Milking in the global economy
Mexican women dairy farmers’ experiences of trade liberalisation and the sexual division of labour

A thesis submitted for the degree of Doctor of Philosophy of The Australian National University by Rosa Noemí Moreno Ramos

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I state this thesis has not been submitted before to any institution for the award of any other degree or qualification. The text is my own original work unless where due reference is made.

Rosa Noemí Moreno Ramos

April, 2019
Dedication

I dedicate this thesis to my mother, Rosa María Ramos Beas, and to my father, Manuel Moreno Castañeda, because their love, encouragement and support planted in me the seeds for action and nurtured the roots that secure my way.
Acknowledgments

I am indebted to the University of Guadalajara for providing me with the facilities to accomplish this study and to the Secretariat of Public Education of Mexico (SEP) that, through the Program for Teachers’ Professional Development (PRODEP), granted me the scholarship with which I could enrol and complete the doctorate program.

I thank the Australian National University for the opportunity of learning from experienced scholars and amazing PhD fellows, and especially for granting me the HDR Fee Remission Merit Scholarship.

My gratitude to Dr Patrick Kilby, chair of the panel, for his academic guidance, confidence in and support of me so I could make the most of my experience as an international student. Special recognition to my secondary supervisor, Dr María Teresa Fernández Aceves, for her commitment in reviewing my progress and her wise recommendations.

I am totally grateful to the women protagonists of this story. They shared their time to answer my questions, their houses to talk and drink coffee, and their cowsheds to show me their knowledge and experiences (and to try to teach me how to milk). Their wisdom and modesty broke my researcher paradigm and taught me to let the ‘anthropological other’ aside to focus on the ‘us’, in ‘nosotras’ (the feminine plural in Spanish) that inspired me to find what unites us as women. Special recognition to Georgina Jiménez, woman, mother, milk producer and friend, who was a key player in my fieldwork, and also to Benjamín González, who introduced me to the first informants and was also crucial in the field work. Particular thanks to Susana and Araceli, who became friends of mine in the field and have continued their friendship, and to the children, partners and parents of the female informants who also gave me part of their time and were willing to share their knowledge with me. My thanks also to Andrea Victoria García Arriaga for her assistance in the two focus groups and to Paulina Villa Moreno for helping to order the data from interviews.

I thank my mother and father, who together have been a pillar in my life. Their love, drive and support were crucial for me to complete the thesis and be ready for each stage of my studies. I thank my siblings and in-laws, Tonatiuh, Ramsés, Mayra, Tania, Cuauhtémoc, Margarita, Hee-eun and Eduard, who have always been examples of living and given invaluable backing. Cuauh, Heeny, Diego and the Yeo family, thanks to you because your closeness was fundamental for me to be inspired and encouraged. To my daughter, Valeria, who accompanied me on this journey and was the perfect partner during fieldwork, I thank you for your love and understanding. We know what it meant to distance yourself from Mexico.
All my love to my friends who showed me that an ocean is no reason for distance and to the amazing people who backed my steps in Australia. Amie, Alicia, Alma, Angélica, Bruma, Danijela, Elba, Fina, Grant, Ibarí, Jenny, Kylie, Laura, Leonie and little Koco, Linda, Tania, Sergio, Silvia and Vero – thanks for your love, advice and support.

I thank my workmates at the University of Guadalajara for their support and fellowship. Thanks also to the staff at CASS, especially Lan Tran and David McGregor, for their assistance.

All my gratitude to Leanne Pattison, a professional editor in Canberra, for her careful and detailed copyediting. I am grateful to Margarita Ascencio for her detailed formatting work and Hugo Moreno for his assistance with that task. I also thank María Rodríguez, Mexican editor, for her help in formatting and reviewing, Tonatiuh Moreno for elaborating graphics and Celio Rivera for drawing the maps.
Abstract

This ethnographic study investigates female labour in family dairy farms in western Mexico. The central goal is to describe the work experiences of women dairy farmers within a context of expanding economic globalisation. Through this investigation, I pursue empirical evidence regarding women's contributions to food production and the sexual division of labour in agriculture. The term ‘woman dairy farmer’ is defined here as a woman working on a dairy farm, whether she works in a waged or unwaged labour organisation.

The study attempts to answer the question: how do women dairy farmers in Mexico experience global capitalism and the sexual division of labour? It does this by looking at their understanding of global food-production guidelines, the organisation of work within households and the social and economic contribution of female labour in the context of the milk industry.

Dairy farming families in Los Altos de Jalisco (Jalisco Highlands), in west-central Mexico, have a significant role in the agricultural production that leads the region to hold a pre-eminent position in the production of milk in Mexico. Trade liberalisation policies during the 1980s introduced farming families to international market challenges that required socio-cultural adjustments throughout the production chain. Nowadays, they face market instability evidenced by frequent changes in the price of milk and cereals, as well as quality and safety standards requirements resulting in economic and social challenges for families. For women, a lack of time and access to resources persist due to strict gender norms that place housework and caring responsibilities in the female realm.

This work is the result of one year of fieldwork in six of the 20 municipalities of Los Altos de Jalisco (Jalisco Highlands). In this region, the family farm type of organisation dominates cow-milk production, as each household usually controls its dairy, labour, land, water and capital.

The ethnographic study consisted of in-depth interviews with 71 adult participants: 54 women of family dairy farms, seven women working for a wage on others’ dairy farms, five male dairy farmers, two intermediaries, and three cattle association representatives. The interviews resulted in information regarding 32 dairy farms ranging from small to semi-specialised, and I made participant observation in 26 of them. I conducted three focus groups, two with women dairy farmers whom I had interviewed during fieldwork and one with new female participants.
The empirical findings in this study contribute to understanding the sexual division of labour in agriculture and to illuminating the significance of female labour in the process of capital accumulation. The results provide evidence concerning hierarchical arrangements that maintain the devaluation of women’s work: allocation of tasks in dairy households remain gender specific following conventions about age-appropriate skills and ‘masculine’ and ‘feminine’ attributes. The thesis also shows transformations regarding gender relationships and the strategies of women to achieve personal and family well-being amid economic pressures, time, and social expectations built on current gender norms in their local contexts.

The global dairy market influences the household’s economics but has limited power over its functioning and everyday life. As active agents historically situated, male and female dairy farmers reproduce features of patriarchy and contribute to the accumulation of capital but also appropriate and transform concepts and rules through a process that combines tradition, knowledge, innovation, values and political culture. All those elements allow farmers to seize opportunities and to face family and economic challenges.

Considering the confluence of the globalised economy and the sexual division of labour, I argue that women dairy farmers’ work is the object of a two-fold devaluation of female (reproductive, unpaid) activities and of local traditional farming which in the State and industry’s discourse is portrayed as outdated.
<table>
<thead>
<tr>
<th>Acronyms</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASERCA</td>
<td>Board of Services for the Marketing and Development of Agricultural Markets (Agencia de Servicios a la Comercialización y Desarrollo de Mercados Agropecuarios)</td>
</tr>
<tr>
<td>CANILEC</td>
<td>National Chamber of Milk Industrialists (Cámara Nacional de Industriales de la Leche)</td>
</tr>
<tr>
<td>CECOOPAL</td>
<td>Cooperative Dairy Center of Los Altos (Centro Cooperativo Lechero de los Altos S.C.L.)</td>
</tr>
<tr>
<td>CSW</td>
<td>Commission on the Status of Women of the United Nations</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>USDA-FAS</td>
<td>Foreign Agricultural Service of the United States Department of Agriculture</td>
</tr>
<tr>
<td>GAD</td>
<td>Gender and Development</td>
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<tr>
<td>GATT</td>
<td>General Agreement on Tariffs and Trade</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
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<td>IFCN</td>
<td>International Farm Comparison Network</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>INEGI</td>
<td>National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía)</td>
</tr>
<tr>
<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
</tr>
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<td>NDDB</td>
<td>National Dairy Development Board, India</td>
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<td>NTAE</td>
<td>Non-traditional agricultural exports</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OEIDRUS</td>
<td>State Information Office for Sustainable Rural Development (Oficina Estatal de Información para el Desarrollo Rural Sustentable)</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Name</td>
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<tr>
<td>PROLEA</td>
<td>Milk Producers of Acatic, Jalisco (Productores de Leche de Acatic S.C.L.)</td>
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<tr>
<td>PROCAMPO</td>
<td>Program of Direct Agricultural Supports (Programa de Apoyos Directos al Campo)</td>
</tr>
<tr>
<td>SAGARPA</td>
<td>Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (Secretaría de Agricultura, Ganadería, Desarrollo Rura, Pesca y Alimentación)</td>
</tr>
<tr>
<td>SEDER</td>
<td>Secretary of Rural Development (Secretaría de Desarrollo Rural)</td>
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<tr>
<td>SEIJAL</td>
<td>Jalisco State Information System (Sistema Estatal de Información Jalisco)</td>
</tr>
<tr>
<td>SIAP</td>
<td>Agrifood and Fisheries Information Service (Servicio de Información Agroalimentaria y Pesquera)</td>
</tr>
<tr>
<td>TTP</td>
<td>Transatlantic Trade and Investment Partnership</td>
</tr>
<tr>
<td>UCCA</td>
<td>Union of Cooperatives of Los Altos (Unión de Cooperativas de Consumo Alteñas S.C. of R.L.)</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>UNWOMEN</td>
<td>United Nations Entity for Gender Equality and the Empowerment of Women</td>
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<td>WAD</td>
<td>Women and Development</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<td>WID</td>
<td>Women in Development</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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Glossary of Spanish terms

**Agrarista**
Relates to the social movement that emerged during the Mexican Revolution in which the peasantry fought for a just distribution of land. They were called agraristas and, during the Cristero War, participated against the Cristeros.

**Alteño/alteña**
A substantive that names people who were born in Los Altos de Jalisco, or an adjective indicating what is representative of that region.

**Arriero**
Muleteer

**Avecindada/Avecindado**
Adults who have resided for a year or more on ejido lands

**Charrería**
Mexican sport of roping and riding in which teams compete in nine different exercises of skills and manoeuvres

**Charro**
Mexican horseman from the central western regions in Mexico, usually wearing an elaborate outfit

**Ejido**
Portion of land owned by a Mexican and used by a community that distributes it among its members, named ejidatarios. This legal entity was institutionalised after the Mexican Revolution and is the form of land tenure that covers the largest area in the Mexican countryside.

**Ganadero**
Cattle farmer

**Guerra Cristera**
Armed conflict in Mexico 1926–1929 between the government and Catholic religious militias, named Cristeros, which resisted the legislation aimed at limiting the participation of the Catholic Church in the ownership of land and in civil procedures. The conflict was particularly strong in the states of Aguascalientes, Guanajuato and Jalisco.
Hacienda
Large farm with high agricultural productivity that used the labour force of peones, the farmers who lived permanently in the hacienda. In Mexico, these farms existed between the 17th century and the 20th century.

Jalisciense
Relating to the state of Jalisco

Lechería
Dairy industry

Los Altos de Jalisco
The highlands of the Jalisco state in Mexico

Maquiladora
An assembly industry that processed tariff-free imported materials. In Mexico, three-quarters of maquiladoras are in the northern border states and focus on the automotive, electrical and textile industries.

Ranchero/ranchera
Relating to the ‘rancho’: it can be a person or a characteristic of an object or a behaviour.

Rancho
Small property dedicated to livestock and agriculture. In Mexico, ranchos are between 100 and 1,000 hectares.

Tanques Lecheros
State program aiming to increase collective dairy tanks
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Chapter 1. Introduction

Gabriela gets out of bed at 5.30 a.m., dresses and prepares coffee for her husband. Before 6.00, she wakes her 13-year old and 12-year old male children. The daughter, 15, and the little boys of 8 and 3 are still asleep. The sky is a mixture of grey, orange and blue that poorly illuminates the dairy. Chickens sleep on the ground, and pigeons do the same standing on the beam that supports the ceiling. The boys seem to be asleep. Gabriela turns the radio on, cleans the feeders and pours the cows’ food into them from an eight-litre container filled with pasture, half of it stubble. Meanwhile, the children clean the hoses and the milking machines.

Once the food is on the feeder racks, the youngest boy approaches the paddock fence, opens the door and calls the first seven cows by name. He is also responsible for driving the animals out of the shed after the milking, feeding the calves in the nearby corral, and loading the water to wash the buckets and milking machines. Gabriela uses one of the two portable milking machines and her eldest son the other one. Before milking, they inspect and wash the cows’ udders with water and chlorine, then they attach the machines’ nipples to the cows’ teats and take care that they do not get detached. After about 15 minutes, the milk stops flowing, and they move the machine from one cow to another. Then they milk the cows by hand and squeeze out the remaining milk to reduce the risk of mastitis.

The milk flows into the dairy cans from the milking machines, and then Gabriela and her son pour the milk into 40-litre containers. Then they apply a sealer on the udders to prevent infections. At 7.30, the family finishes the morning milking. Gabriela prepares breakfast while the children dress to go to school. She serves beans, tortillas and milk. She stays at home with her youngest son. She cleans the house, makes beds, washes dishes, sweeps, mops, and does the washing. Some days, she would attend parent meetings in the children’s schools and leave the domestic work for the afternoon. The second milking of the day starts at 4.00 p.m. and they repeat the process. About 8 o’clock at night, Gabriela heats the fried beans for dinner. Her husband returns from work and, after feeding the children, she sits at the table. That is the time to speak about the family, the household expenditures and the business.

The narrative above illustrates a day in the life of one of the hundreds of women working in the dairy industry in Los Altos de Jalisco. Dairy farming families have a significant role in the agricultural productivity that leads Los Altos to hold a pre-eminent position in the production of milk in Mexico. Trade liberalisation policies starting in Mexico during the 1980s introduced farming families to international market challenges that
required socio-cultural adjustments throughout the production chain. Now they face market instability evidenced by frequent changes in the price of milk and cereals, as well as quality and safety standards requirements resulting in economic and social challenges for families. For women, there are also the lack of resources and time constraints added to their traditional work burden as they respond to these changes. These burdens are added ones due to strict gender norms of housework and caring responsibilities being still in the female realm.

In the Mexican dairy industry, women play a critical social reproduction role in the local and global economy. They work in the family farms, milking either for self-consumption or for the local or national dairy market, or as employees in food industries. My thesis is about them: women dairy farmers and their experiences of work within a context of expanding economic globalisation and a perpetuation of the sexual division of labour.

The term ‘woman dairy farmer’ is defined here as a woman working on a dairy farm. Even when the thesis focuses on the unpaid work of women milking on family farms which produce milk for the market as well as for home household consumption, I also include in the term ‘woman dairy farmer’ the women who work on dairy farms for a salary because it is also their primary source of income and because the low wages also contribute to the accumulation of capital.

In the present chapter, I will introduce the thesis, giving an overview of the context and the rationale of the problem. I start by describing the setting, Los Altos de Jalisco, focusing on the dairy tradition which is increasingly linked to the global economy. The next section describes the objectives and questions of the research, situating the topic in the rural gender studies debates. Then there is an explanation of the interpretative framework of the study by explaining the use of feminist standpoint theory and feminist economics to understand the sexual division of labour in agricultural contexts and how the nature of global capitalism contributes to understanding global-local relations. There follows an analysis regarding the scope of the study, outlining the key arguments and limitations. The section concludes with an outline of the thesis structure.

1.1. Los Altos de Jalisco

I chose Los Altos de Jalisco as the scope of the study because of: a) the significant position of dairy activity in shaping the regional economy and culture, b) the link of

1. For this study, I refer to ‘Los Altos de Jalisco’, integrating both zones (Los Altos Norte and Los Altos Sur). Also, I will use the term alteño to name the people who were born in Los Altos de Jalisco, and as an adjective indicating what is representative from the region.
the regional milk industry with the global dairy market, and c) the dependence of dairy production on family farming. Those characteristics make the region a suitable location to study the main subjects of this research, namely, the influence of the free market on the local practices of agricultural production, women’s lived experiences of work, and the contribution of female labour to the economy in the family, local and global realm.

Los Altos de Jalisco, is a region that has been studied for several decades by various disciplines due to its particular historical characteristics. Pioneering investigations on the region were the books *Arandas: a Spanish-Mexican village* published in 1933 by Paul S. Taylor, *La Cristiada* written by Jean Meyer in 1973, and Noelle Demyc’s article ‘The space organization in Los Altos de Jalisco’ published in 1973 (Icazuriaga, Fábregas, & Cabrales 2002). Andrés Fábregas (1983) led one of the most important researches in the 1970s. The contribution of the anthropologists working in this project was the focus on a little-known region of Mexico, taking into account the complex historical relationship between local and national structures. The fieldwork in Los Altos, as Icazuriaga, Fábregas, and Cabrales (2002) explain, allowed the discovery of a social actor, namely, the ‘rancher’, a character different from the peasant who had been the object of traditional anthropological studies. As Fábregas explains, the analysis of the Altos de Jalisco as a ranchera culture allowed a glimpse of the plurality of the country and the role of livestock on small properties, as well as an analysis of the concept of the frontier in colonial history, used as a strategy by the Spanish government for the establishment of territorios (Fábregas, 2003).

The publications derived from that study are pioneers in the regional analysis of Mexico, and especially important for the understanding of the social, economic and cultural conformation of Los Altos de Jalisco. One of the results, the book *La formación histórica de una región* (The historical formation of a region), published by Fábregas in 1983, reconstructs the economic and cultural conformation of the region and confronts the centralist vision of the configuration of Mexico to show a political, ideological and cultural plurality.

Guillermo de la Peña stated that Los Altos de Jalisco is one of the areas of Mexico that presents a more pronounced regional consciousness, manifested in an abundant and proud folklore (De la Peña, 1981). Following this idea, the approach of recent studies (Gilabert & Camarena, 2004; Hernández-López, 2013; López, 2008) to the Jalisco

2. The team of researchers was composed of Andrés Fábregas, Patricia de Leonard, Jaime Espines, Tomás Martínez, Leticia Gándara, Virginia García Acosta, María Antonieta Gallart and Carmen Icazuriaga.
Highlands shows it as a regional economy and culture, a social dynamic which relies on the organisation of production, land tenure, religion and ideology.

Los Altos (Highlands) is a region located in the state of Jalisco in western Mexico. Jalisco constitutes about of Statistics and Geography [INEGI], 2014). Most of Jalisco’s land is rural and the state is prominent for its agricultural vocation among the 32 Mexican federal entities. The Jalisco Highlands have historically been recognised as a specific region due to the geographical and cultural features, which transcend the administrative state borders. The state regionalisation divided the zone into two regions, Altos Norte (North Highlands) and Altos Sur (South Highlands).

Map 1. Location of Los Altos de Jalisco

The Jalisco Highlands have an average altitude of two thousand metres above sea level and include a territory of 15,158 km² (INEGI, 2015). The region is on a plateau made up mainly of flatlands that cover almost 70% of the prevailing limestone terrain. The few natural pastures have been largely replaced by extensive cattle ranching, which relies on artificial grasslands (Icazuriaga, Fábregas & Cabrales, 2002, p. 37). The hydrographical basins Río Verde-Grande and Río Lerma-Salamanca irrigate the dry soils of the Jalisco Highlands. The Río Verde (Green River) channel is comprised of valleys with terraces corresponding to the most fertile part of the area. Most channels are seasonal or rain-dependent. Hence, the main hydrological resource of the region is the water of dams and ponds (Naturalista, 2015).

Along with the soil’s slow permeability, the intermittent valleys cause water runoff to the rivers (López, 2008), making the development of agriculture difficult. However, these characteristics are not similar throughout the region. There are fertile areas along the Río Verde and forest zones in the higher areas. The aridity is more perceptible as one moves from the state capital to the higher lands. Therefore, from Tepatitlán to Encarnación de Díaz, the landscape becomes increasingly dry and the soil less productive.

4. The dominant vegetation in the lower terrains is usually a species of Acacia farnesiana (mostly huizaches), Prosopis (mesquites) and Cactaceae, whereas coniferous and pine-oak forest prevail in the higher lands.
The link with the land and the hard work to make an arid land productive is an essential part of the culture of the people of Los Altos. According to Fábregas, the topographical and climatic challenges for irrigation make agricultural and livestock exploitation subject to seasonal instability. Such circumstances keep cattle farmers in a state of almost permanent anxiety (Fábregas 1986, p. 27). The novelist of the Jalisco Highlands, Agustín Yáñez (1904—1980), accurately illustrates this interaction in his book *The lean lands*:

> It was the dead season of the year, especially trying at the beginning, the season that stretches from harvest to seed time in the lean lands, which are wholly dependent on the rainy season [...] Neighbours leaving the region, the farms abandoned. The desolation of the land. The tragic splendour of the sun over eroded fields. The shadows of the rare passers-by moving alone as souls in torment. The desolation of huisaches and cactuses. (Yáñez, 1968, p. 23)

Since the colonial period (1541-1821), tenacity in agricultural work has improved the productivity and economic development of the region. The first Europeans arriving in the region adapted to the poor terrain by developing rain-fed farming and livestock activity.

*Image 1. Rural roads in Los Altos de Jalisco*
Agriculture

The state of Jalisco participates significantly in the agricultural production of the country, contributing 12% of the national Gross Domestic Product of the primary sector (IEEG, 2017). There is a trending increase in paid agricultural jobs due to the growth of agricultural export industries. For example, from January 2018 to January 2019, jobs in the primary sector increased by 8.5%, higher than other economic sectors (IEEG, 2019).

Agricultural activities in Los Altos perform a predominant role in the regional economy. In 2015, 7,152 people, 47% of the total population, were registered as engaged in agricultural activities. The value of agricultural production during that year represented 14% of the state value and 7% of the national one. In the same period, Los Altos produced 64% of the total state value of livestock and 17% of the total crop value.

![Figure 1. Jalisco’s GDP, 2015](source)

Source: (IEEG, 2017)

<table>
<thead>
<tr>
<th>Livestock</th>
<th>Crops</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>382,462,270</td>
<td>100%</td>
</tr>
<tr>
<td>Jalisco</td>
<td>73,332,592</td>
<td>19%</td>
</tr>
<tr>
<td>Los Altos</td>
<td>47,146,081</td>
<td>12%</td>
</tr>
</tbody>
</table>

Source: Anuarios Estadísticos (OEIDRUS, 2015a, 2015b)
Figure 2. Value of agricultural production 2015 in Los Altos, Jalisco and Mexico

Source: Anuarios Estadísticos (OEIDRUS, 2015, 2015b)

The Highlands produce the greatest amounts of fodder corn, green alfalfa, grain corn, grass, agave fodder oats, sorghum and green tomatoes in the state. In the Altos Norte, the main agricultural product is forage maize and, in the Altos Sur, grain corn. The region is also a major livestock contributor in the state. In the area, family farms and agro-industries produce 55% of the national egg output and are leading producers of bovine milk, as well as of beef, pork, and poultry meat. Due to the Highlands’ productivity, Jalisco is, in turn, a national leader in these products.

The distribution of land is based on small property holdings. These contrast with the proliferation of the model of ‘ejidos’\(^5\) that prevailed in the country during almost the entire twentieth century. These small properties in Los Altos de Jalisco are known as ‘ranchos’. They abound outside urban centres and are characterised by being dedicated to dairy farming and agriculture.

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5. The ‘ejido’ is a system of distribution and possession of the land through which a community owns a large extent of territory to distribute among its members. This legal entity was institutionalised after the Mexican Revolution and is the form of land tenure that covers the largest area in the Mexican countryside. The parcels are shared among ‘ejidatarios’ (ejido members), but they do not own them because the ejido is the real owner. The general assembly determines the use of the common areas and the separation of the parcels of the ejido to be governed as private property.
Dairy farming

Los Altos de Jalisco is the second most productive region of the country, annually generating 15% of the total national milk volume. Among milk producers, there are important differences according to the number of cows they have, the production systems, livestock management, type of food, main customers or marketing channels, and level of technification (Government of the State of Jalisco, 2018).

The classification of milk producers that will be used throughout the document is based on the characterisation of the Jalisco state government, which considers the number of dairy cows in a dairy unit: small (1–10 cows), medium (11–50 cows), semi-specialised (51–200 cows), and specialised (more than 200 cows) (Government of the State of Jalisco, 2018). Small production units are characterised as family dairy farms, since the origin of labour and other resources such as land, water and capital are basically from the same household. In the Jalisco Highlands, family units comprise between 70% and 80% of farms and dairy companies that use an intensive production model comprise the remaining 30% (Cruz, Gómez, Rindermann, Escoto, Whiteford, & Márquez, 2003).

The dairy production orientation dates to the increase of dairy cattle in Jalisco during the 1940s. Nowadays, traditional practices of milk production are linked with the global market framework, as significant changes came about in the 1990s with the process of trade liberalisation. Mexico's entry into the world economy can be dated to the signing of two agreements: the General Agreement on Trade and Tariffs (GATT) in 1985 and the North American Free Trade Agreement (NAFTA), signed in 1993 to be operative from 1994.
Nowadays, producers face productivity and competitiveness challenges. One is the considerable disadvantage for local producers competing in the milk market. Mexican producers achieve low levels of productivity and their expenses can at times be higher than their profits. Another challenge for small dairy producers is the mandate to achieve ‘quality’ standards. Along with productivity improvement, industries, supported by the government since the 1980s, have developed strategies\(^6\) to enhance production practices to meet international standards, provoking social and cultural changes in the dynamics of milk production. Nestlé was the first to introduce the transnational concept of ‘quality’ among the milk producers in the Jalisco Highlands. By now, the notion of quality has become decisive in the configuration of the regional dairy industry. During the last thirty years, producers have implemented changes to ‘produce more and better’. In different degrees, they incorporate technology, organise into associations and cooperatives, modernise cattle management, and gradually accept concepts such as ‘quality’ and ‘food safety’ into their everyday vocabulary.

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6. I use the term ‘strategies’ because the practices aimed to secure and improve the living conditions that result from both a reasoned process and from tradition, habits and values. I like the notion of the concept ‘means of subsistence’ proposed by Norman Long that refers to the practices created by individuals and groups to solve consumption needs, face adversities and uncertainties, commit to new opportunities, protect their lifestyles and fulfil their social obligations (Long, 2004).
Livestock farmers find themselves in a subordinate position, with very little capacity to mobilise their social and economic capital in their favour in the power shifts of the milk market. That is, in Los Altos, industrial entrepreneurs control what happens in every link of the milk production chain. Until 1996, the federal government in Mexico protected the milk price (Hernández & Valle, 2000), but nowadays companies determine the price of milk paid to producers and the price on the shelves. When the international price of milk decreases, industries drop the milk price they pay to producers, but such a decrease does not lower the price of milk for consumers (Olmos, Ramírez and Darwin, 2015)7.

It is in this context of global capitalism, in which local production interacts with the global market and merges with the regional gender norms, that this research aims to explore the experience of women in dairy production.

1.2. Research motivations, objectives and questions

I became aware of women dairy farmers’ constraints after attending a series of milk producers’ assemblies in Los Altos de Jalisco during 2012 and 2013. I was born in Guadalajara, capital of the state of Jalisco, Mexico, and have worked since 2007 at the state public university. From 2007 to 2013, I worked as Outreach Coordinator in the University Centre of Los Altos, a campus of the University of Guadalajara. Personnel from the campus were invited by livestock associations that were interested in making public their demands to stop what they called the unfair competition with imported products. The participation of women was minimal in these meetings, but when they did participate, perhaps because of their exceptionality, the audience listened with attention and they received strong applause. Assisting at those meetings and getting to talk to some dairy farmers made me aware of two matters: the influence of the free market on the dynamics of local dairy farms and the role of female work in family dairy farms. In other words, I wondered whether, within the livestock families, the situation of women would be different from that of men, given the strict gender norms that prevail in the region. As I developed the research design, especially through fieldwork, I situated female work on the farm and home in the centre of the study and women’s experiences became the lens through which to observe the practicalities of trade liberalisation and the sexual division of labour.

By exploring the experience of women in dairy production in the context of global capitalism, the study contributes to the realm of rural gender studies, a body of

7. Because of trade liberalisation and quality improvement policies, there has been an increase in the price of milk that is unattainable for a large part of the population (Hernández, Borrego, Quintanal and Tanyeri-Abur, 2000).
scholarship concern with the construction of gender norms, identities and relationships. The distinction between rural women and urban women is useful because, despite the common inequities that women experience due to gender, the type and location of residence influences gender relations. Growing up in a city gives access to specific resources, services and information that influence the division of labour and access to the work’s benefits. According to Evans (2018), the proximity to services of populated urban areas relates to the disruption of traditional gender roles and, therefore, to the flexibility of the sexual divisions of labour. Noticing the different forms of social organisation affecting women in rural and urban areas, Byron and Chant (1989) analysed women’s roles and status in the Third World, identifying the influence of long-standing social customs and different degrees of local incorporation into the world capitalist system.

Traditional gender ideologies and practices in rural areas shape social relations in a way that affects gender equality. Therefore, rural gender studies are significant in exploring the experiences of inequalities of non-urban women (Pini, Brandth, & Little, 2014b). For the authors of Feminisms and ruralities “… the question of … how women are differently positioned because of their non-metropolitan location has remained largely overlooked” (Pini, Brandth, & Little, 2014c, p. 1). However, as Chant and McIlwaine state, the different inequalities experienced by women living in cities also require further research (Chant & McIlwaine, 2016), given the common idea of urbanisation generating wealth, well-being and political spaces for women (Chant, 2013). Another benefit of feminist emphasis in rural studies is that they fill a gap in rural studies that have largely portrayed rural living as masculine, in which fixed gender roles of a ‘male farmer’ and a ‘farm housewife’ prevail (Haugen & Brandth, 1994; Pini et al., 2014c).

An enduring discussion in rural studies is about the definition of rural. Among the topics that are discussed is the issue of the distinction between rural and urban (Bryant & Pini, 2010), including the survival of the ‘rural idyll’ representing a set of images and myths of the rural life as “an uncomplicated, innocent, more genuine society in which ‘traditional values’ persist and lives are more real” (Little & Austin, 1996, p. 102), and rural transformation being seen in the context of globalisation (Kay, 2009). In the attempt to grasp the interrelation and greater flow of people, things, capital and information among the rural areas and the global realm, rural studies in Latin America have used the category ‘Nueva ruralidad’ (New Rurality) since the 1990s. This concept conceives rural areas as spaces where multiple farming and non-agricultural activities are linked with urban spaces and the global sphere (Bonnal, Bosc, Díaz, & Losch, 2003; De Grammont, 2004; Delgado, 1999; Farah-Quizano & Perez, 2003; Gómez, 2002; Kay, 2009; Osorio, 2011; Perez, 2001; Riaño & Keilbac, 2009). Generally speaking,
the features of the new rurality can be delineated in these four aspects: the shift to rural off-farm activities, the increasing flexibility and feminisation of rural labour, the growing number of interactions of rural and urban areas, and the rising importance of international migration and remittances (Kay, 2009, p. 614).

In terms of gender relationships, rural areas currently experiment with changes in several ways, namely, the increasing visibility of women's participation in productive activities, the expansion of health and education policies, and the dynamics of gender relations. Gender transformations are also vehicles of renovation of other social spheres but this dynamic “...varies between countries and regions, depending on many socio-economic, cultural and spatial factors” (Bock, 2006, p. 1). As a study concerned with gender relations in the rural areas, this thesis offers empirical material regarding changing gender relations in a particular spatial and temporal context, attempting to “...understand how and why changes in agriculture and rural areas are taking place” (Bock, 2006, p. 1).

**Objectives and questions**

The aim of the study is to explore women dairy farmers’ lived experiences of work within the context of increasing trade liberalisation. Considering the objective, I try to contribute to the fields of female agricultural labour, the sexual division of labour in agriculture and the role of emotions in family farming. In studies of women's work in the dairy industry, there is a wide literature about dairy microfinances for women within development projects (Basu & Chakraborty, 2008; Mian, Fatema, & Rahman, 2007; Mkenda-Mugittu, 2003; Sharma, Dua, & Hatwal, 2012), but less regarding the sexual division of labour and the contribution of unpaid labour to the household economy (Jiménez, Ortíz, & Fonseca, 2014; Kallioniemi & Kymäläinen, 2012; Singh & Srivastava, 2016; Vogt, Jackson-Smith, Ostrom, & Lezberg, 2001). Even less attention has been placed on the link between emotions and farming. Dairy farm family businesses worldwide have shown resilience despite economic difficulties and little economic return. Scholars like Glover and Reay identified four different strategies farmers use to sustain the business (diversifying, maximising debt, sacrificing family needs, and compromising), but, more interestingly, they found attachment and emotions to be crucial in developing strategies and decision making in farming (Glover & Reay, 2015, p. 174).

There are economic and livestock analyses in Mexico, but most social research about the dairy industry is focused on the impact of free market policies there (Cruz, Rindermann, Escoto, Whiteford, & Márquez, 2003; Hernández, Borrego, Quintanal, & Tanyeri-Abur, 2000; Jiménez et al., 2014; Lara, Mora, Martínez, García, Omaña, &
Gallegos, 2003; Rodríguez, 1996, 1999, 2000). To a lesser extent, there is research linking the globalisation of the milk market with family work (Abrego, 2011; Armendariz, Aguirre, Moreno, & García, 2017; Cesín, Escoto, & Macías, 2009; Chávez, 2010; Espinoza, 2007; Fuentes et al., 2004; Jiménez et al., 2008; Jiménez et al., 2014). Most studies make no distinction between the experiences of women and men. The little attention paid to women is evident when we see how little attention the subject has had in recent studies, since the literature that focuses on women's work in the dairy industry dates back more than five years (Gómez Adame, 1999; Zamudio, Alberti, Manzo, & Sánchez, 2003). Bearing in mind the under-researched areas, I obtained empirical evidence of the role of female labour in agriculture and the economy in the context of increasing market globalisation.

The sexual division of labour is governed by traditional gender norms causing trade liberalisation experiences to be different for male and female farmers. To better understand the particularities – the habits, values, motivations, challenges and meanings which constitute the daily life of women dairy farmers – this study examines the following key question: how do women dairy farmers in Mexico experience global capitalism and the sexual division of labour? Then I divided that main concern into three sub-questions:

a) How do dairy producers interpret, appropriate and experience the directives of the global economy?

b) How is the sex-division of labour expressed in the life of dairy farming women?

c) How does the paid and unpaid female labour in the context of the milk industry contribute to social reproduction and capital accumulation?

I attempted to answer each one of those questions through field research and theoretical reflection, and thus give an answer to the initial question. For this, it was necessary to break down the objectives and questions and identify the main concepts and themes. Thus, I delimited the field of study to three major themes: a) the relationship of global capitalism with local agricultural production, b) the sexual division of work, and c) women's experiences of work in daily life. Each topic required a conceptual body guiding the search for and analysis of information as well as a suitable methodology to obtain the empirical evidence. In the next pages, I outline the theoretical framework and the research design posited to satisfy the study goals and solve the questions.

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8. It is worth mentioning that this process was not linear; the interests and approaches of the study underwent modifications during the field work and the writing of the thesis.
1.3. Interpretative framework

In this study, women dairy farmers are the main participants and, through their experiences, I explore the institutions and social norms that regulate them and the society they live in. Women synthesise from their positions the set of social and cultural determinations that constitute them (Lagarde, 1993). Therefore, observing women’s experiences permits to discover of what builds them as females and the recognition of the different positions they occupy in various fields: family, farm, community and public spaces.

I use the term ‘women’ with the understanding that women exist as a group because they share a position in the world and common conditions of subordination. In agreement with Lena Gunnarsson, I admit that “…it is possible to think of women as a group on a global level, because although the gender structure looks different in different locations, it possesses so much internal coherence to deserve to be thought of as one (differentiated) whole” (Gunnarson, 2011, p. 34). In other words, I recognise that women share a generic historical condition structured by sexuality and its relationship with power (Lagarde, 1993). Articulated with such a generic condition, women are the protagonists of different vital events based on the intersectionality of various factors that determine their position in the social networks of which they are part. Narrowing the topic to the agricultural field, I concur with Congues in the idea that

[...] the term ‘women’ is representative of the oppressed positionality of being female within a patriarchal society and because women are rendered invisible within the term and image of ‘farmer’, as is their work and contribution within the agricultural sector (Congues, 2016, p. 17).

Focusing on women’s lives implies undertaking a political position. The decision is not neutral since it is an effort, with its risks, to create resources to understand the world from women’s point of view (Lagarde, 1993). I decided to make explicit my identity as a feminist researcher by undertaking the precepts of the feminist standpoint theory. This perspective is useful to the present study in two ways. First, it encourages having a critical stance in respect to the researcher’s position in the field. That is, to uncover the biases that we as researchers carry to the field and not to pretend that the results would be politically neutral. Second, it facilitates understanding how women’s social and economic constraints have been built and how they function. Such a focus is a contradiction of the mainstream androcentric frameworks which, as Harding explains, systematically ignore the lives of the oppressed and the ways that dominant institutions work (Harding, 2004, p. 5). In sum, feminist standpoint theory was a theoretical framework that allowed me to link a study focused on women as historical
subjects and subjects of knowledge and to establish the political starting point that accompanied me as a researcher.

Feminist standpoint theory implies stopping the way we think about our position in the world as women and men, to analyse gender relations and denaturalise sexual classifications and hierarchies. Dorothy Smith proposed women's standpoint as a method of inquiry that is useful in recognising that research is a dialogue between the researchers and people whose activities are the focus of their interest (Smith, 1997a, p. 129). Under feminist standpoint lens, it is possible to observe “…how patriarchy naturalises male and female divisions, making it seem natural, right, unremarkable that women are subordinate to men” (Wood, 2005, p. 61). Traditional epistemologies would not care to analyse, for example, “…how did it occur that a double day of work, one day of which was unpaid, was regarded as normal and necessary for women but not for men?” (Harding, 2004, p. 5). I found in feminist standpoint theory, a theoretical framework that visibilised women as historical subjects and subjects of knowledge and established the political starting point that accompanied me as a researcher.

Sandra Harding explains that standpoint theory is presented in different ways: “…as a philosophy of both natural and social sciences, an epistemology, a methodology … and a political strategy” (Harding, 2004, p. 2). Such conflation of fields appears to be controversial because, contrary to positivist tradition demanding the production of objective knowledge, feminist standpoints “…set out to explain how certain kinds of politics do not block the growth of knowledge but rather, can stimulate and guide it” (Harding, 2004, p. 2).

According to Julia Wood, the centre of attention of feminist standpoint is “…identifying cultural values and power dynamics that account for the subordination of girls and women and highlighting the distinct knowledge cultivated by activities that are typically assigned to females” (Wood, 2009). Then there is an opening to two elements of analysis: the construction and perpetuation of power relations in which women as a group are subordinated, and the resignification of female knowledge, commonly built within those subordinated positions, as a valid one. The consideration of feminine knowledge as a valid element for analysis results in a contradiction, even for women themselves. The knowledge deployed in the sphere of care is not considered as such; it is only ‘what women do’. As Congues notices, “…there is a division between what they (women who farm) do and what is acknowledged” (Congues, 2016, p. 22).

For Susan Hekman (1997), one of the limitations of the feminist standpoint theory is to privilege the situated knowledge of women as oppressed subjects without considering that it is also discursively constructed knowledge. The same author points out that
such theory states a false dichotomy between the reality lived by women and the body of the abstract concepts of the social sciences (Hekman, 1997). In the context of this debate, I lean towards Smith’s proposal to consider women’s standpoint so that we can observe the “actualities of our lives as we live them in the local particularities of the everyday / everynight worlds in which our bodily being anchors us” (Smith, 1997b, p. 392). It is my contention that feminist standpoint theory demands researchers think about their position in the world as women and men and recognise the contextual and gendered nature of knowledge to identify gender relations and denaturalise sexual classifications and hierarchies.

I understand feminist standpoint theory as a prism that allows us to see a diversity of gender dynamics. This image allows seeing the presence of women where it was previously invisible and the unequal, and diverse, social locations held by women dairy farmers. The economic structure that subordinates local agricultural practices and knowledge, as well as the sexual division of labour, tend to exclude female labour from economic meaning. In the following pages I will explain how the prevalent economic model materialised in a ‘global capitalism’ and the sexual division of labour shaped women dairy farmers’ experiences and how those categories are useful to the thesis.

**Globalisation as ‘Global capitalism’**

Globalisation involves the growing interconnection of the world through the flow and exchange of ideas, information, goods and capital as well as the use of information and communication technologies. In this increased integration, the capitalist system plays a central role “as a system of social and economic regulation” (Perrons, 2004, p. 2). We witness a phase of capitalism “characterized above all by the rise of truly transnational capital and the integration (or re-articulation) of most countries in the world into a new global production and financial system” (Robinson, 2012, p. 350).

To glimpse the effect of commercial openness on local milk producers, I used the concept of ‘global capitalism’. This concept highlights that capitalism is the most important and decisive variant of global connection and consciousness, and that the current economic system is a phase of capitalism, characterised by its tendency towards a global economy (Gimenez, 2009; Robinson, 2012; Sklair & Robbins, 2002). In Sklair and Robbins’ words, “…the dominant forces of global capitalism are the dominant forces in the global system”. (2002, p. 82). The idea of an expanding global capitalism identifies diverse economic processes shaping the life of local farmers, namely, trade liberalisation, corporatism, the global agro-food system and the international division of labour.
This global economy boosts new models and practices of production, trade and consumption of agricultural products, all of which influence the local scope. This global organization places production, manufacturing and trade in different countries, causing changes in local economies and an inequality in the distribution of resources. In this way, global capitalism creates and regulates commodity chains that affect in different ways both local ecosystems and the men and women that participate in these chains from different positions.

In the global context, processes such as trade liberalisation, corporatism, and the international division of labour shape the life of local farmers. Exploring how the commercial opening operates in the context of the Jalisco Highlands concurs with Sklair's call to study how global institutions operate to transform the world (1999). Global models operate in Los Altos de Jalisco through commercial opening and competitiveness. The national dairy industry requires local farmers to adopt global requirements of production in their willing to compete with transnational companies. On the other hand, competitiveness and lowering costs of production is a core struggle for firms and capitalists since “within capitalist societies the profit motive underlies the production and distribution of social output” (Perrons, 2004, p. 10). If we look at the dairy communities in Los Altos de Jalisco, we observe that one way to generate more profits is “extracting more value added from the existing workforce” (Perrons, 2004, p. 11), a strategy applied by the dairy industries that use the labour force of family farms without taking risks of production or labour liabilities.

Jean and John Comaroff address the issue and claim that “Globalism is a vast ensemble of dialectical processes [...] that cannot occur without the grounded, socially embedded human beings from whom they draw value. Nor can these processes occur without the concrete, culturally occupied locales” (2000, p. 305). In an earlier study, Comaroff and Comaroff (1991, p. 31) explained that power is exercised through daily habits, and it is in the ‘taken for granted’ that the power manifests itself. For these authors, dominant ideas can control other conceptions of the social world, that is, create a hegemonic process by setting the limit of what appears to be rational, reasonable, credible, and pronounceable, even thinkable, within the given vocabulary of motives and actions permitted for us⁹. These modes of symbolic production “are so habituated, so deeply inscribed in everyday routine, that they may no longer be seen as forms of control – or seen at all” (1991, p. 25). Therefore, a construction of a hegemonic order takes

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9. Jean and John Comaroff explain that the dominant conceptions of the world cannot directly lead the minds of the dominated classes, but the circle of dominant ideas accumulate the symbolic power to classify the world of others. Their classifications acquire not only the constrained power to dominate other forms of thought but the authority of habit and instinct (1991).
place. That is, a structure of “signs and practices, relations and distinctions, images and epistemologies – drawn from a historically situated cultural field – that come to be taken for granted as the natural and received shape of the world and everything that inhabits it” (Comaroff & Comaroff, 2008).

What hegemony constructs is not a shared ideology but a common material and meaningful framework for living. In the same way, global policies and concepts acquire new meanings when confronted with local forms facing resistance and negotiation by social actors. In the globalised economy, the “…material and cultural forces […] are, in some measure, refracted, redeployed, domesticated, or resisted wherever they come to rest (Comaroff & Comaroff, 2000 p. 14). Supporting farmers’ agency are actor-oriented perspectives (Little, 2002; Long, 1996, 2004). In this study, we will see how, within a process of globalisation of markets, practices and concepts, milk producers interspersed new and traditional knowledge, weighed the risk of technological changes and investments and designed different strategies of work and marketing. With these factors, a local economy is maintained, parallel to the global one, based on tradition, habits and social relations.

Analysing the global-local link is not enough if we explore it with gender blindness. It is vital to understand that the global economy does not impact men and women equally. Therefore, including the experiences of work of women dairy farmers in the analysis implies taking a further step and giving particular focus to examining the “conditions facing working women” (Gimenez, 2009, p. 37) within the global scenario. A research approach that included gender relations in investigating global capitalism is commodity or value chains analysis (Barrientos, 2001, 2008, 2011, 2013; Dunaway, 2001, 2014a, 2014b). Gender in these studies is an organising basis to understand the organisation of work on a global scale and its link to work relationships locally and even at the household level. Only by looking at gender-biased labour conditions and expanding gender inequalities (Dunaway, 2014) would it be possible to identify the nuances of global economy.

**Farming women and the sexual division of labour**

The globalised economy provokes processes of negotiation in the local realm, causing different responses in diverse places and ambits. A sphere of differentiation is the sexual division of labour and hence its existence in male and female farmers’ experiences and responses to external challenges. In other words, there are differences in how the global markets operate in each locality and, within them, the experience of men and women is different due to the proximate knowledge and social organisation shaping gender ideologies.
Within the context of trade liberalisation and constant technical changes in agricultural production, the division of labour remains gender specific and female labour in agriculture unrecognised and undervalued. Agricultural activities of female farmers are always accompanied by housework, food preparation, community activities and caring for children, the elderly and the sick. This situation places on women's shoulders a workload that no-one pays or recognises as work. The report of The United Nations Conference on Trade and Development of 2015 affirms that women make up half of the agricultural labour force in the poorest nations and that rural women continue to face multiple constraints on their productive potential. According to the United Nations Conference on Trade and Development (UNCTAD), “the double burden of productive activities and care work gives rise to greater time constraints for women than for men, and also limits their mobility and the time they can devote to upgrading their skills” (UNCTAD, 2015). Assuming both productive and reproductive responsibilities,

rural women often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises, collecting fuel and water, engaging in trade and marketing, caring for family members and maintaining their homes [...] (FAO, 2017).

This situation, common across human history, has been disrupted neither by modernity nor by the development of economic theory. In the current global system, neoliberal policies have been “…shifting the burdens of adjustment toward small farmers, and especially the women in rural households who often bear the double burden of farm (and off-farm) work and the care of human beings” (Razavi, 2002b, p. 2). The sexual division of labour materialises in the global economy, where, for instance, agribusiness assigns to women tasks related to the ‘feminine’, that is, those that require fine-motor skills and, furthermore, agribusiness assumes women workers are more docile (Barrientos et al, 1999) and consent to flexible conditions more easily than do men (Appendini, 2002; Lastarria-Cornhiel, 2008).

Rural development policies have been a significant factor providing an improved context for the rural population in general and for women in particular. However, as Lastarria-Cornhiel (2008) argues, although the time spent by women in agricultural production has increased, within households there have been very few changes in the division of labour by sex (p. 4). The process of naturalisation of domestic work has come to such a point that, as Silvia Federici reminds us
women who have rebelled against domestic work have suffered an enormous sense of guilt, [as] they have never perceived themselves as workers in struggle. Nor have their families or communities seen them as struggling workers every time they have tried to oppose the performance of these tasks, rather they have been bad women. (Federici, 2014, own translation).

In Mexico, for instance, even in regions that have undergone profound economic and social changes, gender relations are still anchored to traditional gender roles despite women being income earners or in charge of the family and household economy when men are absent (Appendini, 2010).

Women’s experience is not fully explained by either the global context or the local-global interaction, so I rely on feminist economics to explore the economic relationships and the sexual division of labour within family life. Exploring economic organisation through feminism permits observation of relationships, networks and components that are otherwise hidden, namely “...the interaction of patriarchal power and the patterns of resource distribution, domestic labour, and consumption that take place in families” (Barker & Feiner, 2004, p. 20). This study analyses the organisation of work within the families from this perspective of understanding that the distribution of labour by sex arises from a binary system that assigns men and women skills and abilities to perform different, hierarchical, and ‘complementary’ tasks.

Scholars from feminist and non-feminist scholarship agree that the sexual division of labour is socially constructed (Benería, 1979; Bourdieu, 2001; Hirschmann, 2016; Mies, 2007), and is “…the product of culturally and historically specific determinations, not the inevitable product of sex differences” (Weeks, 2004, p. 185). Bourdieu places the relation between bodies as the core of the sexual division of labour:

The biological difference between the sexes, i.e. the male and female bodies and, in particular, the anatomical difference between the sex organs, can thus appear as the natural justification of the socially constructed difference between the genders, and in particular of the social division of labour […] Because the social principle of vision constructs the anatomical difference and because this socially constructed difference becomes the basis and apparently natural justification of the social vision which founds it, there is thus a relationship of circular causality which confines thought within the self-evidence of relations of domination inscribed both in objectivity, in the form of objective dimensions, and in subjectivity, in the form of cognitive schemes which being organized in accordance with these divisions, organize the perceptions of these objective divisions (Bourdieu, 2001, pp. 11–12).
This circular image of the socially constructed biological difference illustrates how the organisation of work produces and justifies a hierarchical order based on power relations and resulting in the masculine domination.

This work takes as a point of reference the Marxist conception of work to go towards a concept that, as Amaia Pérez (2014) proposes, integrates the entire economy, including the tasks carried out in the shadow of the market economy. That is, if we are going to consider that activities necessary for social reproduction are work and that, in performing such work, people find spaces of self-realisation, recreation and social bonds, then we need a concept of work that does not limit it to monetised economic relations. In this sense, Maria Mies (2007) advocates a feminist concept of work that overcomes the Marxist separation of socially necessary work and time away from work as the only area of self-realisation and leisure - that is, a concept of work that integrates its function for the satisfaction of human needs as well as its understanding as a sphere of human relations and fulfilment. Moving away from sexist approaches, it is vital to notice how “capitalists benefit greatly from externalization of the costs of reproduction and maintenance of the labour force to households and communities” (Dunaway, 2014, p. 69). In other words, within the context of global capitalism, commodity chains obtain surplus from households through the reproduction of labour forces and the supplying of low-wage and even unwaged workers (Dunaway, 2014, p. 66).

A fundamental reference in the thesis is the work of Silvia Federici in her explanation of how reproductive and unpaid work performed by women is key to a capitalist economy based on wage labour (Federici, 2004). Being a member of the 1970s feminist movement ‘wages for housework’, Federici is one of the pioneers in the criticism of neoclassical economics, the devaluation of the reproduction of life and the subordination of women through unpaid work. In redefining housework as work and not as personal service, the feminist perspective uncovered a new crucial source of exploitation grounded in the “significance of women's unpaid reproductive work in the process of capitalist accumulation” (Federici, 2012 p. 92). In this study, Federici's explanations of capitalism and women's labour is critical in two ways. The first is her historical analysis about how the devaluation of women's work and the naturalisation of productive activities have facilitated the appropriation of women's work and capitalist accumulation. The second is her emphasis on the effect of neoliberal policies on women's work, particularly in expanding flexible and precarious labour markets.

In the context of globalisation, livestock families in Los Altos de Jalisco undertake strategies to continue to hold their place in the market, combining external guidelines and concepts with with the local-traditional practices. In this context, family labour,
due to its availability and flexibility, has been fundamental for the permanence of dairy activity. Within the family farms, a sexual division of labour persists, which weights ‘masculine’ activities, linked to the production of goods, over ‘feminine’ ones, understood as ‘reproductive’ and devoid of economic value. With such context in mind, this study pursues to break the productive/reproductive work dichotomy; to visibilise the economic contribution of farming women; and to observe often ignored factors influencing the sexual division of labour such as family well-being and surveillance strategies.

1.4. Research design

The thesis draws on a qualitative ethnographic methodology that emphasises the experience of people and the meaning they give to it (Vasilachis de Gialdino, 2007). Among a variety of definitions of ethnography, I understand it in its three uses: as a systematic data gathering, as a way of ordering information and as a writing process. I used diverse ethnographic methods for data gathering, including participant observation, interviews, focus groups and documental research. However, in the end, the study was more interview-based, giving relevance to women’s concepts and narratives about their lives. Despite the identity-giving method that has largely been participant observation for ethnographers, in this thesis I drew more on engaged listening, or, in Forsey’s words, “participant listening” (2010).

I developed fieldwork in six municipalities within Los Altos de Jalisco. I conducted 48 interviews with 71 people: 37 with one person, seven with two people; three with three participants and a collective interview with six respondents. The selection of the participants followed the procedure of snowball sampling. Such method contacts informants through other participants, building an evolving linear or exponential effect. During fieldwork, I used the snowball technique in its exponential procedure as several participants became the key to meet other women dairy farmers. I had access to informants/participants by visiting dairy-households with another person who would introduce me to, usually, another dairy-household informant but sometimes to a cattle farmer’s representative or a government worker or a company’s employee.

Snowball sampling is usually used to approach groups of difficult access or to facilitate contact with informants who share certain traits. In the case of the present study, the technique allowed me to meet a group sharing a distinctive feature – women producing milk in the Altos de Jalisco – as well as to generate confidence, trust and the arrival of more participants.

Although this technique does not allow a probabilistic scope, I did not limit myself to integrating the participants introduced by others, but sought a representative
population of the different agents in terms of location, age, type of farm, marital status and role regarding the farm. In this regard, Noy states that in snowball sampling the researcher decides “who and how many of the potential informants will be contacted and to what degree they will contribute to the research” (2008, p. 132), despite the control the researcher relinquishes to the informants (p. 132). Key participants directed me to certain informants connected to them in some degree. However, I had the decision to: a) search for informants in different locations through other contacts, b) interview or not interview certain informants according to the progress and goals of the investigation, and c) include the information of informants belonging to the same locality or family group.

One of the contributors of the study, an inhabitant of Mirandilla, was a fundamental participant in introducing me to other women. This resulted in ease of finding new participants and generating confidence without great difficulties, although this also meant most of the informants were from one locality and so possibly a bias in some interviews because they considered me a ‘friend’ of the person who introduced me to them.

My identity as Mexican, mother and a university teacher also facilitated people opening up to share their life, thoughts, emotions, work and food with me. All these identities also involved establishing power relations, which I tried to make conscious, as well as expectations about my ability to solve their problems in terms of the milk trade, the relationship with the government and educational services for their localities. I clarify this topic in chapter 3.

The systematisation and analysis of information followed the interest in women’s experience, knowledges and meanings as a valid observable to understand the social relationships and structures. By employing a feminist perspective, I placed women as the centre of the study, which results in a contradiction of mainstream rural studies that favour the “male farmer” (Brandth, 2002; Pini, Brandth, & Little, 2014a; Saugeres, 2002; Silvasti, 2003). I analysed data from interview transcripts, my fieldwork notes, press notes, and institutional documental sources focusing mainly on the local-global interweaving experiences of dairy farming families, the sexual division of labour within dairy-households, the social and economic role of women’s labour, and women’s meanings and explanations of work. My goal was to link those features in terms of some explanatory script on women’s work experiences. In that sense, the writing of the thesis tried to emphasise the knowledge and voices of women.
1.5. Scope and limitations

The study offers empirical evidence of the role of female labour in agriculture and the families’ economy, noticing its significance in the process of capital accumulation. Saying that a sexual division of labour prevails in family farming, and that women keep undertaking domestic and care work is nothing new. However, this research is significant at least in three realms. First, the thesis not only points out another setting where the agricultural work of women is overlooked but also analyses how families and communities interact with the global economic development. The research outcomes identify how global market policies impact on food sovereignty, communities, and particularly on women’s lives by explaining further how local actors not only redefine directives of the global economy but even influence its reformulation.

A second significance is that this is the first study of Los Altos de Jalisco that focuses on the sexual division of labour in agricultural work. There are studies about the participation of women in business and the current trends in the female labour regional market (Macías, 2014, 2016), as well as others about home-based textile work (Forsey, 2010), but there are no studies about the particularities of female labour in family farming, agriculture or dairy production. The feminist perspective guiding this study helps understanding of how the devaluation of women's work merges with local gender ideologies relying on a sex/gender system that transforms "...biological sexuality into products of human activity" (Luxton, 2006, p. 31).

The third contribution is the empirical evidence that a feminist approach gives about female labour and its role in the wellbeing of families and communities, as well as its input to the global economy. In this regard, the results contribute to shed light about the role of women in dairy production in Mexico and, in a broader perspective, to make more visible the role of women in agriculture. In particular, it is innovative in explaining the role of female labour in family farming as a contribution to capital accumulation, since most studies in this regard concentrate on the economic value of housework (Coltrane, 2010; Dalla Costa & Dalla Costa, 1999; Daniels, 1987; Federici, 1975, 2012; Malos, E. 1980).

The study presents methodological and interpretative limitations. A first observation is about the representativeness of the cases studied. Findings are not generalisable, as I conducted research in six municipalities with the participation of 71 informants. Representativeness in statistical terms was never an objective. My interest was to show typical cases that allowed a view to a broader reality and I sought to include women who milked in different farms and industries across the region. Therefore, the results
do not serve to demonstrate trends but to understand qualitatively the experience of women in the context of economic liberation policies.

The data I obtained in the field exceeded the temporal and thematic limitations of the dissertation; therefore, the thesis ignores some voices. The need to limit the scope of the study directed me to explore some points superficially and to leave out others that would have enriched the analysis. For example, the thesis does not engage deeply with theoretical bodies that aim to explain rural gender topics such as the construction, reproduction and embodiment of rural gender identities and of masculinities. I hope that I will have the opportunity to explore these topics in future studies.

1.6. Thesis outline

The thesis is divided into eight chapters. Chapter 2 explores the literature concerning the global agri-food system and the contribution of female labour to agriculture. Chapter 3 explains the methodological approach of the one-year fieldwork, preceded by an explanation of the theoretical assumptions that led to the construction of the object of study. Chapter 4 contextualises the situation and transformations of the Mexican dairy industry within the global market.

Chapter 5 explains the features of cow milk production in Los Altos de Jalisco and the changes that local farmers have implemented since Mexico moved into the global dairy market. Chapter 6 presents the results of research by exploring the functioning of dairy-households and the sexual division of labour. Chapter 7 analyses how female labour in the context of the Mexican dairy industry contributes to social reproduction and capital accumulation. The final chapter concludes the study, tying up the theoretical and empirical strands and suggesting future research topics.
Chapter 2. Female agricultural labour in a globalised economy: a literature review

2.1. Introduction

Trade liberalisation increasingly generates challenges for farming families that once were connected only with local markets. Crop conversions from maize to fruits, vegetables and flowers, as well as price liberalisation, technology innovation, environmental changes, and the elimination of subsidies are examples of transformations that reshape the economic landscape and the everyday life of rural areas. In this changing context, female work is essential for the permanence and competitiveness of family production units that rely on free, flexible and available labour.

The diversity of women’s work in agricultural production has been the subject of studies of various kinds. As well recognized by Bryant and Pini (2010), there has been a growth in studies on gender and rurality contributing to the visibility of rural women. However, the authors emphasise the importance for rural studies not to be carried out “in isolation of other social locations” (2010, p. 1). Even when female agricultural work adopts practices according to geographical, cultural and product diversity, women growing crops and carrying out animal husbandry worldwide share challenges and strategies to feed their families and the world.

Rural women’s labour and its contribution to agriculture is characterised by different themes and interests generating different possible analysis pathways. For instance, Bock’s review (Bock, 2006) makes a diachronic analysis of research subjects and theoretical concepts among western and non-western studies, finding an overlap interest regarding the following topics: agricultural development, identity and rurality, environment and natural resource management, migration, and rural politics. The author distinguishes visibility, agency and identity as three “…important leading perspectives, guiding the definition of research themes as well as theory development” (Bock, 2006, p. 3). Another example is Little and Panelli’s (2003) article regarding gender research literature in rural geography. They focus on concepts of community, work, environment and sexuality to conclude that, since the 1970s, gender studies flourished in both empirical and theoretical areas, giving space to feminist methods. With a different perspective, Sally Shortall (2006) analyses theoretical developments about farm women and farm work, focusing on power relations, agency and resistance.

Sachs and Alston identify previous scholarship on women and agriculture that prioritised family farming as the centre of gender analysis. The literature focused on
“the gendered divisions of labour within households, women’s identities as farmers or farm wives, the economic contribution of women through their on- and off-farm work, women’s access to land and capital, and the virtual invisibility of women in agriculture” (2010, p. 278). Walter S. DeKeseredy (2015) analyses the feminist literature about crimes in rural areas, suggesting four lines of research where these studies are incipient:

a) understanding violence against women by interviewing men and using new techniques such as back-talk focus groups\(^{10}\)/interviews

b) generating data to inform policies aiming to prevent female crime

c) rural racism and hate groups which enact their biases in rural environments

d) feminist studies of “state and corporate/white collar crimes” (DeKeseredy, 2015, p. 183).

Early studies on female agricultural work were related to the 1960s and 1970s women’s activism and feminist theory. Thus, interest grew in questioning the gendered development dynamics of agrarian societies (Boserup, 1970). Following this, studies made visible female agricultural labour (Sachs, 1983) and the role of social reproduction for rural economies (Benería, 1979), highlighting the gender bias with respect to land tenure and access to the benefits of rural policies (Deere, 1977, 1982), and documenting the work of women in agro-industries (Arizpe & Aranda, 1981).

In Mexico, Mercedes Olivera disagreed with anthropology scholarship that overlooked the inequality of women against men and criticised the discipline justifying female oppression in indigenous rural areas. In the 1970s, she published the articles ‘The oppression of women in the capitalist system’ (1975) and ‘On the exploitation and oppression of women in Chiapas’ (1979) (as cited in Castañeda, 2012). In accordance with the same interests, Gertrude Duby Blom studied the working conditions of Mexican women during the 1940s and Isabel Horcasitas carried out a research on Tzotzil women in Chiapas, emphasising the organisation of family work for daily subsistence (as cited in Connelly and Gómez, 2014). On the other hand, Lourdes Arizpe placed the groundwork for the analysis of the migration of rural women and her article ‘Migrant women and peasant economy: Analysis of a migrant cohort to Mexico City, 1940–1970’, published in 1978, became a reference on the migration of women (as cited in Castañeda, 2012).

\(^{10}\) [back-talk focus group] is a follow-up tool in a further research stage which "consists in drawing together research participants to discuss research findings" (Frisina, 2006, p 1)
Susie S. Porter underlines that studies about women’s work in Latin America, especially rural work, emerged in the late 1970s in the context of the international development policy Women in Development (WID). In her work, Porter refers to a wide scholarship in the realms of regional history and social sciences regarding, particularly, Women in Development (WID), Gender and Development (GAD), rural workers, production, land ownership, the maquiladora labour force, labour and migration, domestic work, and sex work. (Porter, 2003). She highlights the work of historians who are interested in analysing the roots of occupational sex segregation (Fowler-Salamini 2013) and the relationship of gender norms to work and social class (Porter, 2003; Ramos-Escandón 2004). Referring to Jalisco, Mexico, Porter points out the study by Teresa Fernández Aceves (2006) that explains the long-term trends of the important participation of women in the state’s workforce.

The following literature review focuses on the development of topics and debates surrounding female agricultural work. Special attention is given to the link between rural gender studies and development, the analysis of the sexual division of labour in agriculture, gender bias in the access to resources, and the impact of globalisation and trade liberalisation in the everyday life of rural women. I conclude the literature review with a discussion of female labour in dairy farms. A concern in this review is the trajectory of rural gender studies in Latin America, with a view incorporating empirical cases and theoretical and methodological proposals from that region. By analysing key findings and perspectives, I aim to explain how the present study adds to knowledge of female agricultural labour within an increasingly connected and globalised economy.

2.2. The ‘rural women’ question

The term ‘a rural woman’ has been the object of examination and debate within academia. The source of scrutiny is whether the concepts ‘women’ and ‘rural’ are essentialist and, therefore, limit our knowledge about a complex non-urban world. According to Pini, Brandth and Little, “...the category ‘rural’ is as equally messy as the categories of ‘woman’ or ‘man’ we may attach to it” (2014c, p. 2). In an effort to show the multiple elements constituting the life of women, Congues formulates the concept of “women who farm” to challenge normative constructions of ‘woman’ and ‘farmer’ and to reflect on “the layered complexity of how women negotiate who they are as women and as farmers” (Congues, 2016). Even though the term ‘rural women’ has become elusive, it remains relevant. We need concepts that help us to explore and explain the experience of women who reside outside urban centres and dedicate their life and work to agricultural production. The challenge is to understand that that, as a category of analysis, requires incorporating a scrutiny that brings to light the different constituencies that make up women's lives.
One of the elements that calls into question the ‘rural’ category is its linkage to the urban and the global. The recognition of the multi-faceted, hybrid and changing nature of rural spaces and their connectivity with globalisation processes has brought up concepts such as the “global countryside” (Woods, 2007, 2014) and the “New Rurality” (Kay, 2009). In such scenarios, changes in the participation of women in productive activities are more visible. Farah-Quijano notes that in Latin America rapid changes in social policies and legislation related to reproductive and productive areas are taking place, resulting in transformations in the educational, health, cultural and economic domains, which in turn have had an impact on gender relationships, especially in the bargaining dynamics between women and men around economic resources (Farah-Quijano, 2008).

Nevertheless, social studies recognise the existence of rural social actors and the gender relations that constitute, among other things, the organisation of agricultural and domestic work. For instance, focusing on the “subject position” of women, that is, the “positioning of an individual within a discursive structure”, Brandth (2002) identifies three discourses in European studies of rural gender identities: the family farm, masculinisation and detraditionalisation and diversity discourses. The first is the dominant one and shows a patriarchal family farm in which the man is the head of the family, the labour force relies on family members, and allocation of tasks is gendered. The “…locus of women’s exploitation…” constitutes the main goal of the research showing “…static and homogeneous differences…” that ignore “…the interplay between the productive and the reproductive aspects of the work of the farm” (2002, pp. 186–187). The “masculinisation” discourse focuses on the process of farming transformation “…in women's and men's roles in farming, particularly those processes by which agriculture has turned into a masculine area of work” (2002, p. 187) mainly by a modernisation and technologising process. Finally, the “…detraditionalisation and diversity” discourse, in which the author positions herself, identifies “…different subjects that women (and men) hold in farming” (2002, p. 191). In that sense, identities are multiple, diverse, dynamic, open to negotiation, and constructed and deconstructed in everyday practices.

According to Porter (2014), the role of women in rural production has had the attention of researchers in subjects such as access to land ownership (Deere and León, 2001; Hamilton 2002), work in agricultural export-oriented output (Deere, 2005), the feminisation of agrarian production, the impoverishment of rural families in Mexico (Fowler-Salamini & Vaughan, 1994) and Latin America (Lastarria-Cornhiel, 2008) and the impact of neoliberal policies on women’s work.
Rural gender studies have shed light on the distribution of women in agricultural production, the exploitation of women's work and the empowerment mechanisms of rural women, ranchers and farmers. It is worth noting that including women's issues in rural studies has not necessarily implied a feminist perspective. As Jennifer Rogers-Brown states, “...a feminist approach moves studies of rurality toward a focus on women's agency, voices, and gendered inequalities” considering “...the complex interplay of intersectional oppressions and opportunities for liberation” (2014, p. 142). Pini, Brandth and Little (2014b) highlight the contributions that feminist scholars have made to rural social science by defying the masculine human subject in rural studies and introducing the category of gender. As Sachs noted, earlier feminist studies on agriculture were pioneers in questioning the traditional image of “male” agriculture (Sachs, 1983). A substantial contribution was the “...reconceptualization of the family farm as women's contributions to agriculture” and the acknowledgement of the “...interdependence of productive and reproductive labour in farming” (Pini et al., 2014c, p. 3). Besides that, feminist perspectives query “...epistemic orthodoxies” in the mainstream of rural studies and promote research topics and interpretative frameworks where women, their experiences and their knowledge are placed at the centre of the analysis. Another contribution of feminist scholars was to broaden “feminist theorizing to the rural, and thus [they] championed new subjects, vocabularies, methods, and conversations in the discipline” (Pini et al., 2014c, pp. 2-4). When feminist perspectives entered rural gender studies, they generated new thematic lines and interpretative frameworks. Little explains that “...they transformed the understanding of the family farm, drawing attention to the ways in which the role and contribution of women within the farm business was routinely under-recognized and under-valued” (Little, 2014, p. 108).

Rural gender studies have recognized the experiences of rural women as different from those of rural men and of urban women. Therefore, including a feminist perspective facilitates the identification of different factors that characterise rural women's lives and create a great diversity among them. Also, by highlighting females’ agricultural labour, it provides a broader perspective regarding agricultural labour. In the same vein, focusing on local realities improves our understanding regarding the different responses of farming families and rural women in different places worldwide. Now, in the framework of an incessant integration of the global economy with local dynamics, the stake is to go beyond a vision of rural women as only being victims of exploitation.

2.3. Through the lens of development

Awareness of women's role in agriculture has influenced development policies from the 1960s. Academia, feminist activism and developmentalism have been linked through conceptual frameworks and practicalities. An antecedent was the foundation
of the Commission on the Status of Women of the United Nations (CSW) in 1946 that, during its first period (1946–1962), focused on promoting women's rights and advancing consciousness of women's issues (UN Women, 2019, p. 4). In the 1960s, influenced by Boserup's studies and the interest of the feminist movement in economic issues, the Commission focused on “women's needs in the community and rural development, agricultural work, family planning and the impact of scientific and technological advances” (UN Women, 2019, p. 7). For instance, in 1962, the United Nations Secretary-General asked CSW to report on the role of women in the social and economic development plans of member states (Kilby, 2015, p. 71).

Ester Boserup (1965, 1970) analysed the long-term development dynamics of agrarian societies, including the impact of the natural environment (Mathieu, 2010, p. 82), and was a pioneer in questioning the efficiency of development policies for the advancement of women in agriculture in Third World countries. Boserup's work was critical for the inclusion of gender in rural development policies. Lachenmann explains that the term “invisible woman”, which showed the marginalisation of women's activities in modernisation processes and commercialisation/market integration, was introduced by the first gender adviser of the World Bank following Boserup's work (Lachenmann, 2014, p. 143). This marked a starting point towards the ‘mainstreaming gender’ that is now an indispensable condition for development agencies and programs.

Boserup's seminal work, *Woman's role in economic development* (1970) “contested the notion that women made little or no economic contribution at the household or national levels. On the contrary, she showed how women's paid and unpaid labour positively contributed to household income and national economic growth” (Behrman, Meinzen-Dick, & Quisumbing, 2014, p. 194). Boserup's analysis had a major influence in the Women and Development (WID) approach, as it was the first study that systematically used gender as a variable and initially delineated “…on a global level the sexual division of labour that existed in agrarian economies” (Rathgeber, 1990, p. 490). Under the WID scheme, the focus of developing agencies was the “...integration of women into global processes of economic, political and social growth and change” and was grounded in the paradigm of modernisation (Rathgeber, 1990, p. 489). WID focused on making visible the gender bias in access to assets and productive resources. However, the framework was criticised as it did not question the social structures that give rise to inequality between the sexes. In the same sense, Benería and Sen argued that Boserup's book lacked a theoretical ground, supposed a unique development model based on capitalism, and ignored women's work in the reproduction realm, thus limiting her explanation about women's subordination (Benería & Sen, 1981). Other critiques regarding Boserup's work are about her assumption of men and women being
atomised, rational individuals following self-interest and acting in the pursuit of higher material wealth (Ramamurthy, 2000). Boserup's logic followed liberal neo-classical economics that led her to recommend the state “educating women and providing them with agricultural extension and technological training to increase their productive capacity, pursuing enhancing women's status and liberate them from private patriarchy and drudgery” (Ramamurthy, 2000, p. 242).

During the second half of the 1970s, feminist scholarship questioned developmentalism (Porter, 2014) by stating that women have been part of development processes to maintain the economic dependence of Third World countries on the industrialised countries (Rathgeber, 1990). The criticism gave rise to the Women and Development (WAD) approach that was more critical of development policies but did not question the underlying factors in the subordination of women. According to McIlwaine, both WID and WAD perspectives shared “…an essentially static conceptualisation of women as a homogeneous, undifferentiated group whose condition was determined by their sex” (McIlwaine & Datta, 2003). In the next decade, the idea of the diversity of women's livelihoods and the structural processes of gender inequality influenced both theoretical inputs and development practices.

To understand the precise site of women's struggle, considering the different levels and causes of oppression, Maxine Molineux coined the terms ‘strategic gender interests’ and ‘practical gender interests’. The former are deductive and derived from the “analysis of the subordination of women and the formulation of an alternative, more satisfactory set of arrangements to those which exist” (Molineux, 1984, p. 232). The later are inductive “and arise from the concrete conditions of women's positioning within the gender division of labour” (p. 232). Drawing on Molineux's work, Caroline Moser (1989) proposed a framework that integrated women's practical and strategic needs, differentiating between short-term economic goals and long-term empowerment strategies (Moser, 1989). Her framework introduced the notion of women's ‘triple role’ in production, reproduction, and community affairs. Moser's proposal, together with the criticisms of the WAD model, led to a paradigm shift in developmental projects, giving rise to the Gender and Development (GAD) approach.

Under the GAD approach, more attention was placed on women's agency and their multiple responsibilities in the public and domestic domains, as well as on the various faces of female subordination. The Third World Conference on Women in Nairobi in 1985 boosted a new paradigm in development policies, as it recognised that “The role of women in development is directly related to the goal of comprehensive social and economic development and is fundamental to the development of all societies”
Chapter 2. Female agricultural labour in a globalised economy: a literature review

(UN, 1986, p. 4). Considering women as active agents of development policies, one of the basic strategies of the Report of the World Conference stated that

Women should be an integral part of the process of defining the objectives and modes of development, as well as of developing strategies and measures for their implementation. The need for women to participate fully in political processes and to have an equal share of power in guiding development efforts and in benefiting from them should be recognized. Organizational and other means of enabling women to bring their interests and preferences into the evaluation and choice of alternative development objectives and strategies should be identified and supported (UN, 1986, p. 25).

Ten years later, the Fourth Women's World Conference in Beijing in 1995 increased women's and girls' visibility in development discourse. To Baca and Herrera, the Beijing Declaration and Platform for Action was critical in the move towards the introduction of the gender perspective on the UN agenda and strengthened the commitment of member governments to support the eradication of gender inequality (Baca & Herrera, 2008). From then on, women were seen not only as victims of economic inequalities, or “the fall-out of Structural Adjustment Policies (SAPs)” (Chant & Sweetman, 2012, p. 519), but crucial actors in poverty reduction. As Sylvia Chant explains, “...the quest for women’s empowerment and gender equality has become a vital component of contemporary anti-poverty initiatives in which great store is set on female agency as a solution to privation in the Global South” (Chant, 2016, p. 2). For instance, for the World Bank, “...maximizing the impact of agricultural development on food security entails enhancing women's roles as agricultural producers as well as the primary caretakers of their families” (Pehu, Lambrou, & Hartl, 2009).

Development policies have been linked to rural populations and especially to women, as they are often erroneously perceived as the poorest among the poor (Balakrishnan, 2005; Chant, 2007; Davis, 2003). Gender equality has become a goal of development policies increasingly since the UN World Conference of Women in Mexico, 1975, but, from the UN Fourth World Conference on Women in Beijing in 1995, development agencies added the idea of investing in girls and women. Since then “Gender equality itself is [...] depicted as smart economics, in that it enables women to contribute their utmost skills and energies to the project of world economic development” (Chant & Sweetman, 2012, p. 520). According to Villarreal (2000), the notion of women entrepreneurs prevails as an explicit target identity, given that development agents need to show the results of their work with micro-enterprises. This approach, called ‘smart economics’ has been promoted by multilateral development agencies such as the World Bank, based on the idea that “…increased women's labour force participation
and earnings are associated with reduced poverty and faster growth; women will benefit from their economic empowerment, but so too will men, children and society as a whole” (World Bank, 2006, n.p.) Such conceptions of women as productive and individual actors have been decisive in the visibility of women's agricultural work but also in promoting the production and consumption of goods within global capitalism.

Recurrent awareness has been given to the role of development policies in the reproduction of gender roles (Gil-García, 2016; González de la Rocha, 2010; Molyneux, 2006; Wilson, 2015), on the dependence on women's care work and on the lack of a gender agenda to tackle inequality within households (Molyneux, 2006). To Kilby and Oliveiri, women's recent development programs “…focus on the individual and seek to expand individual agency, they meet both the requirements of neoliberalism while advancing (some) gender rights and gender mainstreaming” (2008, p. 322). According to Villarreal, the notion of women entrepreneurs prevails as an explicit target identity, given that development agents need to show the results of their work with micro-enterprises (Villarreal, 2000). This conception of women as productive and individual actors has been decisive in the visibility of women’s agricultural work but also in promoting the production and consumption of goods within global capitalism. For instance, several studies regarding the Conditional Cash Transfer program PROSPERA11 in Mexico are especially emphatic on the gender issue since the program loads the responsibility of the family well-being on the mother’s actions and decisions (Molyneux, 2006). These critics agree with the analysis of Sylvia Chant and Caroline Sweetman about ‘smart economics’ that focusing on women carries the risk of putting the onus to fix the world on women's shoulders (Chant & Sweetman, 2012). Magdalena Villarreal wonders if development policies instil the discursive production of a subject-woman that has contributed to create new forms of subjection of the women of the Third World. The author focuses on practices whereby actors, including women, are involved in the “re-creation” of women as subjects of development through processes of power and negotiation (Villarreal, 2000).

Development policies and projects advocate for economic growth within a capitalist system. The pertinence of global capitalism remains unquestioned, and the value of unpaid family work is an element that also impacts the lives of women dairy farmers. There is an emphasis on the representation of rural women as victims, but also as relegated agents in the access to services and, at the same time, granted a halo of values and attitudes that makes them responsible for social reproduction.

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11. Among participants in the present study, only two families were beneficiaries of the Conditional Cash Transfers PROSPERA program. When asked if they were affiliated, the typical response was that the program did not admit them because they were livestock owners.
2.4. The sexual division of labour in agriculture

The international division of agricultural production, global marketing of goods, the establishment of agricultural industries in rural areas of developing countries, and local histories and cultures are all elements that shape the experiences of rural women in the world. In such changing contexts, the analysis of gender relations in rural areas “... needs to be embedded in a discussion of the dramatic reconfiguration of rural spaces that [has] occurred over the past decades” (Pini et al., 2014c, p. 199).

The sexual division of labour within production units in agricultural production in Latin America is a topic of interest among scholars (Caro, 2017; de Lima Vidal, 2013; Deere, 1982; Farah-Quijano, 2008; Lastarria-Cornhiel, 2008; Flores, 2012). Pamela Caro (Caro, 2017) studies the sexual division of labour in the context of agro-rural changes in Chile. From the analysis of interviews, she describes the continuities and transgressions in the generational socialisation of the appropriate feminine behaviours related to the work of care. The author discovers the coexistence of feminine discourses that reproduce female oppression with other discourses that break with traditional cultural precepts by being motivated by the search for and exercise of economic and symbolic autonomy. Caro asserts that, in the rural areas, work includes insertion in the agricultural paid market and peasant production, as well as the exercise of reproductive, domestic and care work in the privacy of the home (Caro, 2017).

Considering access to land, in 1982 Deere studied the participation of women in agricultural decisions in Peru, finding that among the smallholders, women have a greater degree of participation (Deere, 1982). Integrating environmental features, De Lima (2013) analyses the role of women in the agriculture of the semi-arid world zones. Her findings show that in the Brazilian north-east, rural women assume more responsibilities when compared to their male relatives’ work and to females’ work in other ecologically vulnerable regions of the world. For instance, raising fowl and swine and tending vegetable gardens are female tasks that men are not keen to do “because they are considered less valuable” in comparison to others such as ruminant management. The author explains that in the semi-arid regions women cover all agricultural and rural management activities, including water and wood collecting, as well as administrative works. They are capable of achieving the workload due to their ability to “combine different strategies in an efficient and dynamic way, adapting themselves to the demands of labour and the natural environment” (De Lima Vidal, 2013, p. 251).

In Nicaragua, women are hidden in the social imagery where livestock generates social differentiation, social status and power among men. In practice, women have little
participation in productive work and lack financial and technical information about it. Their partnership in public spaces is limited and they face gender violence in the home. Livestock-women do not exist, even if they carry out activities linked to the management of the farm and livestock; there are even women who own cattle farms. In contrast, the social gender convention frees men from family and domestic tasks and systematically reaffirms this attribution to women (Flores, 2012). Farah-Quijano’s analysis (Farah-Quijano, 2013) focuses on the interrelation between the productive and reproductive fields, considering the external and institutional influences. With this, she achieves a broader perspective on female work that integrates the tasks generating resources and those that sustain life.

Migration is a phenomenon that has changed the sexual division and work among peasant communities. For example in Oaxaca, Mexico, due to neoliberal policies, peasants abandoned land and agricultural labour due to rising male emigration, displacement of families and changes in the gendered division of labour (Rogers-Brown, 2014). Consequently, there is a predominantly male migration process that leaves women alone in their home communities, overseeing family subsistence. This phenomenon, Rogers-Brown declares, forces women “...to step out of traditional forms of labour (such as household and childrearing), work outside the home, and take on the extra burden of helping daughters who lose their husbands to immigration” (Rogers-Brown, 2014, p. 136).

The growth of non-traditional or high-value agricultural exports in Latin America has significantly changed the composition of the agricultural labour force in the region. The sector presents segregation and segmentation according to sex, as employers prefer women for labour-intensive tasks. One of the reasons is that they are considered less conflictive and more flexible concerning the conditions of work (Lastarria-Cornhiel, 2008). Appendini (2002) and Barron and Rello (2000) explain the increasing trend of women entering into waged jobs in agri-business under flexible labour conditions in Mexico. For Appendini, “...women are the flexible labour force in the global production” (2002, p. 95). They take flexible jobs more easily than men, meaning seasonal jobs with no labour contracts or social benefits. The division of labour in agro-industries relies on a gender discourse that suggests that women have certain qualities (caring, delicacy, speed, accuracy) that make them perfect for specific crops and tasks. For instance, women are particularly in demand for crops such as strawberries and tomatoes, as well as in the processing and packing of fruits (Appendini, 2002, p. 98). An example is seen in the tomato plantations for export in Sinaloa, where firms hire migrant indigenous families (mainly from the state of Oaxaca) and local women for
six months of work. Men, women and children work with low salaries and almost no labour benefits (Barrón & Rello, 2000, pp. 291–292).

The economic precariousness in rural areas that results from competition with imported products causes men to be less and less able to provide sufficient economic resources for family support. This results in a rethinking of gender roles. Women take salaried jobs, or sell home-made products such as tortillas, cheeses, embroidery and catalogue products, and this leads to a re-negotiation of processes within households. With this, women not only become providers to their homes but, in some cases, acquire a certain degree of autonomy in decision-making.

The international division of agricultural production, global marketing of goods, the establishment of agricultural industries in rural areas of developing countries, and local histories and cultures are all elements that shape the agricultural work of women in the world, the challenges they face, their contribution to households and communities and the visibility of their work. In such contexts, as Pini, Little and Brandth (2014a) argue, the analysis of gender relations in rural areas “...needs to be embedded in a discussion of the dramatic reconfiguration of rural spaces that [has] occurred over the past decades” (Pini et al., 2014c, p. 199).

2.5. Gender bias

It is recognized by international organisations that female farmers face additional constraints in comparison to male farmers (FAO, 2019; United Nations, 2008; World Bank, 2012). In the context of the 10-year review and appraisal of the implementation of the Beijing Platform for Action conducted in 2005, governments of more than ninety member states provided information on the situation of women in rural areas, finding a major representation of rural women among the poor (United Nations, 2008). Such disparity constitutes a gender gap in agriculture in terms of access to resources, productivity and vulnerability (Huyer, 2016; Kilic, Palacios-Lopez, & Goldstein, 2015; Quisumbing et al., 2014; Shortall, 2015).

A number of downgrading situations articulate and influence each other, making it difficult for farm women to ensure, for themselves and their families, durable decent living conditions. A major circumstance contributing to the disadvantage of rural women is male preference in land ownership\textsuperscript{12}: the inequality regarding male

\textsuperscript{12} In the Mexican constitution (Constitución Política de los Estados Unidos Mexicanos), the designation of the heir remains at the free will of the owner, without distinction of sexes, who may or may not take into account the family members. The tendency to favour the male inheritance has
and female access to agricultural extension reinforces the disparity between men and women in rural areas regarding access to material and human resources. The inequality is reinforced by the historical marginalisation of rural livelihoods, as global poverty is largely focused in rural households due to the informality of rural labour markets, poor working conditions, limited social and legal protection and gender and age-based inequalities (FAO, 2012).

The absence of women in the agricultural data records worldwide is an example of gender inequalities. There is a lack of gender disaggregated data about agriculture labour that inhibits accurate information about the participation of women in agriculture (Deere & Doss, 2006; Deere & Twyman, 2014; Lastarria-Cornhiel, 2008). One of the core reasons for this absence of data is that women's labour has historically been perceived as 'housework' or as support of the productive work done by male householders. Therefore, women are usually not paid and so are not taken into account in national censuses or development programs. Even now, when the vital role that women play in world agriculture is recognised, a shortage of information prevails, especially in regions where gender relations are less egalitarian.

According to the Food and Agriculture Organization of the United Nations (FAO), in 2010 women represented 43% of the agricultural labour force of developing countries (FAO, 2011). In sub-Saharan Africa, the average percentage of female farmers is 50%. East and North Africa rose to almost 45% in 2010 from 30% in 1980. In East and Southeast Asia, the average of women within the agricultural labour force is 50%, whereas, in Southern Asia, the average is 30%. The Latin American female agricultural labour force comprises 20% of the total with a slight increment since the 1980s (FAO, 2011).

There are differences within and between countries and between agricultural stages. A useful method to obtain specific information is a time-use survey. For example, in Latin America, studies indicated that, unlike the 20% recorded, the time contribution of women to agricultural activities exceeds 30% in some parts of the region (FAO, 2011, pp. 11-12). Time-use surveys contribute to getting sex-disaggregated data to understand the gender dimensions of agriculture and economic development. In this regard, Ester Boserup made an important contribution, as she “was one of the first to advocate the need to document and understand women's time use and labour burdens, including the amount of time spent on domestic tasks such as cooking, childcare and the collection of water, fuel and fodder” (Behrman et al., 2014, p. 194).
Recent studies confront the concept of ‘gender gap’, as this situates women as either “cardboard victims or heroines (Cornwall, 2004, p. 1)” (as cited in Okali, 2012, p. 2). Okali argues that in the 1990s narratives portrayed women working in agriculture

[...] as victims, overburdened and under-rewarded relative to men, vulnerable and poor; but equally, although less immediately evident, playing (willingly-heroically) a central role in providing food security and household well-being especially in the absence (in perhaps more ways than one) of husbands and other men (Okali, 2012, p. 7).

Ramamurthy (2000) recognizes development programs have usually homogenised “Third World” women as disadvantaged without considering that “economic restructuring is not without contestation over intra-household labour and resource allocation and over gender roles” (2000, p. 251). For example, Kuntala Lahiri-Dutt underlines that when studying the “hyper-masculine mining”, a feminist critique “cannot be based on women as victims, bearers of burdens of dislocations or daughters who might have dubious links with Mother Earth” (Lahiri-Dutt, 2012, p. 194). Challenging the idea of women as passive requires studies that document female agency and how the strategies that women create even generate economic benefits. As Femenias indicates, systematic studies show that, in situations of precariousness and poverty, women are capable of quickly building lasting solidarity networks of subsistence, a capacity that breaks economic determinism, and organising alternative circuits that are ultimately profitable and are an important source of currency circulation.

Referring to Saskia Sassen, Femenias explains these links of alternative or informal economies as “counter-geographies” of globalisation (Femenías, 2011, p. 91). The counter-geographies of globalisation are cross-border circuits—legal or illegal—integrated into transnational economic processes that under lax structural conditions integrate a series of flows of goods, labour and people. Women are crucial agents in those circuits, either joining flexible and precarious jobs or getting into the illegal trafficking in people for prostitution (Sassen, 2003). To Sassen, “these circuits could be considered as indicators of the (albeit partial) feminization of survival, because it is increasingly on the backs of women that these forms of making a living, earning a profit and securing government revenue are realized” (Sassen, 2000, 506).

**Women and land ownership**

Worldwide, women are less likely to hold land ownership rights. Several studies have documented that land reforms and settlement programs give property rights to men and consequently extension services are focused on men (Bravo-Baumann, 2000; Deere & León, 2003; Jamal, 1994; Hamilton, 2002; Katz, 2003). Measuring land ownership
is problematic due to variations in the type of property titles. For instance, there are women owning land unable to sell it due to cultural limitations, or women cultivating inherited land without entitlements. There are also husbands’ and wives’ joint titles, as well as collective land rights, as in the case of ejidos in Mexico.

According to FAO, women represent fewer than 5% of all agricultural holders in North Africa and West Asia. The sub-Saharan African average of 15% masks wide variations, from fewer than 5% in Mali to over 30% in countries such as Botswana, Cape Verde and Malawi. Latin America has the highest regional average share of female agricultural holders in developing regions, which exceeds 25% in Chile, Ecuador and Panama (2011a). In Mexico, 49% of rural women with access to land ownership are ejidatarias or ejido rights holders, 16.4% are owners and 34.5% are avecindadas (Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food [SAGARPA], 2014). In 2018 in Jalisco, Mexico, of the 164,197 people who have ownership certificates or land usufruct, only 24 per cent are women (National Agricultural Record, 2018).

Carmen Diana Deere and Magdalena de León have largely documented the gender gap in land ownership in Latin America (Deere, 1982; Deere and De León, 2001, 2003 and 2005). The authors argue that, generally, even when there are gradual changes in mechanisms through which land is acquired, the gender asset gap is due to five major factors: “…male preference in inheritance, male privilege in marriage, male bias in both community and state programs of land distribution, and gender bias in the land market” (Deere and de León, 2003, p. 926). According to Sarah Hamilton, throughout Latin America the agrarian reform projects during the middle and late twentieth century awarded land rights and other means of production disproportionately to men (Hamilton, 2002). Consequently, formal land and water rights of female farmers throughout Latin America are precarious. For example, in Nicaragua 65% of rural women do not own the land they till. In that country, even when there has been progress towards land titling in the post-Sandinista revolution land reform, there are still cultural attitudes that women face affecting not only the land tenure but their mobility and participation in collective and public spaces (Manchón and Macleod, 2010, p. 375).

Uncertainty regarding women’s land tenure is a serious impediment to increasing productivity of agriculture and livestock and to the income of rural women (Bravo-Baumann, 2000a). Furthermore, without land property rights, women cannot have access to services such as credit (De Schutter, 2013), membership in irrigation systems, access to cooperatives’ services or to technical assistance, thus limiting their productivity (Deere and De León, 1998, p. 376).
In the late 20th century, Latin American governments started a land reform to stimulate the land market and generate an agricultural sector competitive in international markets. To do so, they reduced public financing and stimulated private investment by developing land and credit markets (Hamilton, 2002, p. 120). Most land counter-reforms, as Deere and De León name them, were designed to “...secure individual property rights in land so that, subsequently, following market indications, land may be transferred from less to more efficient producers” (Deere and De León, 1998, pp. 375–376). Women could then have access to a more egalitarian inheritance of land but, in the overall context, distribution of land is becoming ever more concentrated and land market transactions are more important (Deere and De León, 2003, p. 926). For women, gains are “…modest, as ideologies of male providership and doubts about women's ability to make productive use of land have persisted within implementing institutions” (Hamilton, 2002, p. 120). Bravo-Bauman sums up this idea: “…when common land is converted into state ownership and then to private land, women often lose their traditional rights and are often not considered when new laws are introduced” (see Bravo-Baumann, 2000; De Schutter, 2013). However, Hamilton concludes, gendered patterns in “…ownership and control of land can be expected to vary according to local political economic history, social norms, underlying cultural values, and women's political, social, and economic activism” (Hamilton, 2002, p. 120).

In one of her most recent works, Carmen Deere, together with Jennifer Twyman (2014), analyses whether land ownership is linked to the decision making of rural women in Ecuador. The authors conclude that the participation of women is underestimated when the census assumes that the male head of the family is the one who directs family farming. Therefore, it is necessary to measure the composition of those who make decisions, including the variety of ways in which women participate in agricultural production.

In the poorest areas, the trend favouring male land ownership is more evident. The denial of the women's right to land comes into play not only as an economic subordination but, as Vallejos states, a whole range of social, cultural and legal constraints maintained in the rural world, especially because women are not even considered productive economic agents, neither having knowledge nor being socio-political subjects (2009, p. 130). Such pressures are not identical worldwide, as gendered patterns in ownership and control of land differ “…according to local political economic history, social norms, cultural values, and women's political, social, and economic activism” (Hamilton, 2002). However, even though different situations arise in diverse regions of the world, “…whatever the nature of the economic system in terms of its productive and exchange relations, women's ability to function as fully acting subjects in relation
to property is always less than that of men, and mediated through relationships with men (Whitehead, 1984)” (Razavi, 2002b, p. 21).

Given the importance of land as security and a path to empowerment, various programs have been managed worldwide to facilitate access of women to property titles. Shahra Razavi (2002a) raises a critique of how, for development agencies, women's access to land is portrayed as a good policy intervention based on the certainty that land property gives power to women regardless of the context. Critiques of such a perspective point out that land tenure intervention projects break with traditional land ownership to make way for market forces and international commercial interests (See Bravo-Baumann, 2000; De Schutter, 2013). Razavi argues that this dichotomy is unproductive because it ignores the fact that the significance of land diverges across contexts and is used for different purposes because “...land means different things to different people at different times” (Razavi, 2002b, p. 22).

Farah Quijano studied the changes in livelihood strategies among rural households in the Colombian Andes, finding that women have gained more leverage regarding decision-making. Through an empirical study, the author suggested two starting points for rural gender studies. One is to be careful when considering land property as the only or “...the most relevant factor influencing women's bargaining power in the family”, and the other is that “...generalisations about gender issues regarding access to land and housing and decision-making in households in Colombia and Latin America do not reflect all realities” (Farah-Quijano, 2013).

**Extension services**

In developing economies, while both women and men have poor access to extension and technology transfer, women tend to make less use of these services. The lack of visibility of women's agricultural work enables “...women's grossly unequal access to productive resources, especially land, technology, control over social and political space and decision making, employment and other income earning opportunities” (Agarwal, 1989, p. 60). For instance, in many countries livestock extension services are mainly oriented towards men, which makes it difficult to implement gender balanced development programs (Bravo-Baumann, 2000). The dairy industry in Finland is an example of this trend: Kallioniemi & Kymäläinen note that “...farm equipment is considered to be designed more for male users: information about gendered farming practices is generally provided to men by male workers, and official interaction from authorities and cooperatives is usually directed to the main farmer” (2012, p. 79).

Amale bias in the creation and implementation of agricultural policies, as well as in agricultural extension services persists. Reasons could be inaccurate statistics,
women’s disadvantage with respect to human capital accumulation, particularly female household heads (FAO, 2011), and the notion that female work in agricultural production is secondary and, therefore, requires no training. To De Shutter, the failure of extension services to benefit women farmers could be attributable to four factors: first, the “under-representation of women among extension services agents”; second, the assumption that “any knowledge transmitted to the men shall automatically trickle down to women and benefit them equally”; third, the social life of women within the community is more involved in civic and religious groups, which is different from that of men, who socialise more in producers’ organisations; and fourth, women are usually the least well educated and the last to have access to the information and communication technologies, limiting the possibilities of using distance learning tools (De Schutter, 2013).

There is a debate among scholars regarding the productivity of female-headed farming households. Empirical researches documented both a trend towards lower productivity in female-headed plots (Palacios-López & López, 2015) and, conversely, cases in which farms under women's control reached higher productivity. Hogue argues that “access to resources and technologies, control over income and assets, and human capital (particularly skills and education) are the dimensions most closely linked to the productivity gap” (Hogue, 2015, p. 282).

We could state that the historical lack of equality between men and women, as well as social and cultural barriers, have obstructed female farmers from participation in both extension services and in collective decision making, since women are usually under-represented in farmers’ associations and assemblies, although a lack of discussion prevails about the shy approach to accessing technology from women themselves.

**Feminisation of agriculture?**

There is growing feminisation of work in different fields in a context of structural reforms linked to global production and trade liberation (Barrientos, Kabeer & Hossain, 2004; Chant S. & Pedwell, 2008; Elson, 1999; Kabeer, 2008; Standing, 1999). Such feminisation refers either to the increasing numbers of women entering the labour market, or the growing trend of jobs assuming characteristics historically associated with female labour (1999). The pattern of global companies is to focus on the workforce to reduce production costs. They do that by offering flexible jobs and shifting “the costs and risks of production (from adverse conditions or market fluctuations) onto workers” (Barrientos et al., 2004, p. 1). In this context, there is a higher workforce of women in precarious and flexible jobs due to growing economic insecurity and the
weakening of labour regulation and social security, resulting in expanding “gendered, sexualised, racialized and classed inequalities” (Chant & Pedwell, 2008, p. 13).

The increasing participation of women in the agricultural labour force, either as independent producers, as unpaid family workers or as salaried employees has led to the concept of “feminisation of agriculture” (Lastarria-Cornhiel, 2008). Janet Momsen was one of the first scholars identifying a feminisation of agriculture in her study of small farms in the Caribbean (1987) where those owned or managed by women differed from those operated by men.

Some authors relate the feminisation of agriculture with the growing proportion of rural female household heads, male absence from the farm due to migration and employment in off-farm pursuits, and the declined viability of peasant farming under neoliberalism. (Deere, 2005, p. iii). Carmen Deere distinguishes two current phenomena leading to the feminisation of agriculture: an increase in the participation of women in agricultural wage work and the feminisation of smallholder agricultural production:

It can refer to an increase in rural women's, or rural and urban women's participation rates in the agricultural sector. It can also be a measure as an increase in the share of the agricultural labour force that is female. A higher female share can in turn be the result of a higher female activity rate and/or a decrease in men's participation rate in agriculture. Moreover, the feminization of the agricultural sector might be the result of the under-remuneration of women as unpaid family labour in the past, combined with their greater visibility as agricultural wage workers or own-account farmers in the current period (2005, p. 17).

Alston and Sachs distinguish two principal reasons leading to this phenomenon: first, women seem to constitute the main labour force for export crops production boosted in the Global South as a mechanism to repay international debt. Second, cuts in subsidies and supports for traditional crops and commodities in both southern and northern countries has provoked an increasing migration since “…many family farms, or subsistence farmers, can no longer maintain their livelihoods through farming”. As many men leave their farms, there are consequences for the family left behind. For example, there have been documented cases where migration has caused a feminisation of agriculture (Radel, Schmook, McEvoy, Mendez, & Petzelka, 2012; Sachs & Alston, 2010, pp. 278–279) and of women entering agricultural wage labour where employment contracts are precarious (Sachs & Alston, 2010; Appendini, 2002; Caro Molina, 2017). In some cases, labour migration causes an increase in the workload of women since they must face economic needs and ensure family reproduction in an
unfavourable context due to the withdrawal of the state and to commercial openings (Allen & Sachs, 2012; Deere, 2005; Lastarria-Cornhiel, 2008; Razavi, 2002a).

A common topic in the recent literature on rural women links neoliberal globalisation to feminisation of agriculture, due to the increased participation of women in the global food supply chain (Deere, 2005; Katz, 2003; Lastarria-Cornhiel, 2008; McMichael, 2013; Riaño and Keilbach, 2009). Bina Agarwal states that “over the past 40 years, across the world (except for Europe) women workers have been rising as a proportion of the total agricultural workforce, since more men than women have moved to non-farm jobs (Agarwal, 2014). The feminisation of agriculture is not a globally uniform trend; the International Labour Office (ILO) indicates that the trend is greater in developing countries, particularly South Asia where “the share of agriculture in women's employment is 64% with a gender gap of 24.5%” (Otobe & ILO, 2011). The increased analysis of the subject can be due to a real phenomenon of feminisation of agriculture, but also to a change of perspective that extends the view and recognises the importance that women have always had in agricultural production.

Lastarria-Cornhiel (2008) recognises that the evidence offered by the literature on the effect of women's intervention as agricultural producers with their own power to make decisions is contradictory. Analysing Latin America, Deere (2005) affirms that salaried agricultural work has positive effects on women's economic autonomy and decision-making. In this sense, Dolan and Sutherland noted that the impact of access to wages in the Kenyan vegetable industry is different between single and married women, as married women decide together with their husbands how to distribute the money or they give all their salaries to them (as cited in Lastarria-Cornhiel, 2008, p. 17). In Mexico, Appendini relates women's participation in the flower industry to greater freedom in household decision making. In contrast, there are positions that relate the feminisation of agriculture to the ‘impoverishment of women’, since such a process is an outcome of the casualisation of labour involving a double workday as, because of gender norms, women undertake agricultural work without neglecting the care of the family (Radel et al., 2012; Wilson, 2015).

We can understand the feminisation of agriculture as showing “…the increased importance of women's role in agriculture, whether as measured by the ratio between women and men in industry or whether it is reflected in the high proportion of women whose main employment is in agriculture” (De Schutter, 2013, p. 191). Then it can be measured either by their relationship to the male agricultural work or in relation to its growth in the past. Unfortunately, this calculation is always constrained by the limitation of data about female farmers, to which I referred earlier in this chapter.
Meanwhile Daubeterre, Marroni and Rivermar critique extreme interpretations and argue for analyses that account for the differences in women’s increased participation in agriculture (2003). In the same way, Radel et al. (2012) note the tendency to make simplistic links on male migration and the feminisation of agricultural work, and propose to take into account the “...complexity of agricultural systems, labour migration patterns and potential modes of engagement” (Radel et al., 2012, p. 98).

Alternatively, there is another perspective that speaks about a “...de-feminization of agriculture” (Riaño and Keilbach, 2009). This approach argues that there is an estrangement of women from agricultural activities, since they tend to enter the labour market as employees of national and transnational corporations, especially agribusiness, packaging and maquiladoras. This worldwide trend reflects the current international division of labour and the dynamics of food chains. For example, in South America, particularly the Andean region, female migration has led to increased male labour force in agriculture (Katz, 2003). Other studies document how women left agricultural labour to become wage employees in industries, housework and maquiladoras (Appendini, 2002, 2010; Deere, 2005). Riaño and Keilbach recognize that the process of “de-feminization of agriculture” is the consequence of adaptation and survival strategies and development of skills that women create to deal with economic changes and constraints. The authors emphasise that this phenomenon is indicative of the “agency capabilities” of women that allow them to “...visualize and potentiate alternative forms of productive activities, even in “their reduced range of opportunities existing within a rural setting impacted by temporary structural factors” (Riaño & Keilbach, 2009, p. 104).

Furthermore, the “masculinisation” of agriculture is a phenomenon taking place in some contexts. In the case of Norway, Brandth analyses the literature on the subject and concludes that women entering off-farm work has led to the formation of “one-man enterprises” repositioning men and women within the home, farm and society as men “still hold their position as ‘the farmer’, but they are now positioned as less fortunate” (Brandth, 2002, p. 191).

Global figures point to an increase in female agricultural labour, but the differences between regions suggest a need for more regional studies. The United Nations, for instance, notes that “...while globally the proportion of the economically active

13. The maquiladora is an assembly industry where the materials that are processed are imported without paying fees. In Mexico, the maquiladoras grew as of the 1970s as a strategy to employ migrants deported from the United States. Currently, three-quarters of the maquiladoras are located in the northern border states and focus on the automotive, electrical and textile industries; 80% of the production of the maquiladoras is destined for the United States.
population working in agriculture declined in the 1990s, in 2000 the proportion of economically active women in the sector was still nearly 50% globally, 61% in developing countries, and 79% in the least developed countries” (UN, 2008, p. 9). To this should be added the previously mentioned lack of data on women's agricultural labour and the lack of uniform criteria for data collection.

Elizabeth Katz suggests that the gender composition of rural economies can be measured according to three variables: first, the demographic trends in rural areas; second, the sex-specific trends in rates of economic activities in rural areas; and third, data from the agricultural sector (2003, p. 32). Katz concludes that with the exception of Mexico, in Latin America rural men have outnumbered rural women between 1970 and 2000. Regarding gender distribution of economic activities, women's share of total rural employment has risen substantially over the past 20 years from 23% in the 1980s to over 30% in 2000, while women's participation in the agricultural sector is “…one-third of economically active rural women... compared to over two-thirds of men” (2003, p. 36). Nevertheless, these overall figures should be taken with caution due to intra-regional differences (UN, 2008).

2.6. Trade liberalisation is not gender neutral

If we start from the existence of a sexual division of labour, it is clear that changes in economic models will affect men and women in a different manner (Freeman, 2001; Gimenez, 2009; Lindio-McGovern & Wallimann, 2016; Sachs & Alston, 2010). Both sexes are affected by subsidy cuts, crop substitution and competition with imported products. However, free market policies are experienced locally through socio-cultural norms that configure male and female roles (De Schutter, 2013). A gendered effect through social norms shapes the distribution of responsibilities, giving reproductive tasks a female label regardless of the extra activities that women must perform to increase family income (Lindio-McGovern & Wallimann, 2016; Radel et al., 2012; Razavi, 2002a). In addition, agro-industries take advantage of the availability and flexibility of women's work, due to how reproductive responsibilities are timed, understood and structured.

Workload

The economic adjustment policies in the framework of global capitalism that countries like Mexico have adopted affect men and women differently. According to Carmen Diana Deere, the reductions in subsidies in Latin America countries in health, education, transportation and food, combined with higher male unemployment rates, deregulation of labour and declining wages, have lengthened women's “double day” and “…increased the burden of domestic labour, principally by increasing the time that
women must dedicate to caring and providing for their families” (Deere, 2005, p. 8). Razavi (2002b) affirms that rather than shifting the terms of trade towards agriculture, neoliberal policies have been “…shifting the burdens of adjustment toward small farmers, and especially the women in rural households who often bear the double burden of farm (and off-farm) work and the care of human beings” (p. 2).

Jobs are becoming more precarious in the current global economy, affecting women through discontinuity and flexibility within work relations (Arias, 2013; Federici, 2008; Kofti, 2016; Lindio-McGovern and Wallimann 2016). Federici notes that the precarisation of work is not gender neutral, that women always have been disadvantaged in relation to waged labour and, furthermore, that “…women's unpaid reproductive labour” within a context of global capitalism remains “…a key source of capitalist accumulation” (Federici, 2008, p. 6). Lindio-McGovern and Wallimann (2016) stress the intensification of gender inequalities under capitalist globalisation by showing how under the logics of 'mobility of capital' and 'labour flexibilisation', neoliberalism exacerbates gender, class and racial disparities within regions, hurting the working class in both developed and developing countries worldwide. Women comprise most of the non-qualified population, so it is more common for them to enter precarious and low-paid jobs. In addition, the persistence of a sexual division of labour that places the work of social reproduction as a responsibility of women leads to an overload of work.

For Razavi (2002a), policies from neoclassical models and macro-economic policymakers contribute to devalue female work as domestic work, usually assigned to women and treated as invisible and, furthermore, “…women's labour time is often assumed to be infinitely elastic” (p. 9) and the unpaid work sector usually appears in public policies “…as a burden or a constraint that prevents women from contributing their labour to the production of tradeables, not as a necessary and valuable activity that underpins both production of tradeables and the promotion of human well-being” (p. 9). That is, mainstream economics and policy makers maintain that reproductive activities, upon which the rest of the economy depends, are outside the economic realm.

Recognising the gendered experiences of global economic policies is of the utmost importance. Authors make a call to recognize the impacts of globalisation on women (Federici, 2012; Freeman, 2001; Mies, 2007), and to do so in a way that enables women to be understood as historical subjects:

A gendered understanding of globalization is not one in which women's stories or feminist movements can be taken onto or even "stirred into" the macropicture; rather, it challenges the very constitution of that macropicture such that producers, consumers,
and bystanders of globalization are not generic bodies or invisible practitioners of labour and desire but are situated within social and economic processes and cultural meanings that are central to globalization itself (Freeman, 2001, p. 1010).

In Latin America, rapid changes in social policies and legislation take place, resulting in transformations in the educational, health, cultural and economic domains. Such changes in turn have influenced gender relations as wage labour provides women with a range of autonomy to bargain with men about economic resources (Farah-Quijano, 2008). Pamela Caro Molina shows a process of growing female awareness regarding gender and class discrimination, resulting in an emancipation of traditional cultural norms. Women then challenge the naturalisation of reproductive activities as a female realm and the injustices interconnected with women’s expected roles and behaviour (Caro, 2017).

Within the framework of globalisation, it is possible to glimpse an awareness of the social and economic contribution of female labour, reinforced by the flow of ideas and information and the integration of women's groups, as well as to see the strengthening of theoretical proposals and methodologies that assume a gender perspective to analyse the economy and social dynamics derived from global capitalism.

**Women and agricultural waged labour**

Changes in the global food system, including technology innovations, consumption practices and the growing international division of labour, have led to a significant participation of the female labour force in agribusinesses. Agribusiness corporations have favoured hiring female labour in developing countries, searching for tax and labour flexibility. In Mexico, for instance, during the Green Revolution of the mid-20th century, a higher concentration of agricultural resources was absorbed by capitalist entrepreneurs, provoking both migration of farmers to urban places and the increase of agro-industries employment (Arizpe & Aranda, 1981). To Cristobal Kay (2007), the incorporation of agro-industries in rural areas is experienced in different ways among the poor and the rich agricultural producers: for the former, it is a survival mechanism due to the pauperisation linked with the entrance into poorly paid temporary jobs; for the latter, it is an opportunity to accumulate capital for micro-enterprise and develop more productive activities that are more profitable than farming (Kay, 2007).

The preference for female labour is due to diverse factors. On the one hand, it seems that companies share certain notions about women and about female labour, for example, the idea that female workers are “more dexterous” and “less restless” (Arizpe & Aranda, 1981, p. 455), or the belief that women are less likely to unionise
and/or organise to improve their conditions, which characteristics make them a more docile workforce, favourable for companies (Sklair, 2003). On the other hand, from the perspective of women, Arizpe and Aldana (1981) explain that such preference responds to the fact that women are more disposed to take flexible and poorly paid jobs. One might say that in many locations, female farming knowledge and the need for increased incomes is used by the global corporations that offer flexible, low paid and temporary job schemes (Sachs & Alston, 2010, p. 280). Thus, labour markets have become more gender divided, leading to unfavourable conditions for women’s employment.

As Alston and Sachs (2010) note, corporations use labour market segmentation by gender, race, ethnicity and citizenship as some of the strategies to compete in the global market and to achieve the greatest gains possible (2010). Consequently, "...women are over-represented among the ‘peripheral’ segment of the agricultural workforce” constituted of unskilled workers, and frequently recruited once or twice a year (De Schutter, 2013, p. 7) without any formal employment contract or job security, as the constant movement of companies prevents commitments to workers.

With the promotion of Non-Traditional Agricultural Exports (NTAE), there is particularly increased recruitment of young women in export-oriented areas. In Latin America, agribusinesses are increasingly hiring women to combine high-quality labour with the lower costs associated with the flexible employment patterns of women, which are related to their primary responsibility to provision their households (McMichael, 2007, p. 10). A pioneering work in this regard is the study of Lourdes Arizpe and Josefina Aranda during the 80s (1981). The authors explore women’s workforce in the strawberry agro-industries in Michoacan, Mexico, underlining the preference for female labour and the precarious conditions of labour. With women accepting constant fluctuations in schedules and wages below the legal minimum, companies can “…take advantage of the traditional idea that any income earned by a daughter, wife or mother is an ‘extra’ over and above the main income of the father, husband or son” (Arizpe Aranda, 1981, p. 470).

Several studies have documented that women tend to comprise most of the workforce of agro-industries and food processing industries (Appendini, 2002; FAO, 2011a; Lastarria-Cornhiel, 2008; Long, 1996; Sachs & Alston, 2010). Such an entrance to paid work responds partially to the need of households to have two incomes, but also to the fact that women seem to be the preferred labour force for corporate employers. Appendini explains that in the context of a globalised economy, agriculture has become a complementary activity within the household and “…this has had an impact on the allocation of family labour according to age, sex and kinship” (2010, p. 128).
Analysing the cases of non-traditional markets in Mexico, Kristen Appendini (2002) argues that women take flexible jobs with more frequency than men due to their availability to adapt to seasonal changes and to their acceptance of the absence of labour contracts, of low remuneration, of no social benefits, and of few possibilities of upward mobility. The author states that in the nursery and in the agro-industries in Mexico, the gender division of labour “...has been assumed by workers themselves and certainly by their employees” (p.130) and this division responds to the gender discourse that suggests “...that women have the attributes of caring, delicacy, speed, accuracy, and the skills for handling flowers and doing routine work” (p. 95).

By entering waged employment, women generally have higher incomes than before. Salaries (even depressed ones) allow women to increase their power to negotiate within the family unit, including decision making, control of resources and redistribution of productive and household chores (Osorio, 2011). However, such incomes are lower than men’s, either by legal restrictions or because men tend to take on more senior positions. It might be concluded from this that the precarious conditions of women in the agricultural labour market are influenced by the gender division of labour, which tends to minimise the importance of women’s work, but such a conclusion would not ignore the fact that access to a salary enhances women’s household authority.

2.7. Women’s role in dairy production

The role of women's work in the dairy industry has not been a central topic in most literature focused on Mexico. An exception is the undergraduate thesis of María de Jesús Gómez that explains the changes that female labour has caused in the milk industry in the last century (Gómez, 1999). The lack of literature in Mexico positioning women dairy farmers and their work as central agents of research contrasts with studies elsewhere concerning topics, regions and approaches, ranging from quantitative investigations on productivity to qualitative studies analysing the social construction of gender identities (Kallioniemi, 2013; Kallioniemi & Kymäläinen, 2012). For expository purposes, I will focus this review on the literature concerning studies related to development policies, the impact of free trade policies on small farms, and family work on dairy farms.

Dairy and development programs

There is an important niche for these types of studies in the development projects focused on promoting and improving the productivity of farming families. Studies on the impact of development programs in women dairy farmers’ lives address issues such as the programs’ effects on farm productivity, family income and women’s empowerment and economic capabilities (Bravo-Baumann, 2000; Bui, Tran Huu, Thu,
They also deal with the negative impacts such as women's workload and possible household conflicts. Mullins et al. (1996) study the impacts of an intensive dairy technology package in Coast Province, Kenya. The authors focus on the experiences of women, finding that even when the project tends to increase farm productivity and household welfare, outcomes result in the expense of more work for women. In that vein, they affirm that "gender sensitivity about end-users and income control will particularly benefit technology development and delivery where goals include improved food consumption, nutrition, and child education" (Mullins et al., 1996, p. 251). Vera Mkenda-Mugittu illustrates how a project in Tanzania attempted to result in positive gender changes by incorporating 'gender-sensitive' indicators and introducing field observations on gender into its reports. She concludes that a shared understanding of the concept of gender and the project's expected outcomes are essential, as is setting "realistic expectations, bearing in mind the local situation and the project's lifespan" (Mkenda-Mugittu, 2003).

In India, Pratyusha Basu (2009) analyses the results of programs in dairy cooperatives linking development policies with local culture and history, including the sexual division of labour. In the same context and analysing the Cooperative Development (CD) Program of the National Dairy Development Board (NDDB) in India, Shefner-Rogers, Rao, Rogers, and Wayangankar, explore the role of communication in the empowerment process of female dairy farmers. They find that a dialogic communication process can increase the feelings of empowerment among women dairy farmers in India, changing power relationships and encouraging women to challenge the traditional Indian patriarchal system. Studying the outcomes of the promotion of gender aspects in the agricultural sector, a study from FAO concludes that “…the livestock sector offers advantages over other agriculture sectors because of the fact that in most societies all household members have access to livestock, whereas access to land is often biased towards men” (Bravo-Baumann, 2000, p. 139).

Globalisation and trade liberalisation policies

Looking at globalisation, some researches look at how trade liberalisation policies interweave with dairy farmers’ lives. Studies explore the impact that global policies of the milk market have had on the dairy industry and how producers have faced the constraints of being part of the global market of milk (Abrego, 2011; Cruz et al., 2003; Espinoza, Álvarez, Del Valle, & Chauvete, 2012; Hernández et al., 2000; R. Jiménez et al., 2008; Lara et al., 2003; Quintanal, 2002; Rodríguez M. G., 1999, 2000). Scholars have documented a gender differentiation of challenges with respect to the global market, such as the lack of capital, the workload, and impediments to access credits and services
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(Aubron, Cochet, Brunschwig, & Moulin, 2009; Jabbar, Tangka, & Shapiro 2000). In that vein, the article by Aubron et al. analyses Andean dairy farming in the context of the changes induced by globalisation, highlighting the technical and economic obstacles faced by dairy farmers. The authors demonstrate that intensification of labour relates to women and that “…as in many other parts of the world, daily husbandry chores are considered women’s work” (Aubron et al., 2009, p. 413).

In Mexico, the study of Cesín et al. (2009) on family dairy farming analyses different regional models of milk production, illustrating a dynamic, productive industry, and its responses to global and national challenges. The study integrates general aspects of global and national dairy farming, as well as case studies on milk production in eight states, considering the diversity of this productive system according to different ecological characteristics and socio-economic conditions. It also emphasises the significant contribution of family dairies producing milk, an essential food for the national population.

The challenges of the free market have forced the disappearance of small dairy farms as well as the intensification of the most capitalised farms. A key element in the survival of the farms is their dependence on family work. Examining profitability and marketing, Bui et al. (2013) study factors affecting the decision for milk market participation by small cattle holders in Phu Dong, Vietnam. They indicate that family size, along with age of the household, education level and experience in dairy production, influences dairy households’ participation in the milk market (Bui et al., 2013).

There has been recent interest in the environmental challenges faced by dairy family farms. Such is the case of Galiè, Mulema, Benard, Onzere and Colverson (2015) exploring the relation of female dairy farmers and food security and Alston analysing the connection between rural women and climate change (Alston, 2013).

**Family farms and the division of labour**

Female work in family dairy farms is referred to indirectly in explanations of family organisation in the Mexican dairy industry (Abrego, 2011; Chalate-Molina, Gallardo, Pérez, Lang, Ortega-Jiménez & Vilaboa, 2010; Chávez, 2010; Espinoza et al., 2012; Jiménez et al., 2008). For instance, Martha Chávez analyses the family production organisation in dairy farms in Guanajuato, Mexico, to explain how farming establishments are organised in a changing context which is influenced by migration and the origins, values, identities and emotions of their owners (Chávez, 2010). Fuentes et al. (2004) evaluate the quality of food and profitability of family dairy farming in the south of El Valle of Mexico (Fuentes et al., 2004). Chalate et al. (2010) analyse dual-purpose cattle in the state of Morelos, Mexico, considering the relationship between family labour
and other factors such as the scale of production, income, use of technology and the perception of producers about the strengths, opportunities, weaknesses and threats of the productive system. They highlight that people understand livestock ownership and access to family labour as strengths of productive units, and lack of facilities and equipment, training in management and money to invest as weaknesses (Chalate-Molina et al., 2010).

The importance of family work for the permanence of dairy work is explored in various studies. In Michoacán, Mexico, Cortez-Arriola et al. investigate the efficient use of internal resources in family farms, including the role of family labour’s flexibility and low costs in farm performance (2015). In Nopalucan, Puebla, Mexico, Himelda Abrego (2011) found that participation of the family in the dairy farm, coupled with the availability of farmland and production costs, explains the permanence of dairy activity, while considering that her analysis of productive and economic functionality of the farms brought out a negative benefit/cost relation.

In this type of study, the unpaid work of families is seen as a competitive advantage. The rationale is not questioned, and domestic work and care are not understood as activities that contribute to the economy of the farm and the home. However, other scholars have highlighted the importance of looking at domestic economy as a fundamental part of the production sphere (Alston, 1998; Brandth & Haugen, 1998; Garcia-Ramon & Canoves, 1988; Sachs & Alston, 2010). As Whatmore had already underlined, it was fundamental to question the traditional concept of farm work as being only that developed in commercial production and ignoring “a whole realm of conventionally defined ‘women’s work’ in the subsistence and reproduction process” (Whatmore, 2016, p. 5). Conversely, Whatmore calls for seeing the unity of the processes of production and reproduction in the home and the family farm, and adopts the term “domestic political economy” as a category to capture “the interdependence of family and enterprise, organised around the social relations of kinship and household, which define domestic commodity production” (2016, p. 43).

Recent studies have highlighted the contribution of unpaid labour for the farm economy. Telba Espinoza’s thesis (2007) alludes to female labour by placing family labour as a central strategy to face the constraints of the market and emphasises how unpaid work is essential for the sustainability of farms and to assume financial risks (Espinoza, 2007). In the same vein, but in New Zealand, Schewe argues that organic dairy farms in New Zealand reverted to reliance on family labour despite the growing use of contract labour. To the author, this return responds to family labour’s attributes of being more easily supervised and self-exploiting and because it permits easier commitment to central farm goals (Schewe, 2015).
Studies concerning the gendered division of labour in family livestock systems have stressed both the regularities and differences among contexts. These studies emphasise the diversity in the forms of organisation (Bravo-Baumann, 2000), and the gendered division of labour (Anteneh, 2010; M. K. Kallioniemi & Kymäläinen, 2012), including the double working day that falls to women due to their responsibility in reproductive tasks (Jabbar et al., 2000). Studies also emphasise the lack of access to land, capital and extension services as constraints affecting women dairy farmers, in contrast to male dairy farmers (Espinoza, 2007; Gomez, 1999; Jabbar et al., 2000).

Recently, the formation of gender identities in agricultural production has been a topic of several researches that include the context of dairy farms (Keller, Lloyd, & Bell, 2015). Lise Saugeres (2002) explores the constructions of embodiment in farming families in a rural region with livestock production in southern France. Examining the difficulties faced by women to be recognised as cattle farmers and how femininity is reconstructed in such a context, the author finds that discourses on women's and men's bodies reproduce patriarchal ideologies and unequal gender relations. Furthermore, Saugeres suggests that it is not only what women do “…which is inferiorised, it is also what they are, simply by having female bodies” (Saugeres, 2002, p. 649). Focusing on Wisconsin dairy farms in the United States, Vogt et al. (2001) document the ways women contribute to dairy farms, stressing how “…cultural images of men as farmers and women as housewives still influence the way that people perceive women's roles on dairy farms” (Vogt et al., 2001, p. 1). Highlighting the variety of farm and off-farm work as well as household and care responsibilities, Vogt et al. conclude that women are vital not only to dairy operations, including farm decision making, income provision, bookkeeping and financial duties, but also to household economy and the communities’ strength.

In sum, studies of the family dairy in Mexico have placed no emphasis on female work. They deal with family work without questioning the distribution of tasks by age and sex or the different consequences of technological and commercial changes on different members of the family. This study will contribute to knowledge about the role of women's work in the milk industry in Mexico and also to rural gender studies by exploring women's experiences of work. Thus, the study intends to contribute to broader comprehension of the function of the sexual division of labour in agriculture in a context of incessant globalisation of knowledge and economic relations.
Chapter 3. The investigative road and women dairy farmers as research subjects

3.1. Introduction

In this chapter, I explain the lived and intellectual road travelled in the making of the thesis. The approach to field work and the decisions made by the researcher during the investigation are influenced by both theoretical frameworks and ideological positions. Following Bourdieu and Wacquant’s suggestion that “…the most empirical technical choices cannot be disentangled from the theoretical choices in the construction of the object” (Bourdieu & Wacquant, 1992, p. 225), I explain the research design. The chapter delineates the investigation object, explains the methodology design, including the changes during the research, and shows the concepts and principles that guided the study, describing how they were used to interpret the findings.

From the beginning, the intention of my research was to explain how women dairy farmers in Mexico experience the sexual division of labour in the context of global capitalism. As I explained in the introduction, my approach to the subject started from my attendance at meetings of farmers. In those reunions, cattle farmers demanded the government improve market conditions, since, following the signing of NAFTA, they face competition from cheap dairy products. Therefore, my first interest was to understand how local producers experience the policies of the global milk market in a free international market context.

I started shaping a research object with two interests: studying the relations between the global market and local production in Los Altos de Jalisco and focusing on family work for milk production. As small-scale dairy farms are predominant in the region, I found it useful to observe the family organisation for work, including the sexual division of tasks both at home and farms, and to observe the interweaving of capitalism and patriarchy.

Among local dairy farmers on family farms, it was women’s experiences that I sought to interrogate. My intention was to shed light on women dairy farmers’ lived experiences. The focus on women is based on two propositions: first, the experience of rural women with respect to economic globalisation is different from that of men, and second, women have remained largely on the sidelines in rural studies. To allow women’s experiences to be more visible, I use a feminist gender perspective that, according to Marcela Lagarde, allows us to find the markers of the generic condition of women and
to approach femininity from the concepts and categories of scientific knowledge that have occupied a large part of anthropological observation (Lagarde, 1993, p. 28).

I start the chapter referring to the theoretical perspectives that I used to construct, delimit and analyse the research topic, namely the “global capitalism” approach to globalisation, feminist theory, the sexual division of labour, and the affective dimensions of work. I then describe the research design and the methodology, including changes to my initial plan. I describe the setting, the data collection techniques, the strategies to approach participants, and the information analysis procedures. I conclude the chapter with a reflection on the research experience and its ethical dimensions, focusing on my position as researcher, student, Mexican, mother, woman and member of a university, on the impact of my presence in the field, and on the interpersonal ties that I built together with the participants.

3.2. Local-global interweaving experiences

A fundamental tenet in this study is my certainty that globalisation is a complex and changing phenomenon resulting in a diversity of local responses. Policies and practices of trade liberalisation, division of labour and corporatism shape the agro-food system influencing the everyday life of farmers, and especially of women working in food production. Research on globalisation highlights how the impact of global economic policy is not uniform and challenges the idea that culture flows from the centres of political and economic power to the subordinate peripheries (Long 1996, McGrew 2007, Robertson & White 2007).

I draw on previous literature that analyses the existing international organisation as a ‘Global Capitalism’ as a way of understanding the current economic model characterised by its tendency towards a global production and financial system (Gimenez, 2009; Robinson, 2012; Sklair & Robbins, 2002). Looking at the processes of economic global connectivity through the lens of “global capitalism” stresses the need to “…understand theoretically and politically the nature of the current processes of change that have united the world under the rule of unfettered capitalism” (Gimenez, 2009, p. 37).

Looking at global capitalism as a dynamic political-economic and cultural process allows us to see the local and diverse specificities (Benería, 2015; Dunaway, 2014; Rodríguez, 1999). The relationship of networks in the operation of the global market of milk and local producers is an asymmetric relationship in which the former is placed in a position of power. As Comaroff & Comaroff (1993) explain, power doesn’t follow one direction; people in subordinated positions resist through the language and symbols of the oppressors themselves. In their quest to understand a historical process – the meeting of missionaries with the natives of South Africa – they undertake the task of
explaining the interest of some to impose an order on others. For the authors, there are two dominant ways in which power blends into a culture. One of them is the ability of the human being to mould the actions and perceptions of others through control over the production, circulation and consumption of signs and objects, that is, over the creation of subjectivities and realities. The other is on daily life forms, where the quiet power of the sign, and the authority of habits, can be as effective as the most violent coercion in shaping, directing and even dominating thought and social action (1993). The control of the modes of symbolic production must be sustained through time and in such a way that it remains invisible to all intents and purposes. This notion is supported by William Roseberry, who describes hegemony as a political process of struggle and domination and not as a fixed concept. For Roseberry, what hegemony constructs is not a shared ideology, but a common, material and significant framework for living through social orders characterised by domination, talking about them and acting on them (Roseberry, 2002).

Hegemony is used in this study as an order that is constantly rebuilt, as a process of exercising power in specific historical contexts that takes place through everyday habits. Relying on the Comaroffs’ concept of hegemony, I show how foreign concepts and knowledge in the agro-food system become familiar through the force of everyday life. By doing so, I situate the agents of my study in a context, not a locality, and I do not see global capitalism in the world setting, but in the local-global network of the dairy market where different actors interact situated in different positions and pursuing different and usually opposing interests.

The process of creating a new hegemony implies a field of struggle. It is part of the broader context of the capitalist system, as a project that tries to integrate, but that causes specific responses in specific places and times (Flores de la Cruz, 2014). Due to heterogeneity of conditions, cultural and historical differences, and relatively autonomous macro conditions, there are differentiated effects raising a diversity of responses (Llambí and Pérez, 2011, p. 56). Within this discussion, Norman Long suggests bringing attention to how local producers are linked to global networks of actors, i.e. “…traders, state agencies, transnationals, supermarket businesses, agricultural input suppliers, research enterprises, and eventually the consumers of the products” (1996, p. 52).

By focusing on the actors and social networks, this study intends to weight forms of global discourse with the concrete ways in which social actors “[...] conceptualise, deal with and become agents in the creation and reproduction of the economic dynamic through market, state and community relations” (Long, 1996, pp. 51-52). The external interference of the global milk market is the object of mediation and transformation.
by the milk producers through the juncture of personal, familiar, local and national factors.

Focusing on the actors’ perspective allows highlighting of the strategies that local dairy farmers design and operate to achieve their goals and explains the variable responses to similar structural circumstances. The perspective also implies understanding that among local milk producers, the challenges faced by men and women are not the same, nor are the ways in which they respond to them.

3.3. An anthropology of women

The purpose of the study became locating women as the subject of history (Lagarde, 1993), and to make an anthropology of women, which means focusing the analysis in the field of culture with the ethnological perspective that analyses, investigates, relates and names ways of life that are alien to it (Lagarde, 1993).

I understand with Gunnarson, that ‘woman’ refers to something real, which is the “structural position” as a woman within a web of relations (2011, p. 33). Beyond discussions regarding the essentialism of the concept (Spelman, 1988), the intersectionality of many social positions (Crenshaw, 1991), and the performativ constitution of gender (Butler, 2011), women exist as long as they share a “generic condition”, a subordinate position regarding men (Lagarde, 1993, p. 45). In the end, as Marcela Lagarde (1993) states, each woman is a synthesis of the patriarchal world, since, regardless of their social location, they are in a position of subordination regarding the male order.

The “generic condition” is a specific position that women share in society, defined by their life situation, the unique life that each one develops (Lagarde, 1993, p. 45). As the intersectional perspective points out, women’s lives mix different orders of subjection, namely, class, race, ethnicity, age. Such factors intervene in the position of women regarding different social and power relations in specific contexts. While men also experience power relations and subjection through different orders, being a woman makes that experience different according to the prevailing gender ideologies of a society. Thus, using the term “women” and not “gender”, “performativ acts” or “social discourses” implies understanding that there is a structure of patriarchal domination lived daily by women because they are women.

Women dairy farmers’ concrete economic and social processes, relationships and activities through which they have created and recreate themselves reproduce the societies. As they synthesise, from the position they occupy, the set of social and cultural determinations that constitute them (Lagarde, 1993, p. 44), it is viable to
focus on them to explain the processes in which they are inserted. In that sense, acknowledging social phenomena as dynamic and transformable is the base to reverse women’s subordination. As Gunnarsson states, “...the assumption that gendered relations and identities are historical/social products rather than universal or ‘natural’ givens, constitutes a necessary condition for occupying the feminist philosophical position” (Gunnarsson, 2011, p. 29).

The challenge is to identify and explain the common experiences of women dairy farmers, in the way Patricia Hills Collins pursued in “...exploring the common themes of a Black women’s standpoint”, recognising the differences among black women’s lives (Collins, 2002, p. 4). In other words, how to know the experiences of women dairy farmers in the Highlands of Jalisco in the similarities and differences among them and other women? I saw in the fundamentals of the feminist standpoint a way to overcome this dilemma. By doing so, I could privilege the point of view of women as a contradiction of the masculinist hegemonic discourse of rural studies (Pini et al., 2014c; Saugeres, 2002). I could also problematise “...absolutes and universals, focussing attention instead on the situated, local, and communal constitution of knowledge” (Hekman, 1997, p. 356). As Harding states “...different groups are oppressed in different ways, [and] each has the possibility (not the certainty) of developing distinctive insights about systems of social relations in general in which their oppression is a feature” (2004, p. 9). In that way, women’s knowledge is valid for answering questions about the social relations in which they are involved.

Feminist standpoint theory permits observation of the social reality with a critical perspective. It reflects and explains how “...the different social locations that women and men occupy cultivate distinct kinds of knowledge” (Wood, 2009, p. 3). The subject of knowledge is substantial in the epistemology of the study because it implies the recognition of the participants as beings that know. But knowledge is linked to experience and as such to the positions of gender, class and age that go through the identity of people. That is to say that “...knowledge is always socially situated” (Harding, 2004, p. 7).

Feminist theory also offers interpretative resources to the study as it makes visible the inequality between sexes and the diverse forms of women’s subordination. Such perspective helps understanding how the devaluation of women’s work in the context of the dairy industry merges with gender ideologies that privilege asymmetric relations between sexes. Recent literature in this regard highlights the existence of diverse manifestations of patriarchy and its intersection with other systems and forms of hierarchy and domination (Hunnicutt, 2009b; Kandiyoti, 2005). With this study, I aim to
contribute ethnographic evidence regarding not only the forms of oppression but the resistance strategies that women develop to overcome subjugation (Kandiyoti, 2005).

A feminist epistemology demands to recognise participants as situated knowers. The research, as a situated relationship between the researchers and the research subjects, engenders ethical and methodological implications that must be acknowledged. In that sense, the present study recognises my motivations in studying the topic, the relationship with the women interviewed, and the identities I assumed in the field. Hence, I understood that “…the research is a conversation, a relationship, between two or more people, in which one learns about the other through interaction and experience, and then tries to interpret these findings for the academic (or whatever) audience” (O’Reilly, 2008). In the end, the study is based in women’s experiences; it narrates their standpoints and by making their lived experiences and knowledge explicit, by expressing them consciously and articulately, the study pursued boosting their awareness regarding their economic contribution.

By doing an anthropology of women, the research aims to perform an examination of the real and symbolic existence of women in a history in which the protagonists are women. Therefore, the focus is on the “vital facts” as organisers of ways of life that women share according to the generic condition of women (Lagarde, 2011, p. 44).

**The sexual division of labour**

According to Marx, labour constitutes the activity that expresses a human effort. He states:

> Labour is, first of all, a process between man and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature [...] He sets in motion the natural forces which belong to his own body, his arms, legs, head and hands, in order to appropriate the materials of nature in a form adopted to his own needs (Marx, 1867/1976, p. 283).

Under this idea of work as a mechanism to meet human needs, Marx lays the foundations of historical materialism. Similarly, Hennesy explains that work will “…invite us to test the open secrets of social life by beginning with the premise that meeting human needs is the baseline of history” (Hennessy, 2009). Work organisation has a significant role in historical events, becoming a critical phenomenon to understand social dynamics. Under that logic, I set the sexual division of labour as a focal point to analyse the experience of women dairy farmers.
I use the concept of ‘sexual division of labour’, understanding that the organising principle of the division of labour is the socially sexed body. In this vein, I follow Meg Luxton’s (2006) statement regarding the existence of a sex/gender system that transforms “...biological sexuality into products of human activity” (p. 31). The distribution of labour by sex arises from a binary system that assigns ‘men’ and ‘women’ skills and abilities to perform different, hierarchical, and ‘complementary’ tasks. In the late nineteenth century, Emile Durkheim argued that the sexual division of labour gradually gave rise to a specialisation of responsibilities, confining women to the affective realm and men to the intellectual one. According to this French sociologist, such division of labour does not separate both functions but allows its complementarity and even “...goes beyond the sphere of purely economic interests, for it constitutes the establishment of a social and moral order” (Durkheim, 1893/1984, p. 21). In his analysis, Durkheim identified that the consequences of the sexual division of work are not limited to moments when people engage in an exchange of services but extend considerably beyond. This idea was analysed in depth by feminist scholars asserting that among such consequences remains the perpetuation of hierarchies in the social recognition of work (Carrasco, 2006; Federici, 1975, 2012; Hirschmann, 2016; Mies, 2007; Pérez, 2014).

A critique from feminist scholars of Marx’s definition of labour was that women’s work is often ignored by Marxist economists, even its necessary role for biological and social reproduction (Hennessy, 2003). The patriarchal bias of Marx’s thinking about the feminine situation maintained the idea of a natural division of work and ignored the role of tasks associated with reproduction (Coco & Daza, 2017). The feminist perspective of the social division of labour considers Marxist thinking about work as a creator of the value of use and satisfaction of human needs, introduces the role of reproductive activities and recovers invisible elements, mainly domestic and care work.

In a feminist critique of Marx, Federici explains how capitalism intersects with patriarchy, taking advantage of women’s paid and unpaid labour to contribute to capital accumulation (Federici, 2008/2013). In the context of the movement ‘wages for housework’, Federici explained:

We have learned from Marx that the wage hides the unpaid labour that goes into profit. But measuring work by the wage also hides the extent to which our family and social relations have been subordinated to the relations of production – they have become relations of production – so that every moment of our lives functions for the accumulation of capital. The wage and the lack of it have allowed capital to obscure the real length of our working day. Work appears as just one compartment of our lives, taking place only in certain times and spaces. The time we consume in the “social factory”, preparing
ourselves for work or going to work, restoring our “muscles, nerves, bones and brains” with quick snacks, quick sex, movies, all this appears as leisure, free time, individual choice (Federici & Cox, 1976/2012, pp. 35-36).

In the 1970s and 1980s, primarily through the influence of the second wave of feminism and Marxism itself, scholars paid attention to the unpaid and unrecognized work performed by women worldwide. As Harding points out, “...women's movements needed knowledge that was for women” (Harding, 2004). Researchers studied the role of housework and women's unpaid caring work in subsidising both male waged jobs and capital accumulation (Ackerly & True, 2010; Dalla Costa & James, 1973; Federici, 1975; Folbre, 1994; Mies, 2007; Visweswaran, 1994). Maria Mies called this process “housewifization”, referring to the construction of woman as mother, wife and housewife, resulting in the use of female labour as a free resource (Mies, 2007). In the current capitalist system, female work still relies on the idea of complementarity circumscribing women to unpaid and unrecognised labour and provoking job segregation by sex. This view is supported by Nancy J. Hirschman, who states that “…gender is not the problem per se, inequality between men and women is, and the sexual division of labour is at the heart of this inequality” (Hirschmann, 2016, p. 658). Furthermore, Picchio affirms that unpaid domestic and care work are

at the core of the capitalist system, where different spheres and aspects of production and social reproduction cross and conflict in an economy motivated by profit and in a household still pervaded by patriarchal illusions of infinitely self-sacrificing women, and endangered by male confusion between the real strength required to master one’s own life and the exercise of power over women (Picchio, 2015, p. 253).

Pierre Bourdieu explains that the division between the sexes responds to an "order of things" systematically perceived as normal and presented both in its objective state and in the social world and in bodies and habits, which are systems of perception of the world that underlie action and thought (Bourdieu, 2010, p. 21). Thus, forms of being and knowing, which are socially constructed, grant legitimacy to a division of the sexes.

The social order functions as an immense symbolic machine that tends to ratify the masculine domination on which it rests: it is the sexual division of labour, very strict distribution of the activities assigned to each of the two sexes, of its space, with the opposition between the place of meeting or the market, reserved for men, and the house, reserved for women... (Bourdieu, 2001, p. 9).
The sexual division of labour finds its explanatory basis in the classification of the biological difference between the sexes. “The social world constructs the body as a sexually defined reality and as a depository of sexually defining principles of vision and division” (Bourdieu, 2001, p. 11). However, Bourdieu explains, it is not the biological difference which determines the symbolic organisation of the sexual division of labour:

[...] rather it is the arbitrary construction of the biological, and especially the body, male and female, their customs and their functions, in particular biological reproduction, which provides a seemingly natural basis for the androcentric view of the division of sexual activity or of the sexual division of labour and from all the cosmos (Bourdieu, 2013, p. 37).

As a result, a relationship of masculine domination is legitimised by placing it in the realm of biological nature.

Earlier, Lourdes Benería stipulated that the naturalisation of women’s role in reproduction was at the basis of women’s subordination. On the one hand, the concentration of women in reproductive activities reduces their mobility outside the household and, on the other, the division of labour in non-domestic production “tends to reproduce gender hierarchies at the household level and to create mechanisms of female subordination” (Benería, 1979, p. 222). Silvia Federici goes beyond the naturalisation of reproductive activities and the role of the social structures defining the sexual division of labour to highlight the mechanisms of the feminisation of reproductive activities and its usefulness for the accumulation of capital:

The difference with housework lies in the fact that not only has it been imposed on women, but it has been transformed into a natural attribute of our female physique and personality, an internal need, an aspiration, supposedly coming from the depth of our female character. Housework was transformed into a natural attribute, rather than being recognized as work, because it was destined to be unwaged. Capital had to convince us that it is a natural, unavoidable, and even fulfilling activity to make us accept working without a wage. In turn, the unwaged condition of housework has been the most powerful weapon in reinforcing the common assumption that housework is not work, thus preventing women from struggling against it, except in the privatized kitchen-bedroom quarrel that all society agrees to ridicule, thereby further reducing the protagonist of a struggle. We are seen as nagging bitches, not as workers in struggle (Federici, 2012, p. 16).
Chapter 3. The investigative road and women dairy farmers as research subjects

Drawing on the discussion of female labour from the perspective of feminist economics, this study recognizes the existence of a sexual division of labour that organises the responsibilities of production and reproduction in a hierarchical mode (Esquivel, 2016). By overcoming the restrictive assumptions of the orthodox economy that omits and excludes unpaid or non-market activity (Carrasco, 2006), this study considers the process of social reproduction as the axis of structural processes and fundamental for the capitalist system (Picchio, 2015). In the same sense, I agree about employing the “sustainability” of life (Pérez, 2014, pp. 24-27) as a valid parameter for analysing the decision making of farming families.

Following the ideas of the social construction of the division of labour and its relation to women's subordination, Pérez Orozco states that the division of labour encompasses three conditions: first, it is a systemic division of labour resulting from socio-economic and political structures. Second, the key criterion for the division of labour is sex and is accompanied by an ethnic and class division. Third, jobs holding less socio-economic power are associated with femininity and, in a capitalist society, these are the works that sustain life (Pérez Orozco, 2014).

The hierarchy underlying the division of labour rests on the dichotomous view of two spheres organising human actions: a productive sphere, where the production of goods for the market takes place, and a reproductive one where there are activities with no economic value. A first step to understand the family organisation of work in dairy farms is to break such formulation. If we were to examine the division of labour in family dairies through the lens of this dichotomy, we would overlook that productive and reproductive activities coexist in the house and on the farm and that labour organisation transcends the search for profit. The reproductive-private/productive-public dichotomy is inefficient because it hides both the economic contribution of housework and care work and the everyday social reproduction that occurs on the farm as a workplace.

Following the notion that the sexual division of labour is central in feminist economics, I agree with Amaia Pérez when she proposes that to encompass the entire economy, the visible and the invisible, we need an approach that integrates spheres and works. Feminist economists support moving along the analytical axis from the processes of capital valorisation towards the processes of sustainability of life. That is the reason for calling for an understanding of socio-economy as an integrated circuit of production-reproduction, paid work-unpaid work, market-State-households, and assessing to what extent it generates conditions for a “...life that deserves to be lived” (Pérez, 2014, p. 47: own translation).
When examining the composition of women's activities and the sexual division of labour, the inter-relationship between reproductive and productive activities makes it difficult to draw a clear-cut line between the two. Benería and others have argued that women's participation in productive and reproductive activities cannot be separate: “...in fact the distinction becomes artificial if we view production as part of the overall process of reproduction” (Benería, 1979, pp. 210-211).

In the field of rural gender studies it is recognized that gender divisions in farming have cultural rather than biological fundamentals (Shortall, 2002). Authors have analysed the role of sexual designation in the allocation of responsibilities showing a prevalent hierarchy between male and female labour (Boserup, 1970; Federici, 2012; Heggem, 2014; Holmes & Slater, 2008; Mies, 2007; Pini, 2003). Early in the 1970s and 1980s, Esther Boserup (1970, 1989) and Lourdes Benería (1979; Benería & Sen, 1981, 1982) noticed the integration between domestic and farming work in rural economies. It was obvious that for rural women hours of work “…include not only daily maintenance and reproductive activities, but also direct participation in social production of use and exchange values (such as agricultural production and animal care), circulation activities (marketing of goods and petty trade), and wage labour” (Benería, 1979, p. 211).

This thesis is an attempt to change the narrative that economic individuals and relations are motivated solely by profits. As suggested by Antonella Picchio (2015) when she analyses the austerity policies, it is necessary to change the narrative by linking daily lives with the capitalist economy and by “opening the analytical frame to complexity and social tensions: connecting structural processes, institutional levels, sexed individuals and society, personal and social relations, public and private spheres and reproductive sectors” (p. 251). A major contribution to unveiling the social consequences of capitalist policies in daily lives has been the feminist perspective that, as Picchio states, revealed the dimensions of unpaid domestic work and its unequal gender distribution (Picchio, 2015, p. 252). This perspective sees women emerge in the analysis as new political and economic agents.

In an attempt to connect global economic policies with the everyday lives of women dairy farmers, I suggest drawing a model that allows analysis of the interactions between the structural relations of capitalist production and social reproduction through the lens of family milk production. For this, it is necessary to: a) identify individual and institutional elements, b) separate them, c) analyse their position and function, and d) connect them through their functions within the structure.
The affective dimension of work

During the analysis of the information, I identified the affective dimension of work for both men and women as a fundamental element both for social reproduction and for the functioning of the local and global economy. In the literature there are two tendencies in the discussion of the affective dimensions of work. One is the study of waged jobs that demand care and attention from the workers (Dowling, 2012; Hochschild, 1983). For instance: nurses, babysitters, waitresses, flight attendants, geriatricians and domestic workers. The other is the analysis of reproductive work devoted to family and loved ones, which is not paid and not recognized as work (England, Budig, & Folbre, 2002; England & Folbre, 1999; Folbre, 1986, 1994). In both cases, the conclusion is that care activities continue to be tasks linked with feminine ‘natural’ attributes facilitating their devaluation and hiddenness. As noted by Daniels, “…the idea that emotional work should be natural for women contributes to the idea that their work is less skilled or that this part of their work should get less reward” (Daniels, 1987). This does not mean that men do not perform emotional work, but that there is a gendered division of emotional work having effects on realms such as the division of household labour (Erickson, 2005), psychological health (Strazdins & Broom, 2004), couple relationships (Duncombe & Marsden, 1993), and job satisfaction (Cottingham, Erickson, & Diefendorff, 2015).

Because care and affective labour are socially linked with women’s nature, these types of duties are placed far away from the category of work, making it imperceptible. Questioning the invisibility of care work, Daniels asserts that “even without remuneration, it (invisible work) at least shares one aspect of the common-sense definition in that some people are expected to do it and can be sanctioned for not doing it” (Daniels, 1987, p. 413).

Following on from the concept of ‘affective dimensions of labour’ and Marxist historical materialism (1867/1976), I state that attaining personal and family needs, whether they arise from the stomach or the imagination, is a goal backing up the determination to work, generate profits and organise labour. In the same line, Hennessy states, “…invites us to probe the open secrets of social life by beginning with the premise that meeting human needs is the baseline of history” (Hennessy, 2009, p. 310), and it is because work is a social enterprise that emotions influence the day-to-day work where and when people share time and space building relationships. Recognizing the interpersonal core of labour, Dowling calls for “…recognising the emotional and affective dimension of the social organisation of labour” (Dowling, 2016, p. 9).
The affective element is not of minor importance – more, it influences the processes of invisibilisation of unpaid female work. This is related to the socio-cultural mechanism that, Erin Hatton (2017) explains, hides female work through the reproduction of gender roles. This mechanism joins with two others, one legal that regularises work and one socio-spatial that determines what is a workplace. While Hatton is interested in explaining the mechanisms of invisibilisation of women's work, Pérez Orozco breaks the term down to define it as a process of exercise of power materialised in a set of gaps causing such work not to be a subject of public and political discussion. That is, not recognizing such works includes not only the lack of data, quantitative measurements, remuneration and legal frameworks, but also a lack of names and concepts to apprehend what happens in those works, of a knowledge recognition system and of political structures from which to define claims (Pérez Orozco, 2014, pp. 177–179).

Recalling feminist economics, I observed the sustainability of life as an element through which to observe the functioning of the economic system. Therefore, during the identification of variables and the coding processes, I focused on the activities that women perform to sustain families and communities, to achieve the life that is worth living (Pérez Orozco, 2004), and by doing so I identified women's motivations and decision making in a scope that included social relationships and emotions.

I argue that work performed by women in family dairy farms undergoes mechanisms of devaluation making it elastic and never-ending and an essential condition of the family reproduction, the survival of the farm and the processor, and the commercialisation of companies’ profits. In other words, the affective dimension of labour along with the ‘naturalisation' of caring activities shape the sexual division of labour, making possible the family reproduction and the ongoing process of capital accumulation.

3.4. The investigative road

To answer the research questions, I designed a qualitative methodology linking structural and cultural processes in an explanatory narrative. I started proposing an ethnographic study to understand the everyday life of women dairy farmers from their positions and discourses.

During the investigation, I had some doubts about the ethnographic nature of my work. Finding diverse definitions about it was not very helpful. Hammersley highlights that the disagreement about the definition “…is frequently not limited to methods of research design, data collection, and analysis, but extends to methodological, ontological, epistemological, ethical, and political ideas” (2018, p. 6). Then the lack of unity implies not only its definition but how ethnography is understood. The matter is linked with
the history of the method. As O'Reilly explains, “ethnography was first established as a method within the context of anthropology, which was then a fledgling discipline trying to establish itself as one of the sciences of society” (2008, p. 160). Privileging a network perspective, Vasilachis de Gialdino states that ethnography focuses on exploring how the complexity of social relations is expressed in everyday life and the meaning that people attribute to such interactions (2007, p. 34).

Despite the diverse meanings, some certainties are needed to achieve a method that facilitates answering the research questions. Hammersley calls for a recognition of the weaknesses of ethnography as well as its strengths: it is usually weak if we want to generalise to large populations or if we want to test causal claims strongly, but it is more effective for providing descriptive detail and ensuring accuracy, in minimising reactivity, and in allowing the tracing of causal processes (Hammersley, 2018). It would be idle to stop here in this debate. My position agrees with Forsey and Shweder that there is not such a thing as a “true ethnography” (Forsey, 2010; Shweder, 1996) but a variety of traditions within which ethnography is defined. In the next pages, I will focus on explaining how I understand ethnography and how it was useful in my study to link it with a feminist perspective in the design of methods of data collection and analysis of information.

I start with the principle that ethnography is “...a formation of study aimed at understanding and explaining the cultural context of lived experience” (Forsey, 2010, p. 567). I also agree with the idea that ethnography's definition relates not just to the methods used “...but the questions asked and how they are analysed” (Skeggs, 2001, p. 427). For the purpose of this research, ethnography is understood in the triple meaning that Guber outlines: as a focus, a conception and practice of knowledge that seeks to understand social phenomena from the perspective of its members (understood as actors, agents or social subjects); as an open research method that integrates various surveys, non-directive techniques and prolonged residence with study subjects; and as a text resulting from fieldwork that interprets or translates the behaviour of a culture in a description, usually written, that links theory and field (2001, pp. 16-19).

I conducted fieldwork over a year within the settings of the participants, utilising different research techniques including participation and observation. As Skeggs suggests, I was mindful about how the context informs the action and of relationships between the researcher and the researched (Skeggs, 2001).

I lived in Tepatitlán de Morelos, one of the leading cities of Los Altos de Jalisco during my fieldwork, but I have been living there for the last eight years. Maybe for a non-Mexican, living in Tepatitlán would mean immersion in the field, but for me, it was
clearly not. I asked myself two opposing questions: was I doing fieldwork even when I didn't live among the participants, and was I conducting research 'at home' because of my closeness to the setting? (Hockey, 2002).

The first question implied doubt about the proper development of the leading method of ethnography, the participant observation. The emphasis that anthropology has put on participant observation (Gerard, 2010; Hammersley, 2018) caused some concern because I could not distinguish the degree of participation my observation had. I realised I was not alone with such concern when reading Forsey's clarification about how he and other researchers, particularly postgraduate students “…sometimes feel a deep sense of inadequacy because they are not doing a classical (I would call it mythical) participant observer study” (Forsey, 2010, p. 560). In sum, my fieldwork integrated ‘participant observation’ in a broad understanding of the method which implies an involvement with the participants’ lives, making sense of its usefulness for my study by the constant intent (not that I always managed to do it) to make my impressions, feelings and thoughts conscious. As O'Reilly asserts when explaining the 'Participant Observer Oxymoron': “the tension between subjectivity and objectivity, detached observer and participant, group member and ethnographer, always remains whether one is literally adapting to a strange and ‘other’ culture or observing a parallel culture from a mental distance” (2008).

The second question challenged the boundaries of doing fieldwork in a setting that was both familiar and unfamiliar. The ethnographic perspective changed the way I sense, understand and explain the region. During one of my trips to San Miguel el Alto, I noticed my perception of the landscape changed. On March, 4, 2015, I wrote in my field notes:

> The alteño landscape, which was foreign to me eight years ago, became familiar and for seven years I got so used to seeing the red ground, the cows and the hills to the point that I stopped noticing. However, now that I come with an inquisitive intention, I observe it again, I smell it, I listen to it. With the senses focused in noticing, it becomes distant again. (Author’s Fieldwork journal, March, 14, 2015).

I understood then, that the anthropological gaze distinguishes imperceptible elements in the contexts of daily life. Also, I understood that Los Altos de Jalisco had never been my place. So, the answer is no, I did not conduct research at home. However, I understand that my relative familiarity with the place, the people and culture had repercussions during the fieldwork and in the results obtained. I reflect about that in the last section of this chapter.
As explained before, I start from a feminist anthropological perspective to understand the work experiences of women in a context of increasing local-global connectivity. In this study, women are protagonists situated at the core of their concrete life, their knowledge and their histories. The strain of feminist methodology did not emerge from nowhere; it brings into play previous scholarships that had already placed the emphasis on the social actors’ concepts – such is the phenomenological approach’s purpose to validate people’s knowledge and explanations as a contradiction of the ‘objective facts’ of positivism.

The unavoidable impact of the researcher on both the people whom she is investigating and the results of the study itself demands a permanent reflexivity. Ethics comes at the core of the research process, “...from the choice of topic and participants, to negotiation of access, to relationships, to interpretation, to representation and this is why reflexivity has always been a differentiating motif of feminist ethnography” (Skeggs, 2001, p. 5). Feminist ethnography visualises the relationships, power relations, subjectivities and the two-way learning process involved in the research. I that sense, I guided the methods and interpretation, attempting to follow a feminist ethnography that acknowledges the relationships, power relations, subjectivities and the two-way learning process involved in the research.

The setting

I developed fieldwork in six municipalities of Los Altos de Jalisco: Acatic, Encarnación de Díaz, San Ignacio Cerro Gordo, San Miguel el Alto, Tepatitlán de Morelos and Valle de Guadalupe (see Map 1). There is a concentration of cases in San Miguel el Alto, which has to do with the sampling technique. Of the 26 dairy farms I visited, women run twelve, with six operated solely by female labour. All of them are family businesses. Most female and male farmers inherited the knowledge of dairy farming from parents and grandparents, and they started milking during childhood, whether on family farms or accompanying their parents as employees of farms and agro-industries.

The system of milk production and processing is operated mainly by the family, which involves the active participation of women and children. Family farms provide milk mainly to LICONSA, the company Lechera Guadalajara and to the small business of a cheese industry located in the town. This site is appropriate for focusing on the analysis


15. The Social Supply of Milk Program (Liconsa S.A. de C.V) is a company of majority governmental participation that industrialises milk and distributes it with a subsidy price in order to support population in poverty conditions in Mexico. (Liconsa, 2014)
of the experience of women working on family farms since most of the families are involved in dairy production and cheese processing.

The number of women per community is different because it depended upon voluntary participation in this study. However, these numeric differences still preserved the representation of women in all the communities.

**Data Collection**

The data of the study is the result of three focus group recordings, a fieldwork journal, 48 recorded interviews from where I collected information about 32 dairy farms and observation in 26 dairy households. All dairy households in the study produce milk for both the market and household consumption.

In-depth interviews included 54 women working in dairy family farms, seven women working in dairy farms as employees, five male dairy farmers, two ‘ruteros’ or transporters that sell milk directly to consumers, and three association representatives. Some of the interviews included two or more people.
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Map 3. Localities of dairy households of participants in Los Altos de Jalisco

Note: The points in the map indicate the dairy households participating in the study.

The first methodological plan was to collect data through the following techniques: literature and document reviews, participant observation, an exploratory survey, interviews, focus groups and a field journal. At first, I tried to apply the survey and...
then conduct interviews with selected participants. In the end, I realised that when using it, I ended up chatting with the people and that trying to fill out the survey would only interrupt the thread of the conversation. During the second month of fieldwork, I decided to merge the survey questions with the interviews and allow the dialogue with people to flow in a way that helped me to understand their experiences more deeply. With this, I was able to obtain primary data such as characteristics of the informants along with family structure, farm location, production features and figures, and qualitative information valuable for understanding the experience of women from their standpoint. In the end, fieldwork was an interview-based research and the ‘engaged listening’ was carried out not only during the interviews but through sharing time with the participants and their families.

**Table 2. Interviews**

<table>
<thead>
<tr>
<th>People interviewed</th>
<th>71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women working in family dairy farms</td>
<td>54</td>
</tr>
<tr>
<td>Women working in dairy farms as employees</td>
<td>7</td>
</tr>
<tr>
<td>Male family members</td>
<td>5</td>
</tr>
<tr>
<td>Transporters</td>
<td>2</td>
</tr>
<tr>
<td>Cattle farmer representatives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Literature and documental review**

I carried out a review of scholarly literature and other documentation to place the research in the context of current theoretical debates on rural women as well as in the global economy, food chains and their relationship with local actors, and to contextualise the study in the recent history of the opening of markets in Latin America and the milk production in Mexico and Jalisco. It started with exploratory searching in the library and on the internet. This process was permanent through the study, from the research proposal elaboration and throughout fieldwork and the thesis writing.

Many sources were consulted. I derived statistical information from international institutions – the United Nations (FAO, UNESCO, WHO), World Bank, International Monetary Fund, World Trade Organization and that issued by official institutions in Mexico. There was more information from SAGARPA, INEGI and SEIJAL, from records of the Cámara Nacional de Industriales de la Leche (National Chamber of Milk Industrialists [CANILEC]), and from records of the Asociación Ganadera Regional de Jalisco (Regional Livestock Association of Jalisco). Other sources were local
Chapter 3. The investigative road and women dairy farmers as research subjects

associations of farmers, notes about the topic in the press, and literature reviews about dairy production, rural women and the work of women in milk production.

**Strategy for selecting participants**

The focus of my analysis is women and their families, with the selection criteria being women who milk in family dairies and women in waged milking jobs, to have a comparison reference. Then I attempted to identify women holding different positions regarding the division of labour, responsibilities, property and decision making. After six months of fieldwork, I was able to identify categories of participants and was in a position to ensure a minimum number in each group. As a result, I got to know and interview women in four different roles:

a) women who work with family livestock owned by the male-headed household and when men (father, brother or husband) are present

b) women who are not owners but who oversee the family and the cattle in the absence of men on account of migration or waged off-farm jobs

c) women who are heads of household, owning land and livestock

d) women who work as waged workers in the dairy industry.

This differentiation is exclusively for methodological purposes because family and household organisation is dynamic and changes according to resources, events and the context in which they are embedded. The selection of other informants in research followed their relationship with women dairy farmers such a spouses, children, parents, siblings, and key agents as representatives of producer associations and men transporting milk haulers.

The selection of participants was influenced largely by my concern to learn about experiences that would offer a more holistic perspective. I was not looking for representativeness, so as not to fall into what Small criticises as the attempt of qualitative studies to imitate statistical language in problems for which they are not suited (2009). Even when I wasn’t looking for ‘samples’ (see Small 2009, below), I still gave attention to having access to some typical cases that helped me scrutinise the dynamic qualities of women’s labour in family dairy farms. Following Kallioniemi and Kymäläinen's example, my intention was to integrate “…examples of different women performing different roles on the farm: main farmer, as the main farmer’s spouse, a family member or an employed worker” (2012, p. 80). In that order, I refer to the interviewees grouping as a “set of cases” and not as a “sample” (Small, 2009).
To approach informants, I followed the logic of snowball sampling, the “practice of asking interviewees to recommend other interviewees” (Small, 2009). It started with a few people willing to participate and be interviewed. The set of cases expanded by my asking those initial participants to identify others that could participate in the study. This procedure was particularly useful to identify female dairy farmers, since they are barely registered as cattle farmers. It also facilitated the trust building of the participants who followed. As Small notes, this technique “...always increases the number of respondents because people become more receptive to a researcher when the latter has been vouched for by a friend as trustworthy” (Small, 2009).

A method that relies on the introduction of one informant to another could have resulted in a restriction of social networks and geography scope. However, I sought representativeness of several groups in several ways by:

a) incorporating participants from different municipalities through contacts such as cooperatives and representatives of farmers

b) searching for women who work in technology-intensive dairy industries and not only in family farms

c) integrating women of different ages

d) including the testimonies of other actors such as male relatives, intermediaries and representatives of the farmers.

With the understanding that a social research process is dynamic, dialogical and in a changing social environment, the technique of gathering information becomes a fundamental part of the evolution of this process. In the present study, snowball sampling had effects in three areas: the type of data obtained, the relationship that the researcher established with her participants, and the visualisation of social relations. As Noy explains, snowball sampling “is essentially social because it both uses and activates existing social networks” (2008, p.332).

Once I was introduced to another participant, I would consider, in dialogue with the people involved, the time and place of the interview. Sometimes it was possible to organise it right then. At the end of the interview, I requested permission to participate in the milkings; it is worth mentioning that I never got a “no” as an answer. According to my relationship with participants and their families, I made one or several visits to the same dairy household. From those trips I obtained recorded interviews with one or more family members, field notes, photos, videos and sometimes the agreement to come back to be introduced to another woman who milked. Snowball sampling has
been criticised for its lack of representativeness. For instance, one criticism is the selection bias, since first contacts select respondents based on their own preferences and, in the end, people tend to agree with one another (Woodley & Lockard, 2016, pp. 323–324). Another issue is the limited diversity of “existing networks” (Woodley & Lockard, 2016, p. 323). Regardless of its limitations, however snowball sampling tends to be “accepted and comfortable for the subjects being studied” and, furthermore, “provides womanist, feminist, and multicultural scholars with a way to use social networking to study marginalised populations without further marginalising them” (Woodley & Lockard, 2016, p. 324).

**Access and informed consent**

Recommendation from one informant to another was a key to access the setting. It involved generating trust and being open to the doubts and questions of the participants. As Bruce L. Berg notices, “...access is not something achieved once and for all. It has to be negotiated and renegotiated all along to different groups, different people, for different topics” (as cited in O’Reilly, 2008, p. 6).

I talked to potential participants about the purpose of the research. Once they agreed to participate, I handed them the ‘information sheet’ with written information regarding the study so they could read it at their leisure. Before starting any interview, I also asked participants to sign the written consent (see Annex 4) by which I asked for their agreement to participate and their willingness for me to use their real names or pseudonyms, as well as for their permission to audio-record the interview. This step was not always easy, as people in the region are used to trusting – or rejecting – people straight away, and I had the perception that asking them to sign a form acted as a block in the trusting process. However, I explained that gaining consent was mandatory for my study and it was a tool for them to demand me to comply with confidentiality. In the end, no-one declined to provide consent, and I used an oral consent (see Annex 4) a couple of times when people wouldn’t be familiar with documents. I also asked participants for their permission for me to take pictures.

**Participant observation**

Ethnographic studies, and participant observation in particular, vary widely in substance and nature, with O’Reilly (2008) noting that “the distinction between participation and observation takes place on a continuum from full immersion in the setting or culture to very minimal participation, not only between but also within individual studies” (p. 162). By observing and participating in the household, farming and community activities, I learned about the experience of women in the framework of everyday life because it is there that both the routine and extraordinary events occur. My participation in
community cultural and religious activities was relevant for the study, since, in collective events, it is the discourses and practices that take place that express values and symbols of and about women, their work and their role in the community. Being involved in a variety of activities enabled me to see the members of the community in their daily lives and participate in their activities to facilitate a better understanding of their behaviours and activities (Kawulich, 2005, p. 17).

The direct presence afforded by this technique is certainly a valuable contribution to social knowledge. It has the advantage of being immersed in the culture over an extended period without mediations and offers to a critical observer an informed perspective on reality in all its complexity. However, it is evident that the subjectivity of the investigator also has to be taken into account (Naidoo, 2012, p. 2) and that the investigator has to be aware of the interplay of subjectivities. As Forsey notes, listening is as important as anything else and maybe “…ethnography is at least as much about conversation as it is about observation” (Forsey, 2010).

Women and their families shared their days with me. They allowed me to get closer beyond interviews, and we ate, milked, talked, laughed, and cried. I agree with Forsey’s call for a “…democracy of the senses” (2010, p. 562). The fieldwork that I developed for this thesis involved all my senses. My involvement consisted of visits, talks, interviews, participation in the milkings, and attendance at assemblies and a public demonstration against the low price of milk. I was involved in family and town festivities, accompanying women in everyday life, including a couple of nights in one of the households. An extract from my fieldnotes illustrates this better:

After the milking we went to have breakfast. What I found on the table was a work of art. Dishes with beans and ‘nopales’\(^{16}\), clay cups with pot coffee, napkin rings with handmade tortillas, a plate with avocados, two meat dishes and a tomatillo sauce. I told them that it looked delicious and asked if I could take a picture. I left the bread I had brought on a washing machine next to the table. The house was impeccable. When I saw the tortillas and Ana saw my admiration, she guided me to their stove. There were her mother and sisters; one of them was packing, another one standing in a corner and her dad was sitting having breakfast. The smell of firewood, tortillas and beans was sensational. I introduced myself, thanked them and told them that everything looked delicious. We talked then about how ranch food is despised when it is so nutritious and tasty. I went back to eat there with the boys and my daughter at the table in the living room. Everything was delicious! I ate and told them that it was the richest I had eaten in a long time and it was true – I am already salivating by remembering those beans harvested by them and

\(^{16}\) Flat cactus pads (‘Opuntia cacti’) traditionally eaten in Mexico.
cooked in a clay pot; and the handmade tortillas made with corn grown by themselves (Author's fieldwork fieldwork journal, November 5, 2015).

Being in the field with the women producing milk and their families was a feast for the senses. It was not just observing and trying to participate in the work because my participation never ceased to be that of a stranger to the family. However, the fieldwork involved many aspects of sense: the smell of the countryside as soon as the roads began to be dusty the sight of the landscapes that change throughout the year and where the houses are isolated and almost always attached to corrals and paddocks where the cows graze, the smell of the stables, the mixture of the ‘cow smell’ – food, milk and excrement, the touch of the cows on the several occasions when I tried to milk them, the touch of the pasture and the forage, the taste of freshly milked milk, the smell and taste of the food they shared with me, and even the feeling mixed with wonder, peace, and anguish when participating in morning milking when the sun had not yet risen. There was the sound of ranchera music, the ‘corridos’17 and the band so popular in the area, and, of course, listening to the words of the people – not only those recorded in the interviews, but the conversations off the record and the conversations in which I did not participate such as those between husband and wife, between sisters and brothers, between parents and children. The words of the people included the speeches in the assemblies of farmers, the slogans in the demonstrations and even the sermons of the priests during the masses to which I was invited.

In the end, it was possible to ‘participate’ in moments of their life and not just observe but to be there with all the senses, because that is what fieldwork allows us to do, to be involved so we can create reliable and worthwhile knowledge.

**Interviews**

I carried out in-depth interviews with 54 women working in dairy family farms, seven women working in dairy farms as employees, five male dairy farmers, two ‘ruteros’ or intermediaries who sell milk direct to consumers, and three association representatives. Some of the interviews include two or more people. The usefulness of interviews in this research relies on the opportunity that they offer “…for creating and capturing insights of a depth and level of focus rarely achieved through survey, observational studies or the majority of casual conversations we hold with our fellow human beings” (Hockey & Forsey, 2013, p. 71).

With the agreement of the interviewees, I recorded the interviews and from the transcriptions gained general data of the interviewees: household data such as the

17. Popular epic songs.
number of people, ages and occupations – domestic, care and community work – and characteristics of the dairy farm regarding resources, technology, work and productivity, and marketing (see questionnaire in the Annexes).

Figure 3. Age range of women interviewed

Semi-structured and in-depth interviews with key players were conducted with two purposes. The first was to gather information on the dynamics of milk production inside family farms and the experience of employed women in the dairy industry. The second
was to know and make known the women’s perception of their work. The advantage of semi-structured interviews is that they allow the researcher to be alert to signs that respondents provide and to have access to their cultural universe during the discovery of the best questions that the interviews’ flexibility allows (Guber, 2001).

The number of informants I was likely to be able to include was unknown. The interviews followed one another until I found saturation, that is, the information began to repeat so did not provide much more understanding of the study questions. At that point, I then analysed which topics I had not completely explored and changed some questions, looking for informants holding different positions. I chose the following participants deliberately, based on the continuous reflection of the findings attempting to achieve an “...increasingly refined and continuously re-evaluated understanding of the underlying phenomenon” (Small, 2009, p. 26). I looked for milk distributors, personnel of the companies, representatives of the cattle farmers, local authorities and administrators of collective tanks. I did not manage to hold recorded interviews with all of them but, in simply talking to them, I could get a wider perspective about the problem under study and strengthen the representativeness of the case to better understand the work experience of women dairy farmers.

I used the interview in its performative character, meaning that it is a face-to-face situation in which different reflexivities come to encounter one other. During the dialogue a new reflexivity arises (Guber, 2001, pp. 69-70) creating social relationships where the interviewer and the interviewees create a process of co-production of information because the informant “...is not an object, but a subject with agency, history, and his or her own idiosyncratic command of a story” (Madison, 2011, p. 26).

Although the interviews I conducted followed a previously elaborated script, the participants and I, as an interviewer, modified the order and emphasis of the topics planned according to the dynamics of the interlocution. I started all interviews with women dairy farmers with the same script. The issues and the duration dedicated to each of them were different according to the significance they had for them. Also, new topics arose from the experiences of the participants, such as the influence of the extended family on the daily family life, gossip within the community, the weight of widowhood and the difficulties of operating a dairy farm in a patriarchal context. Even the hour and place of the meetings influenced the relationship and dialogue that the participants and I established, thus being factors in determining the final result of the interviews.
Focus groups

Focus groups\(^\text{18}\) were conducted with participants who had already participated in an interview or whose dairy farm I had visited. The goal was to motivate dialogue between women about the perception of the work they do in the milk production.

The decision to conduct focus groups after interviews was a response to my interest in emphasising the shared conditions of women dairy farmers. Focus groups promoted dialogue about their experiences of work and their contribution to the support of their families and communities. Likewise, by prioritising the exchange between participants and encouraging the free expression of ideas, I attempted to reduce my influence on the participants’ responses.

The usefulness of this technique is that it encourages dialogue between people who share a situation or social position. For example, in her study of women working in the sugar industry in Australia, Barbara Pini recognises that “…what was important about the process of the focus group is that women gently challenged each other’s interpretations of themselves and their work as invisible, providing avenues for change and self-growth” (2002, p. 345).

Fieldwork journal

The fieldwork journal was a key in my commitment to reflexivity and a useful tool to register the details of the fieldwork that served in the analysis of the results. The written notes of a field journal are configured by the participant observation and they emerge from the significant social processes and their contexts that can be observed and remembered (Hammersley & Atkinson, 1983, p. 145). My fieldwork journal registered: difficulties encountered in performing research; reflections on symbols, meanings and practices identified; self-emotions; perceptions about my presence inside the community; my actions related to my identity (or multiple identities); ideas to include in the interpretation; plans for the next day.

Analysis

Data analysis challenged my goal of making sense of the information. The process involved moving from a messy set of words, images, concepts and emotions to build a congruent story, beginning by deciding the most relevant lines of analysis for the study. It involved a spiral process of reading, listening, transcribing, sorting, organising, translating, discarding, coding and linking.

\(^\text{18}\) I had the assistance of Andrea Victoria García Arriaga in taking notes and photographs of the focus groups. She also shared with me her reflections about the differential treatment of animals by women, the lack of free time and family coexistence.
The analysis of information consisted of exploring four main themes in dairy households: a) production practices (including the generational transfer of knowledge), b) technology, c) commercialisation strategies, and d) family sustenance and the allocation of tasks and responsibilities. I used the program NVivo to organise the data and identify regularities concerning the main topics in the interviews and field notes. I linked theoretical categories with empirical data, focusing on the main topics through the designation of codes. There was an analytic process through which I identified commonalities and frequencies. One of the main emphases in the analysis was exploring how traditional and modern practices of production intertwined, as well as determining the criteria guiding the allocation of tasks both in the farm and in the house. By doing this, I intended to connect individuals, fundamental processes, institutions, and personal and community relations.

Analysis started with the data collection process. It was inductive and deductive, as I moved back and forward from my theoretical and epistemological perspective to the data but, furthermore, to the people, to women’s experiences. The first step was to count interviews, classify participants and look for commonalities. I compared variables with each other to identify significant relationships. For instance, to explore the economic constraints of families, I related the buyer of milk to the price paid to the producer and the demands of quality. Displaying such data made some patterns emerge and I could identify the type of pressures faced by families according to the commercialisation strategies.

3.5. My position in the field

During the stages of fieldwork, analysis and writing, I considered the participants as active and dynamic beings. In that sense, I attempted to be aware of power relations and be vigilant about it. As Järventie-Thesleff et al argue “…roles can be understood as boundary objects that acquire their intermediary status by virtue of being positioned simultaneously within several different worlds or domains of knowledge” (Järventie-Thesleff, Logemann, Piekkari, & Tienari, 2016, p. 236).

As an interviewer, I became an interviewee. People want to know who you are and why you are interested in their life. Sometimes the questions were personal: are you married? How many children do you have? Where do you live? I tried to answer everything in a spirit of reciprocity and as a gesture to their time and kindness. Expectations are also created by the presence of a strange and ‘educated’ person from the ‘University’ because then maybe you can ‘do something’ for them. The relationship with women created bonds of friendship with some of them. Then I became a confidante and friend. This implied a stronger sense of responsibility.
Reflexivity is fundamental, considering the diverse identities by which we reach the field. In the analysis of her own experience using reflexivity in rural research, Barbara Pini (2004) shows the usefulness of situating one’s identities in the field and stresses the importance of producing “better science” by being “explicit” about the mediation of identities in the access to participants, data gathering, questions and interpretations that we produce (Pini, 2004). In this regard, critical ethnography talks about ‘positionality’ as a way to acknowledge our own power, privilege, and biases and to be aware of “…our own research paradigms, our own position of authority and our own moral responsibility relative to representation and interpretation” (Madison, 2011, p. 7).

My position as a mother was the one that most facilitated access to the informants. This identity allowed me to find common topics and concerns to talk about with women. O’Reilly explains this advantage clearly: “…people often find it much easier to relate to someone in terms of a role they understand, and which is accepted in the setting. This role may be that of ethnographer, or it may be as mother, daughter, or stranger” (2008, p. 10). Another identity crucial to access the field was my job as a university teacher. The University of Guadalajara is widely known in the state and being a teacher gave me, I suspect, a respected persona. It was also a position of power which I tried to ameliorate with processes of accountability. It was not easy to be aware about how my opinions affected my access and, furthermore, people’s expectations, and even their responses.

I forged a study from my location as an anthropologist, teacher, mother, Mexican, woman and feminist. These ways to put myself in the field defined my relationship with participants in various ways: facilitating or impeding my access to the community, generating commitments to participants, and modelling the result of the investigation. Being aware about how I presented myself to the community helped to differentiate the contexts and the presence of my interpretative frameworks.

**Ethics and Reflexivity**

The Human Ethics application for this research received approval from the Chair of the Humanities & Social Sciences Delegated Ethics Review Committee of the Australian National University on 19 November 2014 (protocol 2014/591). Following the recommendations of the Ethics Committee about being respectful of the dairy farmers’ time, I organised visits and interviews in the places and at the times participants established.

Confidentiality was an ongoing concern in the research. During data collection, I respected the participants’ decisions to give or not give their names and other
personal details. Throughout this thesis I use pseudonyms and avoid personal details and identifiers that would allow readers to relate any participant with the information they provided. All participants were informed that they had the opportunity to withdraw their participation from the study at any time.

An important part of the ethics of study is the practice of reflexivity. In ethnography, reflexivity implies the recognition that an investigation will never be neutral because it involves the subjectivity of the researcher and the subjectivities of participants. O’Reilly explains that the reflexive turn in social studies “…awoke sensitivities to the role of the ethnographer in the construction of accounts and the politics of representation” (2009, p. 68). Therefore, ethnography outlines the importance of being honest about our situation and position during the investigation.

Rosana Guber talks about three subjectivities that come into play and dialogue during the ethnographic work: the reflexivity of the researcher as a member of society, the reflexivity of the researcher as researcher, and the reflexivity of the participants (Guber, 2001). This scenario persuades us to think that in the context of fieldwork we are immersed in a dialogue with others and then we assume that we are in reciprocal space where meanings are open and constantly constructed. This perspective leads us to think about the other/informant as a lively, changing and non-static human being and by doing so to confront the “…connotation of timelessness commonly described as the ethnographic present” (Madison, 2011, p. 10).

As Beverly Skeggs notices, “sensitivity to power has forced feminist researchers to be “constantly vigilant of the relations in which they are inscribed” (Skeggs, 2001). This enables an acknowledgement that people's time is important and establishes the intention of non-exploitation. Feminist ethnography calls for “self-reflexivity” as a way “…of breaking down hierarchical research relationships, or even antagonistic relationships between researchers and the researched” (Davids, 2014, p. 56). (See also Wasserfall, 1993.) It is an invitation to identify the situatedness of research, and to build an environment for our research subjects that is “…a hospitable, reflexive and safe home, as inter-subjective knowledge production not only entails relations in the field, but is also multidimensional and continues after fieldwork, embracing analytical and representation processes” (Davids, 2014, p. 26).
Chapter 4. Mexican dairy industry in the global panorama

4.1. Introduction

On February 10, 2016, milk producers in Jalisco and Aguascalientes, Mexico, began a convoy to the capital demanding the government exclude milk from free trade agreements. A month later, European farmers gathered outside the offices of the European Union in Brussels, where agriculture ministers were discussing the fall in milk prices, to demand better regulation of agricultural products and to protest the European liberalisation of the dairy market. Just a week after, on March 21, producers in Argentina mobilised to expose the crisis in the dairy sector and demanded from the government a ‘fair’ distribution of profits because, they argued, the price obtained for a litre of milk was lower than the production cost. During these three events, farmers demanded fairness in the dairy chain and stricter state control of milk product imports that competed with local production. These examples show the globalisation of the dairy market, in which power relations in the dairy market result in disputes between actors in the dairy chain rather than between nation states.

The disadvantages faced by milk producers contrast with the importance of their role in the dairy industry and the global agri-food system. Livestock is an important source of livelihood for millions of smallholder farmers worldwide. According to FAO, “...approximately 150 million households around the globe are engaged in milk production” (FAO, 2016). The International Farm Comparison Network (IFCN) indicates that in 2017 milk production fed over seven billion consumers and provided livelihoods for approximately one billion people living on dairy farms (IFCN, 2017). Along with meat and egg production, the dairy industry supplies almost all protein needed in rural areas and meets an important percentage of food demand in the cities.

The objective of this chapter is to understand the position of the Mexican dairy industry within the global dairy market. The first section studies the significant features of the global agri-food system that influences the dairy industry. Next, the chapter describes the dairy industry in Mexico, comparing the national trends in production, industrialisation and consumption with the world statistics, including an exploration regarding women's participation in dairy production. The third section explores the participation of Mexico in the global dairy market and, to conclude, the summary delineates the main challenges of the Mexican dairy industry.
4.2. The global agri-food system

The dairy industry is not isolated from general changes in the agri-food system. Agricultural production worldwide has been the subject of radical changes resulting from free market policies. The global scenario of agriculture is moving towards globally competitive value chains. This scenario entails trade liberalisation, an international division in food production, a shift from public to private regulation, increased safety control and the incorporation of new concepts in food production, all of which provoke local changes in the dynamics of agricultural production, with major effects on women.

The liberalisation of markets is done through trade agreements between countries and regions. Following the logic of competitive advantages, a regulatory principle is that all people involved would benefit from their participation in the value chain. The Organization for Economic Co-operation and Development (OECD) clearly illustrates this trend by advising that “use of resources – land, labour, physical and human capital – should focus on what countries do best” (OECD, n/d). This model encourages the integration of international markets to produce a variety of new products for diversified, sophisticated and changing markets that are usually created in richer countries (Kay, 2007). What makes this tendency possible is the transnational companies’ potential to control the economic process “…from the point of primary production, the machinery, inputs, industrial processing, and marketing of the products, in both internal and external markets” (Hernández et al., 2000, p. 160). The consequence is a specialisation of agricultural areas according to global guidelines and international agreements.

The international division of labour implies the production of one commodity at various sites and entails the movement of transnational corporations to places where labour, environmental and tax regulations are more flexible. Promotion of Non-Traditional Agricultural Exports (NTAE) clearly exemplifies the tendency. For instance, in Latin America and worldwide, NTAE have replaced local and basic crops, mainly grains, to produce what the global market demands (generally flowers, fruits and vegetables in response to European and US interests). In this scenario “…areas of village-family production are transformed into regions of cultivation and development of modern agriculture, oriented toward internal and external market production, and primary material for agro-industry” (Hernández et al., 2000, p. 160). Consequently, there is a lack of job security since the constant movement prevents companies generating commitments to workers. Women are the preferred employees of these companies, since they are the ones who most easily accept flexible jobs that are characterised by their seasonality according to the agricultural calendar (Anderson et al., 2018), and lack of social security.
In Latin America, this shift towards global agriculture began in the 1980s with the fall of the import substitution model and the consequent neoliberal reconstruction. The World Bank and the Monetary Fund encouraged the implementation of ‘Structural Adjustment Programs’ (SAPs), giving rise to state reforms such as privatisation of land and state enterprises, trade liberalisation agreements and eradication of subsidies to agricultural production. Latin-American countries experienced economic growth as a result of the economic opening in the first half of the 1990s, but that scenario changed around 1995 and, according to Vos, Ganuza, Morley and Robinson, because of reforms “…not only has overall growth been far less than during the period of import substitution, but export growth has also slowed down and is still dominated by primary products” (Vos et al., p. 41).

In a changing economic and social framework in the rural areas, the concept of 'New Rurality' emerged as both a perspective to understand the transformations of rural areas in the context of the global economy and as a model to guide rural development policies. The new rurality focuses on the growth of agriculture for the global market, non-agricultural activities in rural areas and the link with urban areas. For Ramírez-Miranda (2014), the name hides what should be called “Neoliberal Rurality” because of the weakening of rural economies and the resultant liberalisation policies.

International organisations play a regulatory role in the management and operation of the food market, promoting a shift from public to private regulation. Since the creation of the General Agreement on Tariffs and Trade (GATT) in 1947, the world trading system has boosted trade liberalisation policies through global economic organisations such as the World Bank (WB), the International Monetary Fund (IMF) and the World Trade Organization (WTO). WTO's role in agro-food trade has been important as it "introduced a new set of international institutions and organizations to regulate trade, made several existing but voluntary standards de facto mandatory, and opened the door for greater private regulation of the agro-food sector through standards, contracts, and agreements". (Busch & Bain, 2004, p. 322). McMichael explains that “…the World Trade Organization imposes the unitary market via its 1995 Agreement on Agriculture, which prioritizes a model of agro-exporting and food importing over domestic production that cannot compete in the world market” (2007).

Nation states also play a key role in the regulation of opening markets. They are the main target of corporatist strategies and the responsible entities for creating regulatory frameworks that support markets. As Shahra Razavi notes, the state is permanently interfering in the shape of the market by the provision of infrastructure, imposition of taxes, removal of tariffs, land titling, environmental norms and labour regulations, among other policies (Razavi, 2002b, p. 11). Likewise, large firms create and operate...
strategies to have a major part in a neoliberal world strengthening the presence of business interests in decision making inside state governments.

The state also intervenes in the global market by implementing policies that remove subsidies and protections for local agricultural production. Elimination of subsidies has had significant impacts for rural families and women in Latin America and worldwide. In Philip McMichael’s words, “Within global agriculture, the institutionally driven process of liberalisation undermines the ability of food-importer states to protect local farmers and transforms food into a new frontier of commodification” (2000, p. 141). Consequently, the subsidies and support cuts for traditional agricultural crops and commodities mean that many family farms – milk producers included – and subsistence farmers can no longer maintain their incomes through agriculture. To Ramírez-Miranda (2014), the restructuring of farmlands in Latin America was part of a sudden trade liberalisation and a reduction in farm-household expense subsidies that looked to consolidate an agricultural exporting model (primarily based on fruits, flowers and vegetables) in accordance with the United States’ food hegemony. The result was “the weakening of peasant production, the hunt for non-agricultural income sources, migration increases, the loss of food sovereignty, the globalisation of agribusinesses (regarding crop exports), and the import of basic grains” (Ramírez-Miranda, 2014, p. 123).

The process of opening the market also involves the incorporation of notions, discourses, concepts and policies. Exporting to and accessing large supermarket chains requires achieving strict quality and phytosanitary controls. Guadalupe Rodríguez argues that quality conventions shape global production, distribution and exchange, and produce standardised agricultural goods and homogenisation of taste and consumption, while also involving diverse actors such as producers, agro-industries, government and consumers (Rodríguez, 1999). A fundamental element of the current agri-food system is the concept of quality, from which guidelines and penalties are driven by transnational organisations and corporations. In terms of profits, quality requirements favour agribusinesses that can invest capital in technology and have the knowledge and networks to rule practices on the production chain. On the other side of the coin are small producers who occupy a subordinate position in relation to agribusiness (Kay, 2007, p. 35). As in the case of other agricultural products, local milk production has undergone this course of changes and restrictions, forcing family dairy farms to face challenging global standards and competition.

In Mexico, GATT and NAFTA redefined the economic policy promoting efficient agrarian production for external markets and extended the use of concepts and practices of ‘competitive advantage’ that favour free market competition (Rodríguez, 1999). The
government discourse in 1993 about NAFTA argued an expected economic benefit to the country through the strengthening of trade with northern countries. This would be made possible by the push for greater production efficiency and competitiveness of rural Mexico, and increased imports of grains, oilseeds and vegetable crop. The Mexican government then created public policies such as ASERCA (Agricultural Marketing Board) in 1991, PROCAMPO in 1993 and Alianza para el Campo (Country Alliance), now Activos Productivos (Productive Assets), as a transition strategy to address international competitiveness. Those public programs would compensate Mexican producers for the subsidies received by Canadian and North American peers and promote efficiency in production units through the stimulation of crops reconversion (Jiménez, Espinosa, Alonso, García, Dávalos, & Gil, 2011). However, results were not as expected: under the North American trade agreement, the Mexican food system changed its logic from production to food consumption, shifting from “valuing producers to valuing consumers” and resulting in loss of price and market regulations (Rogers-Brown, 2014, p. 131). Critics of the effects of trade liberalisation in Mexico emphasised the unequal conditions of competition, the negative impact on security and food sovereignty (Alvarez, Cervantes, & Santoyo, 2001; McMichael, 2007; Pechlander & Otero, 2010), the proletarianisation of agricultural producers (Kirsten Appendini, 2010; Pechlander & Otero, 2010) and the homogenisation of production and consumption practices (Rodríguez, 2012).

Because of the regulatory framework of NAFTA, products such as avocados, mangos, citrus fruits and flowers have been incorporated in negotiations for access to the markets of the United States and Canada. In return, Mexico has been requested to open the market, even for vulnerable crops such as corn and, in practice, Mexican agro-exports are complementary rather than competitive productions in those countries (Kristen Appendini, 2002). As McMichael states, “after 9,000 years of food security, Mexico, the home of maize, was transformed by liberalisation policies and NAFTA into a food deficit country, compelled to import yellow corn from the United States at the expense of almost 2 million campesinos” (McMichael, 2007, p. 225). In the same way, Pechlander and Otero affirm that since the NAFTA signature, Mexico increased its grain importations from the United States, which led to the bankruptcy of a huge number of Mexican farmers because, even when exports have grown, this growth has been mostly in fruits and vegetables produced by a minority of capitalised farm entrepreneurs. Thus, agricultural liberalisation has led to a depletion of the Mexican countryside, resulting in increased migration – temporary and permanent – of the rural population and the upward trend of food vulnerability (Pechlander & Otero, 2010). A consequence is the transformation of peasants into wage workers, often in transnational packing
and agribusiness; thus, they acquire a job of risk status for a productive activity that depends on the caprices of the world market.

In Mexico, among the dairy industry agents, small dairy farmers have resented trade liberalisation policies the most because of the lack of economic and informational resources to adapt to the new circumstances. Nowadays, producers face fluctuations of global price and the competition of imported products; in different degrees, they adopt global quality standards and modify production practices.

4.3. Dairy industry in Mexico

Agriculture and milk production have been the objects of significant transformations since Mexico opened its doors to the global economy in the 1980s. Social, economic and cultural changes in milk production took place that introduced farming families to international market challenges, which required, and still do, socio-cultural adjustments throughout the production chain. The commercial opening and the technical transformations have had two effects: the diminution in the number of small dairy farms and a slight increase in the volumes of production, that is, an increase of productivity per cow, especially on intensive dairy farms.

The classification of milk production systems varies according to the criteria used to categorise them. Generally, the type of feeding, the quantity and breed of the cattle and the purposes of the livestock are considered. For example, the International Fund for Agricultural Development suggests a typology of four categories of livestock systems: a) transhumant, b) agro-pastoralist, c) intensive, and d) peri-urban.

In Mexico, milk production systems vary from intensive to subsistence in one region. The productive units acquire regional characteristics due to the variability of geographical, climatological, historical and cultural conditions. Wattiaux, Blazek and Olmos (2012) characterise dairy farms in this country as three types: a) specialised farming system, b) dual-purpose dairy farm, and c) the familial system. The first one prevails in semi-arid zones and the majority are in the northern states, especially along the US-Mexico border. This system uses genetically improved cattle, mostly European breeds like the Holstein-Friesian. Milking is highly automated in line or rotary sheds. Alfalfa, corn silage and substantial amounts of concentrated ingredients compose

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19. The transhumant model integrates production units where livestock does not have fixed lands but moves between territories and pastures. Agro-pastoralist units combine semi-mobile and settled systems that do not rely on communal fields and keep fewer head of cattle than transhumants. Intensive systems are more productive and rely on fodder production, crop residues and by-products. Finally, peri-urban systems commonly constitute a secondary income for urban residents and have few animals.
feed. This system relies wholly on dairy production and has a relevant participation in the markets and supporting programs. With only 3.5% of dairy farms in the country, and 7% of the country’s cattle, specialised farms supply 54% of the total national milk production due to their substantially higher milk production per cow (Wattiaux et al., 2012, pp. 9–10).

Dual-purpose farms are common in subtropical and tropical climates. The cattle breed is generally heat-resistant, like the Zebu (‘bos indicus’) or Creole breeds. Farms range in size from very small to having herd sizes of over fifty. Milk production per cow is much lower than in the other two systems and the level of technology is usually limited. Milking is often done by hand and rarely with portable milking machines. Dual-purpose farms are strongly seasonal, following the availability of tropical pasture and rely on diversification to maintain multiple sources of income. This system accounts for around 20% of Mexico’s milk production and includes 75% of the nation’s cattle.

The familial system, the focus of this study, is heterogeneous, as farms range from subsistence to large-scale operations. Contrary to the specialised system, family farms present a wide range of advanced practices in the management system. This system can be semi-specialised or semi-intensive, since farms display similar characteristics to the specialised system such as the use of specialised genetics (primarily Holstein), artificial insemination and automation of milk collection. This type of production undergoes a strong seasonality, provoking higher volumes in summer (Álvarez, Cervantes, & Espinoza, 2007). In these units, the familiar character of the social organisation of labour persists and there is commonly a diversification of production (Vértiz, 2014). Dairy farmers feed cows with concentrates, agricultural by-products and the direct grazing of unimproved, semi-arid ‘pastures’. Labour depends essentially on family members and milk sale is the principal source of income, although there may be secondary agricultural activities to supplement farm income (Wattiaux et al., 2012).

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20. In his analysis about Western Mexico and Eastern Africa, Steve Wiggins identified some advantages of small-scale dairy production. First, in small-scale dairy units, such as family farms, production is more stable because it does not suffer pronounced oversupply, cattle tolerate some degree of droughts and floods, and there is always the possibility of ‘liquidating’ the herd in times of crisis. The greatest risk in terms of security is represented by livestock diseases. Second, access to the dairy industry does not require a high investment and there is easy access to suitable feed for livestock; likewise, although declining, production has access to relevant agro-ecological zones and a broad market. Third, marketing of milk presents a variety of niche markets so farmers can access short and simple chains that allow the sale of raw milk or milk processed by hand, or, if the production volume is enough, they could enter long and sophisticated chains governed by quality standards generally controlled by processing industries and supermarkets (Wiggins, 2007).
Characteristics of this type of system are its flexibility, adaptability and suitability to the environment and space (Cervantes, Cesín, & Pérez, 2007).

Throughout the world, more than 80% of milk produced in developing countries comes from small-scale producers (FAO, 2016). Mexico is not the exception, as small-scale family dairy farms prevail over large-scale dairy industries. According to the Agricultural Census 2007 from INEGI, the volume of milk from family farms in Mexico can vary from 10 to 400 litres daily, with cows producing an average of 14 litres each (INEGI, 2007). Family dairy farms are found primarily in the west central region of the country (Jalisco included) and often operate on limited land with herd sizes ranging from only three cows to 90 cows in production.

**Milk production**

World milk production is over 700 million tonnes (FAO) but only a few countries are self-sufficient. Mexico is not one of them. In 2016, Mexico ranked ninth as a milk producer in the world, after Argentina and before Ukraine. The leading countries in milk production are European Union countries, USA, India, China, Russia, Brazil, New Zealand, Argentina and Australia. In 2015, milk production in the world reached 491,204 metric tonnes, with the US making up 19% of the global figures (see Annexes, Table 5). In 2015, milk production in Mexico was 11,750 tonnes, this being 2% of global production (Foreign Agricultural Service of the United States Department of Agriculture [USDA_FAS], 2015).

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21. Dissimilarly, developed countries have more technology-intensive and less labour-intensive production systems. Thus, they provide less employment per unit of milk production than in developing countries where small-scale dairy production creates on-farm jobs and off-farm employment and income opportunities in milk collection, marketing and processing (FAO, 2016c).

22. This place is considered when the countries of the European Union are integrated as a single competitor.

23. Referred to as ‘metric tons’ in the original source: Foreign Agricultural Service of the United States Department of Agriculture (USDA_FAS)
Figure 5. Top milk producing countries in the world (billion kilograms)

Source: Worldatlas, 2018

More than three million farmers in Mexico produce 31.4 million litres of cow milk daily. The national dairy industry is one of the most important in the food business, as it contributes 20.3% of the gross domestic product (GDP) of national livestock production. Annual milk production exceeds 11 billion litres and there is a trending increase of approximately 1% yearly (Agrifood and Fisheries Information Service [SIAP-SAGARPA] 2017). For instance, from 1990 to 2015, domestic production of fresh milk grew 15% (Figure 6. Mexico: Cow Milk production 1990–2015).

Two areas concentrate milk production in the country: La Laguna, a northern region of 15 municipalities – 10 from the state of Durango and 5 from Coahuila – and the Highlands of Jalisco, a region of 20 municipalities in the west that is the research site of the present study. Dairy production in La Laguna is the most technologically advanced in Mexico and has the highest yield per animal in the country. The dairy region combines a vertical integration of the different stages of the production process with a horizontal integration in articulating various associative figures of producers, manufacturers and marketers (Martínez, Salas, & Suárez, 2003). In this zone, the interference of the corporations that introduced and spread technological packages accompanied the state’s interest in converting dairy farming into a catalyst for the process of industrialisation. The dairy sector reached an economic solidity during the 1960s and 1970s, but the market opening two decades after that threatened producers’ stability (Martínez et al., 2003).
As mentioned previously, in terms of production by states, Jalisco leads milk production, contributing 19% of the national volume (5.6 million litres daily). Following Jalisco are the states of Coahuila de Zaragoza (11.9%), Durango (10%), Chihuahua (9%) and Guanajuato (7%) (LACTODATA, 2018) (See Annexes, Table 6).

There is a significant amount of milk that is difficult to quantify because it is produced in Mexico for either on-farm or local level consumption. This production is crucial to the development of rural areas since it secures farmer families’ protein consumption and is a component of the local economy’s dynamics.

**Dairy processing**

Milk is a perishable and bulky food that requires short marketing and efficient processing chains. Liquid raw milk may be sold directly to consumers or to processor industries where the product undergoes processes of sanitation, homogenisation and pasteurisation, or ultra-pasteurisation and dehydration. The processes include transformation into powdered milk, UHT milk (ultra-high pasteurisation for shelf-stable milk), cheese, yogurt, cream, butter and anhydrous milk-fat production. Many of these processed products do not require refrigeration and therefore are popular among both retailers and consumers (USDA, FAS, 2017). A few companies dominate the global dairy market, influencing production, trading, pricing and consumption. According to Rabobank (2018), the global top 10 dairy companies in 2016 were Nestlé*, Lactalis*,

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**Figure 6. Mexico: Cow milk production 1990−2015 (thousands of litres)**

Source: (LACTODATA, 2018; SIAP-SAGARPA, 2017).
Danone*, Dairy Farmers of America, Fonterra, Friesland Campina, Arla Foods, Yili, Saputo and Dean Foods (see Annexes, Table 7).

The corporate dairy industry accounts for around 66% of the national milk production (Gaucín, 2017). According to the National Chamber of Milk Industrialists (CANILEC), there are 252 formal milk industries (CANILEC, 2018) comprising three types: a) those with strong economic potential, b) those with intermediate gathering potential and c) small dairy industries (Urzúa & Álvarez, 1998). Strong local and foreign companies dominate the dairy market: Grupo Lala (Mexican), Alpura (Mexican) and Nestlé (Swiss) followed by Lechera Guadalajara (Mexican), Parmalat (Italian) and Santa Clara (Mexican, bought by Coca Cola Company). Milk factory usage “is forecast for 2018 at 8.3 million MT, or almost double fluid use for domestic consumption” (USDA_FAS, 2017).

According to CANILEC, the production of fluid and yoghurt milk has shown a tendency to decline so far this decade, while that of derivatives with a high content of milk fat such as butter, cream and cheese has increased (CANILEC, 2018).

Figure 7. Processed liquid milk and milk products in Mexico, 2010–2017 (tonnes)

Source: CANILEC, 2018

24. Asterisked companies have processing plants established in Mexico.
Mexico produces around 60 varieties of cheese. Leading the production are: Fresco (fresh), Doble crema (double cream), Panela, Amarillo (yellow), Chihuahua, Crema (cream) and Manchego (See Annexes, Figure 19).

Ensuring hygiene, safety and quality in dairy products are major concerns of milk processors and traders, as these influence pricing and consumption. With this in mind, there is a trend towards a homogenisation of production techniques guided by the global market’s food standards, which dairy industries seek to achieve to competitiveness. According to Gerosa and Skoet (2012), under the globalisation of the milk market, dairy plants worldwide develop similar lines and emerging technologies and apply novel processing due to the concentration of companies supplying processing ingredients (emulsifiers, stabilisers and texturants) or dairy processing equipment. Nevertheless, milk processing has a long history and traditional techniques coexist today with large-scale industrialisation of major dairy companies.

Population and per capita consumption are drivers of milk demand. According to Hemme and Otte (2010), milk consumption has risen by 10 to 20 million tonnes per year worldwide. One driver is the human population growth rate of 1.2% – 1.3% per year which means 75 to 80 million more people annually. This is an increase in milk consumption of 7 to 9 million tonnes per year. The second driver of milk consumption is the increasing per capita consumption that is linked to per capita income increases. Commonly, milk consumption is higher in developed countries than the developing
Chapter 4. Mexican dairy industry in the global panorama

ones and is particularly low in tropical and subtropical climates (Hemme & Otte, 2010). A study conducted by the agency Kantar Worldpanel in 2017 indicated that in Mexico, households spend 10.7% of their outlay on mass consumption products when buying liquid milk and families buy an average of 217 litres in a year, averaging 2.4 litres per purchase trip (Kantarworld, 2017).

A decisive destination for milk in Mexico is the subsidised milk supply program, LICONSA. In 2016, Liconsa acquired fresh milk from 11,000 Mexican producers, from 12 states in the country: Jalisco, Chihuahua, Guanajuato, Aguascalientes, Zacatecas, Querétaro, Hidalgo, Veracruz, Oaxaca, Chiapas, Campeche and Michoacán (LICONSA, 2017). In Jalisco, Liconsa buys more than 850,000 litres per day from 2,016 producers (Velázquez, 2014).

There are disputes between farmers and the authorities regarding the sale of dairy products that are not milk but are sold as such. Farmers interpret this marketing as unfair competition and a deception of consumers. In general, these products are milk formulas made with cheap imported products which allows retailers and other sellers to offer prices below the local milk. For instance, Nutrileche holds the fourth place among sales of liquid milk even though it is not milk but dairy formula. According to Ivan Franco, the competition in the milk market is regulated by the price, the scale capacity of each company, and the coverage of points of sale in the country. There is a synchronisation of the supermarket chains in the pricing strategy. Higher or lower prices, marked at the right – or inconvenient – time can significantly impact the performance of a brand in a short period of time (Manufactura, 2017).

Among consumers, liquid milk consumption is decreasing while demand for specialised products is growing. Therefore, higher volumes of liquid milk go to processing use. Demand for dairy products is diverse in different regions of the world but, above all, there is a class differentiation which reflects the segmentation of consumption resulting from the introduction of concepts such as quality, sustainability and responsibility, to which we should add the status granted by the consumption of certain products. There is also a growing trend towards the consumption of dairy alternatives worldwide, especially in the middle- and upper-income population. Almond milk is leading demand, followed by soy, coconut, flax and cashew, among others (Research and Markets, 2017).

**Women's participation in dairy farming**

Women have historically played a significant function in livestock systems. It is now recognized that women perform a key role in the production of poultry, small ruminants and micro-livestock, as well as within the dairy industry, including the processing and
marketing of milk and milk products. According to FAO, approximately 400 million women worldwide are livestock farmers living in poverty conditions (FAO, 2011).

Women perform different activities and hold diverse positions in dairy farming. The International Fund for Agricultural Development (IFAD) notes that there are different women’s roles in livestock production systems worldwide which are related to “social, cultural and economic factors” (2010, p. 2). IFAD also identifies that women are typically responsible for milking ewes, processing and selling milk products, providing feed/fodder and water, caring for newborn lambs/kids and sick animals. Young girls are also involved in the grazing of goats and sheep, whereas married and young women are responsible for household activities (IFAD, 2010, p. 2).

The gendered division of labour in family livestock systems differs from one system to another, acquiring particularities in distinct contexts and households. On Mexican family dairy farms, all members participate in some way or another and each person is responsible for certain tasks distributed by gender and age. The situation in Mexico agrees with that described by Jabbar et al. in terms of the distribution of responsibilities and benefits of work. In these production units, men are usually the owners of the cattle and the decision makers for livestock production and, in addition to milking, they are in charge of herd management, livestock mobility, slaughtering and selling. Women commonly own small ruminants as sources of cash for family investment and decide the allocation of milk and its sub-products. They milk, process milk, develop marketing activities for surplus milk and dairy products, and take care of pregnant cows, newly born calves and sick animals (Jabbar, 2000). Children also participate: boys commonly do husbandry work and girls are mostly in charge of herd small-stock and calves (Jabbar, 2000). Data collected in Africa on the gender norm in livestock ownership suggests that there are regional differences and that “while gender gaps have widened — especially during the latest period — the size of these gaps is small in regions where livestock are of limited importance, but more sizeable in those regions where livestock ownership is largest (Andersson, 2018, p. 75). Two examples in Mexico are the family dairy industry in Puebla, Mexico, where women milk, clean, and make cheese as main tasks (Abrego, 2011) and, as seen in this study, in western Mexico, where women oversee milking and feeding cows, in addition to being responsible for family care and housework with almost no participation in management and financial matters when an adult man is present in the household.

In other developing countries, the distribution of tasks also follows gender patterns. Flores and Torres document how, in two regions of Nicaragua, wives are excluded from administrative work and decision making in the livestock farms. In Ethiopia, “...women
are usually responsible for feeding animals, cleaning barns, milking, processing milk and marketing of livestock products” (Anteneh, 2010, p. 6), and they also oversee animals that are confined during most of the year and remove and manage manure. In contrast, in a developed country such as Finland, women milk, clean the barn, take care of young cattle and prepare food but they also take part in book-keeping, payment-transactions, field work and administrative work using information technology.

Women are rarely recognised as the main farmer despite the multiple functions they handle. This leads to a lack of information about the women who work in family dairy farms. For example, in the record of farmers in the 2015 Cattle Farmers Association of San Miguel el Alto, Jalisco, less than 5% are women. Although there are no disaggregated data on the work of women and men in dairy farms, fieldwork highlights female participation.

Also contributing to the operation of the dairy farm and to the family economy are the domestic work and care that women perform in their homes. They oversee food preparation, child caring and housework. By doing so, women safeguard family sustenance and preserve the reproduction of the agricultural labour force.

Different roles mean different responsibilities and diverse access to resources. The division of labour by sex usually relegates women from decision-making. Bravo-Baumann argues that “…in many societies, women’s access to information and training in modern livestock management and dairying continues to be limited” (2000, p. 24). As a result, women face a lack of access to technical knowledge and information on the economic and social environment linked to dairy production, a lack that generates a circle in which the lack of knowledge and information limit women in making decisions and the little space for decision-making inhibits their access to information.

4.4. Domestic and global dairy trade

The dairy industry in Mexico follows monopsony patterns, as there are regional markets with multiple suppliers but only one buyer. Such a model creates uneven asymmetrical relationships between large industries and small producers, creating unequal power relations by imposing sale conditions (Martínez, 2007).

The price paid to producers in Mexico is determined by processor companies according to five parameters: volume, temperature, location of the farm, season and milk composition (Álvarez 1998). To these variables must be added the running of the global milk market by processors, which includes imposing caps on producers – a measure that gives companies the prerogative to acquire the surplus at lower prices.
The average price paid to the producer in Jalisco in 2016 was 5.11 pesos while the litre of milk to the consumer was 15.00 pesos average (SIAP-SAGARPA, 2015).

Under NAFTA, Mexico asked for the complete liberalisation of dairy imports after 15 years from the signing, a period that was completed in late 2007. The government planned to implement public programs that strengthened the national dairy industry and enabled competition with the two northern countries. However, government support was concentrated in the largest and most intensive production units and imports suddenly entered due to inconsistencies in the tariff structure (Cesín, 2009). In the ten years from 2007, imports grew by more than 100%, making room for cheap products that competed with national production. This resulted in negative consequences for small producers who suddenly found themselves engaged in a price policy set by global financial fluctuations and immersed in competition with cheap imported dairy products.

The opening of trade enabled three measures in the national dairy industry: a) a liberalisation of milk prices, b) an increase in imports of milk powder and other dairy products, and c) the introduction of marketing standards linked with the notion of ‘quality’. In Mexico, the demand for stabilising and extending the shelf life of milk led to the intervention of industries and the state in the technical decisions of producers through programs of incentives and punishments (Álvarez, 2007). The mechanisms through which producers are directly involved in the global market include the imposition of pricing and of purchasing volumes by industries, the obligation to meet quality requirements regarding hygiene and milk composition, and the entry of cheap dairy sub-products that compete with local production

Each year, Mexico imports US $2,085 million of dairy products and exports US $534 million. The country has a trade deficit of US $1,551 million (CANILEC, 2018). Mexico is among the six countries with the highest deficit in milk production, the others being China, Italy, the Russian Federation, Algeria and Indonesia. Among Latin American countries, Mexico leads the importation of milk and milk products with an average of

25. The Codex Alimentarius that regulates food production and trading includes the section ‘Global dairy sector’. The guideline includes standards of production, processing, labelling and trading norms. It states, for instance, that dairy products must be “…presented in such a manner as to ensure the correct use of dairy terms intended for milk and milk products to protect consumers from being confused or misled and to ensure fair practices in the food trade” (WHO, 2011, p. 176). This prescript has significant importance since the definition of what milk and dairy products are is a place for contestation of local producers who demand the correct label of imported dairy sub-products and the liquids made of almonds, coconut and soy.
3,300 million litres per year. In the world context, Mexico holds the sixth place among milk importer countries, with 3.4% of global imports.

Since the tariff release in 2007, milk powder imports have grown 128% (see Figure 19 Annex 2). The main dairy imports in Mexico are liquid milk powder and dairy tablets, but also whey, milk fat, dairy spreads, casein and other milk preparations. The United States is the number one exporter of dairy products to Mexico “with a value of $1.2 billion in 2016” (USDA_FAS, 2017). Eight out of every ten tonnes of dairy imports come from the United States (SIAP-SAGARPA, 2017). Mexico is the second largest buyer of milk powder, with 7.9% of global imports. The country produces about 20% of the skim milk powder consumed locally, while the US has a surplus of over 50% (USDA_FAS, 2015).

Milk production in Mexico has mainly a domestic destination but the country still exports dairy products. The major recipient is the US market and, to a minor extent, Argentina and Central America. Mexican cheeses are the main exports. Similar to imports, there is a clear concentration of trading with the United States that absorbs between 60% and 70% of Mexico’s total exports, followed by Guatemala with around 10%, Belize with around 3% and several more with figures lower or close to 1% or less, such as the Philippines and Canada that belong to the Asia-Pacific Economic Cooperation (APEC) (Robledo, 2015). Milk and milk product exports represent about 10 percent of the total value of Mexico’s imports (see Annexes, table 9) (SIAP-SAGARPA, 2017).

26. Among all dairy imports, only 47% is real milk, that is, products that meet the Mexican stipulation that only beverages containing 30 grams of animal protein per litre must be called milk (http://www.industriaalimenticia.com/articles/85515-lacteos-3).

27. New Zealand is the main supplier of semi-skimmed milk powder and butter, and Chile of condensed milk (Robledo Padilla).

28. In 2006, imports amounted to 143,529 tonnes while in 2017, 327,097 tonnes of milk powder were imported (an increase of 11.7% with respect to 2016). Skim milk powder accounts for a third of the total value of dairy imports (see Annexes, Figure 22), along with the cheeses and butterfat accounting for just over two thirds of the total (CANILEC, 2018), “with a value of $1.2 billion in 2016” (USDA_FAS, 2017). The United States is the dominant supplier of cheese and raw materials for cheese to Mexico, exporting more than 25 varieties of cheese to Mexico. The market share of US cheese dropped from 73% in 2015 to 68% in 2016 due to growing imports from the European Union. New Zealand expanded to 5% of their cheese market share in 2016 and keeps dominating the butter market (USDA_FAS, 2017).

29. In the global picture, the US, the EU and New Zealand lead the dairy market products while developing nations are dependent on imports to meet their domestic demands.
The signing of the Trans-Pacific Partnership (TPP) in 2016 between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States and Vietnam has caused serious concerns for the agricultural sector. The treaty, not ratified, included the full offset of tariffs on products traded among these countries, with some exceptions made, for example, for dairy products from New Zealand and beef from Japan.

### 4.5. Summary

Milk producers around the world face economic, technical and environmental challenges. The process of internationalisation of the dairy economy, largely led by transnational corporations, has been accompanied by an economic regionalisation in which common interests are built more by the players in the commercial game than between nations. That is why we see small producers in the world with the same demands and the states and multinational corporations protecting their group interests.

The current agro-food system is moving towards increasing international specialisation. The consequent division of production acts as a mechanism of market distribution of economic activities, goods and services. We can talk about this specialisation in world production as an economic regionalisation that stimulates the organisation of the world economy based on competitive advantages. However, the global economy is not an equitable game, but a field of power relations and hierarchies among agents of value chains.

In this globalised economy, the dairy industry has been a bargaining coin in commercial treaties. Being the source of income for more than 20 million livestock families (World Bank, 2012) and the productive base of a fundamental food in the nutrition of children of adults, milk is a field of negotiation. Mexico included dairy products in NAFTA in exchange for the opening of other economic sectors critical to the national economy such as the automotive industry. However, despite having foreseen a period of preparation for global competition, the milk industry faces great challenges, especially among small farms with low productivity rates and almost no political capital to negotiate in the market.

There is a growing demand for food due to population growth and the effects of climate change. Both situations require dairy farms to be profitable and sustainable. For dairy farmers, the increasing dairy demand and environmental harms demand that they adopt models of modernisation, specialisation and automation, including genetic improvement, efficient dairy cattle lines, cow health and longevity practices, value-added products, and safety production.
Industrialists in Mexico control the dairy sector from milk production to trade. Supported by free-market policies, national dairy industries possess the financial, legal and technological knowledge to intervene in local dairy farms (Vértiz, 2014). That includes the imposition of production techniques and quality requirements. The state acts as a market regulator through the enforcement of regulations and public policies. During the last decades, there has been a government withdrawal from regulatory processes, thus reinforcing companies’ control and the vertical integration of the production process. The weakening of the public sector and the consequent strengthening of the private sector result in mechanisms of inclusion and exclusion of producers whose future in the industry depends on the degree of integration in the globalisation process (Martínez, Salas, & Suárez, 2003).

The socio-economic heterogeneity of the dairy industry in Mexico allows the coexistence of intensive production units with less automated family farms. The result is a diversified dairy industry presenting technological and economic development disparities among regions and production units. In the country, production takes place under very heterogeneous conditions in terms of technology and of environmental and socio-economic farm management.

The local dynamics of milk production in Mexico have changed due to the insertion of agricultural products into free trade. Two issues are substantial in this scenario: a) the imposition of global guidelines to produce milk with ‘quality’, and b) the competition of domestic production with imported products.

The state and the transforming companies have promoted practices and global norms of production and local marketing of milk. As Rodríguez explains, within the context of trade liberalisation, dairy companies in Mexico benefit the survival of the agro-industrial chain of the national milk regarding efficiency and productivity with new standards of quality with criteria that are in keeping with the characteristics of world supply and demand (Rodríguez, 1998).

Within the milk market liberalisation, corporations determine both the quantity of milk they buy and the quality standards milk must achieve. Conversely, local producers face the competition of cheaper imported dairy products; they have no control over the prices, over the milk they produce, or over the inputs they buy. However, they do face market volatility, financial risks and environmental hazards such as droughts and frosts that harm productivity. This situation has led to an uncertain scenario for Mexican dairy farmers that has caused the abandonment of dairy farming and tensions among communities and families.
One way in which producers have faced the competition of imported products is the organisation around livestock associations, consumer cooperatives and dairy tanks. Cooperatives have become common among smaller producers to pool their production, and they often send milk through a middleman to a processing plant. It is estimated that, throughout the world, less than 1% of dairy farms have more than 300 head of dairy cows, but that that group produces around 30% of domestic production (USDA_FAS, 2017).

The growing trends of global milk demand imply significant challenges for the Mexican dairy industry. Adaptation demands include cost-competitive production systems and efficient strategies to face price volatility, as well as mechanisms to guarantee sustainability. According to the analyst Darío Gaucín (2017), the consumption of milk in Mexico has vast growth potential, since the per capita intake is below international recommendations and is below the world average, even lower than the average levels in the other countries in which it is consumed. The fundamental challenges are to increase investments in different areas of dairy activity and in genetic and technological improvements that increase productivity, milk quality and reduce production costs, therefore improving profitability.

A major challenge for the Mexican market is to balance the productivity of the more than 2.4 million head of cattle that provide milk to the national market. The huge gaps in productivity end up damaging the market and competition. Although imports of cheap milk powder are not yet a general problem, they could be if the productivity does not match them.

The previous description is not the whole story: in the macro-analyses of the dairy industry, it is necessary to look at the daily struggles of small producers aside from their importance in primary milk production for the entire dairy chain in which they have significant participation in costs, use of resources, and political challenges. In Mexico, small milk producers are drifting away from the world market. It is urgent that national policies mediate between the vagaries of the market, the interests of dairy co-payments and the survival of family dairy systems. A dialogue between the various sectors is required to develop long-term strategies that, although aligned with the global market, ensure the survival of small dairy industries as well as favourable living conditions for the producers. However, for this to ensue, it is necessary to know these daily struggles, to understand the local farmers as historical agents, and to recognize the preponderant place they occupy in the milk chain.
Chapter 5. “This is what our parents taught us to do.”
Dairy farming in Los Altos de Jalisco

“Tierra pobre, gente laboriosa”
Arandas’ motto

“We have had cows since I can remember. In those times there were none of the machines that are here right now, and there was not so much livestock ... so, for us it is very important; it is what our parents taught us to do and that is what we know how to do well.”

5.1. Introduction

“Poor soil, labouring people” declares the motto of Arandas on the coat of arms at the entrance of the city, portraying a regional identity based on the allegory of a challenging interaction between people and nature, a battle from which villagers become victorious thanks to the virtues of determination and hard work.

Los Altos de Jalisco is, according to Andrés Fábregas (1986), one of the best known regions in Mexico. It is a territory formed through a social organisation with roots in the colonial era and in which the relationship of the settlers with the landscape and with the central political powers is prominent. Fábregas explains that society in the Jalisco Highlands built a regional culture and consciousness constituting a particular vision of the world (Fábregas, 1986).

When mentioning a region, I allude to an organised and socially constructed territory the inhabitants of which share symbols and identity values. Referring to the Highlands as a region provides a physical, social and lived framework to locate the dynamics of family milk production. The specific differentiation of a region is the result of spatial practices in or interactions with the natural landscape, the economic, political and socio-cultural realms, and the lived space, that is, the existential, subjective relation that the socialised individual, by herself or collectively, establishes with the territory (Kollman, 2005). Jorge Alonso is consistent with this view when he argues that the Jalisco Highlands imposes a regional presence due to its political, economic and

30. Public policies have historically recognised the Highlands as a region. However administrative borders do not necessarily respond to the common characteristics in cultural and historical terms. In that sense, elements such as Catholicism, ‘charros’, and the ‘ranchera’ culture link Los Altos’ history and culture with municipalities outside the administrative borders, reaching the neighbouring states of Aguascalientes, Guanajuato and Zacatecas.
cultural particularity being defined by a singular way of facing nature, building social relationships and understanding life (Alonso, 1990).

The goal of this chapter is to describe the social dynamics of milk production in the Jalisco Highlands, starting by explaining the conformation of the ‘ranchos’ as economic units influencing the regional economy. Following this, there is a description of the regional culture that influences people’s identity, values and gender relations, namely the ‘ranchera culture’. The next section explores the backgrounds and features of the local dairy industry, and describes the relationship of the local industry with the global milk market, including the technical and conceptual changes adopted by producers due to commercial openings. Finally, I summarise with a reflection regarding the constraints dairy farmers face to subsist and compete in the market.

5.2. The land-use pattern in Los Altos de Jalisco

The current settlement pattern and land ownership in Los Altos de Jalisco is the small property or ‘rancho’ that evolved through a process of Spanish colonisation in the sixteenth century. In the region, small property also means having a privileged social position and a root, belonging and identity in the Jalisco Highlands.

Before the arrival of the Spaniards, nomadic and semi-nomadic groups populated the region31 (Frajoza, 2013). The arrival of the Spaniards in the 16th century reconfigured the use of the land32 and prefigured the region’s traditional livestock vocation. During the first decades, the Spanish monarchy distributed lands to those who participated in the process of colonisation, engendering a pattern of land distribution. The condition of granting the lands was that their occupants remain in their territory to secure the lands from indigenous attacks and increase the Spanish territory. The size and quality of the terrain were subject to the soldiers’ ranks and social networks, which built up the formation of a regional elite (López Ulloa, 2008). Such social structure allowed the formation of power groups whose privileges have prevailed into the present time.

31. In pre-Hispanic Mexico, a system of manual agricultural production prevailed. The ‘milpa’ was a polyculture method common in the region. It was based on rainfall and consisted of the cultivation of corn, beans and squash in combination with a great diversity of annual plants.

32. The arrival of the Spaniards in the region started after the colonisers defeated Tenochtitlan, the Aztec main city. Spaniards founded Nueva España (New Spain) as the centre of the colony, and the expansion continued to the north and south of Mesoamerica, with a search for land, gold and silver, and populations to evangelise and use as a work force. In the west, the Spaniards founded Nueva Galicia but faced the resistance of the native population for decades. The conquerors triumphed over the indigenous people, allowing Spanish control of the territory. From then on, the repopulation of lands and evangelisation began.
The colonisation strategy of the Altos de Jalisco, developed from Guadalajara, capital of New Galicia, was the establishment of protective villas against the invasions of the Chichimeca Indians. This guaranteed agricultural production and the flow of food (Fábregas, 1986, p. 79). The process of land distribution, together with the rough topography, the emergence of mining in the 16th century and the difficulties of the transportation of people and goods, facilitated the fragmentation of the territory into small properties that prevented the formation of large-scale farms or haciendas. Consequently, dispersed and small settlements arose outside the villages, generating the establishment of ranchos, as small production units are known. This pattern provided security to the inhabitants and helped to create social networks and relative social peace. As the following explanation shows, the territory structure was set up by haciendas, ranchos and villages.

The Spanish settlers brought to America several species of livestock, such as cattle, horses, donkeys, pigs, chickens, sheep and goats. None of these species, except certain varieties of goats, like the so-called ‘cimarrón’ lamb, previously existed in the territory that forms Mexico today. The guajolote (turkey) was a native of America, and the indigenous families raised it in their backyards as a source of food (Reynoso, 2009). The first cattle that landed in the territory of New Spain were from Cape Verde and Las Canarias. The primary purpose of breeding these Creole cattle was the production of meat and, secondarily, milk. The black cows that now constitute much more than 90% of the cattle ranch population have come to the Highlands during the last eighty years and have been displacing the Creole cattle until these have almost disappeared (Reynoso, 2009).

Cattle ranching became an alternative for the local population due to soil conditions, the shortage of indigenous population and the development of mining. During the 16th century, the native population in the area was small, which made it difficult to use it as a labour force. At the same time, livestock required less of a work force than did agriculture, especially because of the arid condition of most of the soil. In addition, the Creole cattle bred and brought to the region did not require fertile soils and were able to roam freely in the countryside with only a small workforce to herd them (Reynoso, 2009).

33. Defining the size of a ranch and distinguishing it from the hacienda is not easy due to the diversity of references and definition. Celina Becerra explains that term ‘rancho’ was not markedly different from ‘hacienda’ during the 17th and 18th centuries in the Jalisco Highlands (López-Ulloa, 2008).
During the late 16th century, the depletion of the mines in Zacatecas, Guanajuato and San Luis Potosi generated the need to provide food and other inputs to these zones. The inhabitants of the Highlands took advantage of this requirement and roamed the roads with their herds in search of new ways to commercialise products for both people and mining: huaraches, soap, pig fat, leather, tools, livestock and working animals. With this process also came a proto-industry that meant greater economic performance. (López-Ulloa, 2008)

Livestock in Los Altos not only supplied the mining areas. Cattle ranching became widespread and by the 17th century mines used numerous animals for transport, hides and meat. Production for the market focused on meat while farmers directed agriculture and dairy towards self-consumption. Also, more than 20,000 cattle were sent from Nueva Galicia to Nueva España to meet the food needs of that region, which was much more populated than New Galicia (Gallart Nocetti, 2002).

During the 17th century, the ‘maritateros’ and ‘arrieros’ (muleteers) appeared on the highland scene as road vendors offering goods to the ranchos. The former exchanged local goods in settlements and were considerably important in the commercialisation of surplus production, especially of poultry eggs. The ‘arrieros’, on the other hand, traded products that were produced outside the region, including those in mining areas and nearby cities (López-Ulloa, 2008). Hence, through the exchange of products, the localities of the Highlands connected to the outside.

Along with the distribution of lands, evangelisation played a fundamental role in the pacification of indigenous peoples and the organisation and settlement of towns. The Franciscan clergy founded hospitals and schools in the region, together with churches and convents to guide the Indians in Christian faith and traditions. They seized major social and economic control over the territory by their contribution to the pacification of indigenous peoples and the establishment of village settlements. For instance, the Franciscan order founded hospitals and schools in Los Altos, along with churches and convents (Frajoza, 2013). In sum, the first Spanish settlements in the zone served as lands for agricultural production, borders to stop the incursions of the natives and sites for evangelisation (López-Ulloa, 2008).

By the 19th century, the small property was the main production unit in the Jalisco Highlands. The type of land distribution favoured the fragmentation of the territory, preventing its hoarding by a few owners and the consequent rising of haciendas, as was common in the rest of the country. The regional land tenure, supported by family ties, responded to the form of inheritance that distributes land between sons and daughters in equal parts. Such a model promoted marriages between relatives and
the construction of networks among families holding political and economic power (Gilabert & Camarena, 2004). On the other hand, there was a trend to retain all or part of the original tenure, which generated a certain immobility in the ownership of the land and, at the same time, a greater attachment to it (Goyas, 2006). The ranch was the axis of productive life and identity in the Jalisco Highlands (Gilabert & Camarena, 2004; Goyas, Hernández-López, 2013). In this context of regional configuration, a small group of families fostered social, religious and economic networks that allowed them to maintain control over local political structures.

At the end of the Mexican Revolution34, a political group emerged from the middle class and instituted what they called a Revolutionary State. Part of their legitimisation strategy was enacting an agrarian reform based on the expropriation of haciendas to divide them into ‘ejidos’ and distributed usufruct rights among peasants.

Local elites and the Catholic clergy in the Jalisco Highlands refused the process of property distribution. In the region, hacienda-type properties were scarce, and there was a relative isolation of its inhabitants regarding national political and social processes. The population perceived the agrarian reform as a threat because, in this zone, the land was taken from smaller properties and not from haciendas, as in other regions of the country (Meyer, 1995). As a result, the government agrarian policies established ejidos only in a sparse and peripheral way in the region; they even functioned with private ownership, preserving the privileges of a local oligarchy (Fábregas, 1986; Hernández-López, 2013).

Alonso, Quevedo and Alarcón, Los Altos de Jalisco developed during the Guerra Cristera a singular counter-revolutionary character showing the presence of a ‘regional personality’ (Alonso, Quevedo, & Alarcón, 1990). The revolt was especially active in Los Altos where the elites, the middle class and the Church prompted an armed uprising of the people against the government under the motto ‘Viva Cristo Rey’ (‘Long live Christ the King’). The Guerra Cristera strengthened a division among peasants, on the one side the ‘cristeros’ defending the Catholic Church and small property, and, on the other, the ‘agraristas’ recruited by the government under the promise of agrarian distribution.

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34. Two armed events at the beginning of the 20th century were influential in the land structure. The Mexican Revolution (1910-1921) and the Cristera War (1926-1929). The first one was a struggle that began with the aim of overthrowing the then President Porfirio Díaz. It was formed through the participation of peasants, workforces and middle class groups, but the various bands ended up facing each other due to differences of interests and demands. Five years after the end of the Mexican Revolution, the country faced another armed movement. The Guerra Cristera took place amid the enforcement of constitutional articles 130, 27 and 3, which regulated clergy rights and religious practices, land property, and secular education, respectively.
The participation of the regional elites in this conflict is a symbol of the anti-centralist attitudes of the Alteños. In the end, the land property in Los Altos preserved the colonial structure. Notably, by 2002 the ejidos in the region comprised only 10.4% of the total agricultural land (Gallart Nocetti, 2002).

The two civil wars during the early twentieth century in Mexico resulted in very large losses of livestock. During the Mexican Revolution, in addition to the enormous human losses, there was a loss of 50% of the cattle.35 During the Cristero War, there was also a decrease in livestock activity in the Jalisco Highlands because of the absorption of men by the war, the migration to the cities, and the use of cattle as food for combatants (Reynoso, 2009).

Historically, milk production in Los Altos has been organised in family production systems. Its permanence is explicable by historical roots and cultural features. Dairy industries in the zone take advantage of this type of organisation that allows them to outsource production risks to farming families (Espinoza, 2007). Farmers function as employees of large industries, lacking the benefits of legally regulated labour contracts. They are at the mercy of the companies’ decisions about the quantity and quality of the milk to be sold, the schedules and periods of sale, and the issuing and remittance of sale contracts. Furthermore, producers carry the production risks associated with climate instabilities, animal health and market fluctuations, as well as bearing the costs derived from the purchase of equipment and supplies needed to produce according to the companies’ parameters. Finally, as I said previously, companies take advantage of the free and available labour of the men, women and children of the dairy-family based farms. As Telba Contreras found, female and child labour has been essential in household production units facing global constraints. Family labour gives many farmers the necessary certainty to acquire, for example, an individual cooling tank and to acquire the debts that this modernisation requires (Espinoza, 2007). Within such contexts, female work transits through a naturalisation process that diminishes it to a point that is not visible, then just barely forms part of the official, academic and day-to-day discourses. Such a process of devaluation makes family and female labour controllable and feasible to be taken advantage of by the actors who have economic or symbolic power in the dairy industry or the household.

35. The reasons for this were their use as food for troops and as merchandise to cover the cost of war (2.5 million head of livestock and 400 million pounds of leather and tallow were sold to the United States).
Chapter 5. “This is what our parents taught us to do.” Dairy in Los Altos de Jalisco

5.3. Ranchos and Rancheros

The milk industry in Los Altos de Jalisco is an essential component not only of the economy but of the regional culture. The livestock activity, the rancho as the core of land distribution, the rough landscape, and a set of religious and social norms and practices have motivated researchers to link the alteña region with the ‘ranchera culture’.

From the term ‘rancho’ and its derivatives – ranchero and ranchera – flow a diversity of nouns and adjectives that contain a multiplicity of local meanings and judgements. There is no univocal version of what constitutes a ‘ranchera’ society in Mexico, but such communities share certain qualities and bonds that unite them and build their identity. Despite the lack of precise limits, several regions have been identified as rancheras in the states of Hidalgo, Michoacán, Jalisco, Guanajuato, Guerrero, San Luis Potosí, Chihuahua, Zacatecas and Puebla (López-Ulloa, 2008; Skerritt, 1990). Such areas comprise certain common characteristics: they are settled on broken landscapes where the territory is distributed in small properties, their main economic activity is livestock, and their workforce is family labour. Some authors emphasise that rancheros hold singular cooperation networks among themselves and depict some

Rancheros shape their identity through their distinction from the ‘others’. First, this is from those whom they identify as ‘indígenas’ (indigenous Mexicans), whom rancheros view as communally oriented and, in a derogatory way, as lazy and unpretentious. Secondly, they distinguish themselves from ‘citadinos o pueblerinos’, city people whom rancheros perceive as fancily-dressed, fussy and arrogant (Farr, 2000). Barragan explains that among rancheros of the Sierra Jalmichena, the ranchero is self-styled and self-convinced to be from “people of reason”, descendants of conquerors and settlers, whether mestizo or creole, and culturally inclined towards the Spanish element (Torres & López, 2016). Farr concurs by stating that rancheros “construct a non-indigenous identity” (Barragán, 1990, p. 67) and Hernández-López goes beyond by affirming that in the Jalisco Highlands, due to the arrival of migrants from the states of Chiapas and Oaxaca, Alteños recreate and give form to new relationships of submission, subordination and discrimination (Hernández-López, 2013).

In the popular imagination, rancheros “...were valorised as epitomising ‘lo Mexicano’ (true Mexicanness)” (Farr, 2000, p. 69). Such an image was substantial during the Golden Age of Mexican cinema between the 1940s and 50s (Farr, 2000). Movies such as Allá en el rancho grande, El peñón de las ánimas (1942) and Ay Jalisco no te rajes (1941) were inspired by the Jalisco highlands. Hence, they portray an iconography of the Mexican ‘charro’, a horseman wearing a traditional outfit in the countryside with cows, horses, rustic houses, traditional clothing, colourful dresses and ‘charrería’, the Mexican sport of equestrian competitions featuring roping, jaripeo and cattle handling.

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36. Territory shared by the states of Jalisco and Michoacán, located in the West of Mexico. This Sierra is a mountainous area where a ranchera culture has been developed for more than four centuries, dedicated mainly to agricultural activity on small properties, where the primary dynamic is of dual purpose cattle (meat and milk) (Farr, 2000).
Both the terms ‘alteño’ and ‘ranchero’ have a value weight linked to the pride of being a landowner and conserving traditional Catholic values. According to Gilabert, ranchos and ranchera culture were a source of the identity in Los Altos de Jalisco (2004). The possession of a rancho outside the urban area is common in the region for productive and leisure purposes. In fact, ownership of this type is a status symbol. However, the word ranchero can also be used in pejorative terms, as a sign of ignorance, by those who are more related to urban areas or those who do not belong to the region. As Farr explains, “the term ranchero also evokes negative connotations in some parts of contemporary Mexico (...) as rural Mexicans, rancheros are stereotyped as backward (not ‘modern’), shy and uneducated” (Farr, 2000).
In line with Fábregas, the pace of settlement in the territory of Los Altos has built the cultural heritage of the region since colonial times. This legacy is closely linked to the symbols of regional identity: men and women on horseback, livestock breeders, deep Catholicism, and the appreciation of individual freedom and landscape (Fábregas, 2016).

As with the ranchera culture, the alteña society observes a patriarchal structure and Catholic precepts (De la Peña, 1984, p. 82; López-Ulloa, 2008). Men, as heads of families, see themselves as maintaining order, independence and control over assets and relatives. Kinship ideology in traditional rancheras societies holds an unquestioned male authority in charge of multi-generational cattle raising (Farr, 2000). The role of the Catholic Church has been, since colonial times, a component of legitimacy associated with the oligarchies or even part of them (Gilabert and Camarena, 2004). To date, its political and economic power prevails among the local elites that maintain relations with the extra-regional powers and markets.

The ranchera culture and identity endure in Los Altos in the midst of the increasing urbanisation. The zone is experiencing growing industrialisation, especially in the textile and agro-industrial sectors, an expansion of educational and health services, high motorisation and an intensification in transport and communications networks.
that facilitate the flow of information and contact with ideas, values and global representations. The largest cities in the area, Lagos de Moreno, San Juan de los Lagos, Tepatitlán, Arandas and San Miguel el Alto, are the core of commerce, public administration, economics and politics. This urban growth and the increasing rural-urban connection is fused with the traditional alteña way of life. Moreover, as Cabrales states, cities in the highlands have become places for the reproduction of the ‘cultura ranchera’ (Cabrales, 1994).

*Image 6. Harvest blessing day, Mirandilla*

During the last hundred years, the migratory flow to the United States has forged the culture and the economy of the region through the coming and going of people, merchandise, money and traditions. In Los Altos, migration to the northern country has been a tradition among young people. Over the last 100 years, there has been a high migration rate from Jalisco to the United States. A total of 1.4 million ‘jaliscienses’37 live in the United States of America and 2.6 million people born in that country are children of parents born in Jalisco (Government of the state of Jalisco, 2015). People in Los Altos de Jalisco have a link with the migration to the northern country, either because of their own experience or because they have migrant relatives.

37. People born in Jalisco.
Since 2005, there has been a decline in the national migratory flow in the region, causing a decrease in the arrival of remittances (Durand & Arias, 2014; Government of the state of Jalisco, 2015). The reversion may be the result of several factors. Passel, Cohn, and Gonzalez-Barrera explain that there has been an increment in the number of Mexican families who moved from the US to Mexico\(^{38}\) (2014). Durand and Arias name as causes the process of demographic transition – mostly fallen fertility – and immigration policies hardening in the US, as well as changes in the local labour market\(^{39}\) and a rise in local education services\(^{40}\) (Durand & Arias, 2014). Villarreal adds the lower labour demand in the United States due to the great US recession in 2007–2009 (Villarreal 2014). Two consequences of this change are the decline in remittances and the increase in the number of women and young children entering waged jobs (Pérez, Rivera, & Heredia, 2014).

An immigration process towards Los Altos now accompanies international emigration. The region has triggered the unprecedented process of internal migration of indigenous labourers from the Mexican south-east (Hernández-López, 2014), mainly from the states of Chiapas and Oaxaca. This phenomenon has had an impact on the regional economy and culture, generating signs of exclusion by ethnicity. According to Hernández-López, immigration has strengthened the founding contents of the alteña identity by process of ethnic differentiation. Alteños see indigenous migrants as embodying features that the local society considers to be contrary to its distinctiveness: whiteness, European roots, traditional values and Catholic morals. Hernández-López calls this a “contemporary racism” because discrimination does not follow biological segregation but political, economic and social exclusion within a context of productive reconversion inextricably tied to the world market (Hernández-López, 2013, p. 83).

5.4. Dairy in Los Altos de Jalisco

Cows, pasture sacks, corn crops, milking sheds and barns adjoin the roads of the Jalisco Highlands. The landscape changes according to sowing stages. Farmers plant forage maize right at the beginning of the rainy season, between May and June, and

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38. Between 2005 and 2010, a total of 1.4 million Mexicans emigrated to the United States – more than half of the 3 million who had done so in the five-year period of 1995 to 2000. On the other hand, 1.4 million people moved from the US to Mexico between those periods, roughly double the number who had done so in the five-year period a decade before.

39. Many local youths work as ‘medieros’ and others, especially women, have entered agri-business and poultry farms (Passel, D’Vera Cohn, & Gonzalez-Barrera, 2012).

40. The educational level of the younger generations has increased and young people are starting to look for better job opportunities in the region or in the neighbouring cities of Guadalajara, Aguascalientes and San Luis Potosí.
they harvest it between September and October. During the rainy season, from May to September, milk production reaches the highest levels of productivity. By contrast, from January to April there is relatively low production because the land is dry and the cattle cannot pasture in the fields. Together, larger cattle farming and maize cultivation are "the two key components of the productive organisation" and the social life of the ranchera societies (Barragán and Linck 1994).

Jalisco is the largest cow milk producer in the country and most of it comes from Los Altos. During 2015, the region produced 1,366,825 litres of milk, comprising 63.4% of the state volume (SIAP-SAGARPA, 2015). Five municipalities, Encarnación de Díaz, Lagos de Moreno, San Juan de los Lagos, San Miguel el Alto and Tepatitlán de Morelos, produce more than 70% of the total bulk milk in the region.

In the Jalisco Highlands, most dairies are the family semi-skilled type. Productive units that range from three to 90 hectares (Wattiaux, Blazek, & Olmos, 2012) and the degree of mechanisation are variable: in some dairies, the milking is done manually, while others use portable machines and just a few utilise fully mechanised milking equipment. Cattle farmers use primarily a family workforce and manage the dairy according to the need and availability of resources. Dairies have an average of approximately 70 cows in milking and herds are mostly Holstein\textsuperscript{41} cattle (90%) and Creole. (Wattiaux et al., 2012). Within changing market conditions, farming families continuously implement technical and management innovations aiming to keep themselves in the milk market and to reach higher rates of productivity and profits.

All farms use forage to feed the cows and almost half use grazing, mainly during summer. Cattle farmers use maize silage and corn stubble (with the grain), commonly produced on the same farm. Nevertheless, due to the high concentration of ruminant animals in the region, there is a high demand for these food inputs, which means that in most years, livestock feed suppliers import other types of fodder (low-quality fodder, mainly stubble without maize) from areas bordering the region (Olmos et al., 2015).

\textsuperscript{41} The Holstein cattle arrived in Mexico towards the end of the 19th century and in 1930 the first specimens were brought to Jalisco from Mexico City and the ‘Bajío guanajuatense’. The breed comes from the region of Friesland and North Holland in the Netherlands and Holstein in the north of Germany. Due to its high dairy productivity and less need for food resources, it is the most common breed in the world on dairy farms. There was a rapid displacement of beef cattle by Holstein milkers through an increasing artificial insemination process and the importation of calves and heifers from the United States and Canada (SIAP-SAGARPA, 2015).
Figure 9. Production of cow milk by municipality 2015 (thousands of litres)

More than 94% of the regional milk production has an industrial use (Urzúa & Álvarez, 1998). Companies that buy most of the milk are Nestlé, LICONSA, Lechera Guadalajara, Danone, Sigma, Parmalat, Alpura, La Campiña, Lechera Alteña and smaller regional industries and local cheese producers. Milk processing companies determine the milk price according to five parameters: volume, temperature, location of the livestock unit, time of year and composition of the milk (Urzúa & Álvarez, 1998). According to official figures, the average price per litre paid to the producer is 5.09 pesos (US$0.25). However, the payment can sink down to 2.00 pesos when the industry does not accept the milk and producers try to sell the product at any price, usually to collectors or small industries that pay very low prices. Industries are also permitted to establish caps allowing them to acquire the surplus at a lower price that is below the cost of production.

Milk production increased significantly in the region from the 1940s with both the increase in milk consumption and in dairy cattle numbers. The post-revolutionary governments in Mexico promoted food, health and industrial policies for the modernisation of the country. One policy was to favor the consumption of cow milk in the 1940s through welfare and industrial policies, for instance the importation of powdered milk and its distribution to schools and state shops (Aguilar-Rodríguez, 2011). By doing so, “Mexican nutritionists and state officials reproduced the idea of milk’s superiority, denying or questioning, at best, the nutritional value of non-dairy diets” (Aguilar-Rodríguez, 2011, p. 37). Such policies strengthened medical discourses and publicity encouraging milk drinking as a source of nutrients. As Sandra Aguilar-Rodríguez (2011) explains, public policies to transform eating habits faced the reality of thousands of Mexicans who had to value changes in light of their culture and material conditions.

In the 1940s, the Mexican government launched the Import Substitution Industrialisation economic model to boost the industrial development of the country. Fiscal facilities and subsidies offered by the state motivated the arrival of foreign industries and the growth of other nationals, so there was dairy industry growth during this period. Nestlé was established in Ocotlán in 1936 and Lagos de Moreno in 1943, both in Jalisco. In 1946, Mexican businessmen created Lechería Nacional SA (National Dairy) (Aguilar-Rodríguez, 2011). Nestlé, with the support of the state, reconfigured the livestock production and economic vocation of the region because dairy production had

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42. In Jalisco, there are 430 companies industrialising milk and dairy products. Among them, 22 are in Guadalajara, 24 in Arandas, 29 in Lagos de Moreno and 12 in Tepatitlán. There are 105 wholesale dairy companies in the state: 22 of them are in the state capital, 10 in Tepatitlán de Morelos, 3 in Lagos de Moreno and 3 in San Juan de Los Lagos (Urzúa & Álvarez, 1998).
become the economic axis of the region. Also, the productive structure influenced alteña culture, modifying daily life and identity. The development of the dairy industry prompted the arrival of other companies – Sigma Alimentos, Parmalat, Lechera Guadalajara, Alpura and Lala (Robledo, 2015) – and between the 1940s and the 1980s firms and government supported road infrastructure projects and technical assistance favouring the specialisation of dairy activity in the region (Espinoza, 2007; Gómez, 1999; Hernández et al., 2000).

The Holstein model technological package has been adopted by farmers and involves not only the use of this type of livestock but also artificial insemination for genetic enhancement, use of improved forage mixtures based on grains, mechanical milking, use of drugs and chemicals for health and productivity, and computer control of the production process, all of which is expensive for family farmers. It also implies having access to modernised roads and transportation43. However, in spite of the efforts of Nestlé, Lechera Guadalajara, and the cooperative PROLEA to introduce the Holstein model, family-type dairy still predominately conserves traditional practices.

Another challenge for local producers is competition with cheap imported dairy products. From 2000 to 2010, except in 2007 and 2008, the price of imported milk was between 40% and 60% lower than that of milk produced in the country (Robledo, 2015). Low prices are possible because the trade policies allow importation from countries that subsidise milk production. Thus, family dairies are forced to compete with cheaper products. Another constraint is that industries’ milk demand is stable during the year, contrasting with the seasonality of milk production. Thus, in summer, when there is greater production, the price of milk usually decreases, and companies set up purchase caps that further lower the amount that the producers receive for each litre of the product.

Along with productivity improvement, industries have promoted alignment with international quality parameters since the 1980s. Dairy companies, supported by the government, develop strategies to enhance production practices according to international standards, thereby provoking social and cultural changes in the dynamics of milk production. Nestlé was the first to introduce the transnational concept of ‘quality’ among the milk producers in the Jalisco Highlands. Other companies gradually adopte international standards, introducing local farmers to a new system and a different understanding of milk quality (Espinoza, 2007).

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43 For instance, Nestlé developed the ‘Dairy Development Program’ aiming to promote artificial insemination based on semen of imported high registration animals and the crossing of Creole cattle with Holstein to boost dairy productivity (Espinoza, 2007; Hernández et al., 2000).
Chapter 5. “This is what our parents taught us to do.” Dairy in Los Altos de Jalisco

The introduction of the ‘cold chain’ in the 1990s was critical to the integration of the regional dairy into the quality system. From then, farmers had to deliver cold milk to ensure and prolong its safety and quality. To this end, industries and the state organised producers, generally between 15 and 30, around cooling tanks that collected the milk.
from a group of farms. In 1997, the government and dairy companies imposed a new change to disband the associations formerly formed and installed individual cooling tanks with the aim, once again, of improving the quality of milk (Espinoza, 2007). The collective organisation around the cooling tanks of Lechera Guadalajara was unable to implement individual containers that guaranteed the quality parameters of the product. However, there are still associations of producers around collective tanks that supply cold milk to companies such as Liconsa, Danone, Lechera Alteña and Sigma.

The notion of quality is now decisive in the configuration of the regional dairy industry. Urzúa and Álvarez identify the beginning of coercive mechanisms by industrialists during this period, that is, changes in the primary manufacturing process and the consequent financial impacts on small and medium farmers due to operating costs and risk distribution (1998). Rodríguez explains that industries raised “the survival of the agro-industrial chain of the national milk regarding efficiency and productivity with new standards of quality, that is to say, with criteria that are in keeping with the characteristics of world supply and demand” (Rodríguez, 1998).

Industries analyse milk hygiene and nutritional content to ensure quality standards. Failure to comply with the established parameters and reception hours allow dairy processor companies to ‘punish’ farmers with price reductions, the rejection of milk for several days or the final dismissal of producers if the breaches are severe or constant. The alternative for farmers is to sell the rejected milk to cheese manufacturers or collectors who take advantage of the situation by paying even less than 50% of the regular price.

In contrast to the changes in quality guidelines, and the transport, storage and marketing of milk, there have not been many changes in the family semi-skilled system.

In their wish to improve agricultural production, Alteños extended the cultivation of pasture lands, clearing wooded zones and thus effecting irreversible damage to the ground. Water retention exposed ‘tepetate’ layers and converted areas of land into ones unsuitable for either cultivation or livestock (López-Ulloa, 2008). The environmental conditions of the Jalisco Highlands, coupled with the intensive livestock activity, is projected to increase the local temperature twice as much as the planetary average increase. If this happens, there is expected to be a decrease in both rainfall and soil moisture (Del Castillo, 2017).

44. Yellowish and porous soil similar to rock. It has low fertility and is characteristic of volcanic areas of Mexico.
Chapter 5. “This is what our parents taught us to do.” Dairy in Los Altos de Jalisco

Figure 10. Main Livestock production in Los Altos, Jalisco and Mexico 2015 (tonnes)

Source: OEIDRUS ‘Anuarios Estadísticos’

Poultry farming is one of the most important economic activities in the region, especially in Tepatitlán. From the 1940s, the activity was developed traditionally until the 1970s, when the activity moved to an intensive phase that transformed the economy and regional ecology. Industrials modernised egg production in technical and administrative terms with changes in the feeding, farm management, physical spaces, safety measures, transportation and product transformation. The number of poultry companies were reduced but the size of flocks and economic growth increased. The entrepreneurs came together to acquire vaccines and produce their own technological and food inputs (Macías González, 2014). Currently, poultry industry owners’ families are part of the political and economic elite of the region.
Map 5. Land use in Los Altos de Jalisco

Legend
- Altos de Jalisco Norte
- Altos de Jalisco Sur
- Municipal boundary
- Agricultural
- Urban
- Coniferous
- Water
- Succulent scrub
- Low deciduous forest
- Pasture/Grass

Source: Based on the Gestatistical Framework of INEGI
5.5. Thirty dairy family farms: between tradition and innovation

Family-type semi-skilled dairy farms share essential characteristics. They rely on family as the primary source of labour, land, water and capital, their herd size is usually small (less than 150 cows), and they perpetuate traditional practices of production. Within these shared features, differences regarding milking room design, technological equipment, productivity, hygiene techniques and commercialisation provide diversity in the regional dairies.

In the next pages there is a description of thirty dairy-households I explored during fieldwork in Los Altos de Jalisco (see Table 3). The selected farms offered enough information to elaborate a characterisation regarding property rights, use of resources, production practices, and commercial strategies, aiming to provide a context regarding the division of labour of dairy families in the region.

A tradition of running a milking farm does not translate into an inheritance of property rights. Land ownership in the 30 dairy-households is as follows:

a) Fourteen farms operate in the farmers’ properties, including the barn and grazing lands

b) Ten families pay monthly rents whether for grazing lands, barns or both

c) Three families have the usufruct of lands inherited ‘by word’ but they do not have property titles

d) Three farms are properties loaned by relatives

e) 11 of the 30 dairy households are operated and managed by a woman and 2 are operated by women although managed by their aged fathers.

All farmers are cattle owners except for three, for whom a share of the cattle is ‘borrowed’ from a relative. In these cases, expenses and profits are organised under verbal agreements. That is, they are agreements of confidence because the distribution of benefits depends on the existence of profits. The herd size among dairy-households varies between two and 100 cows in milking, and all cases have at least one replacement heifer.
### Table 3. Milk production of dairy-households

<table>
<thead>
<tr>
<th>Dairy House-</th>
<th>Herd size</th>
<th>Litres per day</th>
<th>Price (pesos)</th>
<th>Purchaser</th>
<th>Milking Type</th>
<th>Type of labour</th>
<th>Gender of head of the farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>200</td>
<td>3.50 - 4.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>90</td>
<td>4.50 - 5.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>280</td>
<td>3.50 - 4.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>40</td>
<td>3.50 - 4.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>30</td>
<td>3.50 - 4.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>375</td>
<td>3.50 - 4.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>7</td>
<td>53</td>
<td>900</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>8</td>
<td>55</td>
<td>650</td>
<td>5.50 - 6.20</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Hired</td>
<td>Female</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>30</td>
<td>4.50 - 5.49</td>
<td>Local</td>
<td>Hand milking</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>300</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>11</td>
<td>100</td>
<td>2000</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Pipeline milking</td>
<td>Mixed</td>
<td>Female</td>
</tr>
<tr>
<td>12</td>
<td>23</td>
<td>300</td>
<td>5.50 - 6.20</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Female*</td>
</tr>
<tr>
<td>13</td>
<td>70</td>
<td>1100</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>14</td>
<td>43</td>
<td>550</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>15</td>
<td>65</td>
<td>1600</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Pipeline milking</td>
<td>Hired</td>
<td>Female</td>
</tr>
<tr>
<td>16</td>
<td>40</td>
<td>600</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>17</td>
<td>90</td>
<td>1300</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>18</td>
<td>34</td>
<td>440</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>220</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Portable machine</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>20</td>
<td>30</td>
<td>500</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>21</td>
<td>25</td>
<td>400</td>
<td>5.50 - 6.20</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>22</td>
<td>46</td>
<td>900</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>23</td>
<td>65</td>
<td>900</td>
<td>5.50 - 6.20</td>
<td>National</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>24</td>
<td>78</td>
<td>1800</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>25</td>
<td>8</td>
<td>80</td>
<td>4.50 - 5.49</td>
<td>Multinational</td>
<td>Direct-to-can</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>26</td>
<td>31</td>
<td>900</td>
<td>4.50 - 5.49</td>
<td>Multinational</td>
<td>Pipeline milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>27</td>
<td>6</td>
<td>100</td>
<td>4.50 - 5.49</td>
<td>Multinational</td>
<td>Hand Milking</td>
<td>Family labour</td>
<td>Female</td>
</tr>
<tr>
<td>28</td>
<td>55</td>
<td>1100</td>
<td>5.50 - 6.20</td>
<td>Multinational</td>
<td>N/I</td>
<td>Family labour</td>
<td>Male</td>
</tr>
<tr>
<td>29</td>
<td>22</td>
<td>410</td>
<td>4.50 - 5.49</td>
<td>National</td>
<td>Portable machine</td>
<td>Mixed</td>
<td>Female*</td>
</tr>
<tr>
<td>30</td>
<td>6</td>
<td>100</td>
<td>4.50 - 5.49</td>
<td>Regional</td>
<td>Hand Milking</td>
<td>Family labour</td>
<td>Male</td>
</tr>
</tbody>
</table>

*Women operate the farm but their fathers are in charge of the management*
Chapter 5. “This is what our parents taught us to do.” Dairy in Los Altos de Jalisco

Herd-size in dairy farms has implications for the time spent and the organisation of work among family members, although there is also a relationship between the number of livestock and the level of automation of the dairy farm. Farms with more than 100 cows usually have a milking machine, which decreases the time spent on milking because milk buckets do not have to be loaded.

Livestock productivity in Los Altos de Jalisco is above the national average and responds to various factors. Olmos et al. (2015) explain that average milk production in the region was 19.7 kg per cow/day in 2011 and, although this number was higher than the national and state average, it was still lower than the production in the United States, where the average is 26.5 litres per cow/day (Olmos et al, 2015). Among the set of cases, ‘dairy-farm 9’ produces the least volume, getting 30 litres daily milking two cows by hand twice a day. Such bulk results from an average production of 15 litres per cow every day. This dairy sells half of the milk to a local cheese factory and the rest to final consumers. In comparison, the one that produces most milk per day is “Dairy Farm 11”. With 100 animals in production, this farm uses a pipeline machine and produces more than 2,000 litres daily, that is, an average of 20 litres per cow (see Table 3). In sum, 22 dairy farms produce between 10 and 19.6 litres per cow/day, which means only less than 30% produce more than the average of the region.

Some farms increased the daily production of milk per cow by implementing technical innovations. One of the male producers explains that his dairy increased efficiency due to changes in feed and livestock management:

> They [the cows] currently produce around 26.5 per day on average. It is huge! [Before], there were cows that gave us 15 or 16 litres on average a day. When we reached 20 litres, I thought we were already doing a lot! We milked almost 50 cows and produced almost 1000 litres. Now we produce almost 900 litres with fewer cows (31). We changed food, herd management, including separation of livestock. We changed the way we milk, made a room with a pit. [...] This is no longer an ordinary milking shed where the cow eats and the milker sits down to milk (Juan, personal communication, September 2015, own translation).

There are considerable variations in the use of technology in dairy-households. All cases operate in traditional tie-stall sheds (i.e. each cow’s back legs are tied together). This type of shed is common for housing dairy cows in North America, mainly Canada and the northern states of the United States (Zurbrigg, 2005). In this region, some of the sheds have operated with this type of construction for more than a century. Early farmers designed tie-stalls for manual milking: the cattle stand in parallel rows with an eating surface and a walkway for feed in the front, and the milker sits on the side
of the cow. The three exceptions are, first, two cases where there are no sheds and people milk in the paddocks, and the third one is a dairy in which the owner’s son has implemented physical and technical innovations to increase productivity, one of these being the construction of a parallel shed, and changes in herd management.

Image 8. Tie-stall

Source: Author’s photo, 2015

45. See Zurbrig, 2005.
Milking practices range from the most traditional, i.e. milking by hand, to the use of mechanised pipeline equipment. Eight dairy-households still rely on hand-milking, one-third of the cow sheds uses pipeline machines, one more third uses direct-to-can milking machines, and only three farms use portable milking machines.

The dairy farming families participating in this research, similarly to most dairy households in the region, get their primary household income from the milk sold in the market. It is possible to identify certain patterns by linking the milking type with the milk purchaser (see Figure 1). All dairy farms that rely on local trade continue milking by hand. In contrast, all dairy farms supplying the private national company Lechera Guadalajara use pipeline machines in addition to on-farm milk coolers. This pattern has to do with the process instituted by this company in the 1990s, during which they dismantled collective chilling machines and installed smaller tanks on the farms of producers who agreed to continue as suppliers of the company.
Delivering cold milk is a requirement that has intensified since the opening of Mexico to the global market of milk. Companies like Lechera Guadalajara demand their suppliers have an on-farm milk chiller. Danone and Sigma buy only cold milk as well, but accept cold milk that can come from collective tanks of farmers’ associations. Having a cooler on the farm represents considerable commercial advantages. However, purchasing it and maintaining it are costly and some farmers do not see such expenditure as an option.
Having shown some production characteristics, I will now move on to explore the economic dynamic of the dairy households. Milk production costs differ among dairies and regions. However, there are some approximations regarding the cost of production of milk in Mexico. Representatives of cattle farmers agree that the actual cost is around 5.50 pesos (Personal communications, April 28 and July 9, 2015, own translation). The expenses incurred in the production of milk are livestock feed (fodder and concentrates), animal breeding, electricity, water and transport services, medicines and vaccines, milking supplies, and labour when there are wages outlays. Production costs increase as farmers move towards a semi-intensive system. Some take the chance to make improvements in the barn or buy sophisticated equipment, aiming for better product prices, while others cannot afford the investment and do not have enough information that allows them to have the confidence to risk acquiring more debts.
The selling price per litre of milk for producers in the Jalisco Highlands ranges from 4.00 to 6.20 pesos. Liconsa pays the highest price, but the government company reduces payment consistently on the grounds of lack of ‘quality’ in milk. The local industries pay the lowest prices. The selling price can reach seven pesos when farmers sell uncooled milk to consumers without intermediation. However, dairy-households within this project sell only a portion of the total milk production directly to consumers (5 to 10 litres per day), which does not represent a significant difference in household income.

Twelve dairy-households are suppliers to national companies: four to Liconsa, the government company that subsidises milk to low-income consumers, six to Lechera Guadalajara, and two to intermediaries with an interstate trading range. Another four dairy-households supply multinational corporations, two of them to Danone, one of them to Nestlé, and the other to Sigma through an intermediary. The regional business Lechera Alteña buys milk from seven households, and these last seven sell the product to small cheese industries or directly to final consumers.

Farmers obtain advantages and face different challenges according to the commercialisation of milk. Selling the milk to a national or multinational company guarantees a better price per litre. Other benefits are the access to technical assistance and, in the case of Danone, annual productivity grants. On the other hand, supplying milk to local and regional companies excludes farmers from strict quality requirements. Both commercial structures entail constraints and challenges. Figure 17 relates the purchaser company to the commercial risks faced by producers. For instance, all farmers supplying Liconsa cope with the danger of a decrease in price, the occasional rejection of purchase, and the permanent dismissal from the purchaser company’s suppliers’ list. Meanwhile, only farms selling to Lechera Alteña face regular payment delays and dairy farmers supplying Danone responded that they did not face any of those challenges, but just a delay and a decrease in payment when the milk does not meet quality standards.

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46. Equivalent to USD $0.21 to $0.32.
The data appears to suggest that the payment obtained per litre of milk hinges on the safety and quality requirements of the purchasing companies. Producers selling to national companies get the highest price but face significant risks: volatility in the purchase price, rejection of the purchase of milk for established periods (usually two weeks) due to non-compliance with safety and quality parameters, and even being permanently removed from the list of suppliers. This control manoeuvre is possible because, even though Mexico imports milk for lack of self-sufficiency, companies argue that the supply of local milk surpasses the demand. Thus, they use a discourse of market balance to control the price and to set buying caps. On the other hand, dairy-households supplying small dairy factories obtain a lower price, but are not required to implement technical changes in production or buy equipment, supplies and concentrated foods.

The laxity of commercial agreements between farmers and local industries situates producers at a disadvantage because of the contractual informality and the consequent ability of the buyers to control the price, the volume purchased, and the regularity of purchase. It is common for small businesses to reject the purchase of milk without notice or to pay for it at prices well below the cost of production. This type of company also functions as a second option for selling milk when one of the large enterprises rejects the purchase, alleging presence of dirt, antibiotic or water in the product. In such cases, farmers accept disadvantaged commercial deals such as obtaining 2.00 pesos per litre of milk, that is, a third of the price paid by Liconsa. Farmers supplying smaller factories also face price volatility and irregular payments. For instance, all the interviewees selling milk to one of the regional companies stated that this industry raises and lowers the purchase prices without notice and that there is no consistency in sending the pay cheques.
Dairy-households, the object of this study, have different systems of delivery. Variations usually depend on the demands of the purchaser company and the farm's resources. Transporting milk from the dairy farm to the buyer can follow one of the next routes:

Figure 13. Routes to transport milk from the dairy shed to the buyer

Transporting milk within a local range gives rise to what we could name a 'local division of labour' organised around collectors, locally named ‘ruteros’. These local agents are people – usually men – who collect the milk from each of the farms, load them in buckets and transport them in vans to sell the product either directly to consumers or to small factories making sweets and cheeses. Ruteros pay producers for each litre of milk, charging a fee for transportation that ranges between 30 to 50 cents per litre.

Dairy in Los Altos de Jalisco has undergone processes of change that dairy-families have incorporated to various degrees. When asked about the changes they have perceived in milk production, farmers mentioned: incorporation of mechanised techniques, the switch from daily to twice-daily milking, the emphasis on clean milk production and cold milk delivery, enhancements in cattle feeding and breeding,

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47. Thank Tonatiuh Moreno for his help in designing Figure 13.
improvements in housing of cows, and an increase in yield per cow. Martha described some of these changes: “[Milking] used to be by hand and was just one time a day; in the evenings, the calf was removed, and the cow was milked in the morning. Now it is not laborious because we use machines” (Martha, personal communication, April 7, 2015, own translation). Hortensia, who still milks by hand, explains that the most important changes are productivity and cleanliness:

[...] early on, I did not wash the teats, nor the udders, as we did not care [...] We would be milking in the rain and if the water and dirt formed mud and the udders of the cow got dirty, we did not do anything at all. Now if it rains and the cow is wet, when she enters the shed, we have to dry the udders with a rag, with papers that we buy to dry them. [...] Also, before, we didn't use sealer or soap, and now we put on all that (Hortensia, personal communication, October 29, 2015, own translation).

Local producers are active agents of a diverse and dynamic dairy industry. They participate in a sector increasingly involved with the logic of the global economy by accessing information, experiencing pressures to change practices and making decisions among a range of financial and productive options. Expressions of such dynamism are the different ways of selling and transporting milk and the different degrees of incorporation of global techniques and concepts.

5.6. Summary

Family dairy farmers face the challenge of achieving a steady level of competitiveness in the global market. The dependence of the Mexican milk industry on imported inputs and products, the prices and availability of which rely on the international market, favours the industries, including LICONSA, and harms local producers. High costs of livestock are a constraint for the competitive efficiency of local producers. The production of forage maize on the family farms is a common practice that reduces the expenditure on food for livestock and commonly relies on family labour. However, milk production, from the nutritional point of view, is based on concentrated foods (instead of being based on quality forages such as maize silage), the cost of which can account for more than 70% of the price paid per litre of milk. This feature, combined with deficiencies in farm management and external factors, makes milk production economically vulnerable and prone to financial failure (Olmos et al., 2015).

Family dairy farms in Los Altos de Jalisco connect to the global market through the sale of their products to transnational companies such as Danone and Nestlé, as well as Mexican companies such as Lechera Guadalajara, which imports supplies and exports some dairy products. Furthermore, in the context of economic liberalisation,
the trend in the national milk market since the 1990s has been to articulate the global production and mercantile structures and guidelines.

There are strategies of resistance operated by families and women to conserve and improve their lifestyles and at the same time be competitive and remain in the milk market. Examples of these are the different productive guidelines incorporated into everyday practices. That is, producers do not fully adopt the technological packages or regulations dictated by the world milk market, but they make decisions that take into account economic, community, family and individual aspects, including human, political and material resources. In that sense, a process of appropriation arises regarding new concepts such as ‘quality’ acquiring different meanings and strength in various contexts. For instance, Gina said that her husband wanted to buy a portable machine but could not because they cost 34 thousand pesos and they did not have money for it (Gina, personal communication, April, 21, 2015, own translation). With a different reasoning, Lourdes explains how milking by hand produces better milk:

L. Right now, three families buy our milk. I milk that milk by hand, theirs and ours.

I. Why by hand? What effect does it have on milk?

L. I tried it on the milking machine, and it doesn’t taste good to me. Then I told my husband, “Hey, I don’t want piglets of milk, I’d rather milk by hand,” and he replied, “Oh well, choose three cows from there”, which he says are purer and give the fattest milk (Focus Group_1, June 13, 2015, own translation)

Other strategies are public demonstrations to demand better prices for milk and the harder policies regarding dairy product imports. Reliance on social networks is another strategy to get ‘help’ in the household or dairy labour, as well as to have access to loans or equipment lending. A local representative of the cattle farmers related:

We have made demonstrations in most of the states that produce more milk and people come from many sides, from all municipalities to continue fighting our rights. The other day Liconsa was very late with payments arguing it was because surpluses, and it turns out that we went to a demonstration. As soon as we entered to walk through Lázaro Cárdenas [an important avenue in Guadalajara], the money began to fall into the accounts. The same day, we agreed with LOCONSA that they would continue buying our milk. Still, we set a period of three more days, so that if there is no arrangement, that is, if SAGARPA did not transfer Liconsa and SEDESOL the money they need to buy, we were going to throw the milk away. And that was going to be a social problem because when that happens, people get angry and
Cooperativisation is an alternative to dairy industrialisation and commerce. The uncertainty that arises from price volatility motivated milk producers from Los Altos de Jalisco to associate into consumer cooperatives, organisations with the primary purpose of obtaining concentrated foods in large bulk and thus reducing purchase prices. Such is the case of cooperatives like Productores de Leche de Acatic (PROLEA), Centro Lechero Cooperativo de Los Altos, S.c.l. (CECOOPAL), and Alimentos La Concordia. The Unión de Cooperativas de Consumo Alteñas S.C. of R.L (UCCA), in turn, additionally provides technical assistance and management services. There are also smaller organisations for the collection and selling of milk to Liconsa S.A. de C.V., Danone and Sigma Alimentos S.A. de C.V. According to Wattiaux et al., when producers organise, they obtain competitive advantages, increase sales volume and strengthen their negotiation capacity with industries (Wattiaux et al., 2012).

Within the household, farmers develop different strategies with the aim of remaining competitive in the market. The work of women, men, boys and girls in the house, fields and on the farms guarantees the cleanliness, food, health and education necessary to carry out the activities of milk production. Besides, the absence of wages results in a ‘saving’ that guarantees the income and consequently the productive activity. Cutting ‘superfluous’ expenditures is also a measure to mitigate the lack of revenue. In this area, we find a limited consumption of household appliances and clothing, as well as limited property maintenance, less days off, and limited use of services such as health and formal education, especially after high school.

Self-consumption crops, remittances and home-based work also support families to face resource scarcity. Families have crops for self-consumption, including eggs, pumpkins, chillies, tomatoes, beans and fruit trees. In some cases, these supports include breeding chickens, turkeys, sheep, goats and pigs. The manufacture of ‘cajeta’ (a milk sweet) and cheese is also habitual, although it is in response rather to a strategy to process the milk that they cannot sell. With less regularity and less economic importance, some families receive remittances from relatives residing in the United States but in no case where the milk trade persists does this constitute the first household income. Some women also make different types of garments and embroideries for sale, which represent an extra, albeit minimal, income earmarked for savings or personal expenses.

The dairy industry is an important part of the identity and daily life of local society and, along with poultry, functions as a core of services and other economic activities.
For example, the roads respond to the need for transport of agricultural products and commercial activity revolves in large part around the primary sector. Agribusiness companies take advantage of the skilled labour of the rural population and increasingly shape the economy of small localities. On the other hand, in the wider field, higher education services include careers focused on developing the competitiveness of field products.

Life in the Jalisco Highlands is dynamic and complex: traditional values are mixed with new ideas that flow through the migratory processes, the market, and the increasing penetration of the communication media. It is necessary to make a thoughtful explanation that ponders the perspective of the Alteños themselves on their values, identity and social networks – in other words, to build an explanation in conjunction with its inhabitants, who are diverse in their interests and their history and who modify their practices and beliefs. Perhaps, the ‘alteña’ society is increasingly getting away from the attributions of isolation and individualism which have identified it as ‘ranchera’ culture.

The implementation of quality requirements brought about social and cultural changes in farming families in Mexico. One significant change was in the delivery of cold milk. As a result of this, producers make decisions about whether to join the new business logic and take the risk of investing in more sophisticated milking and cooling equipment, or to continue with traditional practices and local trade that do not require major changes or investments.
Chapter 6. Who does what? The division of labour in dairy-households

6.1. Introduction

In this chapter, I discuss how dairy farming families in western Mexico organise their work. I draw attention to the division of labour by sex within farms and households to explore how gender norms influence the allocation of tasks. Recognising that female and male bodies denote different physical, intellectual and emotional meanings in situated historical contexts helps to understand that such division is not natural or inevitable, but rather the product of social relations.

Congruent with the sexual division of labour, task allocation in dairy-households is hierarchical. Although the separation of productive and reproductive tasks takes place in the family environment, the hierarchy remains, with men assuming duties that have greater social recognition, such as those to do with trading and financial decision making. This hierarchy responds to dominant gender norms that in the rural context tend to be highly patriarchal (Brandth, 2002; Little, 2016). Therefore, the sexed bodies and their capabilities have different values and a stratified social recognition.

Labour organisation in dairy-households links culture, economy and family circumstances to determine which tasks are feminine and which masculine. Tradition, religious mandates and gender norms interplay with economic interests of survival, profitability and competitiveness. All factors interplay in defining who possesses the abilities to perform each activity.

I propose to consider the family as the core of the division of labour. To do so, I use the concept of ‘dairy-household’ to refer to a single, but complex, space where the organisation of work takes place in pursuit of both milk-selling for profit and family well-being. This perspective integrates both the production of goods for the market, that is, farm activities, and the work of care and family reproduction. In dairy-households, the division of labour transcends physical spaces, as it takes shape in the family environment. It is not important whether the dairy and the house are co-located or are on separate lands, as it does not modify the central question: what is the role of the social construction of gender in the allocation of tasks?

To answer that question, this chapter starts with the study of thirty dairy-households in Los Altos de Jalisco that are representative of how families in this region organise the production and marketing of milk. The next part explores the division of labour in
those farms, describing who does what in the house and the dairy. Finally, I summarise the chapter reflecting on how dairy-households are places for commodity production, family life and social reproduction.

6.2. Family organisation for dairy farming

Both production techniques and family organisation for work come from processes of negotiation and transformation. Power relations take place that generate strategies of resistance and the appropriation of concepts and practices. Actions and decisions to ensure and improve living conditions result from both a reasoned process and from tradition, habits and values. Farmers’ decisions consider consumer needs, adversity and uncertainties, new opportunities, their lifestyles and their social obligations (Long, 2004).

In contrast to the technical and managerial changes, there are not significant social transformations in family dairy farms. The main farm’s labour force comes from the family members and a sexual division of labour persists, along with hierarchical relations among men, women, boys and girls.

There are 103 workers (50 women and 53 men) working in the thirty dairy households (see Table 4). Most are family members, with only six not being from the farmer families (see Figure 14). Women run twelve dairies and there are six farms operated solely by female labour. There are eighteen children working permanently on ten farms − sixteen boys and two girls.

<table>
<thead>
<tr>
<th>Table 4. Workers in dairy-households</th>
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<tbody>
<tr>
<td>Family female workers aged 15 and over</td>
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<td>Family male workers aged 15 and over</td>
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<tr>
<td>Family female workers under 15</td>
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<td>Family male workers under 15</td>
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<td>Hired male workers</td>
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<td><strong>Total</strong></td>
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The table shows that the sum of adult men and boys exceeds the number of women. The reason is that men start working on the dairy farm since childhood. They are considered subjects responsible for contributing to family support since they enter adolescence. On the other hand, girls’ responsibility to the family focuses on domestic work and looking after younger children. As will be seen later, some mothers prefer not to teach a girl how to milk because it implies “condemning” her to dairy.

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Dairy farming families milk twice a day, with each milking lasting between two and three hours, depending on herd size, number of milkers, milking shed capacity, and the degree of mechanisation. The participation of family members in milking shifts depends on their other activities on and off the farm. Similar to US family farm households studied by Kim and Zepeda (2004), in dairy-households, “...each individual's time availability is limited and in turn is affected by how others in the family allocate their scarce time resources” (p. 116). In this way, the inability of one family member to provide work is offset by the distribution of tasks among the other relatives. For example, school-age children often work only on evening milking, and some women work only one shift so they can fulfil duties of housework and childcare.

Family work in dairy-households is almost synonymous with unpaid work. From the 25 farms operating only with family labour, five allocate money to pay salaries to women and children. Ten of the 54 female participants in the interviews receive weekly wages. This salary is always below what a non-family employee would receive, as doing otherwise would minimise the profits of the family business. A male farmer explained that paying the regular rate to his children would mean having no profits (Enrique, personal communication, March 6, 2015, own translation).

![Figure 14. Labour type in dairy-households](image)

Two dairy farms operate only with hired workers. Olga, the owner of dairy-household#5 (See Table 3), has overseen the dairy since her husband passed away sixteen years ago. She worked in the barn for more than ten years but now she employs two workers (a husband and wife) and she now focuses on administrative tasks. Similarly, Emma

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48. (Enrique, personal communication, March 6, 2015, own translation).
inherited dairy #8 from her father. She has never worked in the milking shed but supervises the farm’s management, decides about the livestock handling and attends farmers’ meetings. In the other three cases, dairy-households #11, #24 and #29, there is a combination of unpaid family labour with hired labour. Dairy-household #11 operates with four people, two sisters who are the farm’s owners, and two workers. Farm #24 mainly works with two members of the family (husband and wife), and one employee. In the #29 dairy, the youngest daughter of the owner runs the milking with no salary and her niece works with them as a wage earner.

There are two ways of organising milk production. One is by allocating tasks, and the other is by assigning cows. In the first case, the same person performs one or two tasks during the entire milking process. For example, feeding cows, tying them up, rotating them in the milking shed, milking, feeding heifers and calves, and/or cleaning both the equipment and physical space. This division by tasks exists mainly in farms where there is more sophistication in the technological processes and the handling of the cattle. With regard to the second type, workers oversee several cows and execute every step necessary to produce milk from them, in addition to performing some general activities of cleaning and care of calves and other animals. With this latter type of organisation, each milker knows her cows and their needs for food and care. Dairy-households producing hay have work cycles. At the time of maize sowing, between May and June, as well as during the harvesting and cutting of the maize leaves between August and October, the workload increases because it is the same members of the family who perform these tasks. During these periods, family members reallocate tasks.
There is no purely rational organisation of work in search of the greatest gains. When the participants were asked how the work on the dairy farm was divided, the answers were as ambiguous as: “Well, everyone does their job”, “Each of us knows what they have to do”. In the daily dynamics, tasks overlap for different reasons: use of time and resources, availability of family members, mutual help and intra-family interactions – all these make the milking labour a collective responsibility.

6.3. Sexual division of labour in dairy-households

In this section, I examine the division of labour in dairy-households by answering who does what and how gender norms influence the allocation of tasks. As explained in the introduction to this chapter, the division of labour is not limited to dairy production, since farms and household tasks both serve the purpose of family well-being.

To understand who assumes which responsibilities, I identified 38 activities for the operation of the farm and the support of the family among five groups: a) duties for milk production, b) farm management tasks, c) agricultural activities, d) housework and care work, and e) waged jobs. I classified family members into four age-sex groups: adult women (15 years of age or older), adult men (15 years of age or older),
boys (under 15 years old), and girls (under 15 years of age). The table below reflects the participation percentage of each age-sex group in the types of work and tasks of the thirty dairy-households.

The results show that adult and young men assume duties that require physical strength, technological skills and the ability and confidence to negotiate, whereas women mainly assume responsibilities close to domestic and reproductive roles. On the other hand, tasks such as milking, feeding the cattle and cleaning the equipment appear to be gender neutral.
Chapter 6. Who does what? The division of labour in the dairy-households

Figure 15. Number of men and women doing different tasks
The most obvious finding to emerge from this study of the sexual division of labour in dairy-households is the large difference in the participation of women and men in domestic activities and care work. Duties for social reproduction remain as a female obligation and, in all cases where there are adult men, it is the men who assume the responsibility of the dairy management. Some of the issues emerging from this finding relate specifically to a separation of responsibilities in a context where gender norms are to some extent implicitly agreed between men and women. In the next pages, I describe with more detail the allocation of tasks. I take as a starting point the variable of sex but still consider cultural and economic foundations of the division of labour. The work of the children deserves a separate mention, because of the particularity of their range of activities.

What do adult women do?

The routine of women integrates the production of milk, housework and care work continuously. They go from milk production duties to house chores and vice versa, usually overlapping care, house and milking errands. In the milking shed, mothers look after small children; in the kitchen, they prepare coffee for the morning milkers, boil the milk and wash containers; in the house yard, they wash the milking clothes and clean the gumboots.

Women clean the milking shed, milk, feed the cattle, look after newborn calves, feed heifers, nurse sick animals and separate and carry the milk for the family to consume at home. In some of these tasks, mothers get their children’s help, but herd handling, financial management and artificial insemination are almost always out of the women’s realm, being roles undertaken by men. Narda explains how her family organises the milking:

The cows are more attentive to me, so I call them to the shed. Children sweep the barn. My husband prepares the food: he mixes pasture and stubble with water. When I call the cows, they get into their tie-stalls, my husband ties them up, and everyone gets a stool and a bucket. The other child (the smallest) is responsible for giving us the Vaseline to spread on the cows’ udders. That’s how we organise; every day is the same (Narda, personal communication, May 13, 2015, own translation).

Women adjust production duties as part of their responsibility for the family’s well-being. At the end of the morning milking, women take up domestic work: cleaning, cooking, doing the laundry, preparing children to go to school, caring for children and the sick and elderly, and accomplishing obligations to the community. They return to the barn in the afternoon and then go back to their domestic routine.
In contrast to their scarce participation in decision-making about the dairy, it is a female ‘prerogative’ to decide about housework, grocery shopping and family meals. In casual conversation, women express the assumption of these responsibilities by adding a possessive pronoun: “my housework”, “my dishes”, “my laundry”. This finding is akin to the notion that female and male speakers have distinct patterns of language use that unfold gender roles, and cultural constructions of gender (Blaxter, 2015).

Even when there are no farm profits, mothers, grandmothers, wives, sisters and daughters are responsible for providing the family with three meals each day. Lucía organises her days between the dairy and the house according to the meals schedule:

When I get up, I come to the corral to milk, and then I go home. I start preparing breakfast, I make tortillas, serve the children and send them to school. After that, I wash the dishes and then it is time to prepare lunch. When they have eaten, I return to the farm for the afternoon milking. Then again I go back to the house to do the dishes that we used at lunch because I did not manage to wash them before coming to milk. There is always something to do: cleaning, bringing in wood for the stove, putting in the nixtamal49, making tortillas and everything (Lucía, personal communication, October 29, 2015, own translation).

Women also take the responsibility for growing beans and vegetables on the farm and breeding backyard animals for eggs and meat. Debts are common in this context, as the local grocery stores provide credit based on trust so families can access the purchase of food they do not get in their homes or back yards. Women are usually the ones who ask shopkeepers for groceries with the promise to pay as soon as the milk pay-check arrives. Their responsibilities include community support roles: they attend church activities, ensure family participation in public events and attend parents’ association meetings, as well as conducting negotiations with the extended family on various issues.

There continues to be a perception by both women and men that there are masculine areas into which the women do not have to enter, and often do not want to, though they could if they did want to. Women do not attend meetings of farmers because “There are only men there”, they do not negotiate with buyers or sellers and they do not manage the accounts of the dairy farm because “that’s what ‘he’ handles” (Lourdes, personal communication, June 5, 2015, own translation).

49. The nixtamal are corn grains mixed with water and lime, which are then milled to make the dough with which women traditionally make tortillas.
What stands out is that there is a consensus between men and women regarding the hierarchy of activities and the division between ‘productive’ work and ‘non-productive’ work. This hegemonic process happens because of the social set that interiorises the discourse of inequality. During the study, women would refer to their work as help: “They take care of the heavy work; we just help them” and “I take my coffee and I only take care of feeding the cows and putting them in and taking them out of the corral” (Focus group 2, September 9, 2015) are typical expressions in conversations with women.

It can thus be suggested that in the context of dairy-households in Los Altos de Jalisco, female labour follows traditional age and sex conventionalities in which cultural and economic aspects interplay. Regardless of the contribution of female work to the production of goods and the reproduction of life, this contribution remains in the universe of help, an act of generosity – and commitment – that women are willing to offer to their families.

**What do adult men do?**

Men assume the running and financial decisions about the farm. They are in charge of the herd management, deciding about the cows’ housing, feeding and reproduction. They also milk, administer medicine, manage milk equipment, carry milk and food sacks, and deliver milk to the collective tank. Male members buy livestock, milking equipment and farm inputs. They negotiate land leases and decide most business and financial management. However, sometimes they consult with wives about the distribution of family expenses.

Adult men assume the public tasks related to the sale of milk, including bearing the burden of the farm’s survival and profitability. They face the milk price volatility, cope with milk amount limits and with rejections of purchaser industries. As well, they have to look for second or third options to sell milk, negotiate the selling of cattle and attend farmers’ meetings. Men get to decide about memberships in the farmers’ associations and cooperatives, about involvement in public meetings and demonstrations and in participation in government programs.

The division of domestic work and farm labour has solid borders when it comes to male work. Husbands, parents, and boys remain almost excused from housework and care work except in exceptional cases, such as when the wife-mother is sick or absent. In this case, the participation of the extended family, including the siblings who take care of the younger ones, is also important. However, there are cultural changes that result in cooperation in child care and a slight tendency to involve boys in the domestic
work, particularly among young couples. These tasks regularly include taking children to school, helping them to do school work, feeding them and playing with them.

**What do boys and girls do?**

Boys and girls distribute their time between school, farm and play. They go to school in the morning and work only during the afternoon milking. However, there are exceptions when, even during school days, they wake up earlier to work in the morning milking and it is not rare to find cases in which, after finishing sixth grade, children drop out of school and start working in the dairy as their main activity.

Defining the age limits of childhood is problematic, so, for descriptive purposes, I will refer to ‘children’ and ‘girls’ for children who are of primary and secondary school age. After the age of 15, they usually begin to assume adult responsibilities.

Children perform farm activities that tend to be either ‘feminine’ or ‘gender neutral’, those that do not involve physical effort or major risks for the farm. They are mostly in charge of rotating the cows into the milking barn, filling the food troughs, feeding calves, loading water, washing buckets, sweeping the milking shed, milking, breeding backyard animals and collecting eggs. Between 12 and 15 years of age, boys tend to assume adult-men roles and girls to take on adult-female roles.

Children also spend part of their time working in the house. In some cases, boys make their beds, wash their dishes, and sometimes are responsible for looking after younger siblings. However, girls are still the mothers’ helpers in housework and care. From a young age, between six and eight years old, they learn how to cook, make tortillas and do the laundry. In the absence of the mother, girls assume housework and take on tasks such as serving food, cleaning the kitchen and looking after younger siblings.

Educating offspring in the patterns of hard work is crucial in the ranchera culture. The involvement of children in the dairy is a path of education for work and preparation for the adult life. Elsa, mother of three, says, “The eldest of my children says ‘If it wasn’t for you two, God knows how my life would have been. Sometimes I feel angry for how [my dad] treated me but […] if I had not been taught to work I would have to be a drug addict and who knows…” (Elsa, personal communication, March 13, 2015, own translation). In the same vein, Gabriela, mother of five, explains how important it is for her to teach her children the value of work:

We have to share the work of both the house and the farm. It is good to get ahead and teach our kids to do some work. Thus, sharing the work among the whole family, we learn together and teach our children to be appreciative […] because sometimes you give
your children everything and they do not value it. That is why you must teach them how to work, so they realise how difficult it is and then they move on. I also tell them “help me in the farm but you better study so that you are better than us” (Gabriela, personal communication, June 5, 2015, own translation).

Boys and girls in dairy-households incorporate play into the work of the farm in the same way that in outside work schedules they play to be adults. Prior studies (André & Godin, 2014; Punch, 2003) have noticed the transit of rural children between the world of children and the world of adults.

Further research is needed to analyse the role of child labour in the sexual division of labour in family dairy farms in Los Altos de Jalisco. I could venture that child labour goes through a devaluation bias like women's work. As Leyva and Pichardo (2016) explain, there is a whole trend of social devaluation of child labour linked to considering the activities that children do at home, as well as their salaried work, as simple aids and collaborations for the family system (p. 74).

6.4. Women dairy farmers’ workload

Global capitalism, assisted by social gender norms, has effects on the economics of dairy-households and on women's workload. Dairy families have had to modify their work routines as a strategy to preserve their livelihoods due to the volatility and the quality and food safety rules of the global milk market. On the one hand, decisions taken in the global scope affect the demand and price of milk in the local realm, threatening the economic solidity of local dairy farmers. On the other, the global guidelines on food safety influence the milk market and therefore the requirements that national and transnational milk processors ask local dairy farmers to fulfil. As a result, dairy farms in the Jalisco highlands have incorporated new inputs, technology and procedures into the milking process.

The introduction of technology in the milking process has facilitated some physical duties but has not had any impact reducing women dairy farmer's workload. At first glance, the integration of technological equipment implies reducing physical effort in the milking process. This change was perceived by the participants in the study. When asked about the changes they have experienced, Elsa remembers how, in the past, milking was more exhausting: “Before, we milked by hand; now the milking machine and the cooler tank are benefits because before you had to carry the milk on donkeys” (Elsa, personal communication, March 13, 2015, own translation). One of three sisters running another dairy farm relates the difficulties of milking before the installation of the pipeline milking machine:
Before the line, we milked with buckets. That was heavy because we had to lift the cans. We are short and we could not raise them! We suffered so much because it was necessary to cross the marsh to where the truck arrived. We loaded the buckets, and then we sank in the mud (Doris, Pilar and Rosa, personal communication, March 13, 2015, own translation).

The reduction of physical effort thanks to the milking equipment does not mean, however, a reduction in costs or in working time. Dairy farmers explain that the extraction of the milk from each cow lasts the same length of time as if done manually. In the case of the dairies with pipeline machines and cooler tanks, the time of transporting milk has decreased, but families incorporated other tasks that increase inputs and time spent in the shed. These tasks can include washing and putting sanitisers on the udders before milking, straining the milk, putting sealants on the udders after milking to prevent infections, and cleaning the hoses, milking machines, tank and buckets with soap and antiseptics. Added to these jobs are livestock and administrative management tasks that did not exist before or were carried out with great flexibility: doing the farm accounts, vaccinating cattle, carrying out artificial insemination, and registering the cows’ stages of gestation and the treatments administered to each animal. Hilaria discusses the new steps of the milking process in her family farm:

[...] Before, the cows gave little milk, but now I suffer more to milk them. Because you offer them a different kind of food, they give more milk. Earlier, we milked without any roof; now we have the shelter, so one does not get wet any more. Back in the day, I did not wash the udders. We did not care, we milked under the rain and if the water fell into the buckets, pouring mud or dirt into the milk, we did nothing. But not any more. Now the cow enters the shed and if it is wet, you have to wipe them with papers that you have to buy. Every day I wash udders, dry them, put on a pre-sealer and then dry them again, that is the difference. After milking them, we put sealer on the udders so they do not get dirty. I think the changes are good, more for the consumers than for anyone, and the business also benefits because if the milk is not clean, they lower the price, so it is better clean (Hilaria, personal communication, June 5, 2015 own translation).

As previous studies have reported, the introduction of technology does not solve women’s workload by itself (Mkenda-Mugittu 2003; Walton, VanLeeuwen et al., 2012; Kristjanson et al., 2014). Regardless of the innovative function of equipment and techniques, traditional gender patterns shaping the sexual division of labour influence who uses them, how they are used and who benefits from their use. Investigating the gender implications of a dairy development program in Tanzania, Mkenda-Mugittu (2003) found that “...the impact of introducing new technologies is generally negative
on women’s work burdens and serves simply to reinforce their subordinate status and position relative to men” (2003, p. 462). In the same vein, Kristjanson et al. maintain that “…interventions aimed at intensifying livestock production, such as shifting from grazing to stallfeeding or by keeping potentially higher-yielding but also more demanding breeds, increase the workload of women and girls, because the intensification lies in their traditional tasks” (Kristjanson et al., 2010).

Different results have been found when the incorporation of new technology is accompanied by development projects that also integrate access to training in a community-based organisation – results concerning gender, female decision-making, income control and participatory organisation (Mullins, et al., 1996; Walton, VanLeeuwen, Yeudall, & Taylor, 2012). Even the use of technology does not avoid the health risks faced by women during agricultural work (Kallioniemi & Kymäläinen, 2012). A high percentage of the women interviewed worked during pregnancy, some even carrying sacks of food and buckets of milk. Women tell stories of being hurt by cows, of being injured in the barn during pregnancy, of getting sick from being exposed to cold and humid climates during winter and summer, and even of having afflictions caused by the use of substances, like Leticia, who says:

See my man's fingers. My fingers were not like that before. It's because of the iodine: see these sores. Before, it was easier, when they did not return our milk. Now they have become very fussy and we are using chlorine and iodine and the iodine rots the hands. We have to wet some wipes, some flannel squares, so we have to soak them in the water and iodine, squeeze it and clean the dirt off the chichis so that dirty milk does not come out. That is before milking and when you have just milked, and the udders are dry, we must put on a sealer. Also, the milk cups of the milking machines must be drawn through the iodine before putting them on the udders. We also must strain the milk when pouring it into the buckets. We use a cloth on the strainer and put this on the bucket to strain the milk. Because I tell you that LICONSA is against dirt. After milking, each person washes their machines and we hang them so that they dry (Leticia, personal communication, June 5, 2015, own translation).

The number of children configures the way women dairy farmers organise their time. It is common for families to have the children ‘that God sends’, especially in a culture such as Los Altos de Jalisco, where religious norms define a large part of behaviour and social judgment. Even though contraception is now more common, couples still have between four and six children. This has two implications: on the one hand, each child means expenses, physical exhaustion and work, especially for mothers during the first years, and, on the other hand, each child, as they grow, brings their work to
the family. From about eight years of age, daughters and sons begin to incorporate themselves into dairy-household work, either in the production of milk directly or in the care of the house and family.

Among the women interviewed, most tell how pregnancy did not imply a reduction of work on the farm and how young children are taken to the barn to be cared for during the milking process:

Even when I was pregnant, I got between the cows. When she (points to one of her daughters) was a baby, my husband milked down there; we sat the little girl in a crib while we milked and she would not move. She never crawled – she started walking by herself (Luisa, personal communication, March 3, 2015, own translation).

Female participation in the production of commodities and services does not excuse women from reproductive and caring tasks. Conversely, their insertion in the workforce can increase their workload because of the double burden (Chant & Sweetman, 2012; Tickner, 2006). Not one of the women participating in the present study reduced her household and caring responsibilities according to her participation in milk production for the market. At best, in the case of households where two or more women live, there is a rotation between the dairy farm work and the housework that responds to several factors, one being the school attendance in the case of girls and another being the confluence of other family and community obligations, as well as resting and emotional needs. Ultimately, the workload of women, composed of agricultural, domestic and community work, is reinforced by the almost null male participation in domestic and care work.

The greater connection of local dairy producers with the global milk market implies greater exposure to economic risks. This finding corroborates other studies’ arguments regarding the effect of the local/global connections in the life of farming families (Aubron et al., 2009; Rodriguez, Pini et al., 2014; Rodriguez, 2017). In response, farmers design and operate strategies to fulfil the responsibility of caring for and feeding their families. Within that context, women assume different tasks to men according to the social gender norms.

One traditional practice of local farmers is the production of food on farms and around houses to save costs. For example, they grow the corn to be used for forage and for the masa to make tortillas. They also produce beans, chayote and squash next to the milpa. Both men and women participate in planting and harvesting with other family members, but women are solely responsible for the preparation of crops, cooking them and serving them on the table. Some women work outside the farm and home to
increase income. Weaving is one type of work, but others trade diverse products. For example, Georgina sells food at the ranch’s primary school so that the money ‘reaches’; Elsa and Maria butcher chickens, and Lilia’s family reduces the ‘extra’ expenses such as going out with the family or eating out. In La Colmena, a farming family grows its own corn with which the mother, with her daughters’ help, prepares the nixtamal and makes four kilos of tortillas every day.

One of my daughters grinds the corn and I make the tortillas. Do you know how much we would spend a week if we bought them? There are at least four kilos of tortillas that we eat per day, so if a kilo costs 12 pesos, there are 48 pesos, almost 50. Then those 50 pesos are used to buy something else (Lucía, personal communication, October 15, 2015, own translation).

As in other contexts, an economic crisis in dairy-households increases the allocation of farming tasks on women’s shoulders but allocates minimal reproductive tasks to the men’s realms. That is, there is a gender inequality in the home that explains work segregation (Wregren, Nikulin, Trotsuk, Golovina, & Pugacheva, 2015).

Survival strategies materialise in more work, usually for women. This is because, according to accepted gender norms influencing the division of labour, the welfare of the progeny is the female responsibility. Women do not question their responsibility to ‘help’ their parents and partners, and to feed and care for their children, while husbands assume it is a female realm and society judges that everyone should accomplish their role. As Daniels states, “When there is a rift of some kind in the social fabric, public or private, at home or at work, it is often expected either that women should or that women could weave the fabric back into wholeness because they have the natural talents to do so” (Daniels, 1987, p. 413).

The other ‘modernising’ element that has impacted the local work dynamics is the incorporation of the notion of a certain type of ‘quality’ that implies specific ways of producing, transporting and delivering milk. The path towards the ‘quality’ goal is accompanied by a process of transformation in consumer preferences. A discourse regarding food safety and nourishment reproduced by the companies and the state in media and public health and education institutions reinforces the legitimisation of the production of ‘good’ milk and the proliferation of dairy products that ‘benefit’ people’s nourishment. Therefore, there is a coercive environment that encompasses the production, trading and consumption of milk and demands local dairy producers augment their expenses on inputs and transform traditional practices of production.
In sum, the trade opening to international dairy products along with the incorporation of global quality requirements and a shift in consumer preferences result in financial hardships and time constraints for farming families. Generally, solutions to financial problems mean further demands on women’s time. That is, when economic resources are needed to sustain the home, families need to generate resources outside the farms. Sometimes this need is answered with wage labour outside the farm and, as already explained in chapter five, these labours are usually in poultry farms or textile work at home. When it is not possible to go out to work, women look for alternatives that involve spending more time each day on some ‘extra’ activity.

When asked if they noticed distinctions between the work done by women and men on the farm, the most common responses were: “It’s the same” (Narda, personal communication, May 13, 2018), “They take care of the heaviest duties such as lifting the sacks of pasture” (Lizbeth, personal communication, May 5, 2015), and “It’s heavier for women because we have to load sacks and milk buckets”. During the first focus groups, when I specifically questioned if there was a difference with respect to the weight of domestic work and care, the answers were similar: “It is heavier for women because from the cowshed we continue in the house”, “They [men] finish the milking and they are free”, “We have to feed the children, take them to school”, “We have no rest” and “We go from the house to the barn and from the barn to the house”. (Focus Group_1, June 13, 2015, own translation)

The articulation of the sexual division of labour with economic precariousness, the global milk market, and patriarchy translates into the workload of women. Even when farms have low profits due to a decline in the price of milk or the refusal of the buyer to pay for milk, the woman is responsible for offering the family three meals a day.

6.5. Women heading dairy farms

As shown in other contexts, in traditional agrarian settings the position of women is still subordinated and “…the cultural model of favouring male successors strongly defines girls’ and women’s occupational possibilities on farms” (Silvasti, 2002, p. 162). Hence, finding women as heads of farms in Los Altos de Jalisco is not usual, as most of them became owners and managers because of external circumstances. The main reasons why women run dairy farms are male migration, widowhood or inheritance. In all cases, they face limitations imposed by gender norms that limit their decision making, their entry into public spaces and their presentation to others as strong and capable people.

Male migration to the United States has been a phenomenon that impacts the family organisation of milk producers and increases women’s workload. Now migration is
also female but, until about twenty years ago, male migration left women, wives and daughters in charge of dairy farms. Juana works the dairy farm with her three sons. Her husband has been in the United States for several years. The shed is on his father-in-law’s land; they do not pay rent because in exchange she helps them by milking their cows. She shares decision making regarding the farm with her eldest son: they calculate expenses, distribute the money between the fodder stores and the rent of the paddock where the cows graze and assess whether it is worth investing in inputs. Regarding cropping the fodder maize, she says, she is the one who helps her son, because “he is the one who knows how to move tractors”. She divides her hours between the farm, caring for her youngest child, who has health problems, cooking, cleaning the house, and occasionally caring for her sick mother. “I'm used to it. Sometimes my children tell me 'Mom, if you want to finish your housework, stay at home!' ‘Oh, no, boy’, I tell them, ‘it’s stressful for me to stay at home.’ The amount of housework I can do is fine. We all leave for the dairy because I need to get out. Currently I am helping them to milk but not always. My duties are those outside the barn: I take the cattle in and out and I help my sons to feed the cows and some calves and heifers that need different types of food. I measure pasture, and I put it in a pile, and sometimes I help to check the quality of the milk” (Juana, personal communication, 2015, own translation).

Loss of spouses suddenly leaves women in charge not only of their family and the care of the house and children, but of new job responsibilities. Luisa, 42 years old, is a widow raising five daughters; the eldest is 15 and the youngest 9. Luisa is in charge of a dairy farm with 40 milking cows. She used to work on the farm with her partner, milking, feeding cows, harvesting and doing other farm work. Since her husband’s death, she has taken over responsibilities she was not used to, such as managing the farm, hiring temporary workers and negotiating processes for the purchase of inputs and the sale of milk. For her, the agricultural work seemed heavy and fully emotional because she saw herself ‘alone’ when her husband died. Some people in the community told her to sell the cattle, questioning her, “What will a woman do with all that load by herself?” Her brothers-in-law told her they were going to sell the cows for her, but she replied “How are you going to sell them for me? I will go crazy without the cows!” She decided to continue the dairy farming work because she realised it would be difficult to find another way to generate income and she feared for the future of her daughters. In her words, “Since there are no men, my daughters and I have to do what men do” (Luisa, personal communication, March 3, 2015, own translation).

Widowhood has meant Luisa taking on tasks for which she was not prepared, including breaking with gender norms that limit women’s participation in public actions with farmers, such as negotiating with buyers, dealing with official institutions and even...
participating in activities to protest government policies. She has had the support of people like the president of the livestock association of San Miguel el Alto and is increasingly comfortable in her new responsibilities.

The inheritance of a dairy farm by the daughters implies both having access to land and resources and facing different challenges to those of men, since access to negotiation spaces is generally restricted and there is still a social judgment that denies women a position of control and decision making.

Three sisters own a dairy farm with 100 milking cows as the inheritance from their father. They have sold milk to Lechera Guadalajara since the 1990s, as their father was one of the farmers for whom this company installed an individual cooling tank. All of the sisters are in their fifties and started milking when they were children. The youngest makes most of the management decisions regarding the cattle and the operation of the dairy. She is in charge of the farm administration, purchasing inputs, selling milk, hiring workers, buying and selling cattle, managing household expenses and paying bills. During the milking, there is constant communication between her and the milkers since she is the one who best knows each cow’s needs. The fact that they are in charge of the paternal ranch has not exempted them from problems. On the one hand, the inheritance has involved family conflicts and, on the other, they do not like to attend meetings of farmers, or even go to nearby towns because they feel marked. They say that some people have questioned them: “What are you working for? You should sell the cattle and go.” They reply that they need to work and that being seated on the sidewalk is not an option. A man once criticised the youngest for going to cattle farms buying calves because only men were there. Telling this story, the oldest states: “What has been taken away from us with milking? Nothing! Nothing sticks with us and nothing is taken away from us” (personal communication, February, 2015, own translation.)

The restrictions faced by women heads of dairy-households are not only external; these norms are internalised and require a major reason to be overcome, for example, when survival is in question. Emma’s history about how she and her mother took over the work and decisions of the dairy farm when her father migrated to the United States forty years ago illustrates the external and internal obstacles that women have experienced and have been able to face:

Circumstances forced me to enter this business. When my father bought the land, he looked for a person to take care of the ranch because my dad was always in the United States, pursuing the American dream. He went to work to make money. Unfortunately, he died there; he had an accident at work. Then my mom was in charge of the rancho;
all the time she had to be in charge of everything. We are women who all the time have had to move alone. We had an employee who was stealing from us, and we almost lost everything. At that time we did not know anything about agriculture or dairying; my mom did not even know how to drive. So, we went to the ranch occasionally, and the employee began to take advantage. He received the cheque from the milk, he changed it, bought the fodder, rented the tractor, and he came to us only to ask for the workers’ salary. Then I started to see things were not right and I said “You know what, mom? This is too much; he will leave us bankrupt”. “But what do I do?” she replied. Well, I called my brothers in the United States to see who would come to take over the rancho, but nobody wanted to. We had a car, we had a taxi, but I did not know how to drive either, so I started learning. I was about 23 years old, and I said: “I have no other option”. I started going to the farm to see how it worked. I went, and I saw how they fed the cows, how many animals were there. The employee began to suspect something. He did not pay for the animals, but he always had guests, and he always made ‘birria’\textsuperscript{50} from our cattle. One day he invited us, and I said to him “When you are free, I want to talk to you, so you go to the house”. I was so frightened; one lacks character. That happened to my mom. That’s why they abused her because she did not dare to speak much; even if she did not agree, she did not say anything. We were always in the house, we did not know anything about the ranch, and we did not know anything. He came to the house, but he did not arrive by himself – he just took people with him. I grabbed courage and told him, “Well, look, I already talked with my brothers and they told me that I could be in charge. We are going to sell the ranch but only if I see that it is not profitable. That is why I need to undertake it myself, so from now on, when the milk cheque arrives, I receive it, I buy the feed, and I pay the workers. If you need petrol, I will buy it. If someone wants to rent the tractor, they have to negotiate with me”. He said, “No, I cannot work like that”. So, the next day I went to the ranch with him, so he gives me the inputs, but he said that everything was his ‘compadres’ – the stubble, the trailer, some cows and calves. He took what he wanted and left us only 12 cows and some calves. And then we had no other option but to keep going. We looked for employees and worked from the beginning. One of the workers we hired then still works with me; we started together. I had to learn (Emma, personal communication, June 3, 2015, own translation).

Women who are at the head of dairy farms, whether due to widowhood, male migration or inheritance, face obstacles that are sourced in gender norms. We see, then, that social norms of gender are restrictive regarding the mobility and autonomy of women,

\textsuperscript{50} Birria is a typical dish of western Mexico made with lamb, goat or beef, and prepared in a sauce of many spices and chillies and cooked in the oven.
but also that human needs, the responsibility of others’ lives, the desire for a dignified life, and expectations transcend the limits of the gender standards.

There are also cases in which women are de facto in charge of the farms, although it is the parents or husbands who act as owners in decision making and financial management. This is the case with Olga, 41, who works her father’s cattle with the help of a niece whom they hired as an employee. Her father always assists her in the milking, mostly feeding the calves, but his advanced age means he carries out activities that do not require more physical effort. Olga also takes care of the domestic work and of her sick mother. Both father and daughter make decisions together. He says he is proud of his daughter, expresses with certainty that “there are no more men” and that now they are all drunk and lazy, unable to take responsibility for the work (personal communication, September, 2015, own translation). Laura and Petra, in their twenties, live in a similar situation, their father, an octogenarian, left the operation of the dairy farm in the hands of his daughters, but he is still the one who attends meetings of dairymen, makes decisions, receives milk cheques and pays the daughters a salary, approximately a quarter of what is paid to a hired worker. Olga, Laura and Petra’s stories show that, in the conventional rural order, whenever there is a man on the farm, he would be in the power position. As Silvasti notes, “according to the traditional peasant script, a man dominates even when the head is a woman” 2003, p. 162).

Women heads of households do face particular constraints such as limitations in the negotiations of dairy collectives where men predominate, in educational gaps and in access to technology transfer services. However, they can also find their status as unpartnered women empowering. For example, Emma, Doris, Pilar and Rosa agreed that having a husband would have implied less autonomy in the use of their time and money. In line with what Chant (2016) proposes, being the head of a family dairy farm can be an “asset” by using this position to enhance women’s resilience, agency and capacities for transformation in gender relations (Chant, 2016).

Women responsible for the dairy households add more responsibility to their workload. Financial management and decision making about livestock, farm, purchases and sales all increase their accumulation of responsibilities. This is a topic not explored here in depth. However, it could be speculated that this increased responsibility gives them a different position regarding making financial and administrative decisions: they obtain a certain degree of autonomy when deciding the distribution of expenses and utilities, as well as having a decisive voice in the family organisation.
6.6. Discussion

The results show that the division of labour in dairy-households is gender specific. When people of different ages and both sexes work in the dairy, the family allocates tasks according to conventions about age-appropriate skills and ‘masculine’ and ‘feminine’ attributes. Such classification, as explained before, entails a hierarchy that places productive activities at the higher level of recognition.

The gender label in productive and reproductive activities does not represent a polarisation between two separate domains. Margins of the gendered labour vanish in different scenarios. In dairy-households, people transit between gendered activities and gender neutral duties. Most variations occur when there are exclusively either men or women working on the farm or when males outnumber females or vice versa. In the case of there being no men on the farm, women assume the leading role according to their position in the family and on the farm. It can be the wife of a migrant, a single mother, a widow or a single daughter. In some cases, the woman head-of-farm discusses decisions with her children or elderly relatives. Another reality that modifies rigid notions about male and female tasks is the survival of the farm and profit maximisation. Sometimes male head-of-households outline a discourse that ignores sexual differences in order to incorporate daughters and wives into agricultural and livestock work.

There are similarities and differences with respect to other contexts. For instance, contrasting studies have found that women commonly perform traditional female roles while the men operate machinery and are trained to succeed to the property (Brandth, 2006, Silvasti, 2003). During the present study, women on farms operating machinery had the knowledge and responsibility to make use of different types of milking machines. Similar to other agricultural contexts (Kallioniemi & Kymäläinen, 2012), the sexual/gender division of labour on family dairy farms in the Jalisco Highlands is always hierarchical and shared perceptions that value profit activities above the activities that sustain and care for people still prevail. In that sense, female agricultural labour remains undervalued, unpaid, often categorised as ‘help’ and so does not exclude women from domestic and care work. Such inequality is possible because jobs holding less socio-economic power are associated with femininity and, in a capitalist society, these are the works that sustain life (Pérez Orozco, 2014).

The division of labour is not static, rigid or harmonious. In different scenarios, the gender ideology is either strengthened or transgressed. In the former case, alluding to social conventions, women reject tasks that involve negotiating or joining with men, and move away from activities that require heavy loads or managing animals. In
an opposite situation, young women demand changes in traditional roles to achieve equitable workloads with their parents and siblings. They can achieve this through refusing to do domestic work for them or declining to learn some farm tasks because they assume it would imply having responsibility for them. We can say that knowledge becomes a tool of parents and husbands to include women in the farm labour. Hence, some mothers refuse to transmit the dairy expertise because they assume that the more their daughters know about milk production, the more at risk they are of being bound to dairy farming ‘for life’. This extract of a focus group shows part of this rationale:

I. Have you taught your daughters how to milk?

P1. I did not teach my daughter and I do not want to because I have four boys and she is the only woman. She does the work of the house because if she ever marries ... she does the housework and I take the boys to the milking shed.

P2. It is the same with me. I did not teach the girl how to milk. She goes sometimes to the milking shed just for the pleasure of going. She has a cow that she spoils and cares for.

P1. My daughter as well. She goes and spoils animals, but I want her to study better.

P3. I do not let my daughter milk. I tell her “Do not be stupid – you do not know that you cannot get out of this.”

P2. That’s why when I lived with my parents at home, I never wanted to milk, but when I got married I had to learn.

P1. I never milked in my parents’ house either. But now that I’m married and have my children, I have to work.

(Focus Group_1, June 13, 2015, own translation)

Daniela, 26, recalls mockingly how she got involved in the dairy work:

I had a cow and I told my dad one day: “Let me milk that cow”; “No and no”; “Let me milk it”; “Ok, do it.” I started to milk that cow and I was happy. I was happy because I milked one cow but then he said “Now milk another one.” And that’s how I started, one, two, three, four, five ... Now I say “I shouldn’t have ever milked that cow, never! It would have been better not to learn” (Daniela and Elsa, March 13, 2015, personal communication, own translation).
The sexual boundaries of the division of labour are noticeable when it comes to domestic and care work. During the fieldwork, in interviews and daily chats, I talked with the women about domestic work, and the participation of men in it. The answers were a mixture of complaints, resignation and laughter, as with someone who sarcastically assumes an inevitable destiny. Among laughter and anger, women in a focus group expressed: “My husband does not go into the kitchen at all. When I got sick, I had to explain how to cook the beans”; “My children helped me when they were kids, but now they do not want to do anything”; “I tell my brothers that they should learn to cook and clean because they do not know if one day they will live alone or will marry a woman who does not want to do anything for them” (Focus Group_2, October 09, 2015, own translation).

Analysing time-use data, in 2014 the OCDE stated that “women spend two to ten times more time on unpaid care work than men”. Among low-income households, Chant explains, men “seem not only to be finding it harder to be the sole or chief economic support for their households, but are not increasing their participation in reproductive work, either” (Chant, 2007, p. 334). Therefore, women continue carrying most of the reproductive tasks within households. As Lastarria-Cornhiel notices in a study on Africa and Latin America, even when women spend more time on productive agricultural and non-agricultural work, men do not increase their participation in reproductive tasks (Lastarria-Cornhiel, 2008).

In both the field and the milking shed, there is not a rigid labour specialisation in the production of milk; people can multitask on the farm, making labour a collective function for the common goal of efficiency of time and effort. The incorporation of men into domestic work is minimal, and although younger couples tend to be more flexible in this regard, rural gender morality places the responsibility of caring for families and communities in the women's realm.

The construction of gender ideology and the classification of work by sex have contextual particularities. This study found that in the cultural context of the Jalisco Highlands, strongly marked by Catholic religious tradition and precepts, the division of labour functions as a fundamental factor of social order, as both cause and effect of the construction of gender identities and relations. The distribution of tasks reproduces the ideology of gender by incorporating changes that in turn shape the prevailing conventions. For example, there is a growing enrolment of girls in secondary and tertiary education that changes the relationships between sexes and family members.

There are flashes of rebellion against the gendered norms, flashes that delimitate the division of labour, resulting in bargaining within families and ongoing transformations.
This observation is in agreement with Brandão, Moraes, and Dutra, who found that agriculturalist women in Brazil express both “...resistance to the historical processes of domination and devaluation of women and the acceptance and reproduction of these processes” (Brandão et al., 2017, p. 19). Exceptions to gender norms are more visible when women are at the forefront of farm management and then perform tasks that would be excluded if there were an adult man in a dairy-household. Other changes happen due to more girls accessing middle and higher education. Although they are not in the same numbers as men, it is not unusual for women veterinarians or livestock engineers to work in agricultural enterprises and to intervene increasingly in the decisions of dairy-households. Access to information in electronic media and through public social services has also had a significant influence on the construction of gender and, to some degree, on a more active participation of women in decision making within the family and the community. Nevertheless, changes are slow and face entrenched notions when it comes to gender criteria.

6.7. Summary

To understand who assumes which responsibilities regarding the sustenance of the dairy farming families, I analysed the sexual division of labour within the farm and the household, taking as my starting point the socio-economic and political structures on which the division of labour rests (Pérez Orozco, 2014, p. 171).

This chapter has stated the need to transcend the production/reproduction dichotomy in order to analyse the allocation of responsibilities among farming families. These results are consistent with those other studies that question the notion of two separate spheres of human action (Baca & Herrera, 2008; Carrasco, 2006; Luxton, 2006; Pérez Orozco, 2014). As an alternative to such dichotomy, I suggest the family as the articulating axis of the distribution of tasks both in the dairy and in the house.

Through analysing the responsibilities and tasks that family members perform on the farm -crops, house and community- we observe economic and cultural factors intervening in the organisation of work. Conceptualisations of age and sex play a critical role in deciding who has the skills and commitment to perform each activity. Women like Olga, Luisa, Doris and Gabriela make decisions about how to distribute the tasks based on criteria not only economic but also ones valuing sustainability and family welfare, individual interest and competitiveness in the market.

Observing the production of goods and services and the production of life as one unified process permits identification of the overlapping functions of the farm as containing productive activities and of the house as the realm of the reproduction of life. This idea concurs with feminist economics in placing welfare as a legitimate element for the
analysis of the family economy, downplaying profit maximisation and self-interest as the sole elements in decision making.

Despite growing transformations in dairy households in the Jalisco Highlands, the sexual division of labour does not encourage the participation of women in decision making. On the contrary, and regardless of the transformations in gender standards, the contextual moral economy compels women to accept – maybe pursue – personal sacrifice and to promote the well-being of their families, especially their children. Such purpose implies making alliances with the other actors – the market, the husbands, the local families, the communities. This scenario relates to Brickell and Chant’s explanation of the emotional, physical, economic and socio-cultural dimensions of women's altruism, which results in excessive workload and power imbalances within households (Brickell & Chant, 2010). In the field of family dairy farms in Los Altos de Jalisco, there is a conventional agreement regarding the exploitation of female labour by the market, just as social judgment demands unfair working conditions inside the house.

The results of this study also show that global capitalism has effects on the economics of dairy-households and has increased women's workload. In the highlands of Jalisco, financial and global decisions affect the demand for and the price of milk. In the same way, the global guidelines on agro-food trade have effects on health policies and the purchase of milk in the local area. Since the 1990s, dairy families have had to modify their work routines as a strategy for remaining as a force in the milk market. This has involved incorporating inputs and steps into the milking process, for example, the practice of cleaning the udders of cows before and after milking, cleaning the machines and taking care of the health of cows. The incorporation of technological equipment has not reduced the time of milking because the extraction of the milk of each cow lasts the same length of time as if it were done manually. In the case of the dairies with pipeline machines and a pipeline cooler tank, the time of transporting milk has decreased, but families have incorporated other tasks such as cleaning the tank and equipment. In sum, the trade openings for international dairy products, along with the incorporation of global quality requirements and a shift in consumer preferences, result in financial hardships and time constraints for farming families. This finding corroborates the argument of other studies regarding the effect of the local/global connections in the life of farming families (Pini & Baker, 2015; Rodriguez Castro, 2017). As in other contexts, an economic crisis in dairy-households increases the allocation of farming tasks on women’s shoulders but allocates minimal reproductive tasks in men's realms.
The notion of a “feminization of responsibility and obligation” (Chant, 2007, p. 333) helps the researcher to observe cultural, economic and ideological dimensions that maintain the low participation of men in domestic and care work. There is the alteño-and Mexican-ideal of the ‘good wife’, the ‘good daughter’, the ‘good woman’. Women in Los Altos are raised by moral-religious demands of self-sacrifice and submission in a tricky combination with ideals such as hard work, strength and even beauty. It seems then that the female body is privileged for its ability to meet multiple responsibilities while not privileged or able to make economic decisions. Furthermore, there is the dichotomous vision of productive-reproductive work that, in conjunction with the traditional gender norms, frees men of domestic and care work. Doing the dishes, washing, cooking and caring prevail as duties that feminises men, placing them in a lower scale of the social hierarchy.

The borders of the gendered tasks overlap, making crossing them easier for women. From this conclusion, we can state that women are more likely to engage in tasks considered ‘masculine’ than men in ‘feminine’ ones. On the other hand, women performing ‘masculine’ tasks, that is, labour with more social recognition, does not result in a breakthrough regarding the appreciation of work done by women.

These results demonstrate that female, male and children’s unpaid work is critical not only to the functioning of dairy units and the well-being of farming families, but also for the local economy and for capital accumulation. Supporting the assertion that capitalism depends on unpaid productive and reproductive labour (Luxton, 2006), in the next chapter I analyse the sexual division of labour in regard to social reproduction, class struggle and capital accumulation.
Chapter 7. “I milk with love”: female unpaid labour, subjectivities and capital accumulation

“One becomes a slave, all for the love of our children”

7.1. Introduction

The sexual division of labour puts the welfare of families on women's shoulders. Women provide the free and available work that the capitalist system requires to renew the labour force and accumulate capital. In previous chapters, the thesis explains the impact of global capitalism on dairy-households, the importance of the family labour force for the sustenance of dairy families, and the weight of gender norms in task distribution making the sexual division of labour patriarchal and hierarchical. In the present chapter, I attempt to answer how women dairy farmers in Mexico experience the junction of global capitalism and the sexual division of labour and how the interaction of these two factors contributes to social reproduction and capital accumulation. To do so, I analyse the emotional dimensions of work in dairy-households and the devaluation of female farming labour to identify this devaluation's usefulness in the local and global economy.

The present study not only shows empirical evidence of the sexual division of labour in a rural environment of western Mexico but also exposes the utilisation of women's knowledge regarding milk production and reproductive care and tasks. Elevated to a level of sublimation, female labour loses its economic connotation. It becomes unlimited, flexible and available. It is so naturally feminine that it excludes men and becomes invisible in a halo of surrender and self-sacrifice.

The chapter is organised in the following way. In the first section, I explore the lived experience of women dairy farmers by analysing a workday on a farm where global and household circumstances interweave with women's work routine integrating farm and house responsibilities. In section two, I analyse the role of affective dimensions mediating family organisation for work and decision making in dairy-households. Section three describes the social mechanisms that support the devaluation of unpaid female labour and how they interact with the underestimation of local farming knowledge to provoke a dual exploitation of women's labour on family farms. Section four explains how capitalism exploits unpaid women's labour and transforms it into profits for dairy industries and traders. The summary concludes that women's labour
is critical for social reproduction and capital accumulation through its role in family survival, the community economy and the functioning of the global dairy market.

7.2. The lived experience of women dairy farmers

External and personal circumstances shape the daily work of women in the family dairies of Los Altos de Jalisco. Trade regulations, market fluctuations and the social and economic policies of global trading influence their routines. A closer focus shows that the natural setting moulds the human arrangements of adaptation and, in such an environment, people build a regional history that moulds a sense of community. Collective values and knowledge dictate social norms, including gender ideologies, that dairy families incorporate into their daily work. In the more intimate environment are the household conditions, the material resources, the houses and the people using and inhabiting them with whom women share time and space and who demand care and attention from the women. Personal interests influence the daily labour in the form of aspirations, emotions and responsibility, all functioning as motivations for the daily effort and giving meaning to work.

Between external demands and personal obligations and aspirations, women organise their days establishing priorities and moving between the farm and the house among the tasks of producing profitable milk and those required to accomplish the family needs. In the following narrative, we observe the interrelation of diverse circumstances involved in the day’s work in the life of a dairy farming woman.

A workday in San José del Cuatro

Lourdes gets up at four in the morning, puts on her plastic boots and goes out with her husband and two of her children to the barn, located on a rented lot. They drive no more than ten minutes on the paved road that connects Mirandilla with San José del Cuatro. She milks 25 of the 60 animals in production. Her husband and 15-year-old son milk another 20 cows. They do it together because the father has limited strength and mobility in his legs. His 21-year-old son milks another 20 cows by himself.

Upon arriving at the farm, Lourdes puts the pasture and fodder in the cattle tie-stalls and calls the first cows. Cows approach when they hear their names and enter the tie-stalls and as they eat, the milking process begins. She washes the udders with chlorine and iodine to minimise the risk of bacterial presence in the milk. The family sells milk to Liconsa, the federal government company, which mandates cleanliness standards that producers must meet as a condition of purchase. The next step is to place each milker’s nipples in each of the four teats and repeat the process with another cow, as she milks two at a time. The equipment takes the milk straight from the udders to the milk cans,
a procedure that also helps to conserve milk with less environmental contamination. In the end, she milks her favourite cow to remove the milk she brings home. She says this cow “gives the fattest milk” and it is with this that she feeds her family.

At the end of milking each one of the cows, she puts iodine on the udders again. She says this substance is the reason for the harm to her hands. They are hard, “as men hands”, she says. After milking the 25 cows, she washes the cans and the milking equipment, cleans the tie-stalls and sweeps the barn. Then it is time to feed the calves and, if necessary, help her son to carry fodder to the nearby land plot where the bull and heifers are. For her, the work on the farm ends some minutes before eight in the morning.

Her husband and sons carry the milk to the ‘thermo’, the collective tank of the local cooperative of milk producers. They pour in the milk and the supervisor collects a sample. When the company refuses to buy the product, the association analyses the test samples of each farm to detect from which came the contaminant, the antibiotic or the water.

The demands of the dairy industries are increasingly strict. The cooperative repeatedly experiences Liconsa’s denial to buy the tank containing 2,500 litres of milk. The reasons for rejection may be excess acidity, failure to pass the ‘reductase’ test that detects pollutants, an insufficient percentage of protein or fat, or the presence of antibiotics or water in the product. However, these decisions are made unilaterally, since producers do not have access to the milk analysis process and do not have the necessary equipment to perform their tests. Sometimes they go to other companies or laboratories to verify the lack of compliance with the standards alluded to by Liconsa. On each of these occasions, the milk of 20 dairy families is at risk of being sold below the production price to intermediaries and small industries or the farmers throw it away.

For Lourdes, the morning work continues in the house. She cooks breakfast, often beans and tortillas, packs the children’s lunches and takes the children to school. Once home again, she washes the dishes, cleans the kitchen and catches up with other tasks: cleaning bathrooms, sweeping and mopping the floors and doing the laundry, which is almost a daily task. She lives with her husband and eight sons; her two daughters do not live in the house any more. Housework is unquestionably the responsibility of her alone since she is the only woman at home. After cleaning the house, she prepares lunch, gets the children from school, the rest of the men come to the table, and she feeds them all. After they finish, she eats. Later, she cleans the kitchen again and prepares herself to go to the dairy at 4:00 p.m.

During the afternoon milking, her two youngest children, eight and ten years old, participate in the farming tasks. Their responsibilities are mainly guiding the cows in and out of the milking shed, carrying the fodder to the shed, feeding the calves and collecting eggs. They do such errands while playing with each other and with the animals and chatting and teasing with the family. In the dairy, there is also room for expressions of tiredness and complaint, about the heavy labour, the price of milk, anger with a cow that “does not obey”, or disagreement with any family member who did something inappropriate for the milking process.

Lourdes, unlike many women, receives a weekly salary from her husband, although she has still been about to quit when her health and mood have weakened. The work is hard but “it’s from where we eat”, she explains with a smile and a tone of resignation.

In the previous narrative, different dimensions that influence the productive life of women in dairy-households emerged. The dairy farm families face the global requirements of milk quality and the price of the product, which in turn depend on the market fluctuations concerning the supply and demand of milk and other products related to the agricultural market, mainly cereals and fuels. The association ruling the collective tank that gathers the milk to deliver to Liconsa determines the milking schedule of the dairy farms. The milk must be in the tank before the cistern trailer leaves for the company’s municipal collection centre in San Miguel el Alto. This government company establishes purchase prices and standards regarding the quality of milk, factors that influence the family organisation and economy. Such involvement with the market requirements has required the incorporation of additional procedures and inputs that lengthen the time of production and increase expenditures. The safety requirements have also affected the health of dairy farmers, as in the case of Lourdes’ hands, injured by using iodine.

Lourdes’ work on the farm and home follows regional social norms. In the context of Los Altos de Jalisco, society rewards hard work and economic solvency and follows traditional rules regarding male and female accountabilities and behaviours. These social norms set gender principles and establish who, according to their age and gender, is liable for what tasks. To Lourdes’ workload are added family and community activities such as participation in school meetings, housework, care duties and the organisation of village festivities. Within that logic, caring for the family, including self-sacrifice, has a feminine label. Lourdes’ work burden makes sense within a social context in which it is important not to be judged ‘lazy’ and where there is a permanent impulse to grow economically and behave according to what society expects from a man and a woman.
Despite the four kilometres separating the barn from the house, Leticia’s routine follows a timeline that links both places, as completing the milking shifts does not mean the end of work. For female dairy farmers, the house is a workplace, far from that idyllic place where there is “just the indispensable work of food, conversation and sociability that gives human form to the succession of the days and the presence of the other” (De Certeau, p. 149). The daily life of the women confronts the romantic vision that the house is a place where custom allows one to dedicate one’s time to doing nothing, although one knows that there is always something to do in the house (De Certeau, 1996, p. 149).

A house is indeed a place of sociability, rest and intimacy but it is also a workplace. It is a place of social reproduction, including all the labours that produce the labouring population, ranging from conception and birth to childrearing and all immediate work associated with caring for and maintaining people at the immediate daily level (Luxton, 2006). It is also a place of production because the work people do there is indispensable for the function of the labour force that works for the market.

In dairy-households, farming, milking and housework are collective occupations. Family members weave networks of collaboration in which disagreements and disputes about the distribution of tasks and the benefits of work also take place. Lourdes has priorities that underpin the care of her family. For this reason, the care of her ill husband was a determining factor in the organisation of family work. For the good of the family, the children who go to school milk only in the afternoon. That is also the reason she decides to set aside ‘good’ milk for family consumption and why she continues milking even though her health is affected. Therefore, each milking shift is a time of help and negotiation. There are family tensions that are expressed on the farm and words that arise reproaching what happens at home, as well as actions of mutual help and transmission of knowledge from parents to children.

Being part of a traditional family of the Jalisco Highlands, attached to traditional gender roles, all the family members expect from Lourdes the care they need to survive every day. Those care obligations include waking up the children, buying food, cooking, setting the food on the table, washing the family clothes, sweeping and mopping floors, helping with homework, working on the dairy farm, taking care of the ill, calling children to sleep, and making beds clean and ready. Reflecting on her work, Lourdes says she sets an example to other women in her family because she does housework, sewing, raising children and doing the work of men on the farm. This is effort that she makes for the well-being of her family, but also because she assumes that it is what her family and society expect from her.
There are contradictions regarding the experiences lived in the work of the family dairy. There are flashes of pride mixed with frustration and exhaustion. She would like not to work on the farm any more, but she assumes it as a demand that she cannot release herself from until all her children are self-reliant. The experience of Lourdes is an example of the "feminization of responsibility and obligation" (Chant, 2007) as well as of the “female altruism” as a manifestation of women’s disempowerment (Brickell & Chant, 2010).

The eyes of the community observe, applaud and sanction the behaviour of its members. Leticia is proud of her dedication to doing the work “of women” and “of men”. It is evident that there is a common image of an ideal woman and mother that Lourdes shares with her fellow women dairy farmers in Los Altos de Jalisco. Such an image, even with isolated flashes of rebellion, moulds the priorities and decisions of women regarding their time and their relationships.

7.3. Affective dimensions of female labour in dairy-households

Work expresses a human effort integrating time, resources, action and the will to satisfy a need. By working, people dedicate their labour (Bhattacharya, 2013) to satisfy family needs, both material and emotional. Recalling Marx's definition of labour as a relation between man and the natural world (Marx, 1867/1976), dairy farming can be defined as a process transforming natural resources into food, whether for self-consumption or the market. The productive dairy units of Los Altos de Jalisco appropriate and adapt natural resources to produce milk with the intention of producing commodities to sell and to sustain the family. Women dedicate their work also to ensure the survival and care of the family, and thereby ensure social reproduction.

When talking about the purpose and the will to work, we dive into motivations, a subjective field that is perceptible but difficult to grasp. Producing milk for the market in family dairy farms is a work that involves subjectivities which are fundamental to both the family welfare and the farm operation. The “affective dimension of organising” (Hennessy, 2009) comes into place in the day-to-day dairy labour since love, moral norms and responsibility interweave with the profit maximisation rationale. Every decision about the productive unit, the division of labour, the marketing of milk, the care of the family and the education of children involves personal and business goals that, in turn, engender emotions and expectations.

Emotions shape the dynamics of daily labour because we work in conjunction with other people. As stated by Dowling, “we don’t just work stuff out with and for ourselves, we work through and on each other” (2016, p. 8) and dairy farms are not an exception. Personal relationships mediate family dairy farming, creating an exchange
of knowledge and feelings. Let us go back to Luisa (see Chapter 6). All of her five daughters attend school and work along with their mother in the family dairy farm, the house and looking after Luisa’s father, who has health problems. The farm and the house are together on the land. Luisa assigns responsibilities according to the girls’ ages. The eldest participates in financial management and decision making with their mother while the younger ones feed calves, clean and help in the milking.

In Luisa’s dairy-household, relationships configure the everyday work through mutual help, collaboration, resistance and negotiation. Luisa takes care of her daughters, supports their aspirations and spends time talking with them. The five girls care for their mother, too, working with her and supporting her emotionally. However, reciprocity does not imply an atmosphere of absolute harmony because sometimes they argue; there are complaints about assigned tasks and signs of fatigue. To continue with the trade of milk production was a decision based on the attainment of economic resources as a means for the survival of her family and to support her daughters in their aspirations.

The upbringing of children is also fundamental for dairy farming families. Farmers express their perception of the milking labour in two contrasting ways: as the means to offer children better living conditions, and as an obstacle to their economic and professional development. They transfer their knowledge to the following generations in contradictory terms, because they speak proudly of the dairy trade while lamenting an unfavourable perspective for the business. Nevertheless, mothers and fathers raise children with the aspiration that they have a better life. In this context, we find what Quentin Farmar-Bowers calls a “family's motivation-stories” imbued with the message to become responsible people and to bring up their own children, in turn, to be responsible adults, too (2010, p. 143).

Milk producers construct the discourse behind their daily work by recalling images of the past and future. Remembrances of the cattle tradition and grandparents’ teaching motivate the pride of being a ‘ranchero’ and the tenacity for the following generations to continue the cattle work. Folk traditions of three hundred years as farmers, with almost one hundred years focused on the production of milk, accompany dairy farmers in Los Altos de Jalisco, and they assert with pride: “This is what our grandparents taught us; this is what we know how to do”.

Self-sacrifice of mothers, daughters and sisters is a value that in this rural Catholic region is promoted and applauded. “One becomes a slave, all for the love of our children”, said María (personal communication, October 15, 2015, own translation) with a smile expressing the acceptance of a destiny that she always knew and assumed.
Women justify sacrifices of time and of fatigue from farming by reference to their family's welfare and the certainty of raising children who will grow up being "personas de bien" (good people). The same moral norms reinforce the exaltation of family union and hard work configuring how women perceive their work.

In a different field, conjugal relationships in dairy families also engender strong emotions in the farming work. On the one hand, for many women, milking was not part of what they had anticipated in marriage and now they remember those expectations with a tone between mockery and lament. In a focus group, a woman says, "If I had known that when I got married, I would milk, I would've been better not to have married" while another participant complained, "I got married to get out of farming with my dad but it got worse" (Focus group, June 13, 2017, own translation). On the other hand, as the women are imbued with a traditionally patriarchal culture, working side by side with their husbands can be a privilege. Many female dairy farmers in the region appreciate working together with their husbands, as Isabel does with hers:

I like to work on our farm because I spend more time with my husband. Well, I talk more with him, we make plans together, and I notice that other women do not have much communication with their husbands – that's what I see. When you stay at home, he goes to work; you do not know so much about his problems, what worries him. On the other hand, with our work, we are aware of them, and our husbands take care of us [...] he is my best friend (Focus group, June 13, 2017, own translation).

Dairy family farms in Los Altos de Jalisco are far from being idyllic places of harmonious relationships. We can talk about different elements of friction that, like love and satisfaction, intervene in the work of women and their families. There are confrontations among different actors of the milk chain as well as between family members. Local producers are angry with the government and companies because they allow a 'cheating' market that favours industrialists who demand a uniform quality of milk by global regulations. There are differences within producer associations linked to the quality of milk, and the organisation and benefits of partnerships and cooperatives. Within households, there are conflicts between families due to inheritance of land and livestock, and there are explicit and implicit claims about the distribution of work and its benefits within the families that work in a dairy-household.

Disagreements between the different agents, workload, an unstable market that privileges industrialists and marketers, together with a patriarchal culture, all influence the emotional state of the women who work in the family dairy. During the research, women expressed their feelings about being undervalued within their families. There is frustration regarding their lack of free time and availability for social activities and
their tiredness of waking up in the early morning 365 days a year. Free time is a long-awaited goal for farming families. Armida, 50, explains the constraints that milking represents to having holidays as a family:

We never leave. We do not have free time for Christmas or birthdays. Maybe a little while, as we get up at 4:00 in the morning and at 8:00 we finish, then we will do our chores and then we will do our shopping in San Miguel. We return to the farm and then we start to milk again at 4:00, we finish at 7:00, and by that time we are already exhausted. This work is on Saturdays and Sundays, and you do not go out as a family; we spend time together here. As a family, we can never leave because there are always three of us in the shed. It is complicated: we cannot pay another person, and we couldn't get an employee just for one day a week because they also need to work every day of the week (Armida, personal communication, July 28, 2015, own translation).

Above all, there is a feeling of working for nothing because many times the payment for milk is not even enough to pay farm expenses. There are uncertainties because of economic scarcity when the price of milk falls, or if they cannot sell it at all.

At the moment, the milk is cheap, and the pasture is expensive. There is not enough money to eat, just the hassle of working. For the last two months, the price of milk has been lower and lower. They paid over five pesos per litre and now it is 4.70 pesos. They say it will be even lower from now on. And everything else goes up. The pasture costs five pesos, and we can’t pay it, so we owe it to the forage store. What do we do? We sell animals – that’s where we get money to eat (Elsa and Dolly, personal communication, March 13, 2015, own translation).

The division of labour cannot be analysed considering only self-interest and profit maximisation. Without the emotional motivation, it would be difficult for people to submit to the competition of a market that imposes the rules of the game and does not grant them the same negotiation opportunities as the milk processing industries. This emotional engine favours the supply of industries and guarantees their profits. In sum, considering the emotional facets of work is important because they are drivers of relationships and decision making, and because they are engines in the functioning of the family economy and the local and global economy.

7.4. Devaluing unpaid female labour

From the emotions involved in work, we move to the analysis of the devaluation mechanisms of work to find out the function of the subjectivities in the economic and social valuation of the work.
Labour stratification assigns women the least recognised jobs – that is, the un-waged jobs usually locked in the domestic sphere. Such a hierarchy supports a system in which the production of life is in the background and receives no recompense because it is expected to be an act of ‘love’. Moreover, when women contribute to the production of commodities within a private sphere, such as is the case of milk production in the dairy-households, labour is also consigned to the realm of supplementary ‘help’. That is, in any situation, female work is relegated to a position of secondary importance in a system of gender that justifies, imposes and reproduces it. Now, the consequent question is: how does this happen?

I recall Arlene Daniels’ concept of “invisible work” as the work that disappears from view and reckoning, lacking social validation (1987). Invisible work is either ignored or hidden but, in both cases, there is a mechanism of devaluation of its economic contribution. Erin Hatton expands the term “invisible work” coined by Daniels to introduce it as an analytical concept that allows identification of the “sociological mechanisms” that make work invisible (Hatton, 2017). Using this framework, I analyse the work of dairy women in Los Altos de Jalisco to find the processes through which it is rendered invisible, in what sense it is invisible and for whom female work remains out of sight. Hatton proposes three interrelated mechanisms of invisibility: sociocultural, sociolegal and sociospatial. The first one works through ideologies of gender, sexuality, race, class and age, among others, to obscure and devalue the work. Sociolegal mechanisms exclude certain types of work from the definition of employment. Therefore they are not regulated or monitored. Finally, the sociospatial mechanisms segregate tasks not performed on sites built as ‘workplaces’.

Female agricultural work does not figure in Hatton’s examples of invisible work. However, the framework is valuable to analyse how the three mechanisms work to separate the work of women dairy farmers from the scope of work with social recognition. The sociocultural mechanism works through the naturalisation of women’s skills. Attitudes and tasks that women perform in dairy-households are often related to care and reproduction, i.e. ‘helping’ their husbands, looking after cows, feeding, cleaning and all domestic and care work. Gender ideologies set such responsibilities as natural abilities of the female bodies, the results of which have no economic influence. By feminising attributes of bodies and occupational skills as a natural part of women’s bodies, this mechanism reduces labour costs and has backed “the economic devaluation of some categories of traditionally defined ‘women’s work’” (Hatton, 2017, p. 340). Women perform the tasks that, according to the gender ideology, they can and should develop. Historically, the sexual division of labour rests on the differentiation of bodies and their attributes. By linking women with reproductive activities, that is, ‘non-productive’,
any task performed by them, inside or outside the house, is feminised in the sense that they are known as natural activities, lacking in skills and effort because it is what female bodies do.

The sociocultural system influences the sociospatial mechanism of invisibility that defines what a ‘workplace’ is. Sociocultural gender mechanisms restrict the term to places that produce commodities and profits. The dairy-household as a continuous workspace for women is domesticated, ‘housewifed’ and, as such, feminised, a place where ‘real work’ is not carried out. Sociocultural mechanisms come into play when the farm is defined as a place of work for men but lacks this category for women when women perform activities alongside their male relatives, as their work becomes ‘help’.52 Internalised gender norms go beyond class ideology. Emma is over forty years old and at the head of the dairy farm, but still faces gender conflicts with her workers:

Yes, right now I have a worker who wants to teach me. No, do you believe it? I have many years in this trade; I did not start yesterday. But he wants to teach me because men cannot stand a woman giving orders. They cannot tolerate it; their stomach hurts when that happens. But I pay, I command (Emma, personal communication, June 3, 2015, own translation).

The legal framework does not contribute to the visibility of women's work in dairy-households, either, since domestic work, unpaid care and housework do not have legal recognition, and agricultural work is protected only under legal regulations when it comes to paid work, and when there are contracts between employers and employees. The three sociological mechanisms intersect to deny female care and female agricultural labour the category of work. Historically, women's work loses significance through three assumptions: it does not require effort or work skills, it does not produce merchandise for the market, and it takes place out of regularised workplaces.

The devaluation of women's work is linked to the lack of recognition of women as beings who know and to the restriction of female knowledge to the private sphere. Sandra Harding argues that to understand “through what processes women’s life choices became so restricted” requires “research about dominant institutions, and their customs and practices, including, especially, their conceptual practices” (Harding, 2004, p. 6). Such devaluation, internalised even by women, becomes clear when women dairy farmers are placed in decision making locations. In taking charge of the family dairy farm, Emma faced attitudes of rejection and harassment in forage shops and

52. This is not the case in the dairy-households where there are only women; in these cases, women's work is recognised by the absence of men.
public spaces, as well as judgment about her capacity and her self-perception of lack of knowledge:

I was very clumsy. I was learning alone and I did not know anything. I did not know anything about animals. I did not know anything about land, or how to crop anything. A former worker said “What are those stupid women going to do? If they do not know how to do anything, after a while, they will come and ask for help.” But no, we never went back to them. People helped us, and I learnt everything (Emma, personal communication, June 3, 2015, own translation).

Devaluation mechanisms affect not only female work. The globalised agricultural system increasingly demands homogeneity in production, packaging and marketing standards. There is a regulatory discourse used by the state, industries and global organisations that promotes ‘modern’, scientifically based and homogenised parameters in production, undermining diverse and uncontrolled traditional practices. Within the current agro-food model, a scale of values distinguishes the legitimised global knowledge from the retrograde, false and diverse local one.

The production of milk and milk itself go through a series of assessments that determines if the product satisfies sufficient criteria to enter the market. Thus, the fewer accepted attributes the product has according to its composition and production, the less value, and price, it has. A family farm producing milk according to traditional practices and using traditional inputs and techniques would not sell the product to a large company and cannot access a competitive payment in the market. However, the attachment to some traditional practices, such as unpaid family labour, also serves as an excuse for the buyers that permits them to pay low prices and secure profits. Ultimately, a devaluation that favours the appropriation of unpaid work by dairy companies takes place.

Local dairy farmers have valuable knowledge of their work. For generations they have learned to milk, using supplies and equipment, feeding and treating livestock and organising work. They also know how to distinguish ‘good’ milk, the type of milk that each cow produces and how it changes according to its stages of gestation. There is family and community knowledge about what ‘good’ milk is, milk with ‘quality’ that may or may not coincide with the standardising criteria of the global dairy industry. They have also accepted changes and recognise productive success by having implemented new practices.

The logic of accumulation has the power to impose its own process and legitimise its needs and rhythms as those of the social group. It manages to impose a
Pérez Orozco (2014) explains “invisibility is power” and this is exercised from certain areas that allow the definition of socioeconomic priorities. On the other hand, subjects with less choice or lower alternatives are given the functioning of various symbolic and material structures that occupy invisible areas. As a whole, we can think of (in)visibility based on how certain spaces, processes and subjects become hegemonic and others become subordinates (Pérez Orozco, p. 179–180).

The state and corporations classify farms, push for productive changes, benefit from the unpaid work of families and make unilateral decisions regarding the purchase and sale of milk. Such a hierarchy allows the incorporation of a new language concerning milk quality and dairy production. It is an arrangement of hierarchies that favours capitalist accumulation on local and global scales.

Figure 16. Unpaid labour and capital accumulation

In this scenario, women’s labour in family farms is the object of a twofold exploitation (Figure 16). Firstly, it is exploited through the devaluation of women's work by leaving it out of sight and neglecting its economic value. There is an invisibilisation of women's free labour in the production of milk as a commodity and in the reproduction of the family. The milk price does not consider either the domestic work or the care that allows the operation of the productive unit. Secondly, there is an underestimation of female farming work as it embodies the local, traditional and non-legitimised agricultural knowledge that contrasts with the global agro-food regime that mandates uniformity. As Federici noted in Caliban and the Witch, capitalism denigrates the nature of what it exploits as a basis for the reproduction of the socio-economic system (Federici, 2004).
Chapter 7. “I milk with love”: female unpaid labour, subjectivities and capital accumulation

7.5. Capitalism, subjectivities and profits

Family labour in dairy-households is not accounted as a capital investment and so is ignored when the price of the product is determined. Therefore, the surplus resulting from unpaid or poorly paid work in the production of milk and the reproduction of the labour force is appropriated mostly by intermediaries.

The Mexican dairy industry is a system based on the exploitation of family work. The surplus value generated through the unpaid work of women, men, girls and boys is taken advantage of by intermediaries and the milk processing and marketing industries. The president of the National Front of Producers and Consumers of Milk (FNPCL), declares that there is an appropriation of unpaid work in the dairy family:

In Jalisco, we could not understand dairy activity without the presence of women and, in general, of the family as a whole. We are trying to say that there is exploitation performed by a few people in the country that takes away the possibility of development of these families because industries punish them with the price. When we talked to the producers about production costs, they told us that they [these families] produced cheaply compared to the rest of the country, but it turns out that the labour has no value on those farms. When asked “Who does the milking work?” they answered “My children, my wife” and when questioned “How much do you pay them?” they answered, “They do not earn anything; they are from the house”. Then the person who buys the milk practically has unpaid workers (Álvaro G. M., Personal communication, July 19, 2015, own translation).

An essential condition for the functioning of capitalism is the replacement of the labour force, the “renewal of a subordinated class of direct producers committed to the labour process” (Vogel, 1983, p. 135). In the Mexican dairy industry, the capitalists have access to skilled labour, as families instruct the new generations from childhood. That is, not the state, not industries and not the global market pay for the training of new generations of milk producers. In this scenario, the work of women is essential. It is also essential in the agricultural work that they do with their families, work that generates profits that they do not obtain. Therefore, they are using their labour power for the reproduction of labour – that is, the production of life that permits the system to be in motion. As Federici explains, “capitalism must rely on both an immense amount of unpaid domestic labour for the reproduction of the workforce, and the devaluation of these reproductive activities in order to cut the cost of labour force” (Federici, 2012, p. 92).

Women’s position on dairy farms determines the degree of influence they have in decision making as well as their access to the benefits of work. They can be the owners
of the land and the cattle, wives or daughters of the male owner, or salaried workers. In the dairy-households, the absence of salaries and the male prevalence in financial decisions and the distribution of money are notable. Among 43 women participating in the study, 34 do not receive a salary, eight earn at least 50% less than that which a worker gets outside the family, and one of them has a wage only when there is money left.

The male head of the family acts as head of the farm and as such performs the administrative work, orders and pays for supplies, sells, and receives the money that he distributes between the farm’s needs and the family. He also decides who receives a salary as well as how much and when it must be paid. In all the cases interviewed, when there was an adult man in the family, it was he who oversaw managing the farm resources. In this situation, the sexualisation of certain skills that separate the public-masculine activities from the domestic-feminine ones takes place on a hierarchical scale that relegates the private to the background. That is, women carry out public activities only out of necessity when there is no male head of household.

Women are the leading performers of jobs that pay wages for love and endure uncountable tasks for the ‘love work’ that never gets paid. Both relate to “caring activities [...] and [...] caring feelings” (Folbre & Nelson, 2000) that women are supposed to deliver naturally and generously. The notion of a feminine nature naturally disposed to caring duties minimises the duties’ character as work, converting them into attributes that

53. For instance, in the growing caregiving industry, such as housekeeping, babysitting, waitressing and nursing.
women perform with selfless dedication and without any effort. By interweaving with emotions, Federici states that “reproductive work enters the domain of mystification” (2008, p. 6). In fact, it translates into an act of love the monetarisation of which is contradictory. This ‘naturalisation’ of work in a capitalist model allows the economic depreciation of women's work. Therefore, it facilitates low salaries and limited social benefits for domestic employees, nurses, nannies, waitresses and flight attendants.

When observing, with these premises, the work of women in the family dairies in Mexico, we detect that the exaltation of the maternal values, the dedication to the family and the arduous work facilitate the depreciation of the female labour. Such downgrading justifies locating female labour as free and accessible work, the benefits of which are easily exploitable. Moreover, Dowling states, there is a process through which women's labour is “recoloured and feminised to justify non-remuneration, as seen in the gospel of all of us ‘doing what we love’, being a flexible worker, or the idea of rolling up one’s sleeves and getting stuck in, simply because the job has to be done” (2016, p. 9). Female labour in dairy production interconnects domestic and care work, embodying what Mies (2014) calls a “free resource” that has no time limit and seems available without restrictions, like a natural resource.

The appropriation of female labour would not be possible without the participation of women in such an agreement. A difficulty of recognising care work as work “is compounded not only by the realisation that no one else will see it as work but also by a woman's own sense that much of it ought to be offered spontaneously − a gift or expression of love for her family” (Daniels, 1987, p. 407).

The capitalist economy works through hegemonic exercises in which the discourses of competitiveness, profits and modernity gain ground by becoming part of everyday life. In that sense, global capital depends to no small extent on the productive and reproductive work developed by women as producers of workers not only for local economies but for industrialised countries, as well as depending on them being producers of cheap goods for global export (Federici, 2012). It is not a capitalist monster that oppresses defenceless subjects; the system facilitates the appropriation of the work of others through “mechanisms of regulation of the invisibilised spheres of the economy and of the constitution of subjects willing to inhabit them” (Pérez Orozco, 2014, p. 26). Such spheres constitute the unpaid work that women perform at home and on the farm, the work that feeds and cares for people. They inhabit them with their disposition, with their identity as rural women indicating that this is their path and realisation.
7.6. Summary

Women’s labour is critical for social reproduction and capital accumulation. Women are protagonists in the daily life of the households, workplaces and communities, providing fundamental work for the family survival and for the local and global economy.

The lived work experiences of women dairy farmers mix surrounding circumstances with assimilated social values and individual desires and emotions. Their daily life is thus constructed through a dynamic influenced by the requirements of the milk market. They experience global capitalism in facing the volatility of the market through strategies for the sustainment of the family. Together with their families, they incorporate hygiene and production practices that allow them to produce more and obtain better prices. Adjacent to this there is a process incorporating new concepts in their daily life and connecting them more and more with the global economy.

The global economy intersects with the sexual division of labour that in turn follows traditional gender ideologies. The result is the assimilation of patriarchal patterns where women assume the reproductive and productive workloads, bearing on their shoulders errors in the calculation of the financial system, austerity measures and inequity in the distribution of work and its benefits.

As explained in the previous chapter, the house and dairy farm form a single decision making space in which the self and collective well-being operate together as a decisive element. To dairy farmers, decision making integrates the “lenses” of the “individual decision-maker’s perspective” (Farmar-Bowers 2010, p. 149) that Farmar-Bowers identifies as intrinsic interests, family considerations, personal components and social considerations (2010, p. 149). Then there is an integration of the economic sphere with that of personal and emotional relationships. In that sense, families, as stated by Barker and Feiner:

are places where many of the economic activities relating to production, reproduction, and redistribution occur. Cooking, cleaning, caring for children and providing for family members, all without access to market incomes, are some examples of these activities. Determining who will do this work and how family resources will be allocated often generates tension and conflict. Indeed, economic relationships within families are characterized by inequality, conflict, and exploitation as well as by support, caring, and cooperation (Barker & Feiner, 2004, p. 19).

Dowling’s call for “recognising the emotional and affective dimension of the social organisation of labour” (2012, p. 9) is critical in this study. In the dairy households
in Los Altos de Jalisco, there is an attachment – to tradition, to work, to the field and animals, to the community and to the family – that allows the reproduction of work and people. The family organisation for work and decision making in dairy-households is mediated by personal relationships, emotions and aspirations. Dairy farming families consider risks, profits and economic benefits, but also family welfare and the moral values with which they identify themselves. Likewise, factors considered by the head of the farm are influenced by the rationale of profits as well as by their interest in the future of the dairy farm and that of their family. In all cases, there are subjective elements that are difficult to discount as relevant in decision making.

Social mechanisms back the devaluation of unpaid female labour that is connected with the underestimation of local farming knowledge and results in a double exploitation of women's labour. The female body becomes the axis of the definition and valuation of work. That is, if a woman performs an activity in the domestic sphere, it is not work but her natural responsibility. On the other hand, if women work in a productive place with no wages, theirs is not work but help. This is consistent with Brandth's (2006) suggestion that it is gender identity that gives the final meaning to the use of agricultural machinery.

Through the normalisation of women's self-sacrifice, the “feminisation of responsibility and obligation” (Chant, 2007) and female altruism (Brickell & Chant, 2010), female work transits through a naturalisation process that diminishes it to a point where it is not visible in the economy of the farm and the community. Such neglect makes family and female labour controllable and feasible to be taken advantage of by the actors who have economic or symbolic power, both in the dairy industry and the household.

Thus, social mechanisms come together to define domestic work and subsistence agriculture as ‘not jobs’. Cultural mechanisms state that female bodies whose ‘nature’ is caring for others do not work but ‘care’ and ‘love’. This idea is reinforced by the notion that caring activities are carried out within households, that is, in the ‘private’ sphere where people ‘do not work’.

Capitalism exploits unpaid women's labour and transforms it into profits for dairy industries and traders in two ways. First, there is the benefit for companies having access to free, available and qualified work which the dairy industry takes advantage of by paying a price per litre of milk below production costs. Secondly, the milk price does not consider either the domestic or care work that allows the operation of the productive unit as well as the reproduction of the family's following generations of skilled dairy farmers.
Both patriarchal and capitalism structures influence the household's economics but do not have complete control over their functioning and everyday life. As active agents historically situated, male and female dairy farmers reproduce patriarchal features and contribute to the accumulation of capital, but also appropriate and transform concepts and rules through a process that combines tradition, knowledge, innovation, values and political culture. All those elements allow farmers to seize opportunities and to face family and economic challenges. It is not the weight of global economic policies that governs daily life, it is people who are creative. Dairy farmers, women and men, find spaces for decision making that challenge global capital; women also discover and create spaces to strengthen their autonomy against the patriarchal system.
Chapter 8. Conclusions

To answer the question about how women dairy farmers experience the free market and the sexual division of labour, I analysed the effect of the global dairy market on dairy family farms. By doing so, I found how global agriculture guidelines and economic fluctuations merge with and replay household economic situations, local culture and gender norms. Within such contexts, the work experiences of women in dairy-households integrate duties and responsibilities that are focused both on producing commodities for the market and guaranteeing family reproduction and welfare.

A starting point to understand women dairy farmers’ labour was the assumption of the historicity of human experiences, by which I mean how the structural features of economic organisation and local social norms interweave with each other, building normative frameworks of responsibilities, rights and obligations in a local context. The dairy industry in Los Altos de Jalisco arises from the intersection of the long-term livestock tradition dating back to the 17th century. More recently, thirty years of trade liberalisation, the increase in cereal costs and the falling milk prices have had a profound effect on these enduring traditions. With reference to Fernand Braudel (Braudel, 2007), the result comes from a meeting of slowly changing structures with the short-duration events that challenge these structures. Within such a context, I identify women’s experiences in the context of the long-standing gender norms that have shaped the sexual division of labour and families’ and women’s responses to the short-term economic pressures. This study recognises the sexual division of labour as a historically situated process and women as historical subjects, that is, as constituted and constituting agents of history.

Throughout the study, we see how the dairy shed, the house and the community are spaces for the reproduction of various dimensions of inequalities: gender, class, urban-rural division. We see also, though, that the experience of such disparities is different and that factors such as social environment, age, family composition, access to information and educational services mediate.

In this chapter, I synthesise the main research findings and reflect on the contribution of the thesis. I start summarising the results regarding the work experiences of women dairy farmers. In the second section, I reflect on the application of the feminist standpoint to the analysis of the results. Subsequently, I identify some gaps in the study while suggesting possible directions for future studies. Finally, I reflect on the significance of the thesis.
8.1. Women dairy farmers’ experiences of work

Since the establishment of livestock in Los Altos de Jalisco, women have been active agents in the dairy sector. Their work has been significant in the reproduction of the dairy tradition and the local economy through their agricultural activities: milking, feeding cows, cleaning corrals and stables, cultivating fodder and making cheese and other milk products. They also undertake administrative and managerial work: conducting purchase-sale operations, keeping accounts of the farm and making decisions about the management and use of livestock. Another role, which also contributes to the economy of the dairy farm, is the domestic and care work that official records do not register when considering the family agricultural workforce.

The results of fieldwork and research in the literature showed a variety of factors intervening in the daily life of women as subjects of study. I will synthesise these findings regarding a) the local experiences of the global economy, b) the sexual division of labour in family dairy farms, c) the female labour contribution to economy and social reproduction, and d) the affective dimensions of work. The last subsection talks about the study of the connection between the daily lives and the capitalist economy.

a) Local experiences of the global economy

Each litre of cow milk that dairy farming families produce on a small farm in western Mexico contains not only physical components but social meanings and values. The increasingly widespread global ideas of quality and safety permeate the distinctiveness of agricultural products in production, commercialisation and consumption. In that context, family and local histories worldwide increasingly connect to the global economy through market relationships that shape the dynamics of both the production unit and the family organisation. As Bock (2006, p. 1) notices, the changing agricultural structure directly affects the life of farm families.

The opening of the national dairy industry to the global market in the 1990s, completed in 2008 with the elimination of tariffs on dairy products, was critical for small-scale dairy farms. In the local realm, the feed costs, price behaviour in the dairy sector and dairy demand now follow global trends. If we add the state withdrawal, the cuts in subsidies and the importation of cheap dairy products, we see small dairy farmers becoming vulnerable to the market volatility. Dairy producers cope with increasing global competition, seeing their income threatened by decreasing milk prices and increasing production costs. There are transformations in family relationships due to the search for different options to generate income. However, despite their efforts, producers speak of an inevitable tendency towards the reduction, even disappearance, of the family dairy industry, as their daughters and sons are not motivated to continue
a business that is not profitable. In Mexico, the result is the withdrawal of 80% of milk producers from this activity since the signing of NAFTA (García, 2018).

Producers remaining in the dairy industry perform various strategies to keep their business profitable. They organise themselves in cooperatives for the purchase of inputs and the sale of milk, diversify their sources of income and acquire debts. Farmers also rely on support networks built with families and communities searching for financial and emotional support. Such practices are not innovative alternatives caused as a response to economic constraints, but represent the prevalence of traditional methods that not only have persistently been there but have been convenient for the functioning of the capitalist model. With a more detailed analysis, we could find out if these practices are part of the “non-capitalist economic activities that mainly predated and continue to coexist with capitalist economic relations” (Gibson-Graham, 2006, p. 92).

Milk producers do not automatically accept technical changes or global trends in milk quality. They make decisions about whether to join the new business logic, taking the risk of investing in more sophisticated milking and cooling equipment or, otherwise, continuing with traditional practices and local trade. Despite the pressures of discourses on productivity, competitiveness and quality, milk-producing families create and recreate alternative economies.

The external interference of the global market is inevitably mediated and transformed by local producers. Regarding quality, for example, when dairy farmers talk about producing ‘good milk’, they define it as a product that is the result of hygienic milking practices, appropriate cattle food and good selection in cattle breeding. However, they also assume ‘a good milk’ is one resulting from responsibility and commitment towards the consumer, because they do not want to “make people sick” (Lourdes, personal communication, June 5, 2015). Furthermore, they refer to milk as a product made with ‘love’ and ‘sacrifices’. Dairy farmers see themselves as determinant agents of the milk chain: they acknowledge their responsibility and their crucial role in the milk industry and they also notice the subordinate position they hold regarding other agents such as the industrialists and supermarkets. Both awarenesses mediate the degree of incorporation of innovative production and trading tactics.

Global norms for food production are not only confronted with local practices but also with the values, beliefs and traditions that are imprinted in ordinary work-meanings that are ignored by transnational capital. Despite this, these elements act as means of capital accumulation since they allow unpaid work, social reproduction and the
existence of a diverse market where different production systems and niches of commercialisation take place.

The challenge is to understand the mechanisms by which an inequitable economic system is introduced and adopted, and to then identify those flashes of rebellion and resistance that are key to altering both capitalist exploitation and gender subordination. As Villarreal explains, it is necessary to identify dissonant and transgressive voices, even within what we identify as the capitalist system itself because, hidden under what has been called the dominant discourse, there is a simplification of a complete series of processes and negotiations, which, when carefully observed, reveal the vulnerabilities of power (Villarreal, 2007, p. 34).

b) The sexual division of labour experiences on dairy farming families

The connection of women with agriculture has an ancient tradition, since women have always participated in food production. However, the techniques and organisation for production, as well as the participation of women in it, differ according to time and space.

In Los Altos de Jalisco, traditional gender norms permeate the division of labour within families. This research shows that the division of labour in family dairy farms comprises three elements: sex, age and family composition. The first one responds to traditional gender roles typifying as female and male duties. Following such logic, activities related to reproduction – cleaning, feeding the calves and taking care of the sick animals – are assumed, by both men and women, to be women's responsibilities.

Considerations about age determine the responsibilities of children, youth, adults and the elderly. Children, for example, have the primary obligation to attend school, but there is a precept about teaching children to work, so they get involved in the farm duties and the housework from an early age. Further, children's labour is a critical element of family farms. Sometimes, for boys and girls, the farm becomes a playground, and they ask to be part of it. They usually call the cows (by their names) to the shed, feed the calves and backyard animals, clean the shed, and milk if parents consider they are grown enough. Children's tasks seem to follow those of women, but as girls and boys grow, the sexual division of labour becomes more noticeable, and the most striking difference in the division of labour is the exclusion of girls from farm activities and the exclusion of boys from housework and care work. Children's labour is a major contribution to the operation of the family farm and the family and community economy in general. I agree with scholars regarding the need for more research on children's contributions to the economy of family farms (Kim & Zepeda, 2004).
Family composition is also a determining factor in the organisation of work. The presence of an adult man becomes fundamental in the distribution of obligations and the use of resources. For instance, when there are no men in charge, women perform activities that by tradition are considered masculine, such as those requiring physical strength or negotiating in conventionally male spaces. That is the case of female household heads who not only perform tasks that require physical force or fearlessness such as carrying sacks or handling cattle, including bulls, but also take decisions, make agreements in associations and negotiate with buyers and sellers of supplies.

It is also the women and their children who are in charge of the crops and backyard animals. This work also hides behind a curtain of obligation that denies the category of work. Subsistence agriculture remains in limbo, as it is not considered productive work in census records, but it is hardly considered as reproductive work in analyses of the unpaid work of women. Because of the results of this thesis, I conclude with Silvia Federici that as “…subsistence farming is mostly done by women, the concept of ‘domestic’ work had to take on a broader meaning” (2012, p. 10). These activities are part of the daily life of rural women. In the case of this study, people produce eggs, zucchini, ‘nopales’ (cactus) and herbs in households. Some families also produce beans, ‘chayotes’, pumpkins, corn, and raise animals such as chickens, turkeys, sheep and pigs for self-consumption.

The most evident polarisation of the sexual division of labour in dairy-households is the almost nil participation of women in the farm finances and herd management and the insignificant participation of men in domestic work. The division per se is not a problem but the social valorisation we give to each activity is, as it translates into social inequality. Let me put it this way: for many women it is not an issue that men do not enter the kitchen (in Mexico there are various sayings in Spanish demanding that men ‘get out of this place’, implying a lack of masculinity). Furthermore, perhaps many women never want their husbands, fathers or brothers doing the cooking duties, as preparing food can be a uniquely free and creative activity. In that sense, the critique of the sexual division of labour is not so much of the division per se but of the androcentric capitalist system that places the house and care work in a less valued place than the work that produces commodities. Being the result of a consensus regarding the female nature of reproductive labour, such division results in an excessive workload and lack of economic autonomy for girls and women.

In sum, the division of labour on the family dairy farms follows patriarchal patterns reproducing a social division based on a biological difference. As Bourdieu explains, “…the anatomical difference between the sexual organs can appear in that way as
the natural justification of the socially established difference between the sexes, and especially the sexual division of labour” (2001, p. 24). Thus, even when women produce goods and services, and although they enter paid jobs, the domestic and care work continues to fall on their shoulders. Women end up with an excessive burden of work constituted of agricultural, domestic, care and community work.

Excessive workload translates into “poverty of time” (Brasdshaw, Chant & Linecker, 2019; Damián, 2005; Esquivel, n/d; Gammage, 2019), a concept defined as the lack of time to perform the requirements of domestic and care work, to have a minimum rest time and to do paid work. Time is also a resource that can be distributed unevenly in family and community contexts, especially when there is a shortage of other resources. Thus, even in contexts of poverty, there may be people rich in time and others poor, without enough time for leisure, recreation or human capital (Gammage, 2019, p. 83). Poverty of time affects more women because care responsibilities are distributed unequally between men and women, and it has a significant effect on poor women who do not have the resources to hire cleaning and care services (Esquivel n/d).

The local configurations of the sexual division of labour are the product of historic structures. Coming back to the long-term concept, I see a reproduction of the patriarchal division of labour continuing through global capitalism. Maria Mies goes further by showing how patriarchy not only did not finish during the process of modernisation, but how the ever-growing process of capital accumulation is based in the conservation of patriarchal or sexist man-woman relations (2007). Nevertheless, through interviews and observations in the field, it is notable that younger women have discursive tools that allow them to have greater influence over the farm and to identify certain masculine practices as ‘macho’ and out of date for not understanding that times have changed.

c) Female labour contribution: economy and social reproduction

Feminists have challenged the Marxist concept of work that underlies the differentiation between productive labour (for the market) and non-productive labour (housework) (England, Budig, & Folbre, 2002; Esquivel, 2016; Federici, 2012; Ferguson, Hennessy, & Nagel, 2004; Luxton, 2001; Mies, 2007). A pivotal critique was that women’s labour power, despite its contribution to wealth and capitalist reproduction, is exempted from economic value. They have categorically questioned both the devaluation of reproductive work and the sexual division of labour that defines domestic and care work as women’s responsibilities. Furthermore, feminist economists emphasise that unpaid reproductive labour was naturalised as a feminine attribute. Under such preconceptions, care work is an ideal to be achieved, the materialisation of the surrender, love and virtues of the female body. Mercedes D’Alessandro (2016) insists
that disguising unpaid work as an act of love – and an act specifically performed by women – hides that these tasks are work itself and, in this way, an activity essential for the functioning of all society, free of charge in a world where the consumption of all things has a price.

Historically, work has been a bearer of gender (Benería et al, 2015, Dunaway, 2014). In the ruling monetised economic system, the sexual division of labour causes a process of inverse valuation. In masculinised jobs, the higher the economic value of the work (regarding salary and benefits), the greater is the social recognition, because such jobs hold a superior position in the process of capitalist accumulation. On the contrary, in feminised works, social recognition is greater when the works symbolise lower economic value. In fact, there is a social sanction when remuneration is required for the performance of those tasks associated with femininity. Under the restrictions of femininity, women are valued more if they are willing to do things for free, for love (Pérez Orozco, 2014). In this way, women who work in the production of milk have social recognition through their dedication and devotion to help their husbands.

In the context of Los Altos de Jalisco, the invisibility of female labour in the dairy industry obeys what Pérez Orozco (2014, pp. 178–179) explains as the intersection of the undervaluation of the work done by women, the disapproval of peasant agriculture, and the treatment of food as a commodity and not as a right (regarding farming for self-consumption). That is, the work of women dairy farmers goes through three filters that place their activities in the second place of a hierarchical binary system: the gendered perception of the body, the value of the source of knowledge, and the utilisation of food

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{image.png}
\caption{Devaluation of women´s labour}
\end{figure}

The devaluation involves a process of invisibilisation of the feminine tasks to the point of denying them the category of work. Focusing on unpaid labour and recalling Erin Hatton´s framework, I state that subsistence farming, domestic and care work in dairy-
households remains invisible through three assumptions: it does not require effort or work skills, it does not produce goods for the market, and it takes place outside regularised workplaces. Such a process naturalises female labour to the point that it does not count as work, although women’s labour force is fundamental for the family reproduction, the survival of the farm and the processor and commercial companies’ profits. In this setting, a process of appropriation of work takes place since “surplus labour is appropriated by a dominant class” (Vogel, 1983). I argue that a twofold discrediting of female work, being both traditional farming and traditionally female work, enables social reproduction and benefits industrialists’ profits.

d) Affective dimensions of labour in dairy-households

The research found that producing milk for the market involves subjectivities that are fundamental for both family welfare and farm operation. Working with the family on the dairy farm, like any job, involves subjectivities because it is collective labour. Coexistence implies dialogue, negotiation, ties of support and, sometimes, conflicts. In all social relationships, emotions participate in and motivate the work dynamics. Especially in family labour, people organise work pursuing maximisation of profits, but also the welfare of their loved ones and even the education of the progeny. In that sense, the desire for self and collective well-being is an axis element in economic decisions.

In dairy-households, a division between the productive and reproductive spheres does not exist: neither is the dairy farm a space of economic rationalisation, nor the household a mere space of the family’s shared life and time-out. A cow-shed, as well as being for milking cows, is also a place for reinforcing family ties, and the house and backyard are places of work and economic production.

As well as observing both the subjectivities that move and organise work and the merge of the productive and reproductive spheres, questioning the precepts of orthodox economics allows us to see economic behaviour as a mere discourse. In the words of Kofti, “people’s actions are not merely driven by economic motivations and, therefore, the concept of utility-maximising ‘homo economicus’ is approached as an ideological construction” (1983, p. 434). In that sense, exploring work experiences with a local focus allows us to perceive the nuances of economic indicators and to identify the features that are intervening in economic decisions, including emotions and desires.

e) Connecting daily lives with the capitalist economy

Following the suggestion of changing the narrative of unpaid work, I now return to Antonella Picchio’s (2015) idea of connecting structural processes with social reproduction (p. 76). Putting the focus on women lets us see how global capitalism
intervenes in daily life, the place where personal and social tensions appear in the
search for adaptation by those bearing the responsibility of family and community
welfare. In the case of the work experience of the women producing milk, we observe
the intersection of the following five factors:

a) global capitalism and the various manifestations of the patriarchal system and
traditions that permeate social reproduction

b) the multinational, state, religious and civil institutions that materialise the
processes of the global economy in public and private spheres through
establishing the rules of the milk market, prices, quality guidelines and, with that,
a field where actors exercise unequal power in decision making

c) community social relations mediated by privileges held by class, sex, age
and political affiliations and even belonging to specific family bonds; these
relationships include collaboration and organisation networks for the collection
and sale of milk

d) the domestic realm, where families organise for social reproduction in
relationships mediated by sexual norms, needs and emotions, for instance, the
division of labour on the farm and home and the distribution of its benefits

e) finally, the individual experience where knowledge, rationality, needs, desires,
emotions, aspirations and interests intervene in personal relationships and
everyday decisions.

Ultimately, these decisions, taken by family or community, determine the level of
participation of the family farm in the market: to whom to sell, what quality standards
to meet, what production processes to obey, where to buy the inputs and, furthermore,
who does what on the farm and in the house, what is the workload and responsibility
of women for family welfare, and how family members will distribute profits, family
resources and free time.

What then becomes visible is the actions of the political actors (Picchio, 2015, p 251)
that intervene in the processes of change. As Picchio states “including the process
of social reproduction among the structural processes, rendering unpaid work visible,
and recognizing its culture and life ethics, make the sustainability of the system of
production, distribution, and exchange of means much more complex and dialectical
– that is, not open and deterministic” (2015, p. 254). Furthermore, social reproduction
is fundamental in the structural process because in it resides the reproduction and
sustenance of life.
8.2. Feminist standpoint and social research

This thesis utilises a feminist perspective to examine how trade liberalisation intertwines with the lives of women in rural Jalisco. I started from three assumptions:

a) the words and knowledge of women have been absent or minimised in social studies and, therefore, taking this focus as a research core is an affirmative and compensatory action

b) the knowledge and experiences of the women dairy farmers are valid and reliable as objects of social life analysis

c) anthropological research involves engaging in social relationships and this entails both the recognition that it is a dialogical process and the acknowledgement of the ethical responsibility implied in ‘appearing’ in the lives of the participants.

It was the focus on women’s knowledge that led me to the feminist standpoint. Sandra Harding emphasises that “knowledge is supposed to be based on experiences, and so different experiences should enable different perceptions of ourselves and our environments” (2004, p. 7). In that sense, I state that experiences, knowledge and discourses of women dairy farmers give a broader vision than heretofore of the family dairy industry in western Mexico, shedding light on drivers excluded from economic analyses. As female work, it is hidden behind reproductive (that is, non-work) tasks. When we bring it to the light, we see another side of the coin, the activity that sustains the workforce day by day, using morals, internal struggles and love for others.

The feminist standpoint is not something given. Anthropological research is a dialogical process that can help women to recognise (with the reservations that this implies) their work and knowledge as fundamental elements for the lives of their families and communities. In that sense, standpoint theories are not “…another word for viewpoint or perspective” (Harding, 2004, p. 8) but an achievement. Furthermore, “…standpoint theories map how a social and political disadvantage can be turned into an epistemological, scientific, and political advantage” (Harding, 2004, pp. 7–8).

It is important not to exclude reflexivity because, even when the aim is to complete the scenario, the feminist standpoint is not immune to biases and limitations. Hekman warns about the danger of turning the feminist standpoint into a hegemonic discourse that does not reveal the lives of women, just as the male discourse has done. Hekman states that the fact that research from women’s lives “…is closely tied to the social actors’ own concepts and provides a counter to the hegemonic discourse of masculinist science makes it no less a discourse” (1997, p. 355). That is why it is essential to
be aware that by using the feminist standpoint we also elaborate a discourse with an ideological and political underpinning load. This alternative perspective of reality runs the risk of formulating universals that dissipate the diversity of women’s lives. As Hekman also points out, the contribution of the feminist standpoint is undeniable when we define it as a “situated and engaged knowledge” (1997, p. 362). By making this visible, it is easier to warn about its effects in interpreting the results.

The feminist character of a study may contain gaps and contradictions. Back in the 80s, Stacey stated that while there are not fully feminist ethnographies, “there can be (indeed there are) ethnographies that are partially feminist, accounts of culture enhanced by the application of feminist perspectives” (Stacey, 1998, p. 26). Such an approach enriches ethnographic studies by driving feminist research to be “rigorously self-aware and therefore humble about the partiality of its ethnographic vision and its capacity to represent self and other” (Ibid, p. 26).

With a feminist perspective, I pursued a story about women’s experiences of global capitalism. The findings showed that structural inequalities are fed back into the society, resulting in an imbalance in decision-making and in social relations, but also that, even when the global dairy market influences the household’s economics, it has limited power over the household’s functioning and everyday life.

**8.3. Directions for future research**

It may be worth exploring some issues that remain outside this study, some of them outside it due to lack of records, and others because their analysis exceeded the focus of the investigation. One of the limitations of this work was not having precise records of livestock units in the region. There are some in the livestock associations and the finance ministry, but there are many family dairy farms that are not registered. By not registering, farmers avoid the payment of taxes and cumbersome procedures, even if the irregularity means not having access to government support programs.

There is a lack of data about salaries within family dairy farms – more data could allow comparisons against wages in large dairy industries, as well as disaggregating information by sex and age. I glimpsed the wages only tangentially, both in family farms and in dairy companies. A deeper analysis of the role of payments, or their absence, would shed light on the organisation for work and the distribution of benefits in dairy families. In family farms, when salary does not exist, it is precisely its absence that allows profits. When the male head of the farm grants wages to his wife, daughters and...
sons, they are usually lower than the salary in the labour market of the milk industry and are flexible because they are subject to the existence or not of profits. It remains unclear whether wages are a tool for control and negotiation within families, whether they are unequal between men and women in dairy companies, and whether access to paid work has changed the situation of women within families dedicated to milk production.

An urgent challenge for the Mexican dairy is to move toward sustainable production. Livestock activity produces high volumes of organic waste, and cattle manure constitutes a residue with severe impact on agro-ecosystems. The food chain contributes significantly to greenhouse gas (GHG) emissions, and the impact is commensurate with other energy-intensive sectors such as transport. Notably, meat and dairy products carry the greatest environmental burden and major effects occur at the farm stage, with subsequent processing, retailing and transport. Livestock contributes 18% of global greenhouse gas (GHG) emissions (Garnett, 2009, p. 491). The environmental impact is severe, especially since global consumption of meat and milk is growing to the extent that it is forecast to double by 2050 (Garnett 2009). There is a considerable gap between environmental legislation and day-to-day practices in Mexican dairy, especially on family-based farms, where owners have little access to information, and which are not as supervised by the government as are large milk production units. Therefore, livestock feed and waste management in the small dairy farms do not conform to environmental guidelines. A direction of future studies would be to explore the impact of the sustainability discourse on dairy farming families and how men and women understand it.

Some other issues would be worth investigating to have a complete perspective on the experience of women producing milk. For instance, I found contradictory testimonies regarding the continuity and transformation of female participation in milk production. A longer term historical study would shed light on the changes and continuities of female work in the family dairies of Los Altos de Jalisco. Other relevant topics that I could observe only tangentially were the relationship between the division of labour and economic precariousness, women’s health deterioration in dairy farming, women’s body self-image, social judgements and gossip, and how the number and gender of children influence the family work organisation.

A shortcoming of the study is that, while I wanted to give voice to participants constituting a group that has been largely ignored by social studies, the thesis shows only a glimpse of the lived experiences of women dairy farmers. I have the perception that I owe women a closer and more meaningful means of expression by which each of the participants can express their voices.
8.4. Study significance

The thesis offers empirical evidence about the experience of the work of women producing milk in Mexico and contributes to the knowledge about the forms of women's subordination in the field of agricultural work. Female labour in the dairy industry in Mexico has barely been a topic of research. The lack of studies regarding the contribution of women's work in the milk production system in Mexico has resulted in a gap of knowledge not only about their economic contribution, but about the forms of economic oppression they face within the family, the community and the dairy industry.

The present study also contributes to the feminist tradition of theorising from the ground up. According to what Hunnicut proposes, exploring the reality from women's experiences allows us to identify "varieties of patriarchy [to] document their characteristics and dimensions and track how the victimisation of women is taking shape across different patriarchal systems" (2009, p. 568). In the case of women working in the milk industry, these hierarchical arrangements are manifested, among other ways, in the devaluation of women's work on the family farm, in waged jobs and at home. The results show that there are inequalities between men and women reflected in the distribution of work and the benefits of it, in the productive and reproductive female overload of work, and in the scarce economic autonomy of women.

Ethnographic evidence about women's lives is essential not only to shed light on the forms of oppression but on women's strategies of confrontation. Deniz Kandiyoti identifies the existence of covert resistance practices in everyday life, such as in food preparation and symbolic disputes through music and dance. These practices, according to Kandiyoti, may be interpreted as part of women maintaining a system of domination that provides spaces where subordinates legitimately acquire a "breathing space" (2005, p. 145). Thus, Kandiyoti suggests that studies focused on gender must incorporate a "reconceptualisation of ‘households’ in relational terms as an analytical and empirical approach to micro-negotiation, cooperation and dispute regarding gender" (2005, p. 137). These elements are identifiable in the experience of women dairy farmers. As I mentioned before, the house, and particularly the kitchen, are also places of creativity and autonomy. Preparing food is a display of knowledge and decisions. I will not go into this topic now, but I would like to leave it as a topic for analysis that could help recognition of flashes of resistance and self-realisation in subordinate positions in everyday life, just as Sidney Mintz (1996) analysed Caribbean cuisine as a space for slaves’ creativity and resistance. The reconceptualisation of the dairy farm and the house as the dairy-household allows undoing the polarisation of two secluded spheres. Women’s work crosses both in the flow of everyday routine.
Once I started analysing the findings, I found it pertinent to place the family on the axis of analysis. By doing so, it was possible to explore the family organisation for work, recreation and resources distribution, including the subjectivities implicit in work routines and economic decisions. It also allowed identification of the conflicts and negotiations within the family. In dairy-households there is dialogue and negotiation: the roles are not given, and men and women reconstruct them from the circumstances and their changing knowledge. In the end, gender relations are not static and “are themselves important driving forces of change” (Bock, 2006, p. 1)

The study scrutinises social mechanisms that devalue female work and that reject its status as work, as well as how such devaluation contributes to capital accumulation. The devaluation of women’s work – productive, reproductive, paid and unpaid, housework and subsistence farming – is critical for the capitalist economy. The findings of this research compel subscription to the realisation that “the immense amount of paid and unpaid domestic work done by women in the home is what keeps the world moving”, making the reproduction of human beings “the foundation of every economic and political system” (Federici, 2012).

Women dairy farmers experience the free market in three layers: first, as part of a community of small dairy farmers who resent fluctuations in food market prices and competition with imported dairy products; secondly, as part of a family that makes decisions and organises to survive in the dairy industry and ensure family survival and reproduction; finally, as social agents guided by gender social norms that dictate the limits of their public actions, their autonomy and their knowledge.

In everyday life, the three layers are mixed. They, the women, resent the low price of the litre of milk, adjust the expense and make use of domestic crops and social networks to ensure food on the table. They dialogue with their partners and relatives about the future of the family farm and weigh the convenience of participating in public protests. Every day, on the farm and at home, they care for and educate their children and teach them the value of work by incorporating them in the milking while yet wanting them to have a better life. Women live the restrictions of being a woman: the economic dependence, the moral judgments and, some more than others, the principle of not transgressing spaces ‘that belong to men’ with their presence and participation. Every day, women produce and reproduce gender roles and assume that their work is ‘help’ and that domestic and care work are responsibilities they can barely share with partners, fathers and brothers. However, they add small changes that give themselves and their daughters more autonomy. They motivate the girls to go to school and incorporate their sons into domestic activities. Every day, they get up early, driven by those factors
that the economy ignores – the love of others, the satisfaction of working side by side with their husbands, and the hope that ‘things’ will be better.

The thesis acknowledges the critical place of the sexual division of labour in the reproduction of the social differentiation between men and women. Nancy J. Hirschman (2016) summarises the idea clearly: “gender is not the problem per se, inequality between men and women is, and the sexual division of labour is at the heart of this inequality” (p. 658). I hope the research contributes to identify, analyse and question the social structures and mechanisms supporting such inequalities.

Disseminating a vision of the generic differences in agricultural and family work is fundamental for a more comprehensive knowledge of work for the production of food in the world. With Pini, Brandth and Little, I join the desire to enhance feminist studies that “have produced knowledge on the unequal distribution of power and influence in rural societies and highlighted how rurality is fundamentally gendered” (Pini, Brandth, & Little, 2014a, p. 3).

I appeal to the fact that the constant self-questioning and the interest in rigour allowed this study to fulfil its purpose of contributing to illuminating the world of female agricultural work and the experiences of women in the context of the family dairy industry in Mexico.
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References


Annexes

Annex 1. Tables

Table 5. Milk production worldwide: selected countries (tonnes)

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>11,470</td>
<td>11,679</td>
<td>11,519</td>
<td>11,326</td>
<td>11,496</td>
</tr>
<tr>
<td>Australia</td>
<td>9,568</td>
<td>9,811</td>
<td>9,400</td>
<td>9,700</td>
<td>10,000</td>
</tr>
<tr>
<td>Brazil</td>
<td>22,449</td>
<td>23,008</td>
<td>24,259</td>
<td>25,489</td>
<td>26,300</td>
</tr>
<tr>
<td>China</td>
<td>30,700</td>
<td>32,600</td>
<td>34,300</td>
<td>37,250</td>
<td>37,250</td>
</tr>
<tr>
<td>EU-25&lt;sup&gt;55&lt;/sup&gt;</td>
<td>138,220</td>
<td>139,000</td>
<td>140,100</td>
<td>146,500</td>
<td>148,100</td>
</tr>
<tr>
<td>India</td>
<td>53,500</td>
<td>55,500</td>
<td>57,500</td>
<td>60,500</td>
<td>64,000</td>
</tr>
<tr>
<td>New Zealand</td>
<td>18,965</td>
<td>20,567</td>
<td>20,200</td>
<td>21,893</td>
<td>21,391</td>
</tr>
<tr>
<td>Russia</td>
<td>31,646</td>
<td>31,831</td>
<td>30,529</td>
<td>30,499</td>
<td>30,025</td>
</tr>
<tr>
<td>USA</td>
<td>89,020</td>
<td>91,010</td>
<td>91,277</td>
<td>93,461</td>
<td>94,480</td>
</tr>
<tr>
<td>Mexico</td>
<td>11,046</td>
<td>11,274</td>
<td>11,294</td>
<td>11,464</td>
<td>11,750</td>
</tr>
</tbody>
</table>

Source: US Foreign Agricultural Service.

Table 6. Cow milk annual production by leading states (thousands of litres)

<table>
<thead>
<tr>
<th>States</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jalisco</td>
<td>2,228,481</td>
<td>2,306,317</td>
</tr>
<tr>
<td>Coahuila de Zaragoza</td>
<td>1,411,959</td>
<td>1,358,884</td>
</tr>
<tr>
<td>Durango</td>
<td>1,133,983</td>
<td>1,095,175</td>
</tr>
<tr>
<td>Chihuahua</td>
<td>1,051,733</td>
<td>1,095,175</td>
</tr>
<tr>
<td>Guanajuato</td>
<td>823,442</td>
<td>822,160</td>
</tr>
<tr>
<td>National production</td>
<td>11,607,495</td>
<td>11,807,557</td>
</tr>
</tbody>
</table>

Source: LACTODATA, 2018

55. Belgium (BE), Denmark (DK), France (FR), Germany (DE), Greece (EL), Ireland (IE), Italy (IT), Luxembourg (LU), Netherlands (NL), Portugal (PT), Spain (ES), United Kingdom (UK), Austria (AT), Finland (FI), Sweden (SE), Cyprus (CY), Czech Republic (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Malta (MT), Poland (PL), Slovakia (SK) and Slovenia (SI).
Table 7. Dairy top-10 companies worldwide

<table>
<thead>
<tr>
<th>#</th>
<th>Company</th>
<th>Country of headquarters</th>
<th>Dairy turnover, 2016 (USD billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nestlé*</td>
<td>Switzerland</td>
<td>25.0</td>
</tr>
<tr>
<td>2</td>
<td>Lactalis*</td>
<td>France</td>
<td>18.3</td>
</tr>
<tr>
<td>3</td>
<td>Danone*</td>
<td>France</td>
<td>16.7</td>
</tr>
<tr>
<td>4</td>
<td>Dairy Farmers of America</td>
<td>USA</td>
<td>13.8</td>
</tr>
<tr>
<td>5</td>
<td>Fonterra</td>
<td>New Zealand</td>
<td>13.1</td>
</tr>
<tr>
<td>6</td>
<td>Friesland Campina</td>
<td>Netherlands</td>
<td>12.3</td>
</tr>
<tr>
<td>7</td>
<td>Arla Foods</td>
<td>Denmark/Sweden</td>
<td>10.5</td>
</tr>
<tr>
<td>8</td>
<td>Yili</td>
<td>China</td>
<td>9.3</td>
</tr>
<tr>
<td>9</td>
<td>Saputo</td>
<td>Canada</td>
<td>8.6</td>
</tr>
<tr>
<td>10</td>
<td>Dean Foods</td>
<td>USA</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Source: Rabobank (2018)
Table 8. Fluid cow milk consumption in selected countries (thousands of tonnes)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>169,500</td>
<td>171,237</td>
<td>172,292</td>
<td>174,436</td>
<td>179,552</td>
<td>183,520</td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>3,184</td>
<td>3,164</td>
<td>3,040</td>
<td>2,982</td>
<td>2,946</td>
<td>2,946</td>
</tr>
<tr>
<td>USA</td>
<td>28,952</td>
<td>28,449</td>
<td>28,353</td>
<td>28,294</td>
<td>29,000</td>
<td>29,798</td>
</tr>
<tr>
<td>Mexico</td>
<td>5,167</td>
<td>4,100</td>
<td>4,168</td>
<td>4,160</td>
<td>4,180</td>
<td>4,185</td>
</tr>
<tr>
<td>Subtotal</td>
<td>37,303</td>
<td>35,713</td>
<td>35,561</td>
<td>35,436</td>
<td>36,126</td>
<td>36,929</td>
</tr>
<tr>
<td>South America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>2,130</td>
<td>2,093</td>
<td>2,133</td>
<td>2,065</td>
<td>2,045</td>
<td>2,107</td>
</tr>
<tr>
<td>Brazil</td>
<td>11,278</td>
<td>11,429</td>
<td>11,712</td>
<td>12,000</td>
<td>12,390</td>
<td>12,858</td>
</tr>
<tr>
<td>Subtotal</td>
<td>13,408</td>
<td>13,522</td>
<td>13,845</td>
<td>14,065</td>
<td>14,435</td>
<td>14,965</td>
</tr>
<tr>
<td>EU-28&lt;sup&gt;66&lt;/sup&gt;</td>
<td>33,738</td>
<td>33,870</td>
<td>33,800</td>
<td>33,800</td>
<td>34,466</td>
<td>33,900</td>
</tr>
<tr>
<td>East Europe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td>11,775</td>
<td>11,650</td>
<td>11,000</td>
<td>10,150</td>
<td>9,825</td>
<td>9,625</td>
</tr>
<tr>
<td>Ukraine</td>
<td>5,342</td>
<td>5,442</td>
<td>5,588</td>
<td>5,316</td>
<td>5,580</td>
<td>5,750</td>
</tr>
<tr>
<td>Subtotal</td>
<td>17,117</td>
<td>17,092</td>
<td>16,588</td>
<td>15,466</td>
<td>15,405</td>
<td>15,375</td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>12,060</td>
<td>12,600</td>
<td>13,517</td>
<td>14,350</td>
<td>15,111</td>
<td>15,744</td>
</tr>
<tr>
<td>India</td>
<td>49,140</td>
<td>51,660</td>
<td>52,000</td>
<td>54,400</td>
<td>57,000</td>
<td>59,547</td>
</tr>
<tr>
<td>Japan</td>
<td>4,150</td>
<td>4,058</td>
<td>4,045</td>
<td>3,975</td>
<td>3,915</td>
<td>3,890</td>
</tr>
<tr>
<td>Subtotal</td>
<td>65,350</td>
<td>68,318</td>
<td>69,562</td>
<td>72,725</td>
<td>76,026</td>
<td>79,181</td>
</tr>
<tr>
<td>Oceania</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>2,284</td>
<td>2,422</td>
<td>2,511</td>
<td>2,494</td>
<td>2,600</td>
<td>2,675</td>
</tr>
<tr>
<td>New Zealand</td>
<td>300</td>
<td>300</td>
<td>425</td>
<td>450</td>
<td>494</td>
<td>495</td>
</tr>
<tr>
<td>Subtotal</td>
<td>2,584</td>
<td>2,722</td>
<td>2,936</td>
<td>2,944</td>
<td>3,094</td>
<td>3,170</td>
</tr>
</tbody>
</table>

p / Preliminary data  
e/ Estimated data.

Source: SIAP-SAGARPA, 2015

56. EU-25 + Bulgaria, Romania and Croatia.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fluid Thousand litres</th>
<th>Powdered Tonnes</th>
<th>Evaporated Tonnes</th>
<th>Condensed Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>6,015</td>
<td>23,061</td>
<td>1,857</td>
<td>3,259</td>
</tr>
<tr>
<td>2015</td>
<td>6,411</td>
<td>11,972</td>
<td>2,673</td>
<td>7,597</td>
</tr>
<tr>
<td>2014</td>
<td>6,609</td>
<td>6,723</td>
<td>1,918</td>
<td>11,253</td>
</tr>
<tr>
<td>2013</td>
<td>6,475</td>
<td>4,267</td>
<td>1,972</td>
<td>12,127</td>
</tr>
<tr>
<td>2012</td>
<td>9,752</td>
<td>3,140</td>
<td>2,166</td>
<td>8,767</td>
</tr>
<tr>
<td>2011</td>
<td>7,238</td>
<td>5,512</td>
<td>1,705</td>
<td>678</td>
</tr>
<tr>
<td>2010</td>
<td>5,714</td>
<td>6,174</td>
<td>1,223</td>
<td>25,842</td>
</tr>
</tbody>
</table>

Figure 19. Value of imports of cow milk 2009–2016

Source: SAGARPA, 2015
Mexico cheese production January-November 2017

Figure 20. Mexico’s cheese production, January–November 2017

Source. SIAP SAGARPA, 2017

Figure 21. Origin of skimmed milk powder imports during 2016

Source: CANILEC, 2018
Figure 22. Leading countries exporting dairy products to Mexico in 2017
Source: CANILEC, 2018

Figure 23. Share of dairy imports in 2017
Source: CANILEC, Estadísticas, 2010–2017
Annex 3. Information sheet

Participant Information Sheet

(To be translated into Spanish and read aloud to participants)

Researcher: My name is Noemí Moreno. I am from Guadalajara, Mexico. I am an academic at the University of Guadalajara and currently a PhD student at the College of Arts and Social Sciences of the Australian National University.

Project Title: The title is Milking in the global economy. The project studies the women of western Mexico working in dairy production and their linkage to trade liberalisation, the global agro-food system and the gender and international division of labour.

General Outline of the Project

Description and Methodology: The methodology to be used is ethnography during a year-long fieldwork. The planned methods to collect data are in-depth interviews, focus groups and participant observation. It is planned to have the participation of about 100 women between 15 and 80 years.

Use of Data and Feedback: It is intended that the research results will be disseminated through four pathways: the thesis; journal articles, presentation of papers at conferences, and the oral exposition of results to the community after fieldwork in order to stimulate dialogue and feedback about the research.

Participant Involvement

Voluntary Participation & Withdrawal: The project is voluntary and participants may, without any penalty, decline to take part or withdraw from the research at any time until the work is prepared for publication, without providing an explanation, or may refuse to answer a question. If participants in interviews do withdraw, their data will not be used and will be destroyed. However, it will be impossible to isolate and destroy individual contributions in focus groups. In such a case of an individual withdrawing, the information will not be eliminated but I am committed to trying to identify the individual data and not use it during dissemination of the research results.

What will participants have to do? Participants will be asked to complete questionnaires, undertake an in-depth interview, participate in a focus group, and/or permit access to personal documents. All in-depth interviews and focus groups are intended to be
audio or video recorded if participants consent to it. Transcriptions of the interviews can be provided to respondents if they request them for perusal before the analysis is finalised.

**Location and Duration:** The research will take place in localities where participants live. Questionnaires will be able to be answered in writing or orally and will last between 15 and 30 minutes. Interviews will last between 30 and 90 minutes and focus groups between 60 and 120 minutes. It is possible that the research will require interactions by the same participants on more than one occasion.

**Risks:** The topic and the questions raised will not involve risk to participants.

**Implications of Participation:** There are no consequences if participants decide to decline participation.

**Confidentiality:** Only the researcher and the supervisor will have access to primary data, which will be safeguarded by the researcher. Confidentiality will be protected as far as the law allows. I will respect the decision of the participants to give or not give their names and other personal details during data collection. In the stage of dissemination, I will use pseudonyms unless participants are interested to have their names associated with the results. Participants are assured that their names will be kept confidential as far as the law allows.

**Data Storage:** Interviews and focus groups recordings will be stored in my personal computer, on an external HDD and in my iCloud account. In all three cases, access to data will be blocked through password. Written data and other physical material will be kept locked in my personal suitcase. Data will be stored for at least five years after the dissertation and, since it could be used for future research projects, it will be destroyed only if participants ask for this.

**Queries and Concerns:**

For further requests for information or queries regarding the project and the use of their information, participants will be able to call me or write an email to me or my supervisor.

**Investigator:**

Rosa Noemí Moreno Ramos

u5422478@anu.edu.au
Supervisor:
Patrick Kilby
patrick.kilby@anu.edu.au

**Ethics Committee Clearance:**

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager
ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Officer@anu.edu.au
Annex 4. Consent forms

WRITTEN CONSENT FOR PARTICIPANTS

(Translated into Spanish and read out to participants)

I have read and understood the “Participant Information Sheet” you have given me about the research project, and I have had any questions and concerns about the project addressed to my satisfaction. I agree to participate in the project.

Signature:....................................................

YES □ NO □ I agree to this interview being audiotaped.

YES □ NO □ I agree to this interview being videotaped.

I agree to be identified in the following way

YES □ NO □ Full name

YES □ NO □ Pseudonym

YES □ NO □ Complete confidentiality

Signature:....................................................
ORAL CONSENT REQUEST

(This is to be translated into Spanish and read out to participants)

I have read out the information sheet about the research project “Milking in the global economy: a study about women working in dairy in western Mexico and their relation to trade liberalisation, the global agro-food system and the international and sexual division of labour”. Was anything not clear? Do you want to ask me any questions about the project?

I will keep all the information you give me in this interview confidential as far as the law allows. Any notes or recordings I make will be kept on a password-protected computer or in a locked suitcase or cabinet. I will not share your personal details or personal views with anyone else. Is that okay?

Some of the information you give me may be published in English and/or Spanish. It will not be possible from these reports to identify individuals. With regard to information you give me during the in-depth interviews (or focus group), your real name will not be used in any publication, unless you tell me clearly that you want me to use your real name. Is that okay? Please tell me if I should use a pseudonym to protect your identity, or if you want me to use your real name so that others can identify you.

If you want me to give you a pseudonym, I need to tell you that although I will avoid using information that will allow other people to identify you by what you say, it is still possible that people will be able to guess who you are. Therefore, you should avoid reporting information with identifying details. Is that clear? Further, before I publish any of your statements or views, I will give you the chance to review what I have written. Okay?

You can stop this interview at any time, without giving me any reason, and if you mention anything that you do not want me to publish, please say so and I will follow your request. Okay?

I would like to record this interview (or focus group) using a digital audio-recorder and I will totally or partially transcribe the words and store them safely. That way, I can listen to the recording afterwards and catch things you say that I might not fully understand during the interview, or might otherwise forget. I will not give access to the recording to anyone else. Do you give me permission to record?

Do you have any further questions? Can we start the interview now?
FAMILY FARMERS

1. What is your name (optional)?

2. How old are you?

3. Since when have you worked in milk production?

4. What is the destination of the milk that is produced on the family farm?

5. What changes have taken place in the way milk is produced on the family farm?

6. Are you aware of the difficulties faced by milk producers in Mexico? How do you know about them?

7. What are the difficulties you face as producers of milk?

8. How do the constraints of the dairy industry affect your family economy?

9. Could you narrate how a usual day goes in your everyday life? Could you tell me what you do from when you wake up in the morning?

10. Which of your activities satisfies you most?

11. How many hours a day do you spend milking?

12. How many hours do you spend in other activities related to milking? For example, feeding the cows or cleaning the sheds?

13. How did you learn to milk?

14. Have you taught the process of milking to anyone? If so, to whom and why did you do it?

15. What is the most difficult thing for you in milking?
16. Do you like to work in the dairy?
17. Is that what you always wanted to do?
18. Do you plan to do something different in the future?
19. Do you expect that your children will work in the dairy, too?
20. Who owns the land where the farm is located?
21. Who owns the house where the family lives?
22. Do you have any property?
23. Who makes decisions about the family expenses?
24. Do you participate in the decisions about the farm? How?
25. How is the income organised? How is it distributed and who participates in decisions about its allocation?
26. Do you participate in meetings of farmers?
27. If yes, is it regular participation? How do you participate?
28. If not, would you like to participate?
29. If not, is there anyone in the family who does participate?
30. If yes, do they inform you about the issues discussed in the meetings?
31. Have you received any training about milking? If so, where?
32. If not, would you like to participate in training?
33. In addition to your work on the farm, do you perform any other activity that generates money for family maintenance?
34. How important do you think that your work in the production of milk is for the maintenance of the family?
35. Which members of the family members are involved in domestic work?
36. How is the distribution of chores decided?
37. Which words do you use to refer to housework?
38. Do you consider the activities that you do at home as work?

39. Do you participate in community activities? How?

40. Do you have free time? If yes, what do you like to do in those moments?

41. If you have children, what do you want for their future? Do you see a different future (from your life) for your sons and your daughters?

WAGED DAIRY FARMERS

1. What is your name?

2. How old are you?

3. Since when have you worked in the production of milk?

4. Where do you work?

5. What are your activities in the industry?

6. For how long have you worked there?

7. Are you aware of the difficulties faced by milk producers in Mexico? How do you know about these?

8. How many hours a day do you dedicate to waged labour?

9. How did you learn the tasks that you do in the industry?

10. Is it your intention to work there in the future?

11. How do you distribute your salary?

12. Is the allocation of your salary up to you?

13. Is your wage the only income of the family? If not, where do the other incomes come from?

14. If yours were the only income, do you think it would be enough for the maintenance of the family?

15. In addition to your work, do you perform any other activity that generates money for family maintenance?

16. How important do you think that your work is for the maintenance of the family?
17. Do you have any property?
18. Who owns the house where the family lives?
19. Could you narrate how a usual day in your everyday life goes? Can you tell me what you do from when you wake up in the morning?
20. Which of your activities pleases you most?
21. Which members of the family are involved in domestic work?
22. How is the distribution of the chores decided?
23. Which words do you use to refer to housework?
24. Do you consider the activities that you do at home as work?
25. Do you participate in community activities? How?
26. Do you have free time? If yes, what do you like to do in those moments?
27. If you have children, what do you want for their future? Do you see a different future (from your life) for your sons and your daughters?
Focus group Questionnaire
(Translated into Spanish)

1. Since when have you worked in milk production?
2. How did you learn to milk?
3. Have you taught the process of milking to anyone?
4. Do you like to work in the dairy?
5. Would you have liked to have done something other than dairy work?
6. Do you expect that your children will work in the dairy, too?
7. How is the domestic work organised in your households?
8. What would you think about receiving a salary for housework?
9. What would you think about receiving a salary for child-rearing?
10. Do you find it easy to organise your time between your work in the production of milk and the housework?
11. Who makes decisions about the family expenses?
12. How is the income organised? How is it distributed and who participates in the decisions about its allocation?
13. Are you aware of the difficulties faced by milk producers in Mexico? How do you know about them?
14. What are the difficulties you face as producers of milk?
15. How do the constraints of the dairy industry affect your family economy?
16. Do you think economic difficulties affect family relations? How?
17. Do you participate in community activities? How?
18. Which of your daily activities satisfies you most?
19. How important do you think that your work is in the production of milk for the maintenance of the family?
Survey questionnaire

(Translated into Spanish)

I. Background
   - Male / Female
   - Age
   - Address
   - Locality
   - Number of people living in the same house
   - Years of education
     a. 0 years
     b. 1−4 years
     c. 5−7 years
     d. 8−10 years
     e. 11−12 years and older

II: Family
1. Who do you live with?
   a. My parents and siblings
   b. My parents, siblings and members of the extended family
   c. My partner and children
   d. My partner, children and members of the extended family.
2. If living with a partner, are you married?
   a. Yes
   b. No.
3. If applicable, what is your marriage's property status?
   a. Community property
   b. Separate property.
4. How many children do you have?
a. 0
b. 1–2
c. 3–4
d. 5–6
e. More than 6.

III. Everyday activities

5. Is milking the main productive activity for the family?
   a. Yes
   b. No.

6. Does the family own a farm?
   a. Yes
   b. No.

7. How are you related to dairy production?
   a. Working in a dairy industry
   b. Working on the family farm

8. What are your daily activities?
   a. Family farming
   b. Wage work
   c. Study
   d. Housework
      i. Cleaning
      ii. Food preparation
      iii. Laundry
      iv. Ironing
   e. Care of children
   f. Care of elderly
   g. Other (please specify).
9. If applicable, how many hours a day do you dedicate to study?
   a. 1–2
   b. 3–4
   c. 5–6
   d. More than 6.

10. If applicable, how many hours a day do you dedicate to housework?
    a. 1–2
    b. 3–4
    c. 5–6
    d. More than 6.

11. Do you consider chores as work?
    a. Yes
    b. No

12. If applicable, how many hours a day do you spend preparing food?
    a. 1–2
    b. 3–4
    c. 5–6
    d. More than 6.

13. Do you consider preparing food for the family as work?
    a. Yes
    b. No.

14. If applicable, how many hours a day do you dedicate to the care of children?
    a. 1–2
    b. 3–4
    c. 5–6
    d. More than 6.

15. Do you consider childrearing as work?
    a. Yes
16. If applicable, how many hours a day do you dedicate to the care of elderly or sick people?
   a. 1−2
   b. 3−4
   c. 5−6
   d. More than 6
   e. Specify of whom you take care.

17. Do you consider taking care of other people as work?
   a. Yes
   b. No.

18. Which members of the family are involved in domestic work?
   a. Just me
   b. Just the adult women
   c. All women (including girls)
   d. Women and children (boys and girls)
   e. Women and men (please specify sex and age).

IV. Living conditions and ownership

19. Do you and your family have social insurance57?
   a. No
   b. Yes (please specify).

20. Are the children in the family attending school?
   a. Yes
   b. No.

21. What education level is it expected that your children will reach?
   a. Primary

57. Social Insurance includes state responsibility and patterns in caring for sickness, maternity, disability, risks and diseases, child care, unemployment, retirement and social benefits.
b. Secondary

c. Preparatory

d. Graduate degree

e. Postgraduate degree.

22. Where do you go when you need medical attention?

a. Local doctor
   i. Public service
   ii. Private service

b. Municipality Centre
   i. Public service
   ii. Private service

c. Tepatitlan
   i. Public service
   ii. Private service.

23. What are your options for recreational activities with your family?

a. Trips to the ranch

b. Trips to Tepatitlan

c. Trips to Guadalajara

d. Trips to the USA

e. Other (please specify).

24. Who owns the house where the family lives?

a. It is leased

b. My husband

c. My parents

d. My husband’s parents

e. My husband and I

f. Other (please specify).
25. What assets have you obtained in the last few years?
   a. Vehicle
   b. Cattle
   c. Sewing machine
   d. Land
   e. Jewellery/gold
   f. Other
   g. None.

V. Decision making

26. Who decides the distribution of the chores?
   a. My father
   b. My father and my mother
   c. My mother
   d. My husband
   e. My husband and I
   f. Other (please specify).

27. Who makes decisions about the family expenses?
   a. My father
   b. My father and my mother
   c. My mother
   d. My husband
   e. My husband and I
   f. Other (please specify).

28. Who decides if the family participates in community activities?
   a. My father
   b. My father and my mother
   c. My mother
d. My husband

e. My husband and I

f. Other (please specify).

VI. Community

29. Do you participate in religious community activities?
   a. Never
   b. Occasionally (please specify the activities)
   c. Constantly (please specify the activities).

30. Do you participate in educational community activities?
   a. Never
   b. Occasionally (please specify activities)
   c. Constantly (please specify activities).

31. Do you participate in recreational community activities?
   a. Never
   b. Occasionally (please specify activities)
   c. Constantly (please specify activities).

32. Which are the two main problems that exist in the community?
   a. Crime
   b. Food Shortage
   c. Health
   d. Lack of access to education
   e. Lack of employment opportunities
   f. Alcohol abuse
   g. Family violence
   h. Other (please specify).

33. Which are the two main strengths of the community?
   a. Community cohesion
b. Family cohesion
c. Religious values
d. Job opportunities
e. The hard work of the people
f. The environment
g. The distance from the city
h. Other (please specify).

VII. Productive labour – Family farms (to be answered only by people working on family farms)

34. What is the destination of the milk that is produced on the family farm?
   a. Sold to an industry (please specify)
   b. Sold to Liconsa
   c. Sold to another producer
   d. Sold directly to consumers
   e. Family consumption
   f. Other (please specify).

35. How many hours a day do you dedicate to the production of milk on the family farm?
   a. 1–2
   b. 3–4
   c. 5–6
   d. More than 6.

36. Indicate which are your activities on the family farm:
   a. Milking
   b. Feeding the cows
   c. Taking care of sick cows
   d. Taking care of the calves
Annexes

37. Are you involved in the decisions about the farm?
   a. No
   b. Yes.

38. Who makes decisions about the production of the milk?
   a. Father
   b. Husband / Male partner
   c. Adult men only
   d. Adult men and women
   e. Whole family.

39. Who makes decisions about the selling of the milk?
   a. Father
   b. Husband / Male partner
   c. Adult men only
   d. Adult men and women
   e. Whole family.

40. Who makes decisions about selling and buying cows?
   a. Father
   b. Husband / Male partner
   c. Adult men only
   d. Adult men and women
   e. Whole family.

41. Do you receive a wage for your work on the family farm?
   a. Yes
   b. No.
42. If yes, how do you distribute the wage?
   a. Family maintenance
   b. Personal spending
   c. Personal leisure
   d. Family leisure
   e. Savings
   f. Other (please specify).

43. Have you suffered any accident or illness related to the family farm?
   a. No
   b. Yes (please specify).

44. Who owns the land where the farm is located?
   a. It is leased
   b. My husband
   c. My husband and I
   d. My parents
   e. My husband’s parents
   f. Other (please specify).

45. Who owns the assets of the farm?
   a. My husband
   b. My husband and I
   c. My parents
   d. My husband’s parents
   e. Other (please specify).

46. If applicable, how did the family farm become your property?
   a. Inheritance from my father
   b. Inheritance from my mother
   c. Inheritance from another relative (please specify the relative)
47. If applicable, how did the family farm become your husband's property?
   a. Inheritance from my father
   b. Inheritance from my mother
   c. Inheritance from another relative (please specify the relative)
   d. He purchased it as a single person (please specify the seller)
   e. He purchased it as a married person (please specify the seller).

48. Which members of the family are involved in the work of the family farm?
   a. Father
   b. Mother
   c. Mother and father.

49. Do you participate in meetings of farmers?
   a. Never
   b. Occasionally
   c. Constantly.

50. Do you participate in training for milk production?
   a. No
   b. Yes (please specify place and how often).

51. From whom have you learned your knowledge of milk production?
   a. My father
   b. My mother
   c. My husband
   d. My brother(s)
   e. My sister(s)
   f. Other (please specify).

52. To whom have you taught the process of milk production?
   a. My son(s)
b. My daughter(s)
c. My brother(s)
d. My sister(s)
e. Other (please specify).

53. In addition to your work on the farm, do you perform any other activity that generates money for family maintenance?
   a. No
   b. Yes (please specify).

54. How important for the maintenance of the family is your work in the production of milk? Rate its importance below, with 10 meaning crucial importance and 0 meaning null importance.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
   h. 8
   i. 9
   j. 10

55. Would you expect that your children will work on the family farm, too?
   a. Yes
   b. No.

56. Do you plan that your children will inherit the farm?
   a. No
b. Yes.

57. If yes, how would it be distributed?
   a. Sons only
   b. Sons and daughters equally
   c. I have not decided yet.

VIII. Productive labour – Waged employment (to be answered only by waged employees)

58. What is the name of the industry where you work?

59. Please indicate your activities on the family farm.
   a. Milking
   b. Feeding the cows
   c. Cleaning
   d. Administrative tasks
   e. Other (please specify).

60. For how long have you worked there?
   a. Less than a year
   b. 1−3 years
   c. 4−6 years
   d. 7−9 years
   e. 10 years or more.

61. For how long do you intend to work there?
   a. Less than a year
   b. 1−3 years
   c. 4−6 years
   d. 7−9 years
   e. I see it as my job for life.

62. Do other members of your family work in the same industry?
a. No
b. Yes (please specify who).

63. How many hours a day do you dedicate to waged labour?
   4. Less than 4
   b. 4−6
   c. 6−8
d. More than 8.

64. How did you learn the tasks that you do in the industry?
a. By training in the industry
b. I learned at home
c. Both
d. Other (please specify).

65. How do you get to your work?
a. By public transport
b. By the industry's transport
c. In my car
d. In a friend or relative's car
e. Other (please specify).

66. How do you distribute your salary?
a. Family maintenance
b. Personal spending
c. Personal leisure
d. Family leisure
e. Savings
f. Other (please specify).

67. Is it the only income of the family?
a. Yes
b. No.
68. If applicable, please specify the source(s) of the other income(s).
   a. Family farm
   b. Wage employment
      I. Father
      II. Mother
      III. Siblings
      IV. Husband
      V. Sons
      VI. Daughters
      VII. Other (please specify).

69. If it were the only income, do you think it would be enough for the maintenance of the family?
   a. Yes
   b. No.

70. Have you suffered any accident or illness while working in the industry?
   a. No
   b. Yes (please specify).

71. In addition to your work on the farm, do you perform any other activity that generates money for family maintenance?
   a. No
   b. Yes (please specify).
72. How important for the maintenance of the family is your waged work? Rate its importance below, with 10 meaning crucial importance and 0 meaning null importance.
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5
   f. 6
   g. 7
   e. 8
   i. 9
   j. 10

73. Would you expect that your children will work in the same industry in which you work?
   a. Yes
   b. No.