had seen in [the region]. 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. Work from childhood. 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.”*

Finding herself in a tiny village where her partner is based as a veterinarian, she decided that livestock production was the only viable livelihood option.

*“Here the options are few, very few. Here everyone lives from livestock production. The municipality of S. is the municipality with the most head of livestock in the region and everyone lives from the land and we are outsiders. And we will continue to be outsiders because they don’t accept us. In the end you have to do what they do and do what you can. Here we started from zero, zero, zero. We had absolutely nothing. ... We started in 2004, when our daughter was born, and we bought a house and began to settle. In 2012 I ask for a new incorporation as a young farmer without any idea, I had no idea. I knew about dairy cows but I had no idea about meat cattle. The first thing I did was to increase the value where I could, what kind of animals could I put here. It’s a region as you can see that is very steep with difficult climate and significant slopes with limestone and cliffs. What to put? Cattle. 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, to eliminate middle-men from the value chain.

#### **6) From Zero and Partner (n=2)**

The final pathway shared by several participants was the combination of from zero and via a partner in the business. These women often share much in common with the new-rurals with respect to their educated and often urban backgrounds. They find themselves living a rural life and engaged in livestock production to varying degrees, largely because of love. Louisa was attracted to her husband in part because of his sheep, and now plays a significant role in their care, although she is not a legal co-owner of the herd. Nina is less involved in the day-to-day management of her boyfriend's flock, but abandoned her own professional career to relocate and live with him in a mountain village. She has since found temporary government work in rural development, and they have discussed a larger role for her in the business, potentially developing a branding and marketing scheme for their heritage breed of lamb.

#### **7) Unique Pathways (n=1)**

Some women's pathways were not shared by others and yet their stories stand out. 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, in contrast, began her business from necessity and felt little love for her occupation. Ana was born in another country and moved to Spain when she was young. 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 autonomy or personal freedom. Her partner bought a piece of land, where they lived in rudimentary conditions without electricity or hot water, and she started a subsistence farm. 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 and sold their cattle, she took the step of incorporating legally as the sole operator of the sheep enterprise. 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. As an

independent operator, she now pays into social security, which will provide her a modest pension and therefore more independence when she retires in 9 years.

### 3.3 Motivations

Women who became producers primarily through an inherited family connection often did not initially foresee taking over the family livestock business or even discarded this option as too demanding. Yet, family ownership of land and/or animals created both an opportunity and a sense of obligation. Most of the women who followed this pathway, alone or in combination with other pathways, had a post-secondary education or significant off-farm professional experience and work opportunities. For some, like Linda, who were not raised on the land but later inherited it, the opportunity was combined with a strong sense of (re)connection with place, family roots embedded in her land. For others, like transhumant Juana, love for and identity with animals, combined with the opportunity to take over her father's herd, was a prime motivator. Finally, in cases like María, a sense of obligation to help her father with mounting bureaucratic paperwork and daily farm tasks, combined with opportunity offered by family land and livestock, led her from part-time to full-time stock-raiser. The theme of care-giving obligations was important in mediating these women's roles in agricultural tasks. Sometimes this manifested in a woman's increasing involvement in land and animal management to substitute for an aging or injured parent or spouse. Other times it meant that the woman reduced her outdoor agricultural work in order to care for an elder mother/father or parent-in-law.

Participants who came to herding primarily by joining their life partner's business or family were motivated by personal reasons—namely falling in love with a stockgrower. For most women, marrying (or living with) an extensive livestock producer entailed moving to a remote rural location, often a very small village, where opportunities for off-farm work are limited. Thus, the decision to take a role in the herding business was often a practical one driven by lack of alternative income sources and a need for additional labor on the farm. Some of these women saw rural life and working with animals as part of their attraction to their partner, while others adapted to and developed an affinity for stockgrowing over time and introduced innovations into the business.

Women who chose to enter the extensive livestock sector “from zero” made clear choices based on lifestyle and belief systems, including political ideologies. Most of these women had completed some post-secondary studies, often related directly to their professions. Several women entered the sector in mid-life, after pursuing other careers, while others made early commitments to the sector as paid shepherds or by starting their own small livestock business. Some of these 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. In particular cases, 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 and family around an agro-ecological.

### 3.4 Challenges to Entry

Women who entered through the family pathway experienced the fewest challenges to entry overall, as most came into the business with a legacy of land, animals and/or knowledge and experience and sometimes family economic and emotional support (Díaz Méndez, 2005). Nevertheless, some faced opposition from family members (especially mothers), or difficulties with the bureaucracy of incorporating. Notably, most women who entered the business through this pathway incorporated as sole operators of their own operations, with the legal and financial autonomy and responsibilities that this implies.

Participants who "married into" the extensive livestock sector faced a different set of challenges. Those who came from urban or non-agricultural backgrounds faced often difficult periods of adaptation to rural life and learning about animal husbandry. In some cases these challenges were compounded by tensions associated with joining their partner's parents' household. Others described challenging power relations within the extended family, particularly with mothers-in-law. Interestingly, several of these same women described positive relationships with fathers-in-law, whom they credited as primary teachers and mentors. Women who entered the business in this way were less likely to hold legal sole or joint ownership in the operation. During participant observation in some of these households, we also observed less decision-making autonomy in daily herding tasks, which were organized and directed by the male partner. A consequence of the lack of official ownership is that the woman essentially donates her labor to the enterprise and the business does not pay into her social security account. 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 in the business sometimes experienced social exclusion from other women in the community. One of the workshop participants, who entered the business because of her partner but is currently legalizing her own operation, reported frustration due to the lack of trust and overall opposition of her father-in-law and her partner, in her attempts to introduce innovations in livestock management.

Women starting from zero face the greatest number of challenges to entering the sector. Younger women often lack the financial and social capital to acquire or rent land, renovate a barn to regulatory standards needed for incorporation, or purchase sufficient livestock to support themselves. They also often lack a house or apartment

to live in. Thus, the youngest women starting from zero in our sample worked as hired shepherds. Women starting from zero at middle age or older had accumulated savings that enabled them to make the needed investments, but did not benefit from “young farmer” subsidies. A second major hurdle was the bureaucratic process of incorporation and meeting all the necessary requirements. Even women who entered through other pathways sometimes experienced difficulties or received bad advice on incorporation. Further, single women reported discrimination from local officials that married women starting from zero in the same community did not experience. A third challenge was lack of experience and knowledge of livestock husbandry, which sometimes led to costly mistakes e.g. in the selection of the herd, machinery, land or farm management. A fourth challenge was the lack of a built-in network of physical and moral/psychological support enjoyed by women with family or partners, although two of the “from zero” participants were married and their husbands, though not registered owners, contributed labor to the operation and/or housekeeping and child-rearing tasks. Both of these women were able to benefit from the young farmers subsidy when they incorporated. A fifth challenge that some of these women reported (as did some women who followed other paths), was opposition from family and friends. In contrast to women born into herding whose families objected because they understood the all consuming nature of a stockraising life, the families of women who started “from zero” were more likely to perceive opposition or ridicule based on friends’ or family’s low esteem for or negative stereotypes of herders.

### 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, drew from this intergenerational knowledge and their own lifelong experience as they launched their operations alone (Juana and María), or with a partner (Sandra). 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. This pattern of gendered knowledge transfer may vary regionally, as women in some regions, such as the Cantabrian cordillera of the north, historically played a much larger role in animal management, as many men worked in the mines, trades or travelled abroad for work. We speculate that women in these regions learn more about animal husbandry from their mothers and grandmothers than from their fathers. Similarly, 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 fathers, uncles, brothers, or boyfriends, but in some cases it was a sister or mother. Some women who did not grow up in the business, but later inherited the management of a large family estate, reported learning from other



employees (e.g. hired shepherds, farm managers) on the operation, who often became important mentors and confidants.

Women who came to herding via a partner most often learned from the partner and other family members. Herding tasks were most often learned from fathers in law while work like cheese making or butchering hogs (*matanza*) was learned 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 the challenges of isolation and missing their birth families and friends. In the current time, mobile phones and applications like WhatsApp have helped to overcome physical distances.

Participants who started “from zero” lacked inherited family knowledge or a partner to learn from and thus 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*” or stockraiser. 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 with the help of these texts. These women also often experienced the greatest degree of social isolation, especially if they were single.

Across all pathways, women in workshops lamented that they had few other women in their villages/localities who shared their experiences and with whom they could socialize face to face. Virtual networks like WhatsApp groups have begun to fill this void, and some women reported that joining groups like GeR, where they have daily contact with other women herders, had transformed and significantly improved their lives. Another gap that workshop participants identified is professional training and continuing education for women producers tailored to their needs and concerns. For example participants in the Andalucía workshop wanted training in food product processing (i.e. *charcuterie*) so that they can improve the profitability of their enterprises by capturing the added value.

#### 4.Conclusions and Implications

The narratives of women’s pathways into extensive livestock husbandry reveal three primary pathways and multiple combinations that lead Spanish women to take up herding. Although only five women entered the sector through family alone, more than half (17) cited family as part of their pathway (e.g. family and partner or family and from zero). This highlights the importance of family heritage in the continuity of the extensive livestock sector. Although the interviewees share many common

experiences and struggles, each of the primary pathways is associated with distinct motivations, challenges and sources of knowledge and learning. Identifying these pathways and understanding both the common experiences and unique challenges of each can help to improve support for women pastoralists.

#### 4.1 Key conclusions and implications and recommendations for policy, outreach and support

First, our study challenges stereotypes of women's roles in extensive livestock husbandry, illustrating the variety of roles and contributions they have made historically as well as recently. It also challenges the notion that there is only one pathway into extensive livestock husbandry, and highlights the diverse backgrounds, motivations and challenges of different women. This diversity calls for communication and outreach that disrupts existing stereotypes of women pastoralists, reflects evolution along recent past and grounds outreach and support efforts in the diverse realities of women's real life experiences.

Second, this study highlights the challenges that pastoralist women experience in gaining and maintaining economic autonomy, especially if their pathway into pastoralism involved becoming the partner of a herder. Therefore, we recommend outreach and support for women to create and maintain economic autonomy as they contribute to family enterprises or set up with own businesses. Sole or joint ownership helps to ensure decision-making and economic autonomy, facilitates personal freedom and provides security in the event of the loss/divorce of a spouse. Such autonomy also allows women greater space and power to innovate, especially within an existing family-run enterprise. We strongly recommend improved training of local government agricultural officers tasked with overseeing new incorporations. Such training should counteract existing discrimination against women (such as actively discouraging women from incorporating as operators), especially single women who are sole operators, and train officials to proactively support women entering extensive livestock husbandry through any pathway. There must be a clear mandate to support women entering the sector, regardless of their background or pathway into extensive livestock husbandry. Further, many local officials appear to be ignorant of the option and process for joint ownership (*titularidad compartida*). Training should therefore cover this option, its benefits and drawbacks, and the process for obtaining joint ownership. Overall, there is a need to eliminate discriminatory practices and to increase transparency and clarity on the bureaucratic process of incorporation and registration for subsidies. Such changes will benefit producers of all genders and strengthen the sector overall.

Third, our study highlights the particular challenges faced by women starting from zero, and those who come from a non-agricultural background and enter the

**Table 1** Patterns of primary motivations, challenges and sources of learning and support for women who follow different pathways into the extensive livestock production sector.

Pathways	Motivations	Challenges	Sources of Learning/ Support/ Mentoring
<b>Via Family</b>	Opportunity Identity with place, occupation, animals Family obligation	Sometimes family opposition	Family members Employees Hands-on experience from childhood
<b>Via Partner</b>	Personal (love) Practical/pragmatic (lack of job alternatives) Affinity for rural lifestyle, animals	Conflicts with in-laws Lack of decision-making and economic autonomy	Partner Partner's family Hands-on experience
<b>From Zero</b>	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

sector through their partner. Women on both these pathways often experience social isolation and lack a peer support group in their local community, especially among other women. Solo women starting from zero face further practical challenges as they have no built-in labor support from other family members, in the event they experience illness or accident or need to take time off for other reasons. Interviewees and workshop participants who belong to GeR and similar networks have found these virtual support networks to be critical to overcoming social isolation, as well as sharing technical and institutional information. 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 a family. One workshop participant reported on an institutionalized work-spelling

arrangement that she observed on a visit to France. We encourage NGOs and other agricultural support organizations to further learn from these examples elsewhere and explore the feasibility of implementation in Spain.

Finally, we encourage continued support of participatory action research that supports researchers to develop long-term research and action relationships with women pastoralists across Spain. Such partnerships are empowering for the pastoralists, can help raise the visibility and increase legitimacy of women pastoralists through documenting and publicizing their experiences via research. They also help to ensure that research is co-developed by the people it is intended to benefit, and thus is oriented to their key issues.

#### 4.2 Future research and contributions to theory

This article represents an initial exploration of a phenomenon that calls for much wider and deeper investigation. As this study has focused on women's entry into livestock production, we first recommend further work focus on women's experiences throughout their lives, including the gendered division of labor and the barriers, tensions and challenges women face at different life-stages and different scales (household/farm/community, livestock sector, society broadly), and their strategies, tools and proposals for overcoming or negotiating these challenges. Second, given the concern about the future of extensive livestock management systems in Spain, another critical theme for further research are the roles of women in preserving traditional culture and practices, their roles in innovating and transforming these systems to support long-term cultural and environmental sustainability, and the role they play in abandonment of pastoral cultural landscapes and lifeways. Third, we suggest there is a need to examine and expose the triple- or quadruple-burden that women pastoralists experience, carrying the load of care-giving and house-keeping in the home, tending animals and land on the farm, participating actively in civil society and industry organizations, and/or earning an outside income to support the family farm enterprise. Feminist economics may provide a useful approach to investigating the social-ecological sustainability of pastoralism. Fourth, we recommend a more deeply intersectional approach to analyzing women's experiences, and expanding the current work and sample of pastoralists to include a more clear focus on the experiences of women and other pastoralists across different socio-economic classes, ethnicities/countries of origin, sexual orientations and gender identities. Finally, this study is entirely qualitative and based on a small though diverse sample. To better understand the prevalence of certain barriers and experiences, a larger sample study using a more closed-ended or semi-quantitative survey methodology may be useful in the future.



# 3



## The Invisible Thread: Women as Tradition-Keepers & Change-Agents in Spanish Pastoral Social-Ecological Systems

*“La verdadera importancia de la mujer rural que siempre ha tenido, y sigue teniendo, como asentamiento del territorio y de la población, como preservación de las grandes cosas de la vida, las crecientes, las semillas..., las guardianas han sido y son las mujeres. Como el **verdadero hilo invisible** entre la generación de encima y la generación de debajo, el verdadero orden... En fin. En todo eso, ¿no?”*

*“The true importance that rural women have always had, and continue to have, like the settlement of the territory and the population, like the preservation of the grand things in life, the growing things, the seeds, .... the guardians have been and are the women. **Like the true invisible thread** between the generation above and the generation below, the true order, ... in the end. In all of this, no?”*

SANDRA (pseudonym)

## 1. Introduction

Rangelands managed for extensive livestock production cover 46% of Spain's land area, and are critical to conserving the country's biodiversity, providing safe and healthy food, and sustaining socially-valued landscapes and lifeways (Beaufoy et al. 2012). Yet rangelands and extensive livestock production, in Spain as elsewhere, face myriad interacting threats, including climate and land use change, restructuring of agricultural economies and production systems, rural depopulation, loss of socio-cultural heritage, land fragmentation and degradation, and political marginalization, calling into question the sustainability of both pastoral lifeways and the ecosystems pastoralists use and steward. Although demographic changes in rural Spain, including changing sex ratios, are well documented, research has largely overlooked the roles of women in extensive livestock management systems. Specifically, no work has examined the potential importance of women pastoralists as custodians and transmitters of traditional knowledge, as change-agents who innovate and adapt while helping to maintain the essential character and function of extensive management systems, or as possible drivers behind rural abandonment.

Extensive livestock production has been integral to rural Spanish landscapes, economies and cultures for thousands of years. Indeed, extensive livestock production created and has maintained many of Spain's iconic cultural landscapes, such as the *dehesas* of the south and west (Campos et al. 2013) and the mosaic of mountain pastures,

hayfields, and forests of the Pyrenees (Montserrat Recoder 2009, Fernández-Giménez 2015). These intimately co-evolved social-ecological systems provide numerous ecosystem services, including provisioning (Sebastià et al. 2008, Azcarate et al. 2013, Komac et al. 2014, Moreno et al. 2016), regulating, and cultural services (Gómez-Baggethun et al. 2012, Oteros-Rozas et al. 2014, Fernández-Giménez 2015). The interactions of people, land and animals in these social-ecological systems generate and maintain traditional knowledge that forms a critical self-regulating feedback that sustains these dynamic complex adaptive systems. However, little is known about the gendered nature of this knowledge.

Like many other countries, Spain experienced significant rural to urban migration in the mid-late 20<sup>th</sup> century, with a disproportionate number of women migrating to seek education and improved livelihoods in larger towns and cities (Camarero and Sampedro 2008). At the same time, technological and structural changes in agriculture led to increased mechanization, intensification and industrialization of agriculture, resulting in altered and often reduced and less visible roles for women in farming and livestock-raising (Gómez-Sal et al. 2011). These interacting trends have led to shifting sex ratios in rural communities and the masculinization of agriculture in particular and rural spaces in general. These economic, demographic and social changes have environmental consequences as patterns of land-use shift towards more intensive farming and urbanization in some areas, reduced cropping and grazing in others, and in some areas a substitution of amenity- and tourism-based land-uses (e.g. ski resorts) in place of extensive livestock production. The fate of rural Spain generally and extensive and mobile livestock management systems, specifically, remains an open and pressing question, and women's roles within these systems remain largely unexamined.

In 2017, at the 44<sup>th</sup> meeting of the Committee on World Food Security, the FAO's Pastoral Knowledge Network organized a side event on the Women's Empowerment for Better Resilience in Pastoralist Communities. The panel concluded that, "Women play a crucial role within pastoralist societies not just as livestock producers, income generators, and caregivers but also as key organizers and keepers of local knowledge. They are integral to maintaining pastoralist community life and identity. Yet, they remain vulnerable and must constantly negotiate their position within their households, communities and otherwise." (<http://www.fao.org/pastoralist-knowledge-hub/news/detail/en/c/1044193/>). From a research perspective, the role of women, men and gender in social-ecological resilience more broadly is gaining attention (Ravera et al. 2016). However, social-ecological and resilience-oriented research has been criticized for inadequately addressing issues of power dynamics, conceptualizing people as passive subjects rather than active agents within social-ecological systems, and overlooking the subjective lived experiences of people within these systems (Crane 2010, Cote and Nightingale 2012). Finally, much social-ecological systems and resilience

research (and most science generally) takes an instrumental approach to engaging with human research subjects, longstanding traditions of participatory research notwithstanding.

Given the potentially critical role that women play in the future of Spain's pastoral social-ecological systems, and the lack of research on women in these systems, this study aimed to understand the subjective lived experiences of women in the extensive livestock sector in Spain. More specifically, we sought to understand how women contribute to conservation, abandonment, or transformation of these systems, and how they interpret their own roles in maintaining, leaving, or changing rural communities and extensive livestock management systems. We approached this objective through semi-structured oral history interviews and participant observation, and by engaging research participants in making meaning of these experiences through participatory workshops.

## 2. Methods

This qualitative research study is informed by a feminist research philosophy that emphasizes transparency and reflexivity regarding the researchers' positionalities, and aspires to a collaborative and reciprocal relationship with research participants. We also recognize that Spanish women pastoralists' experiences may vary greatly based on the region, locality, the woman's role in the family and livestock enterprise, and her socio-economic class and level of individual financial autonomy.

### 2.1 Sample selection and study areas

As the first study to focus on the lives of women pastoralists in Spain, we sought to interview a broad range of women to capture the diversity of women's experiences in the extensive livestock sector. Our criteria for inclusion were women who are or were directly or indirectly involved in extensive livestock production, including those who own or co-own their own operations, who work with livestock as family members or employees of an operation owned by someone else, and the family members—wives/partners, daughters, mothers and sisters—of livestock producers. We focused our study in three primary geographic areas that provide contrasting land ownership and management contexts: Andalucía in the south, the Northwest (Zamora, León, Asturias and Cantabria), the central Pyrenees and Aragón, and Catalunya. Prospective interviewees were identified through existing research networks and through *Ganaderas en Red* (GeR), a country-wide network of women pastoralists in Spain. Participants from Catalunya were members of a similar network, *Ramaderas.cat*, but were not recruited via the network as GeR participants were. A few (4) interviews arose opportunistically through conversations with contacts in these regions.

## 2.2 Data collection

Participants were contacted directly by the lead PI (Pyrenees) or by collaborators (GeR members, Catalunya) and invited to participate. Most interviews took place at the participant's residence or farm and most included both a formal semi-structured interview and an informal visit/tour of the operation. A few involved more extended participant observation, such as accompanying transhumants on part of their journey or staying overnight with the interviewee's family.

The semi-structured interview protocol used a life-history approach, covering a variety of topics, beginning with the interviewee's birthplace and year, their childhood, education and family relationships, and how they entered the livestock industry and learned herding and other needed skills. Further questions focused on the characteristics of the operation, animal and land management practices, and processing and marketing of livestock products. The interview next explored gender division of labor in the operation and family; challenges and barriers related to gender in the home, livestock sector and society; more general issues and challenges facing the extensive livestock sector and their potential solutions; and the participants' views on the future of extensive livestock production generally, and of their operation specifically. Each participant was also asked what they most liked about their profession and life in the livestock industry and what they liked least. Interviews lasted from 1-3 hours, and in some cases continued over multiple days. Formal interviews were audiorecorded with the participant's permission and professionally transcribed. Research was conducted under Colorado State University IRB protocol 350-18H, and each participant provided explicit consent after being informed of the research purpose, data management protocol, and publication intent. We sent each participant a copy of their interview transcript for their review and personal records. All the names used in this report are pseudonyms and not the individual's real names.

Following initial data analysis (see below), we convened workshops with interview participants and other women pastoralists in Andalucía (n=11), Pyrenees (n=3), and Northwest Spain (n= 11), to share our preliminary findings and engage participants in further discussion and interpretation, and held informal follow-up meetings with two other Pyrenees participants. These workshops served both to "member-check" initial analyses with an expanded group of participants, to collect additional data on women's experiences and perspectives, and to co-interpret and make meaning from the findings. Six interviewees attended the Andalucía workshop as well as five women who were not part of the interview sample. The Pyrenees workshop included two interviewees and one additional participant. Four interviewees attended the León workshop together with seven additional women. Collectively, the workshops included participation from an additional 13 women who were not part of the original interview sample. Importantly, the workshops provided an opportunity



for participants to discuss how they might use the findings to advance their own projects to increase the visibility of women in the extensive livestock sector, improve services to rural communities, and educate society about the bio-cultural benefits of extensive livestock production. We invited workshop attendees to participate as co-researchers and co-authors in the development of scientific publications based in the project, as well as outreach and policy-oriented documents.

### 2.3 Data analysis

Data analysis proceeded in an iterative fashion, beginning with initial coding, workshops with research participants, and then a second round of coding, analysis and writing. First, transcribed interviews were imported into qualitative data analysis program QSR NVIVO. Initial codes focused on personal and family history; the characteristics of the livestock enterprise, including livestock and land management, and other associated on-farm enterprises; entry into and learning about the livestock business and management; social networks and participation in organizations; gendered division of labor and challenges faced; overall challenges; shocks and changes and responses to them; and women's roles in conserving, transforming and abandoning extensive livestock systems. A second round of coding focused in on passages coded under adaptation, innovation, entrepreneurship, conserving, transforming and rural depopulation. In this second round of coding, we identified sub-codes under conservation, transformation and abandonment that represented categories of actions under each of these primary codes at different levels of social organization: household/family or community, livestock/agricultural sector, and society more broadly. For example, at the household/family level one sub-code under conservation was "conservation of traditional product processing practices," an example of which would be learning and teaching traditional cheese-making methods. At the level of the livestock sector, women who practice or support others who practice transhumance, are contributing to the conservation of this traditional management strategy and the traditional knowledge embedded therein. Finally, in the workshops, we shared our research questions and preliminary codes with participants and asked them to what extent they identified with the key preliminary themes/codes. The presentation of themes, codes and sample quotations led to further discussion and identification of additional actions, practices or experiences that participants considered to fall under each of the three main themes (conservation, transformation, abandonment). Before concluding the workshop, participants discussed possible tensions among these roles, and identified proposals for policies and actions that would support women in their conserver and transformer roles.

## 2.4 Trustworthiness of data

We ensured qualitative rigor through an iterative multi-stage analysis process of initial coding, member-checking via workshops and individual interactions with research participants, further coding, and peer-debriefing. This process ensured prolonged immersion in the data and repeated interactions with many (though not all) of the research participants. As a qualitative study grounded in a sample of 29 women selected to represent a diversity of roles, experiences and perspectives, it would be inappropriate to extrapolate the findings beyond the research participants. However, the three regional workshops, which included women not part of the initial interview sample, lend additional strength to the transferability of our results to the experiences of other women within these regions. As mentioned earlier, it is important to recognize that women's experiences may vary greatly with socio-economic class and personal financial and decision-making autonomy. In addition, all of the women in our interview sample were white women of Spanish (n=27) or western European (n=2) heritage. We did not have the opportunity to interview any immigrants or women pastoralists with heritage from countries outside of western Europe. This remains an area for further study. We did not ask participants about their gender identities or sexual orientations. However, no participants self-identified or presented as non cis-gender or referenced same sex partners. This may indicate a gap in our sample, as Spain is considered a socially progressive country with regard to LGBTQ rights and social acceptance.

## 2.5 Positionalities of the authors

M.F.G. proposed this research after reflecting on the absence of women's voices and experiences in her prior research with herders in the Pyrenees. To remedy this oversight, she made women's experiences in the extensive livestock sector the primary focus of this study, and sought to partner with organizations composed of women pastoralists in its design and implementation. Trained as an ecologist and human ecologist, with firsthand experience working in the livestock sector, she is committed to developing long-term and reciprocal relationships with research participants that support participants' goals for community and livestock sector development, as well as contributing to science. She led or participated in all of the interviews and workshops, and developed personal relationships with several of the research participants who reside in her long-term study site in the Pyrenees. These relationships and contextual knowledge contribute to her interpretations of the research findings.

E.O.R. has been developing participatory research with pastoralists in Spain and is a co-founding member and co-facilitator of the *Ganaderas en Red* network, which situates her between researcher, practitioner and personal lenses. She has a daily and personal relationship with some of the research participants, which frames

her interpretation of explicit discourses (interview transcripts and workshop notes) in light of her knowledge of implicit and omitted information in the interviews and workshops. She conducted interviews in Andalucía and organized and led workshops in Andalucía and Northwest Spain.

F.R. works in the Catalan Pyrenees with women pastoralists and global environmental change. Her research highlighted the absence of women's voices and perspectives in analyzing drivers of and responses to change, as well as their invisibility in pastoral decision-making and governance systems. Her scientific work and activism place her in contact with Catalan women pastoralist networks. Her work focuses on recording life histories of women pastoralists following their daily lives and activities. Participant observation and personal relationships with participants influence her data collection and interpretation. For this study, she conducted interviews and workshops with the Catalan participants.

### 3. Findings

#### 3.1 System Conservation: Women as Tradition-keepers

With very few exceptions, participants lived in rural areas, often in small villages. Whether they came from a lineage of livestock owners or were new arrivals to the sector, many participants described activities related to learning or perpetuating traditional knowledge, skills, practices, institutions and even physical infrastructure.

##### 3.1.1 Local level: household/family and community

At the level of the family/household and community, participants described their roles in conserving the physical environment and living/nonliving objects/entities associated with extensive livestock production: land, house and livestock; and their roles in conserving and transmitting intangible cultural heritage, including traditional knowledge, practices, values, identity and pride.

In some regions of Spain, the concept of house or *casa*, refers to both the physical structure that shelters the family, and the identity of the family lineage and associated livestock herd and enterprise. In the Pyrenees, for example, producers are more likely to identify themselves and refer to each other by the names of their *casas*, than by their family surnames. Continuity of the physical structure and the family line/business were important. One participant from northern Spain was particularly concerned about the condition of the physical structures, and was adamantly committed to maintaining and restoring buildings in her community in order to preserve the potential for future generations to inhabit or return to the village. She spoke passionately about her own house, in which she was born and had lived her

entire life, and which she conceptualized as both a building and associated lands, and a lineage/enterprise. *"For nothing in the world would I want to see this house end, nothing in the world. For as long as I have money to pay for them to keep the fields clean, I will pay it, even if I am an old [rebuida], as I say, a wrinkled and grumpy old woman."*

[Rosa, Northwest]

Another tangible dimension of conservation is related to lands, pastures and herds through grazing. Many women spoke about caring for and improving the land, in order to keep pastures healthy and accessible for grazing. For example, Nelda from Andalucía reported, *"We came here and it was like a jungle, there were no pastures, there were no anything. And now since you got here, it is all taken care of, you take care of it."*

[Nelda, Andalucía]

A different interviewee spoke of how her partner's grandmother preserved the family sheep herd and bloodline (genetics) during the Spanish Civil War. The grandmother's brothers were the stockmen, but when they were killed in the war, their sister kept the herd going until her own sons were old enough to take it over. *"His grandmother was a stockgrower. That is, the livestock that his father and uncles had, came from a herd that belonged to his grandmother. During the Civil War in Spain and all that, the grandmother was the stockgrower, she was the one with the operation. So for him, this thing of women livestock producers. He says, 'It's something that has always existed, you know? In my family, my grandmother was the herder. So, it doesn't surprise me to see women keeping sheep.' But well, it's good to establish a bit that this [livestock production] is not only by men, right?"*

[Nina, Pyrenees]

Less tangible and visible are women's roles in conserving both practical/traditional knowledge and cultural values, including love for the land and occupational pride. As Sandra says in the epigraph to this article, women are "Like the truly invisible thread between the generation above and the generation below." Another interviewee expressed the idea of the invisible intergenerational thread as she described how she learned her land ethic from her grandfather, and how she hopes to pass on this sense of responsibility to her daughter.

*"My grandfather ... always said that that land isn't yours, the land is an inheritance you receive and your mission is to try to conserve it and improve it for those who come after. If my daughter wants to study veterinary studies, she should study veterinary studies, and if she wants to study physics, she should do what she wants, but yes she should learn to take care of [the land] to love it. I would like to think that my daughter a few years from now will learn, will be of an age to go with [the shepherd]. I do think of this and I like to think that she will get something from this. It seems beautiful to me and of course, it's our responsibility*

*to conserve it and when the next generation comes, if it's a bit better, if they get it in better condition than we did, onward. But it is a beautiful responsibility, it's not a bad responsibility, it's an inheritance that we must conserve."*

[Linda, Andalucía].

For some participants, this role was implicit—such as teaching children how to care for animals, instilling a sense of responsibility and affection for the animals and love of the work. As Lourdes mentions about her 12 year old son, *"He knows that he has to take the mares to drink and put the cows in the barn. And later on the weekend he helps me a lot around the house. But what I like about the rural world and raising livestock is that, the contact with the animals, because you become attached to them, after all."*

[Lourdes, Northwest]

Other women articulated an explicit goal of their operation as the conservation and transmission of traditional knowledge and practices. For example Carla, a stockgrower and educator who started "from zero," shared why she started a business focused on recuperating and transmitting traditional food conservation and preparation practices. *"What was our objective? .... Well, you saw that so much was being lost. .... The people stopped making preserves, they stopped making/doing a lot of things. Less and less. People didn't live in the countryside because the roads were better and everyone had a car. The farm manager didn't live on the farm. So all that culture of... what we produce has to last all year, well it was being lost. ... Before there was a culture of conserving [food] because it was the ancestral culture."*

[Carla, Andalucía]

Sandra (Andalucía) represented this idea as well, when she attended one of the workshops for participants. We invited participants to bring an object that represented their identity as a rural or stock-raising woman. Sandra brought with her the "masa madre" or dehydrated sourdough starter used to bake bread, and which was passed down in her family from her grandmother, to her mother, to her. She explained to the other participants how the starter could be rehydrated and used to leaven bread and that she continues to bake bread at home using traditional methods, and sharing these methods with her family and visitors.

### **3.1.2 Extensive Livestock Management Sector**

At the level of the livestock production sector, participants contributed to conservation of traditional land and herd management practices as well as conservation of rare and heritage livestock breeds. These actions may not be unique to women, but demonstrate the important, and in some cases growing role that women play in conserving traditions related to the sector. Transhumance, the repeated seasonal movement of herds between distinct seasonal pastures located in different

ecological and geographic regions, is a culturally and ecologically important practice that has declined significantly since the mid-late 20<sup>th</sup> century. Our sample included several women who practice transhumance, either as sole operators, jointly with their partners, or as the family member of a transhumant herder. Each of these women has played an important role in maintaining this practice in their family and region, and thus contributing to the overall viability and continuity of transhumance. One wife and mother of a transhumant herder described in an interview how she supported her husband during the moves early in their marriage and later, how she helped her son establish his own transhumant operation. Another young transhumant woman described how she never intended to become a herder, but when her father decided to retire and sell the sheep, she couldn't bare it. *"I never said, I want to be a ganadera, no. Or a veterinarian, or whatever. But perhaps because I thought they [the sheep] would be always be there. The moment that I realized they were going, they were leaving [to be sold], well I decided to keep them"* [Juana, Pyrenees]. She also described how she learned the transhumant route by accompanying her father when she was a child. Now, in addition to keeping the family herd, she continues the transhumant tradition. A workshop participant who is a transhumant described how she and her husband had helped their daughter start her own business and carry on the transhumant tradition.

Another important traditional practice was controlled or "artisanal" burning of shrubs in pastures, which shepherds did, one shrub at a time, to keep encroachment of woody plants in check (Fernandez-Gimenez and Fillat 2012). A participant from the mountains of northwestern Spain, where this type of burning was once common, complained about the public misperception of the practice. *"They call us delinquents because we burn. We burn because it is a management tool that has been used all our lives and the city people when they see a fire say, 'delinquents, the herders are burning,' and no, we are cleaning the mountains so the houses don't burn, because they are going to burn any day now because of the government's ill-conceived management,"* [Marina, Northwest]. Here, it wasn't clear if the interviewee herself participated in burning, but she was a vocal advocate for pastoralists' right to carry out this traditional practice.

A third example of women's contributions to the sector is their commitment to raising heritage and rare livestock breeds. While we don't know whether the proportion of women who do this is greater than the share of men, in our interview sample, at least 17 interviewees (59% percent of our sample) chose to raise local and/or rare breeds or were involved in an operation that did so, often at the expense of greater productivity of more commercial varieties. Some were deeply involved in recovery and conservation of a breed on the verge of extinction. One has become a leader in the breed association. In addition to contributing to biodiversity, locally adapted breeds may provide an important resource for future adaptation to climate change (Hoffmann 2010) and overall system resilience.

### 3.1.3 Societal level

At the societal level women play a key role in maintaining rural life and communities, which both support and depend upon extensive livestock production. To state the obvious, women are essential for the physical and social reproduction of rural society. Without women there can be no children, and rural women continue to do the majority of care-giving for both children and elders (Sayadi and Calatrava-Requena 2008, Elizalde-San Miguel and Diaz-Gandasegui 2016, Suarez-Ortega 2016, Lillo-Crespo and Riquelme 2018). As other research shows (see previous chapter of this report), the emigration of women from rural to urban spaces in Spain is not a new phenomenon, but dates back to the Franco dictatorship and the early decades of democracy, when many young women left villages to obtain work and/or an education. A few of them returned to marry and settle locally, but many did not. Thus, women who deliberately choose to remain, return or settle as newcomers in rural communities can play a critical role in the continuity of rural life and pastoral social-ecological systems. As one participant pointed out in her interview, women are often the critical decision-makers who determine whether a family will stay or leave a rural space. For this reason, she argues, it is important for women to take part meaningfully in extensive livestock production, including the management of pastures and the environment. *"It's not only making [women's work in livestock production] more visible, but also our point of view, which differs from that of men, not better or worse, as I said. But it has to be included in extensive livestock production, in pasture and environmental management. Because it's a funny thing. In any village where someone lives, [and] a family or someone from the village is leaving the village to live somewhere else, ... if the woman likes it [in the village], if in a family the woman says, 'I want to stay here,' the whole family will stay, eh. In general. In 8 out of 10 cases at least it's like that. So you see how important [women's perspectives] are"* [Sandra, Andalucía]. Part of what this participant seems to be saying is that when women are deeply engaged in the stewardship and care of the land, as well as animals and family, they develop an attachment to place that makes it more likely that they (and their families) will stay and fight for/contribute to a viable rural lifeway and economy.

In addition to women's roles in producing/reproducing family and community, at the societal level some participants actively work to share local knowledge and cultural traditions with a wider public audience, with the aim of increasing broader social awareness and appreciation of the biocultural diversity associated with traditional rural life and agriculture generally, and extensive livestock production specifically. Here, Sandra (Andalucía) describes her efforts along these lines. *"I also took on something that had been my dream always, and which my mother and grandmother inculcated in me, which is to demonstrate these traditions to people so they can live them, so that they [experience] them with their five senses and discover them and know them. If they know them, they won't forget them, and if they don't forget them, they won't be lost. So I also*

*do a route that are called The Ruta De S., which I registered with that name, but which has become the Ruta of the S. Lamb, so they remember the lamb more than me."*

[Sandra, Andalucía]

### **3.2 System Abandonment: Women's Roles in Rural Abandonment**

Nearly all the participants in this study live in small rural communities and their presence and activities are vital to the continuity of pastoral social-ecological systems in their respective regions. The "flip side of the coin" is that many of the participants, despite their personal dedication to rural life, are pessimistic about its future, and in various ways contribute to what they perceive as an inevitable decline.

#### **3.2.1 Local**

Most women want their children to have options, and they encourage them to finish school in order to have more choices for their future. As discussed earlier, some are pleased when their children choose to continue in the livestock business, others assert that they would of course support their children if they choose to continue, but they don't encourage them to make that choice. Still others actively discourage their children from staying in the business. Ana (Andalucía), a small-scale subsistence producer whose own entry into livestock husbandry came more from necessity than choice, was one of the most adamant participants on this point.

*"I am happy there is no passing on to the next generation. I don't want... I like it a lot but like L. said, you have to love it. It's a life you have to enter by choice not from obligation. So I gave my children the option to study and to choose a [different] life... And they haven't wanted the countryside and I am happy because it's a slavish life and for our children we want better things. At least that's what I think, and I think it's not a life, at least for now. I don't know about tomorrow [the future], if it's more organized, if with the cooperatives, with the prices of things. Let's see, I was paid for the wheat last week and they paid me 18 cents, which is shameful. I nearly didn't even cover my costs for the wheat. So I say, right now I say, I don't want this life for my children."*

[Ana, Andalucía]

Laura [Northwest], a cattle-breeder with a substantial operation, echoed this sentiment. Her nearly adult son wants to take over the operation, but she is reluctant. *"I don't want my son to continue with the cattle but if he wants it then so be it. I told him that next year I am going to retire, and transfer the cattle to him; you keep 40. I want him to keep studying and then if he wants to keep 40 or 50 and he wants to hire someone to take care of them, that's fine with me. I'd like the business to continue but I don't want this*

*occupation for him. I want him to see [be exposed to] other things, so he has a choice. My daughter from the beginning didn't like it, and she comes and helps me, because she comes and helps with the veterinarians, with the feeding, but she doesn't like it. My son does like it but I want him to have options and to see other things, other worlds."*

[Laura, Northwest]

Veronica [Northwest], a transhumant and co-owner of a large sheep operation reflected that her daughters' experiences helping their parents as children dissuaded them from any interest in following their parents' path. Further, while she would support anyone who asked for help, she would never encourage a young person to go into the business. *"I don't encourage anybody. My daughters were the first to whom I said, 'study because look at how hard this is.' Look, if one of them had wanted to continue of course I would have supported her. But I always said, 'you study and later you decide' and neither of them wanted it, no, no, no way. So, I don't know, any woman who wants to start I will support but I won't encourage anyone because, in the long term, as our generation passes, it will get more complicated and many people are discouraged."*

[Veronica, Northwest]

### **3.2.2 Sector**

At the level of the extensive livestock sector, women play a key role in abandonment of traditional practices. This is the "flip side of the coin" from their role as conservers. Echoing the voices of many male transhumants from another recent study (Fernández-Giménez 2019), Laura explains how she persuaded her husband to give up transhuming and to switch from sheep to cattle-raising when they started a family. *"We had known each other all our lives, from the fiestas, I knew him all my life, I saw him in the mountains because he did have sheep. He had no parents and he went to the mountains and was there for four months with his sheep there in the mountains. So what happened within two or three years of getting married we got rid of the sheep because he had to be in the mountains four or five months up in the mountains and me alone in the house. I had my little girl and it wasn't the plan because the husband five months in the mountains and you alone at home with a little kid then that isn't a family. Then, well the family too, you have to look after the family."*

[Laura, Northwest]

### **3.2.3 Societal**

Similarly, at the societal level, the masculinization of rural spaces is driven in part by women's decisions to leave (often encouraged by their mothers, as we saw in the section on household level abandonment), or to the reluctance of women from more urban areas to marry rural men/herders and settle in small and often isolated communities.

A cattle raiser and mother who wants her son to stay and continue the tradition acknowledged the difficulty of finding a spouse willing to move, and the challenges women who make such moves face. *"Man, that's the issue. All of it. And then, of course, let's see, a young woman who comes here, a girl who comes to the village, of course, let's see, it's not for everyone. It's certain that it will be difficult. You know? It's really difficult and you have to get used to it"*

[Rosa, Northwest]

Another pastoralist and mother articulates a fundamental tension between the work she and her husband must do to keep their operation going, and their ability to spend time with and raise their daughter. Marina sees women as fundamental to the future but the contradictions and tensions of women's roles as too great to ensure a future. Specifically, she argues that the lack of adequate schools and health facilities for children living at home in remote rural communities leads many women to persuade their families to abandon rural spaces for better-served locations in larger towns and cities.

*"I think this sums it up perfectly: without women there is no population replacement. And a woman, the most valuable for her, the most valuable thing she has is a child, and she is never going to consent to her child not being able to study, not having health services. Before having a child without education and health services, she will refuse to live in a rural setting and will go to the city. Because nothing is more important than your child. And then there are four of us hanging on here but we have had to give up our children. I have had to give up my daughter at 12 years old, right? I am not with my daughter. My daughter doesn't sleep at home every night. So, this, there are many women who are not willing to do this, and they leave. Without women, there is no population replacement in rural areas. There is a sentence that sums it up perfectly. Pastoralists in danger of extinction. But not only pastoralists, a way of life, an identity, a culture, a wisdom, the conservation of the natural world, the production of high quality food and everything surrounding agricultural production and all the biodiversity, because there are a ton of species that depend on livestock activity to live and survive. And I think that there is a clear word [for all of this]: pastoralists in danger of extinction."*

[Marina, Northwest]

### **3.3 System Transformation: Women as Innovators and Change-Agents**

Women are helping to adapt and transform extensive livestock production in Spain in various ways across multiple levels of social organization. Sometimes



women's innovations at the household level diffuse through communities leading to sector-level changes. In other instances participation in local or sector-level livestock organizations or networks scale up and out to national or international outreach and advocacy.

### 3.3.1 Local level

Women in our sample reported introducing a wide range of innovations at the household/enterprise level. Interestingly, even the oldest women in the sample, from 75 to 96 years old in 2018 when interviews were conducted, described how their actions and decisions changed the course of family livestock operations to capture greater convenience, efficiency, productivity and/or profitability. For example, one 75-year old woman who was a daughter, wife and mother of transhumant herders, described how she introduced new production systems, such as multiple lambing seasons per year, and infrastructure, like portable metal corrals (in the days before portable electric fencing), to increase profitability and ease of livestock handling. The eldest participant recounted how she and her husband completely changed the focus of their operation three times over her lifetime to adapt to changing market forces: from a chicken farm to a pig farm, and later from pigs to sheep. Her son eventually took over the semi-extensive sheep operation and it continues in the hands of her granddaughter and grandson today.

Other women described more recent innovations in daily activities like doctoring calves, as described by Nelda (Andalucia). *"I'll explain the invention, the invention is very simple. We go in the pick-up and normally there is a backpack for fumigating. We fill the pack with a little zotal and water and we put it in the middle and tie it down well and then [hired shepherd] grabs it and puts it in one hand and I sit behind throwing a little bit of grain. Then the cows stop to teat and [shepherd] turns the pick-up and he sprays [fumigates] them, he cures them from a distance. In this way we have been able to tread the less serious cases."*

Participants also described innovative methods for reducing environmental impacts. For example Marina from the Northwest, who raises certified organic beef, implemented a system of worm composting of barn waste (cattle and horse manure) that she claims reduces greenhouse gas emissions from manure, binds carbon, and provides a natural source of fertilizer for her fields. Others have revived or innovated agro-ecology practices like seeding and grazing leguminous cover crops under their almond or olive trees to increase soil nitrogen, decrease erosion, and provide additional forage for sheep; or planting native aromatic shrub species to attract pollinators.

Finally, women in our sample often took the lead in diversifying on-farm income streams by managing for multiple functions, like apiculture (bee hives and honey production) in addition to more traditional large livestock species (sheep, cattle,

horses and pigs). As well as adding new dimensions to the agricultural enterprise, several women developed rural or agri-tourism enterprises on their farms. The most common approach was opening a “*casa rural*” or rural holiday home. Several complemented the *casa rural* by offering other educational or interpretive activities like traditional food preparation workshops, family summer camps or guided tours of the local natural and cultural heritage. One innovative participant developed a “*be a stockgrower for a day*” experience for all sectors of the public. She constructed all of her barn and corral facilities to be wheelchair accessible and offers her experiences for groups of adults with physical and cognitive disabilities.

### 3.3.2 Sector

At the level of the extensive livestock production sector, participants reported taking part in scientific studies or experiments, experimenting with value-added processing and direct marketing, participating in or, increasingly, leading livestock and agricultural organizations, and joining networks of women producers (GeR, Ramaderas.cat, Ganaderas y Punto, Ganaderas Asturianas) to support each other and raise the visibility of women’s roles in the extensive livestock sector. Among these, perhaps one of the most critical areas of innovation for the future of the sector broadly is development of approaches to adding value to and marketing their products based on geographic location, conservation values of their production system, or the nutritional and quality characteristics associated with organic or extensive production systems. Isabel (Pyrenees) described how she participated in writing a grant to develop a meat cutting room (*sala de despiece*) in the nearby town that can be rented by any stockgrower to custom package their meat for direct marketing customers. *“So what we wanted was to give an added value to the product because of course, in the end we always sold the calves to the feeder. You see that you have a quality produce and no, you’re not making a profit. So well, it turned out that a group from here from X and Y counties, created a business incubator where there was a cutting room and so we saw there a kind of an opportunity to try. If it works, great, and if not we haven’t had to make a huge investment, because to create a cutting room it takes a large investment. So well, I presented the project to the Aragonese Institute of Development, in a program they had for entrepreneurs and they selected me. So well, the truth is it’s been really good because they taught us about the health regulations, marketing, a little of everything.”*

[Isabel, Pyrenees]

Lourdes, whose flocks graze in a national park, collaborated with a conservation NGO to market her family’s lamb under a locally-grown, pro-biodiversity branding and direct marketing strategy. According to the NGO, this strategy has led to increases in producer prices of 50-300% over the previous market price, without raising costs

to consumers in restaurants (<https://m.europapress.es/cantabria/noticia-lechazos-montanas-liebana-nueva-marca-calidad-ligada-conservacion-biodiversidad-20100408135927.html>). Lourdes is pleased with the result. *"We have been fighting to sell our lambs for years. We sold our lambs and we couldn't find. When cheap meat began to be imported into Spain, our lambs were worth the same as 30 years ago, very little money. And now, via the mediation of the [Environmental NGO], its an environmentalist association, logically. They want to introduce [endangered bird species] into these mountains and I loved it. For me, every time I come and I see the [bird] I call them because it makes me happy. The herders, far from wanting to destroy everything, burn, kill, it's not like that, you know? That's an ugly image. There are all kinds, like in everything, there are all kinds. And they [Environmental organization] are helping us sell our product directly to the consumer. So we have been doing this since last year and we are very happy because we sold at a price that covers the grain for the sheep, buying hay, for...Before we weren't making money and now with the help of these people. They are interested in having sheep so that when the sheep die the [bird] can eat their bones and we are interested in having someone give us a hand getting our product out there and in this case, the truth is we are very satisfied and very grateful to this Environmental organization."*

[Lourdes, Northwest]

Several of the participants hold leadership roles in a livestock organization, or have been recognized with prizes for their innovative or agro-ecological production systems. Although some women perceived that their participation was initially tokenized, and referred to themselves as "window-dressing" ("*florero*"), they earned the respect of their male peers who asked them to run for president. Nevertheless, women still report barriers to implementing innovation within traditional patriarchal local livestock associations. For example, in one workshop, a participant reported that the association president repeatedly dismissed her ideas as unrealistic. In another case, the participant, although invited to run for association leadership, felt that she lacked necessary legitimacy because she was not the legal owner (*titular*) of the operation she manages. Although we lack data specific to livestock organizations in Spain, we speculate that the trend of increasing women's participation, and especially, women's leadership in livestock sector organizations could support a transition to a more sustainable, just and equitable extensive livestock sector.

A third indicator of women's roles in transforming the extensive livestock sector is the recent rise of women producers' networks, facilitated by various social media and digital communication applications. To our knowledge, the first of these was Ganaderas en Red (GeR), founded in 2016 by a group of women pastoralists and women advocates for pastoralism, who were tired of attending meetings about the extensive livestock sector where women's perspectives and voices were not represented. One of the founding GeR members recounted her "aha" moment that contributed to the formation of GeR, "And I look around and I say, '*holy virgin and that place was*

*full, but full of men...hardly any women. That was when I said, 'let's see here, if we now have more possibilities than we have ever had, the woman, they open the doors for us so that we can be part of this and visible everywhere, if we are the ones responsible for opting not to participate, because there were only 3 of us, more of us could have come. Sometimes we get too comfortable [with the status quo]. Other times the husband won't let you, literally, or makes it really hard.'* [Sandra, Andalucía]

Since its genesis, with the support of the NGO Entretantos Foundation, GeR has grown to over 150 members across Spain, all women who are extensive livestock producers (and four non-producers who act as group facilitators). Several other groups have spun off from the initial network, including one specific to Catalunya (Ramaderas.cat), and another called Ganaderas y Punto. About 2/3 of our sample were members of GeR, as GeR assisted in identifying potential participants in our study. In the sector broadly, GeR has become a point organization for sector groups and the media who seek producer perspectives or speakers on extensive livestock production, with the result that women are more often consulted and represented in these fora. As important as GeR has been for increasing women's visibility and including their voices at the sector level, it has perhaps served an even more important role as a network of mutual support and knowledge exchange among women pastoralists across Spain. All the GeR participants interviewed mentioned GeR as an important source of information and support. For some especially isolated women, joining the network was life-changing. For many it has been profoundly empowering. For at least one, it was life-saving, when other network members helped her flee a violent domestic relationship, provided shelter and employment. Ana, who lives on an isolated subsistence farm, is a GeR member whose life has improved because of her participation. *"It opened a window to see that you are not alone. ... I've been here for many years but I haven't had any friends and now since I am part of [GeR], I call one or another of the GeR women every day. It's totally different. We all have a bit the same... It's that, that suddenly you meet people that have the same problems you do. The problem of being a pastoralist, which includes men and women, but the specific problem of being a woman. A woman and a pastoralist in this world, a completely masculine world."* (Ana, Andalucía)

### **3.3.3 Societal level**

At the broad level of Spanish society, the participants described contributing to social change in several ways. They advocate for school curricula that reconnect students with the realities and benefits of extensive livestock production as it relates to food production, high quality diets, and environmental stewardship. They participate in feminist environmental movements such as eco-feminism and feminist agro-ecology. Some engage politically as candidates for public office or advocates for specific policies; and others participate in social media campaigns to increase

the visibility of women producers and extensive livestock production to the wider Spanish, European and international society.

Several participants reported visiting local schools to talk with children and youth about extensive livestock production and the environment. Many more recounted troubling interactions with teachers or their own children perpetuating what they perceived to be inaccurate information about livestock impacts based on the inappropriate conflation of intensive industrial animal agriculture and extensive livestock production. The goal of developing curricula on extensive livestock production for different school levels emerged from the workshops as a key strategy that GeR plans to pursue. In addition to educating school children through formal curricula, the tours of the farm or of the local area that some women pursue as a means of educating a broader public about the ecological and cultural value of extensive livestock production, provide another example educational outreach activities.

Some participants articulated clear identities as feminists engaged in local, regional or national ecofeminist or feminist agro-ecology movements. While these participants were in the minority, their political consciousness and activism represents a contribution to social change at the societal level. As one participant reflected, *"It's what I say, here the men see feminism like we want more than they have, but that's not what we want. What we are looking for is equality, not to be more but rather to be equal and to be better, but not to be more."* [Ana, Andalucía]. Sandra (Andalucía) reflected on the mechanisms through which patriarchy maintains dominance in society, by playing on women's insecurities. She gave the following advice to women who aspire to become pastoralists. *"Well I would tell them that, more than anything as women in general, what the patriarchy has really done is to instill in us insecurity. I think that is the patriarchy's best weapon to maintain everything exactly as it is. Although I am also an insecure person. Very advanced in some things and very insecure in others. So they should work very hard and be sure of themselves, because if you have that [self-confidence] you will get ahead for sure."* [Sandra, Andalucía] This feminist consciousness is not yet widespread among the participants, however, and some perceived a danger of "over-empowered women," and emphasized that men are essential partners in their operations and in the sector. For example, one interviewee said, *"In any case, all this about women, it's possible that we have gone from being completely invisible to being too visible. We also have to take care. There's a point beyond which we mustn't go because we can't be saying all day 'the women, the women, the women.' Because here, the women without the men are nothing. Do you understand? We have to be careful."* [Rosa, Northwest]

A few of the participants have sought to change policies by engaging in political advocacy in regional, national and European Union levels. One participant successfully ran for political office at the level of the autonomous region on a platform

of “rescuing rural life” by fighting depopulation and bringing needed resources and support to the “primary industries” including extensive livestock production, fisheries and forestry. At least one other ran for local office at the level of her village. Several others have spoken to regional and international delegations (e.g. EU Commission) on issues related to extensive livestock production and environmental subsidies. Another participant and GeR member was an invited speaker at the scientific conference of the Spanish Society for the Study of Pastures (SEP) in 2019.

In an era when social media has gained disproportionate influence on public opinion, women pastoralists are taking advantage of these platforms to highlight their roles in livestock husbandry and advocate for their sector. GeR, specifically, has gained a large social media following, due in part to a catchy video the organization created and posted in 2018, featuring a re-writing and performance by various GeR members of the summer hit song “Despacito,” which at this writing had 356,000 views. When we explained our research to acquaintances and contacts in Spain, including those with no connection to the rural or livestock sectors, almost all of them asked if we had heard about this new network of women pastoralists.

### **3.4 Synthesis: Tensions, Contradictions, and Synergies in Women’s Roles**

Are women pastoralists the invisible thread that stitches new knowledge to old, passing on a complex patchwork of cultural and ecological values, knowledge and practices? Do they lead the exodus from rural spaces? Or do women unravel and reweave the fabric of rural society into something new? Our interviews and workshop discussions suggest that the answer to all of these questions is yes—revealing fundamental tensions and contradictions in women’s roles within pastoral social-ecological systems in rural Spain. The results in the previous sections highlight how the tensions and contradictions among women’s roles in conservation, abandonment, and transformation of rural livestock-based social-ecological systems manifest at multiple levels—within individual women, families, operations and communities; in the livestock sector; and in rural society broadly. A key question for this synthesis is whether and how these tensions are managed or resolved, and what this means for the continuity of these social-ecological systems.

At the household/family and operational level our findings highlight a significant trade-off between conservation or innovation and abandonment, and an important synergy between conservation and transformation/innovation. An example of the trade-off is the way that Victoria’s commitment to maintaining transhumance contributed to her daughters’ decisions not to continue in the livestock business. Similarly, Marina’s achievements building a highly diversified, innovative and profitable livestock and tourism business came at the expense of keeping her own adolescent daughter at home. In both these examples, the women’s dedication to

their work and business in the present came at the cost of future intergenerational continuity of the operation and transfer of traditional knowledge, values and practices. In contrast, the narratives of Sandra and Carla point to synergies between conservation and innovation, in which traditional practices and culture become the basis for new enterprises and educational efforts that seek to add value and increase household income, while building social awareness and support for extensive livestock production systems. Victoria and Marina both live in the remote and sparsely populated northwest of Spain, while Sandra and Carla are from Andalucía, where the socio-demographic situation and closeness to urban settings entail greater opportunities. Other interviewees also perceived synergies or compatibility between women's roles in conservation and transformation. As one of the younger interviewees opined, *"I think it's possible to combine the two. Really I do. In truth, the more ancestral tradition and knowledge that comes from multiple generations of women, it's more in... It's probably not in whether I graze this pasture first, or tomorrow, or in a week, or when it's a new moon or an old moon, but rather in how we relate to the animals, to the products, to the things that... Probably the innovation goes much more for making life more comfortable in terms of management, and I think that the wisdom and all the knowledge are much more around everything that goes on the farmstead."* [Erika, Catalunya] The practical and policy question is what strategies and policies can mitigate the trade-offs and leverage the synergies to support women's active engagement in conservation and innovation in ways that do not undermine family relationships and intergenerational transfer?

At the level of the extensive livestock production sector, women contribute to both the continuity and abandonment of key practices like transhumance. Some participants are leading social and business entrepreneurs and emerging political leaders. While more women participate in and take on leadership titles in formal organizations, they also continue to experience significant barriers to meaningful leadership positions and to implementation of innovative practices and policies within formal livestock organizations. One participant observed that women's participation in women-only pastoralist networks such as GeR and Ramaderas.cat provides much-needed mutual support, empowerment and information exchange opportunities for women, but also means that women may participate less in more traditional male-dominated mixed-gender forums and organizations, which need women's participation to become more inclusive and innovative. Participating in both adds to the multiple burdens that women already bear for care-giving, household tasks, livestock and land management and engagement in community and sector organizations.

At the societal level, women's decisions about education and profession, marriage, childbearing and childrearing, and residence, all strongly influence and perhaps even drive social and demographic trends, including rural depopulation, on

the one hand, and neo-rural (new peasantries) re-settlement movements on the other. Key considerations and concerns of the women participants included the quality, availability and accessibility of social services like education, health-care, and support for special-needs children; social isolation and availability of local social networks (face-to-face and virtual); and adapting to rural agricultural lifestyles (for those with more urban upbringings). Interviews and workshop discussions foregrounded one tension and one contradiction. The tension relates to the way that women's bodies, care-giving and house-keeping work are instrumentalized in discussions of rural depopulation/repopulation, such that women are socially valued primarily for their roles in biological and social reproduction in rural spaces. Younger women, single women and neo-rural women interviewees are especially sensitive to and affected by this discourse and dynamic, especially if they do not intend to have children. Such instrumentalization may affect not only women's self-concept, self-esteem, and attitudes towards rural life, but also has direct practical effects of excluding single women without children from entering the industry and repopulating villages. An example within our sample is María (Pyrenees), a 40-year old single woman in the process of incorporating as a livestock producer, who experienced discrimination from multiple government offices that another interviewee who was married with two young children and incorporating as a sole operator in the same village did not experience.

The contradiction/tension relates to the differential treatment and attitudes of and towards new-rural women and women from traditional rural agricultural backgrounds. Neo-rural women often come to the countryside seeking a more tranquil and grounded quality of life and context for child-rearing compared to their urban origins, and more frequently articulate specific ideological motivations related to the agro-ecology and food sovereignty movements. In contrast, women from traditional rural agricultural backgrounds reference the endless workload of livestock production (using the Spanish adjective "esclavo" or slave-like), and prefer that their children have the option to choose a different occupation. An additional layer of contradiction occurs when established pastoralists ostracize, discourage or express skepticism about new-rural pastoralists, even when the latter contribute in multiple ways to mitigating rural depopulation and land abandonment, and innovating land management and livestock business practices. In this study, we observed that GeR and similar organizations may help facilitate relationship-building, mutual support, and knowledge-sharing among women of different backgrounds and political ideologies, helping to resolve this contradiction.

#### 4. Conclusions and Implications

Women play diverse and key roles in conserving, transforming and abandoning Spanish pastoral social-ecological systems, highlighting important contradictions, trade-offs and tensions in these roles, as well as potential synergies, with implications for the future continuity and resilience of extensive livestock production and rural communities. Although our focus is on the present, the inclusion in our sample of older women shows that women's contributions to conservation and innovation in extensive livestock production are not new, but have evolved and shifted over several generations. In our sample, women who came of age and spent most of their working lives under the Franco dictatorship drove innovations at the enterprise and community scales, and played critical roles in conserving family livestock lineages, enterprises, and traditional practices. Some of the younger and middle-aged women in our sample take an active role in the sector and societal levels, seeking to transform the industry and governance, while conserving extensive pastoralism as a lifeway and land use. These participants have collaborated with various conservation and environmental NGOs, especially groups that support emerging alliances between extensive livestock farmers and conservation interests (including, among others, Asociación Trashumancia y Naturaleza, which has sponsored women pastoralists to attend EU Commission meetings and funded this research, and Fundación Entretantos, which facilitates the GeR network). We speculate that the growing presence of women leaders in conservation organizations may indirectly contribute to empowerment of women pastoralists via these types of cross-sectoral collaborations. The unique and innovative past and current contributions of women pastoralists to conserving and transforming systems should be recognized and valued beyond women's roles in biological reproduction and care-giving that stem rural depopulation.

To leverage women's ideas and energies for transformative change and long-term sustainability of rural landscapes and communities, women's genuine participation and power within livestock and agricultural organizations must be increased. However, to assume these and other roles as change-agents, pastoralist women and families need greater support to offset the triple or quadruple burden that women bear. Further, women who enter livestock production as new-rurals, from non-livestock backgrounds, or as single women, need greater support (and less discrimination) from government, the livestock sector and other pastoralists (including other women). Farmer-to-farmer peer networks and bottom-up strategies for mutual support, which are proving powerful in Latin America, could be more widely implemented in Spain and other parts of Europe, where the farming sector is frequently accused of being over-dependent on institutional support.

Several implications for policy and future investments arise from this analysis and from the women in our workshops. Government administration at local, regional

and national levels can support women's roles as tradition-keepers and change-agents by: 1) maintaining and enhancing public services in rural areas, especially schools, health care and cell phone/internet coverage; 2) rehabilitating or subsidizing housing for pastoral women and families in rural villages; and 3) providing opportunities for professional development and training targeted to women pastoralists' needs and interests, such as training in value-added processing and direct marketing. Other measures that would help women to overcome the tensions and contradictions in their roles include providing respite support for pastoral women/families that enable them to take occasional days off or family trips together. Women in the workshops reported that France has a program to provide "substitute herders" so that pastoralists can attend family events or take holidays together. This type of occasional support would also enable women to participate more actively in mutual support networks and livestock organizations. Overall, the major thrust of the changes women called for focused on increasing the visibility, empowerment, participation and connections among pastoralist women. Women sought to use these emerging and strengthened capacities to: 1) reform formal elementary and secondary education about agriculture and environment; 2) communicate more effectively and directly with decision-makers, especially at the level of autonomous regions, to influence policies that affect women specifically and extensive livestock production more broadly; and 3) influence public awareness of and appreciation for extensive livestock production. These goals speak to the broad priorities that women hold, all of which aim to support the extensive livestock sector and rural communities more generally—women, men, children and families. Women's prioritization of community- and sector-level benefits over individual gains or profitability underscore the critical role that women must play in the future of pastoral social-ecological systems in Spain.



## APPENDIX: ARTICLES INCLUDED IN SYSTEMATIC REVIEW

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