March 2016

Three Essays on Women's Land Rights in Rural Peru

Rosa L. Duran
University of Massachusetts, Amherst

THREE ESSAYS ON WOMEN'S LAND RIGHTS IN RURAL PERU

A Dissertation Presented

by

ROSA LUZ DURAN

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

February 2016

Economics

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Approved as to style and content by:

_____
Nancy Folbre, Chair

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Michael Ash, Member

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Millicent Thayer, Member

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Michael Ash, Department Chair
Economics

DEDICATION

To my mother

ACKNOWLEDGEMENTS

I would like to thank my advisor, Nancy Folbre, for her many years of thoughtful and patient guidance. Without her support, it is unlikely that this dissertation would have been completed. Thanks are also due to Carmen Diana Deere for her encouragement and inspiration throughout the years. Working alongside Nancy and Carmen Diana has been as much a privilege as a pleasure, and the invaluable contribution of both of them to my professional development will forever be appreciated. I would also like to extend my gratitude to the members of my committee, Michael Ash and Millie Thayer, for their helpful comments and suggestions on all stages of this project.

ABSTRACT

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FEBRUARY 2016

ROSA LUZ DURAN, B.A., PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERU

M.A., UNIVERSITY OF MASSACHUSETTS AMHERST

Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Nancy Folbre

This dissertation investigates the relationship between female land rights and cultural, policy, and regional variables, and asks to what degree, and in what ways, the highly contextual nature of the relationships between these variables have determined local-specific causes and effects of female land rights in Peru.

This dissertation consists of three essays. The first essay provides the socioeconomic and institutional context for the entire dissertation, introducing a brief historical account of the evolution of female land rights in Peru. This essay pays particular attention to the relationship between property rights and geographical context in the Peruvian countryside, examining the region-specific institutional, social, cultural and economic obstacles that prevent women, particularly in rural areas, from having adequate access to and secure tenure of land.

The second essay models the varying patterns of female land ownership in Peru, identifying the main factors that have bearing on women's acquisition of land, relevant to explain the magnitude and characteristics of the gender-asset gap in Peru. This essay empirically estimates the determinants of female land ownership, and in particular the

effect of household wealth and geographic location on women's likelihoods to acquire formal land rights.

Lastly, the third essay tests the hypothesis that land ownership gives women more bargaining power in the household. This essay conducts an empirical evaluation of the effects of female land rights on labor supply decisions of couples in the Peruvian rural household setting. This essay brings to light the complex effects of partnered women's bargaining power on time use including labor supply in paid employment, which varies in connection with the specific characteristics of female land rights and the size of the farm. By comparing the main features of farm organization in minifundios (farms between ¼ and 3½ hectares) versus small farms (between 3½ and 10 hectares), this essay shows that the differences in the time allocation patterns of couples in these two farm size categories largely emanate from differences (in determinants and characteristics) in women's land rights.

Key words: female land rights, asset ownership by gender, joint titling, individual titling, time allocation, intrahousehold bargaining, Peru Living Standards Measurement Survey.

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CHAPTER 1

GENDER AND RIGHTS TO LAND IN RURAL PERU: HISTORY AND REGIONAL VARIATIONS

1.1 Introduction

A number of specific cultural, socio-economic, and policy factors have shaped the existing large regional differences in the distribution and characteristics of women's ownership of land in Peru today. While these are all important factors, this essay highlights the critical role of the geographical context in explaining the regional variations in women's land ownership in the Peruvian countryside by delineating the connections between the regional features of the conditions of women, and the regional patterns in the distribution of female land rights in this country. Through a comprehensive review of the available data and secondary sources, I show that the heterogeneous patterns of female land ownership correspond to differentiated gender relations, varied socio-economic conditions, and the uneven coverage of titling programs across the country. The analysis concentrates in the Southern and Northern Sierra regions of Peru.

In Peru, the uneven geography has a strong influence in how social, historical, and political processes unfold. Considerably uneven geographic settings have conditioned not only the local climate, the type and use of the land, and the agricultural activities of the country but most importantly, have influenced the socio-economic, cultural, historical, and political processes shaping peasants' characteristics and their relationships with land and other productive resources.

The remainder of this essay is organized as follows. Section 1.2 provides an institutional background on the situation of women and land in Peru, and recounts the historical progress of family law affecting women's land property rights. This section also considers the role of communal rights in women's access to and control over land, and reviews the evolution of land policy in Peru in connection to its impact on women's ownership of land. Also included is a discussion of the issue of women's legal documentation, which influences women's ability to assert their rights. Section 1.3 examines the main regional patterns of female land rights (FLR) in Peru and describes some key characteristics of women relevant to asset ownership, particularly in rural areas. Finally, Section 1.4 offers some conclusions, being the main one that geographical context plays a critical role in explaining the regional variations in women's land ownership in Peru. There is a strong connection between the regional features of women's conditions and the regional patterns in the distribution of female land rights in Peru.

1.2 General overview of women's property rights in Peru

The first constitutions and civil law procedures in Peru date back to the colonial period and were based on the Spanish legislation of the time. In this law tradition, women were allowed to keep a legal personality separate from that of their husbands, and thereby permitted to have property rights of their own. Married women, in particular, were entitled to own, inherit and bequeath property; and in the case of divorce or separation, they were able to keep the assets brought by them to the marriage (Deere and León 2001a). The Spanish law, however, epitomized a paternalistic view of women and

reflected conservative norms regarding family relationships that confined women's civil capacity to exercise their rights. Formally treated as adult minors, women retained the ownership of their personal assets but lost the capacity to administer them to their husbands, who were designated officially as the legal representatives of their wives. Placed in a superior position of authority within the household by tradition and by law, men had the power to make decisions over the personal assets of their wives, irrespective of the wives' permission (FAO 1994). Married women in fact needed their husbands' authorization to act in their own name. Husbands were also considered the appropriate managers of the household assets, and were in charge of communal property of the marriage, legally at liberty to dispose of it as they pleased, with no need of consent from their wives.[1] The official recognition of men as heads of households since colonial times established the legal subordination of women to their husbands and fathers and effectively restricted women's control over their own assets during marriage.

It was not until the first half of the twentieth century that modifications to the Peruvian civil code entitled married women to administer their own individual assets during marriage, enhancing in this manner their juridical capacity and property rights (Deere and León 2001a). During the second half of the century, several other crucial improvements in women's civil capabilities took place in Peru and throughout Latin America. The Peruvian Constitution of 1979 brought in two edicts of great consequence for women: the right to vote irrespective of literacy status, and the legal recognition of consensual unions. The first edict was critical in enabling women to actually vote because

[1] It is explained later that the common property of the marriage is the property bought with the salaries and wages of either spouse, or with the income generated from their individual properties.

although women received the formal right to vote in 1955, most of them continued to be excluded as a result of the concomitant requirement to be literate. At the time, well over half of the women in rural areas were illiterate. For the age group over 65 years old, the numbers were more appalling. For instance, in the Southern Sierra departments of Huancavelica and Puno, approximately 89 percent of women in that age range were illiterate, compared to 57 percent among men (INEI, national census 1981).

The legal recognition of consensual unions was also a crucial change in women's situation, considering that these unions are frequently the norm in the Peruvian countryside. The 1979 Constitution granted common-law unions the same rights of legally married couples in all matters except inheritance, which had major implications for the management and property rights over assets, such as land (Deere and León 2001a). Subsequently, the Civil Code of 1984, which is the current one, also recognized consensual unions and established that these unions were to be ruled by the partial community marital regime (article 326); unmarried partners continued to be denied the rights to inheritance that spouses were given (Macassi León 1996, as cited by Deere and León 1997).

The 1984 Civil Code had even more significance for women's property rights, as it officially departed from the long-standing practice of male household headship and sanctioned equal rights for wives and husbands to legally represent the family. The new code also stipulated that either member of the couple could administer the common property of the marriage. Moreover, in order to sell such property it was required that both spouses agreed and signed the bill of sale (Deere and León 1998). The 1993 Constitution further enhanced women's access to land by explicitly establishing that men

and women could own and inherit land. Nevertheless, marital authority continues to be a problem because while it is no longer present in the letter of the law, it remains in the customs and traditions that in practice define the relationships within couples, posing considerable obstacles for the application of the law.

1.2.1 Marital property regimes, formal and de-facto marriages

Marital property regimes are crucial to women's ownership of assets. Since colonial times, marital regimes in Peru have followed two general models, the partial community property regime and the separation of property regime. Couples marry under the partial community property regime unless they explicitly opt for the other regime at the time of the nuptials.[2] Both marital regimes have in common their acknowledgement of the individual property of each spouse, understood as those assets acquired prior to marriage or received as inheritances after marriage. Each spouse is entitled to keep ownership of that property in the case of divorce (FAO 1994, Deere and León 2001a, Deere and Doss 2006a). The critical difference between the two regimes is the treatment of the income generated by such individual property during the marriage.[3] In the separation of property regime, such earnings remain each spouse's individual property. In the partial community property regime, known as *gananciales* (participation in profits), the income generated by the individual property of either spouse, such as rents and

[2] Article 296 of the 1984 Civil Code establishes that the spouses can substitute one regime by the other during the marriage by formally requesting the change and following a relatively simple legal procedure.

[3] This same difference applies to the treatment of any individual earnings in general, such as wages or salaries.

interests, is pooled and considered community property; and so is any asset acquired with the wages or salaries of the spouses during the marriage. Under the current marital legislation, for example, a piece of land purchased during the union forms part of the common property of the couple and should be registered as joint property, that is, the title should be issued in the name of both spouses. Upon dissolution of the marriage, and regardless of the reason, the community property is divided equally between the two spouses. Each spouse thus has an estate constituted by half of the common property plus any individually owned property acquired before marriage or via inheritance before or after marriage (Deere and León 2003, 2001a). The same applies to common-law unions.

This legislation seemingly protects the assets of married and common-law women. Unfortunately, tradition and other cultural factors limit the use of formal mechanisms to transfer land. For example, it is not unusual for a husband to buy property with the resources of the household but to register such property in his name only. Given the lengthy and costly bureaucratic procedures involved, in the case of divorce a wife has few options to claim her co-property rights if her name does not appear in the land title. Furthermore, although in theory the common property cannot be sold or mortgaged unless both spouses agree, in practice the lands titled only to the husband are under his control, even if they were acquired during the marriage. As Deere and León (2001a) point out, in rural areas the requirement of the signature of both spouses for the sale of an asset is rarely binding if the names of both spouses do not appear in the land title.

The limitations of family law are even greater for the large share of couples that are not formally married. Indeed, although consensual unions are legally recognized on a par with marriage for all intents and purposes (except inheritance) in the Peruvian

legislation, additional provisions governing asset ownership pose serious problems for rural women. Common-law wives seeking to claim the rights of co-ownership of the assets acquired during the union must first obtain the formal recognition of their relationship by a judge or notary public through an entirely separate process. Written documents that indisputably ascertain the permanence of the relationship for a period of at least two years, such as the certificate of religious marital ceremony, or the birth certificates of the couple's offspring, are required in order to prove the legal existence of the union (1984 Civil Code, article 326). In other words, two different civil procedures are necessary, which doubles the costs in terms of money and time, not to mention that this system allows the 'defendant' spouse to dispose of the land or asset in question in the interim between one suit and the other. This state of affairs discourages many peasant common-law women to undertake the proceedings to claim their rights, especially in those cases in which these women are poor or live in areas far from courts (FAO 1994, Deere and León 2001a).

1.2.2 Inheritance rights

Peru does have among the more favorable inheritance rules for widows and widowers among Latin American countries, since the widow/widower is in the first order of inheritance (Deere and León 2003). Peruvian legislation also states that all legitimate children, irrespective of sex, are forced heirs and inherit equally from both parents.

In colonial Hispanic America, spouses generally did not inherit from each other because they were not mandatory heirs. Such status was reserved for the children or descendants of the deceased, or, in their absence, the descendant's parents or ascendants,

or collateral kin (Deere and Doss 2006a, 2006b). Successive reforms favored spouses in inheritance matters.

> In the civil codes adopted after independence, Latin American countries began to include spouses among those who would inherit under intestate in the absence of children or parents, preferring widows and widowers over siblings. In the late 19th century, a few countries began to include spouses, even in cases with surviving children or parents, in first order of inheritance under intestate, dictating the spouses would inherit an equal share. This change has placed spouses in a privileged position compared to children, since they are also automatically entitled to half of the community property when widowed (Deere and Doss 2006a, p.9).

The Peruvian Civil Code of 1984 went a step further and gave married women the automatic right to a share of the inheritance upon the death of a spouse, even in the case of a will noting otherwise (Deere and León 1997). Irrespective of the marital regime chosen by the couple, when a husband dies his wife inherits a part of the property of the husband ("as an extra child"). In other words, at the death of the husband, the partial community property regime ends and the wife keeps 50 percent of the property; the 50 percent of the husband is divided among the legal heirs (Deere and León 1998).

The conditions for inheriting a spouse's or companion's property depend on whether the succession is testamentary or intestate. Even in the case of a will, Peruvians have access to limited testamentary freedom. Testators may only dispose freely of one third of their assets and are obliged to share the remainder among whom the law specifically requires to be treated as heirs (forced heirs are the children, the spouse, the parents of the deceased, and grandchildren) (FAO 1994).[4] The other two thirds are

[4] A testator with surviving children, grandchildren or a spouse can freely bequest one third of his/her or her assets. If there are no surviving children or spouse but surviving parents, a testator can bequest one half of his/her assets to whoever he/she desires. Only in the case of no surviving children, spouse or parents, a testator can freely bequest the entirety of his/her assets (Deere and León 1998).

reserved for the deceased's spouse and children; how much each gets depends on the number of children, as family law specifies that all children and spouse share the estate in equal proportions. If there is no will, the heirs are obliged to abide by law. If the husband died intestate, his whole estate goes to his children and widow and the amount the widow gets depends again on the number of children since, as in the previous case, a married woman inherits the same proportion as the children.[5] Legally, thus, if the spouses had land in community property, the widow should find herself with a controlling interest (her half plus the share of his estate). If the land was the husband's patrimony (acquired before marriage or later through his family's inheritance), the widow would inherit a small share (Deere and León 2003).

Women partners in consensual unions are in a different situation since, as noted earlier, the partner in a consensual union is not a forced heir. Consensual unions properly documented are subject to the same procedures that rule the partial community property regime: at the death of the husband, the wife keeps half of the patrimony, and the half of the husband is divided among the children or members of his family. That is, an unmarried partner does not automatically inherit from her partner, which constitutes a considerable disadvantage for women in this position compared to married women (Deere and León 1998).

Regarding the inheritance rights of children in Peru, the key point is that the 1984 Civil Code establishes that all children inherit equally, irrespective of sex, age, or order

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[5] It is unfortunate that information about the share of husbands who die intestate, so relevant to wives' acquisition of assets, is not collected systematically to allow for an accurate estimation. Considering the expense of hiring lawyers and notary publics, it is likely that a great majority of Peruvians die without leaving a testament, although that share is probably smaller among those who own assets.

of birth, including those born out of wedlock or those adopted, as long as they had been voluntarily "acknowledged" by their parents or declared legitimate by government resolution.

1.2.3 Land policy

Historically, land policy in Latin America did not concern itself with whether it affected women and men differently, as it worked under the assumption that benefitting the head of the household was equivalent to benefitting all the members. In contrast to the gender-progressive changes in constitutional and family law during the 1980s, land legislation regarding property and tenure continued to consider primarily men as the heads of households (Deere and León 1997, 1998).

The current agrarian structure in Peru is one of the results of the agrarian reform program carried out in 1969 by a left military government. Among the most radical and comprehensive implemented in Latin America, this reform substantially changed the property regimes of land (Caballero 1976, Zegarra 1999). Up until the end of the 1950s, Peru's land tenure system was highly unequal, with concentration of large extensions of land in the private hands of wealthy landowners. Responding to the increasing protests of the impoverished rural population (in particular the tenants on estates), and the demand for social justice of national peasant movements, the government expropriated and redistributed roughly 39 percent of the total agricultural land in the country, benefiting approximately one fifth of the rural population (Matos Mar and Mejía 1980, Table 26, p.183).

The expressed goal of the reform was to shift from a plantation or hacienda system (*latifundio*) to a state-led cooperativist model of organization. To that end, each expropriated hacienda was turned into an agrarian production cooperative collectively owned by its members. The members of the cooperatives established on the expropriated haciendas were by far the principal beneficiaries of this reform. Beneficiaries could only access these lands by becoming members of a cooperative. Membership was largely composed of those who were permanent workers at the time of the expropriation, most of whom were males (Klaren 2005, p.45). Casual and seasonal workers, women in their majority, were excluded from membership in the cooperatives and therefore were not allocated cooperative-owned land.

Cooperatives accounted for 45 percent of the number of beneficiaries and 62 percent of the redistributed lands. Another considerable share of the expropriated land (30 percent) was redistributed to other types of associative enterprises, such as peasant communities and individual landowners organized in peasant groups. A small group of independent peasants became direct beneficiaries as well. These private individuals accrued 11 percent of the total number of beneficiaries and received only 8 percent of the adjudicated land (Matos Mar and Mejía 1980, Table 23, p.182). Land assigned to individual beneficiaries was transferred via sale contracts with the state. The state 'bought' the land from the original owners and established a bond payment system to compensate the owners affected; in turn, the state then sold the land private individuals (Eguren 2006, p.7-8).

It is estimated that the agrarian reform had a negligible impact on female ownership of land, as very few women became direct beneficiaries of this reform.

Although no explicit stipulation vetoed potential female beneficiaries, in practice legal requirements along with cultural factors effectively excluded most rural women. For instance, the reform targeted the household and beneficiaries were required to be household heads (DL 17716, article 84).[6] Formally, only one person benefitted per household. Deere (1985) argues that this head-of-household criterion was the one that hurt rural women the most because it effectively precluded married women from becoming direct beneficiaries and virtually annulled their chances to gain legal land rights. Since the agrarian reform considered the family as the beneficiary unit, and the prevailing social and cultural practices designated the man as the head of the family, land titles and property certificates were issued in the name of the household heads (mostly men). In the vast majority of cases, women benefitted from the reform indirectly, in so far as their access to land, rather than their ownership, presumably did increase provided their membership to a beneficiary family (Deere and León 1998).

The lack of information disaggregated by sex at the national level makes it difficult to estimate rigorously the extent of the exclusion of women from the agrarian reform. Data collection about beneficiaries was centered on the household. In particular, little is known about the effects of the agrarian reform on women's land ownership within peasant communities and on women as individual (private) beneficiaries. Most of the analysis has been done for cooperatives and agrarian associations.

[6] Among the main formal requirements to qualify as direct beneficiaries were to be a peasant, a head of household, and have no more land than what was legally established for an agrarian family unit (DL 17716, article 84). Those who benefited directly were contractually obligated to fulfill a number of conditions, such as working the land directly and joining a cooperative if a cooperative was established.

Cooperatives' ownership of land affected women minimally because the prerequisites set by law, namely being a permanent worker to become a cooperative member, in practice disqualified most women as direct beneficiaries. Not all female permanent workers became cooperative members, however, unless they were also the heads of their households, which essentially meant they had to be widows, on account of the common practice of perceiving and declaring the males as the household heads whenever two adults form a couple and share a dwelling. If a female permanent worker had a husband who was a permanent worker as well, then he was the only direct and legal beneficiary of any land allocated because land titles were issued in the sole name of the applicant, not in the family's name. The reform legislation did not include any provision about joint ownership. The wife did not have formal claims over her husband's income from the cooperative, not through marriage. In their study in Cajamarca (Northern Peru), Deere and León (1998) found that only 2 percent of the members of cooperatives were women. Deere (1985) reports a five percent estimate of female beneficiaries of the Peruvian agrarian reform from case studies and surveys conducted in the 1980s.

Female single heads of households, however, did not necessarily qualify as beneficiaries either because often they were not perceived as the main agriculturalists in their households (another requisite) but merely as the helpers of the oldest male working in the farm, such as the eldest sons of these women. Only the few women who were permanent workers in the haciendas, widowed, childless, and had an uncontested position as heads and main agriculturalists of their households were accepted as formal members of the cooperatives, gaining formal land rights directly from the agrarian reform.

The other main way women acquired land in their own right (land allocated under the reform) was by inheriting from their beneficiary husbands upon their death. The agrarian reform legislation, however, did not have any explicit provision regarding the inheritance of cooperative-owned land (Deere and León 1998).

Concerning the inheritance rights of the wives and common-law partners of men who received land from the reform as independent individual beneficiaries, the law contained two provisions instructing how to proceed upon the death of the beneficiary, depending on whether or not the beneficiary had completed the purchase of the allocated parcel. If the purchase had not been completed, the parcel was adjudicated to the spouse or common-law partner and to the children under 18 years of age, who had no obligation to complete payments until the youngest child became of legal age (DL 17716, article 88). This provision did effectively protect the rights of women, irrespective of marital status, particularly considering the Civil Code of the time did not recognize common-law marriages, let alone inheritance rights for de-facto spouses.

The situation was different if the deceased beneficiary had completed the purchase of the parcel. If the beneficiary left a will, the land went to whoever was designated, as long as the person inheriting worked the land directly. In the absence of a will, it was up to the legal heirs (among which was the widow) to decide to whom the parcel would go to (article 104). If the legal heirs could not agree then the decision went to the agrarian reform authorities, who would adjudicate the land following the conditions established in the law (i.e., be head of household, etc.). While this regulation undermined the land rights of married women (because they were rarely seen as principal agriculturalists), it harmed unmarried partnered women the most since, as explained

earlier, Peruvian legislation does not provide for inheritance in the case of consensual unions (Deere and León 1997). Furthermore, the Civil Code of the time did not recognize consensual unions as legal.

The collective tenancy of land by peasants proved problematic. Towards the end of the 1970s, most cooperatives and associations were struggling with severe economic and managerial crisis (Figallo 1987; Figallo 1989). New legislation allowed the parcelization of the cooperatives and peasant associations. The members of the cooperatives and associations were given the freedom to decide whether to stay as a collective or, instead, divide the land amongst themselves and become individual private landowners. As individual owners, the (former) members of the cooperatives could keep their land (as a parcel) or sell it. The majority of cooperatives and peasant associations dissolved and parceled their land.

Since so few women were direct beneficiaries of initial agrarian reform, it is generally assumed that few women benefited directly from the parcelization of the collective enterprises. Although the Civil Code approved in 1984 formally granted women rights equal to those of men within the family, the legislation about land and property was still governed by the agrarian sector laws described above. Deere and León (1997, 1998) argue that the gender implications of the 1980s policies here again depended on an indirect impact. Women benefited conditional on the household being better off in individual production than in collective production, and conditional on men sharing the increases of income with their wives and the other members of the household. The scant research on the gender impact of the parcelization of cooperatives at the household level indicates that, as common practice upon parcelization, the few female

members of the cooperatives received smaller parcels than those given to male members (del Castillo report, cited by Deere and León 1998).

In 1991, a new law formally abrogated the Agrarian Reform law of 1969, consolidated the parcelization process via measures to privatize rural property, and provided the framework for the transition of the (remaining) cooperatives towards more market-oriented models (Trivelli and Abler 1997). This 1991 law removed the requirement that landowners had to be the main agriculturalists (direct producers) on their land and instead authorized any natural or juridical persons to acquire land.

The land transfers resulting from the agrarian reform and later from the parcelization of the cooperatives aggravated the precariousness of the land tenure situation in rural Peru, as the majority of peasants lacked formal property rights over their lands (Larson et al. 2001, p.55). At the beginning of the 1990s, land tenure was, for the most part, quite informal and legally uncertain (Zegarra 1999). The government had neglected this aspect, overlooking the simplification of the titling procedure. The long, tedious and expensive process of titling a property discouraged the majority of small landowners. As the structural reforms and the market-oriented policies took force, the formalization of the property in rural areas progressively gained importance in the government's agenda.

By 1990, only 59,578 land titles had been granted either individually or collectively, encompassing some 14 percent of the beneficiaries and 53 percent of the land adjudicated under the reform (Casafranca and Espinoza 1993, as cited by Deere and León 1997, p.12). Official statistics from the Peruvian Ministry of Agriculture indicated that by 1992, only 9 percent of all rural parcels had a title (MINAG 2006, p.3). That year,

the “Special Project for Rural Titling” (PETT) was launched with the mission of completing the titling and registration of all rural properties in the National Land Registry so that subsequently, these could be legally bought and sold. Initially, PETT targeted the land adjudicated during the agrarian reform. Later on, recognizing the extent of the problem, PETT expanded its scope and undertook the formalization of individual private property, which included the formal registration of the land of individuals already holding a title, as well as the titling of land that farmers had used for generations but for which they had no legal title. In 2003, PETT began titling also the land of peasant and native communities in the country.

A number of gender biases have been present in the implementation of PETT. Women’s disadvantage in participating in land titling campaigns originates in the absence of an explicit recognition of women’s rights to family property. As indicated earlier, the current (1984) civil code stipulates that assets acquired during marriage are the common property of both spouses. Yet, the widespread tendency to title and register the family property in the name of one person, usually the male head of the household, has generated criticism of titling and registration programs (Lastarria-Cornhiel and Barnes 1999).

According to the established procedure, when registering property, married and common-law couples are obligated to identify and include their spouses. While certainly not all women are protected, this procedure does reduce (or should) the probability that one spouse can dispose of the property rightfully belonging to both. Unfortunately, registration programs do not generally concern themselves with protecting women’s rights to land – they are often relegated to simply recording in the property registry what

is on the property title (Lastarria-Cornhiel and Barnes 1999). In case studies in rural areas, Fernández and del Castillo (1998) found that titling officers often overlook the verification of the civil status of the person appearing before them to process the title and limit themselves to simply record the information displayed on the identification document of the applicant. The problem with this seemingly innocuous behavior is that, due to the extended practice of common-law marriages in rural areas, it is common for men in consensual unions to appear as single in their ID documents.

Over the past decade, feminist NGOs (and NGO Flora Tristán in particular) have raised awareness among other civil organizations and local governments about the importance of incorporating procedures to protect rural women's access to land in land titling programs. Feminist lobbying has gained some influence in the undergoing titling process, persuading a few local authorities to instruct their field officers to be vigilant of women's rights to property acquired during marriage, either customary or legal marriage. As Deere and León (2001a) report, some regional PETT directors, however, as in Cajamarca in the Northern Sierra, were trying to enforce it, realizing that the Civil Code required them to do so. It also depends on how committed (or pressured) the regional PETT director is to enforce the Civil Code, combined with varying degrees of political pressure as well.[7]

[7] Interestingly, those areas where feminist NGOs influenced PETT the most are indeed the areas (departments) that show the highest presence of joint FLR in my sample (Cajamarca, Cusco, Arequipa), as presented in the second essay in this dissertation.

1.2.4 The situation of women in peasant communities

Another factor that contributes to the gender gap in the property of land is related to the distinct characteristics of women's ownership of land in those regions with a large presence of peasant and native communities. Specifically, the lack of articulation between the national legislation and the customary law regarding the norms governing the access of women and men to land within communities poses challenges to female land ownership because, as it generally happens, those in a weaker position are less able to assert their rights.

In Peru, peasant and native communities are important institutions for the access, ownership, and management of land. As of 2002, 5818 peasant communities, located primarily in the Southern Sierra region, comprised 56 percent of the entire agricultural land of the country (CEPES 2005, p.10). Most of this land is in areas of high altitude and suitable only for pastures.[8] Native communities, located in the Selva region, also control large extensions of land, encompassing approximately 18 percent of the national agricultural land (CEPES 2005, p.10).

Peru has a long and rich legislative history with regard to the formal acknowledgment and protection of the property rights of peasant and native communities as collectives, in particular their property rights over land. The legislation recognizing indigenous rights is probably the earliest in the Americas (Roldán 2004, p.9).[9] These

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[8] Peasant and native communities together comprise about 55 percent of the agrarian land in Peru (CEPES 2005, p.5). According to the 1994 CENAGRO, a total of 5680 peasant communities were in possession of more than 14 million hectares of agricultural land, equivalent to 40 percent of the total land owned by the agrarian production units in the country (del Castillo 2003, p.90).

[9] The General Law of Peasant Communities (1987) defined peasant communities as "organizations of public interest, with legal existence and juridical personality, composed by families that inhabit and control certain territories, linked by ancestral ties, social, economic, and cultural, expressed in communal

communities are autonomous in their organization, as well as in economic and administrative matters, and are endowed with juridical powers within its territory, in accordance with customary law (CEPES 2005). The state has consistently guaranteed the juridical autonomy of the communities and the integrity of peasants' communal property for most of the last century, although the Constitution of 1993 introduced an important change in the land tenure system of these communities. Current Peruvian legislation now allows peasant and native communities the use and free disposition of their lands, and governmental titling programs have promoted the individual titling of lands originally belonging to the community (del Castillo 1997). While this could arguably lead to the weakening and progressive disappearance of collective land ownership and of the communities themselves, some scholars argue that peasant and native communities have redefined the traditional concept of communal property. Del Castillo (2006) argues that, while "comuneros" (members of the communities) have shown interest and 'ambition' to get an individual formal title for the land they possess, they have creatively combined collectively-held possession with family possession and find no contradiction between the two, preferring in fact to have two titles. In these communities, although the property is formally collective and legal registration involves only one title for the common land, de-facto possession normally is individual, and a legal certificate formalizes the usufruct rights (so extensive that include even inheritance among family members) that those belonging to the community have always enjoyed (del Castillo 2006).

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land property, communal work" (CEPES 2005, p.16). The Native Communities Law (1974) refers to native communities as the groupings of families located in the Selva region sharing a language or dialect, cultural and social characteristics, and the collective tenancy of a common territory (ibid, p.17).

In any case, the gradual transfer of previously communal land to individuals has posed additional challenges for women's land ownership within peasant and native communities. If little is known about women's access to and ownership of land within families, much less is known about women's property and usufruct of land within peasant communities because additional norms of distribution of collective property come into play. Women's access to land is conditioned by a double mediation: their membership in a family and their membership in the community. It is unknown how these two memberships operate to determine women´s concrete access to land (Diez 2011, p.86).

The state has also formally declared its respect for the cultural identity of these communities and its commitment to protect and support their traditions and customs, which are to this day rarely gender neutral. Women and men reportedly have equal rights to be members of the community and are both rightfully entitled to use the communal goods and services. Yet, there is the category of "qualified member", who is the member with legal identification and the one registered in the community's records. Communities' statutes distinguish between members and qualified members. In peasant communities, 'qualified' membership and participation in the community's meetings has traditionally been restricted to one person per family, usually the male head of the household (Deere and León 2003). In theory, a qualified member could be a man or a woman; however, the tradition in these communities (which the law explicitly pledges to abide), is that men are the ones who, as heads of their households, represent their families before the community. Women take up that role only if they are widows.

Since only qualified members are granted participation and vote in the community's meetings, women in peasant communities face discrimination in their

involvement in collective decision-making and, consequently, in their direct access to land (Deere and León 1998).

1.2.5 Women´s lack of legal documents

Rural women's generalized high rates of illiteracy and Quechua monolingualism, and limited access to public spaces, make them less likely than men to be aware of the benefits they are entitled to regarding land rights. The lack of knowledge about their rights arguably amounts to hardly having those rights at all, as these become in practice empty legalisms with no real force (Agarwal 2003).

This situation is further complicated by women's lack of legal documents, in particular the National Identification Document (DNI), principal form of identification in Peru. Not having the DNI seriously restricts women's full exercise of their citizenship and basic civil rights, including their rights to own land.[10] For instance, a married or common-law woman with no DNI cannot appear in the title of the family land along with her partner. If one of the spouses does not fulfill the prerequisite of having a legal ID, the official responsible for issuing the title is supposed to put the processing of the joint title on hold until the DNI card is obtained. Lastarria-Cornhiel and Barnes (1999) refer to evidence indicating that this regulation is observed only partially, as titling field officers are often negligent in rigorously following the legal procedure and simply yield to the

[10] The lack of legal documentation limits other important civil rights of women, further weakening their position relative to their male partners. Undocumented women face restrictions to conducting legal transactions such as applying for loans, voting in elections, obtaining remunerated work, or constituting businesses. Perhaps more critically, undocumented women are impeded from accessing social programs, getting married, reporting domestic violence, etc.

convenience of dealing with one person and one name, usually the male head of the household.

Until 2007 there were no official statistics about the number of Peruvian women (or Peruvians in general) lacking legal documentation. According to the 2007 National Census, 4 percent of the female population and 3 percent of the male population 18 years old and older do not have DNI. In rural areas, the percentages are twice as large: 8 percent of women and 5 percent of men of legal age are undocumented (INEI 2008a, p.131-132). Among rural women 60 years old and older, lack of documentation reaches 17 percent. This group of women has the highest likelihood of lacking legal identification in part because while Peruvian women obtained the right to vote in 1955 (when this right was made formally "universal"), the law excluded the illiterate population (which meant that most women continued to be excluded), most of whom were women. Women were able to exercise this right only since 1980, after changes in the national constitution allowed illiterate citizens to vote, making the right to vote effectively universal (Velázquez 2004).

1.3 The Peruvian gender-asset gap: size and regional characterization

The legal and historical factors characterizing women's land rights discussed in the previous section are mediated by contextual factors and the specific circumstances women face in to the environment they live in. What role does geography play in explaining the characteristics of the distribution of land by gender in Peru? This section presents the main features of female land ownership across the country as conditioned by regional differences.

Peru is a country of stark geographic contrasts. The Sierra region is a setting typically rural and poor, with a predominantly Quechua-speaking population. Infrastructure is generally meager compared with the coastal region of Peru and land tends to be of low quality and highly fragmented. For the most part, farming in the Sierra is largely dependent on rainfall and based on traditional technology. Production is oriented towards the internal market and self-sufficiency. The Coast holds the land best suited for commercial and export agriculture, with large irrigation systems and other infrastructure. There is also a more developed and active land market, more investment and technology. The third region of Peru, the Selva, consists of Amazonian tropical forests and savannas (Mazurek, Huerta, and Mateo 1998).

In addition, the morphologic structure of the Andean mountain range, highest, sharpest and thickest in Southern Peru, while lower in the Northern part of the country, has determined a North-South asymmetry of great relevance to understanding the distinctive characteristics of women's relationship to assets, particularly within the Sierra region. The isolation and remoteness of the Southern Sierra have been historically a critical factor for the generalized lack of adequate infrastructure and public services in these areas. The high Southern mountains constitute a barrier to trade and transportation; unpaved roads and dirt roads are the norm. This weak system of roads and other means of communication, with the associated high transportation costs and underdeveloped markets, have undoubtedly contributed to the poverty of the agrarian producers in this region.[11] Indeed, in spite of its relatively rich natural resource base (large deposits of

[11] Generally speaking, the term 'agrarian producers' refers to those individuals whose primary economic activity is agriculture and/or livestock raising. Later on, I discuss the gender biases of this definition.

natural gas and high mining potential), the Southern Sierra is the worst-off region in Peru, and includes some of the poorest departments of the country, namely Cusco, Apurimac, and Puno. The high altitude conditions in the Southern Sierra have determined the predominance of subsistence agriculture. In contrast, the softer topography in the North offers advantageous conditions for the growing of industrial and export crops. Additionally, the flatter terrain in the Northern Sierra enables the access to urban markets and hence promotes active commerce. The main ground pathway in the Coast, the Panamericana highway, facilitates exchanges among the cities along the Coast and connects sections of the Sierra to coastal cities.

These regional disparities are mirrored in the land tenure situation in the country. The current land tenure structure in the agricultural sector in Peru is characterized by a high incidence of land ownership and small landholdings. Rural farms are typically owner-operated production units averaging three hectares in size, with about one fifth of them below one hectare and only five percent of them above 30 hectares (INEI 1995). Microfundios and minifundios, agricultural units no larger than three hectares, are clearly overrepresented in the poorer regions (Central and Southern Sierras).[12] The agrarian units located in the Selva region are the largest, on average almost twice as large as those in the other regions, because of the specific characteristics of the agriculture practiced in this region, namely industrial crops such as coffee, cacao, and fruits (PROAPA - GTZ 2002, p.67).

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[12] Minifundios are defined as agricultural units which size is so small and their resources are of such low quality that do not allow by itself the adequate sustenance for an average peasant family. As a result, 'minifundistas' must look for other sources of income, principally wage work off the farm (PROAPA-GTZ 2002, p.65).

High fragmentation is a serious problem of Peruvian agriculture, as small production units are hardly viable in a context of increasingly globalized and competitive markets. Overall, since inheritance is the main form of land acquisition in rural Peru, the subdivision of production units continues and there are no visible trends towards land concentration. In the Southern Sierra, land fragmentation is extreme. The average parcel size is only 0.3 hectares (Zegarra 1999).

The fragmentation of rural properties is most severe in the Southern Sierra because of the high incidence of inheritance as form land acquisition, which leads to the escalating splitting up of lands. The extended poverty in this region makes inheritance the only, or the main, form of land acquisition, because of the difficulty for families of buying new land. Poor families tend to have many members; therefore, inheritance becomes the main vehicle for land fragmentation. In contrast, the Northern Sierra has noticeable larger farm sizes due to the importance of the livestock activity in this region (Mazurek, Huerta, and Mateo 1998). A key feature is that in the Northern Sierra, as well in the Coast, land market purchases are almost as important as inheritance. In the Selva, farms are almost twice as large as those in the other regions because of the specific characteristics of the agriculture practiced in this region (Mazurek, Huerta, and Mateo 1998, p.34).

There is no precise account of how many women farmers own land in Peru, or of how large the gender-asset gap is.[13] This is in large part due to the criteria that the Peruvian National Institute for Statistics and Informatics (INEI) uses to collect

[13] I am referring to the large disparity in land ownership by gender: men are much more likely to own land than women are and, among landowners, the landholdings of men are noticeably larger than those of women.

information about property. The INEI conducted the two latest national agrarian censuses (CENAGRO) in 1994 and 2012. While the INEI furnishes some updates of the characteristics of agrarian producers and their activities by means of two sources, the National Household Survey (ENAHO) and the National Population Census, the information about land ownership they provide is calculated using the criterion of the principal farmer, that is, the self-declared primary agriculturalist. This is a very gender-biased definition because it gives such 'title' to one person per household, and for cultural reasons that person is identified as the oldest male in the household. This methodology in all probability underestimates the number of landowning women because it does not collect data about joint ownership of land, where landowning women may not be the main producers. In countries such as Peru, joint ownership of land by couples is an important phenomenon because women are as likely to own land jointly as individually (Deere 2005, p.47).

According to the 2008 ENAHO, there are over two and a half million agrarian producers in Peru, and almost all of them own land (INEI 2009d, p.11).[14] Compared with the 1994 CENAGRO data, this represents an increase of more than one million agrarian producers in the lapse of fourteen years. In the official account, there are 666,480 landowning women farmers nationwide, comprising almost one fourth of all landowning farmers. While this number has more than doubled with respect to the 1994 agrarian census, women farmers still represent a similar fraction (one fifth of the total). The 2012

[14] Although the term "agrarian producer" is arguably more general than the term "primary agriculturalist", when used to collect information, that is, in the context of a survey questionnaire, both terms are substitutes. There is only one agrarian producer and one primary agriculturalist per household, and they are both the same person. Since most agrarian producers own land, then most agrarian producers who are women own land.

CENAGRO reveal an increase in the proportion of agrarian producers who are women: 30 percent. In all cases, the figure included only those women who declared to be the main producers or primary agriculturalists in their farms. It follows that, in practical terms, most of these women were widows or single heads of household, owners of the entire farmland, or women in couples appearing as principal farmers (rather than as unpaid family labor) because their male partners were temporarily away. As a result, the number above is more a lower bound than a ballpark estimation of female land ownership. It gives an idea of landowning women as *individual* landowners.

In contrast with the official census figures, some survey data do register the joint ownership of land by the couple. According to the Peruvian Living Standards Measurement Surveys (LSMS), in 2000 13 percent of landowners were couples, another 13 percent were females, and 74 percent were males (Deere and León 2003, Table 2, p.928). In total, individually and jointly, women account for over one fourth of all landowners. This suggests that the CENAGRO and ENAHO definition of principal farmer does in fact underestimate the number of women landowners and is a poor proxy. Furthermore, as will be discussed in the next section, such definition obscures important relationships between female land rights and the contexts they operate in.

While the highest incidence of women's *individual* land ownership occurs in the poorest areas of Peru, namely the Southern Sierra region, case studies and recent data indicate that *joint* ownership of land is mostly highly represented in the more affluent Northern Sierra region. These two distinctive scenarios denote two different processes of land acquisition for women, and two different ways in which women relate to assets, as

landowning women with farms in the poorer regions definitively face greater economic hardships measured up against women whose farms are in the better-off regions.

Table 1.1 summarizes the sparse data available from official sources and presents *individual* female landownership across the national territory. The percentage of total individual landowners who are female is relatively uniform across the country, around 25 percent for most regions, which shows little geographic variation.[15] In terms of geographic distribution, and considering absolute numbers, there are more *individual* women landowners in the Central and Southern Sierra regions (particularly in the latter), and noticeably less in the Northern Sierra, although, as explained earlier, this is probably due to the criteria used by the INEI for the collection of data on land ownership.[16]

This spatial distribution is meaningful for the regional characterization of female land rights. The poverty and geographical isolation of the Southern Sierra decrease women's access to markets and their exposure to education, training and information. The Southern Sierra registers the lowest literacy rates in the country and the highest concentration of monolingual Quechua-speakers. In this region, for women not only the overall levels are lower but the gender gaps are deeper, particularly with respect to educational levels. Southern Sierra women have fewer years of schooling with respect to

[15] This illustrates the distortion of considering only *individual* female landownership I show later on that a different pattern emerges when considering individual and joint female land ownership simultaneously.

[16] Perhaps more than any other sector of the population, the peoples settled in native communities live in isolation and receive the least attention in terms of provision of public services. Recent information revealed that for 41 percent of them, it takes more than 24 hours to go from the district capital to the community; and over 71 percent uses rivers as their main means of communication. Nearly 60 percent of them do not have health centers; over 90 percent of homes do not have a public water connection or sewage facilities, and 86 percent do not have access to electricity (INEI 2009c, p.34-38).

other areas of the country, and the literacy gap between women and men is the largest in this Sierra.

Table 1.2 shows that among female agrarian producers, 66 percent are illiterate (national average) compared to merely 31 percent for men. The highest illiteracy rates for women are in the Central and Southern Sierras, with 71 and 77 percent respectively. Northern Sierra women have clearly more access to education, as demonstrated by their much lower illiteracy rate of 58 percent. The more developed rural-urban links help in this matter, as well as the stronger presence of the state providing public education. Also relevant is the fact that in the Northern Sierra the great majority of agrarian producers (including women) speak Spanish, which contributes to their legal literacy, that is, the awareness and ability to claim their legal rights.

Women's lack of legal documentation further debilitates women's ability to assert their rights. The regional patterns in the issue of women's legal documentation reinforce the North-South asymmetry discussed here, further consolidating and compounding regional differences. Determinant factors of women's lack of legal credentials include the inadequate access to information about how to process the document and the inability to meet the expenses involved in obtaining it, which commonly entails several trips to the city or town where the government office is located. This is conspicuously problematic for the population living in isolated areas in the Peruvian highlands. According to official data of the 2007 Continuous National Survey (ENCO), the national average time needed to reach the nearest office of the National Registry of Identification (RENIEC) is

approximately two hours.[17] The alarming aspect is that while in urban areas the average time is 47 minutes, in rural areas the average time soars to 5 hours and a half (INEI 2007, p.85). In addition, the DNI is valid only for six years; after that time, the document expires and it has to be renewed in a RENIEC office again (Meléndez 2004, p.41). Case studies have found that in some rural areas there is little motivation to get identification papers; women are unable to discern its importance as they are socialized into thinking they do not need a DNI card. In other cases, women are aware of the importance of the document but are discouraged by their husbands to obtain one (Meléndez 2004, Velázquez 2004). This is a complex problem that easily extends from one generation to the next, as parents with no legal credentials cannot obtain a birth certificate for their children.

Often the problem originated in these women not having a birth certificate or the military card, documents that in turn were required to process the DNI card. Data collected by the feminist organization Flora Tristán in 2003 in some provinces of Cajamarca and Piura (Northern Peru) and Arequipa (Southern Peru) revealed that nearly half of the rural women in these counties did not have a birth certificate, and well over 80 percent did not have a military card (Centro Flora Tristán 2005, p.106). While not representative at the national level, these numbers illustrate the severity of the situation in some areas.

[17] The National Registry of Identification and Civil Status (RENIEC) was created in 1993 with the mission of creating a single registry of births, marriages, divorces, deaths, and other occurrences that modify a person's civil status. RENIEC also keeps track of the electoral activity of all Peruvian citizens and issues the documents that certify legal identity (INEI 2007, p.39).

Realizing that the extended lack of legal documentation among rural women was a key impediment for the issuing of joint titles to married or de-facto couples, NGO Flora Tristán enlisted the participation of the RENIEC, civil organizations, and various regional authorities. The collective action of this group of institutions resulted in the implementation in 2004 of a law formally eliminating the military card as requirement to obtain the DNI card, which has been critical in alleviating the widespread lack of legal documentation of rural women. The RENIEC reported that as of 2005, more than 19,000 DNI cards had been awarded to rural people who previously did not have legal documents of identification. Between 62 and 72 percent of the beneficiaries were women (Velarde 2006).

Lack of legal documentation is a problem that usually adds up or reinforces other processes of discrimination, such as ethnic and gender exclusion. As a matter of fact, the situation of women in terms of illiteracy and lack of legal documentation is the absolute worst in the Selva region. For instance, the rural areas of the departments of Loreto, Amazonas, Ucayali, San Martín and Madre de Dios report the highest proportions of population without legal identification: 16, 13, 13, 10, and 10 percent, respectively (INEI 2008a, p.133). This is so because of the presence of native communities. The situation of women in these communities is very precarious, clearly more so than in regular rural areas (higher incidence of consensual unions, domestic violence, etc.). According to the 2007 Census of Native Communities of the Peruvian Amazonia, 12 percent of the male population 15 years old and older is illiterate, while 28 percent of the female population in the same age range is (INEI 2009c, p.18). In addition, approximately 8 percent of the total population of the native communities does not have a birth certificate, and 15

percent of individuals 18 years old and older in these communities do not have the DNI card (INEI 2009c, p.9).

Another factor influencing women's individual and joint ownership of land is their participation in agricultural activities. In the case of the Sierra, the precarious economic conditions compel men to leave their communities, often for prolonged periods of time, in search of wage work to supplement the family's income. The migration of males seeking off-farm remunerated employment is common among peasant families in these regions and leaves women in charge, particularly in the poorer Southern and Central Sierras, where the periods of migration are typically longer (Mazurek, Huerta, and Mateo 1998, p.182). Overtime, this has fortified women's leadership within the family and strengthened their economic role in agriculture and commerce (Campaña 1982, p.149).[18]

The different forms of land acquisition by women in the Sierra region also reflect the North-South dichotomy (see Table 1.3). In general, inheritance is by far the most common way to transfer land in the Southern Sierra.[19] In this context, women in this region usually acquire land as individuals (rather than as part of a couple), perhaps as inheritance from parents, but in the majority of cases as inheritance from a husband. In contrast, the more dynamic market economy of the Northern Sierra has fostered the emergence of a market for land. The gender implication is that in the Northern Sierra a

[18] Campaña (1982) emphasizes, for the case of the Central Sierra, the fact that in that the rural population of this region is grouped in peasant communities. The author highlights the role of peasant communities as facilitators of salaried work outside the community because the existence of the communities allow men to work off agriculture and far away from their farms with the security that their families are safe and wives are taking care of the small piece of land assigned to their households (p.144).

[19] "Inheritance is the most common form of land transference and the only one that allows keeping the agrarian unit intact" (Mazurek, Huerta, and Mateo 1998, p.48). [Translation is mine].

significant portion of women acquire land by market purchase, most likely with a husband (this is readily observable in Table 1.3).

Most Peruvian women live in couples. The 2007 national census estimated that 53 percent of adult women in the country were either in married or cohabiting couples. In rural areas, the figure reached 59 percent. The practice of common-law unions is certainly widespread. About half of the unions in rural Peru take this form (2007 Census database). As shown in Table 1.4, most of the women who are agrarian producers in the Northern Sierra are married, rather than widows (de la Peña 2000). In contrast, in the Southern Sierra the majority are widows (they inherit the land after their husbands die). In the Southern Sierra, then, the occurrence of FLR is related to age and widowhood, and to location in areas with robust female independent tradition. In the Northern Sierra, instead, FLR seem to be related to a more active female participation in the land market, probably because of being younger and more educated compared to women in the other region. Policies that promote joint titling are also likely to be playing a role.

In summary, typical individually land-owning women in the Southern Sierra are widows, older, and poorly educated. In all likelihood, their unfamiliarity with accessing legal resources has worked against their ability to realize their potential rights to own land. Southern Sierra women do have a preeminent role in economic activities because of the migration of their husbands in search of supplemental incomes (and also because women have low spatial mobility; the migration of women is not as widely acceptable as men's). The counterpart of this situation is that these women, while de-facto heads of their households and in charge of the family's economic activities, remain in a dependent situation since the property of the land is not theirs until they become widows.

In contrast, landowning women in the Northern Sierra are married, comparatively younger, and better educated. They are more likely to be aware of their rights as wives, and more likely to have access to social programs that have promoted a more gender-equal distribution of assets such as land. Access to notary publics or land titling offices nearby has proven decisive for women in this region.

1.4 Conclusions

Women acquire land by varied and complex processes. Public policy, legal frameworks, social norms and traditions, socio-economic conditions, as well as personal and household characteristics, are all evidently relevant to women's relationships to assets. These factors do not only influence the gendered allocation of property rights in land but affect the distribution of the social and economic benefits of such allocations as well. While relatively thin, the existing literature on gender and asset ownership has documented the wide-ranging historical processes and traditions underlying women's difficulties in exercising their basic right to own property in their own name. This literature has also illustrated the diverse patterns of land acquisition for women generated by varied socioeconomic, regional, and political factors.

There are two main types of FLR in Peru, and each implies different processes of acquisition of land, as well as different meanings (or effects) of owning land. In the Southern Sierra, the worst-off region, mostly rural and poorly connected with the rest of the country because of its challenging geography, women own land individually, that is, they are sole owners of small pieces of land that they inherited sometimes as daughters but mostly as widows. The poverty of the region manifests itself in larger families, which

implies that the land inherited is very small and fragmented. The little presence of the government in the Southern Sierra further undermines women's situation because despite the existence of legislation guaranteeing women's rights, the enforcement of the law depends on institutional, political, and social factors that in this region tend to markedly favor men. In the case of the Northern Sierra, well connected with urban centers and with relatively more developed markets, women own land jointly with their husbands. These women are married and have bought their land along with their partners, which implies not only a relatively better-off economic situation but probably also being more aware of their rights. Landowning women in the Northern Sierra are younger and more educated than women in the Southern Sierra are.

The improvement of women's ownership of land is the result of the convergence of a number of factors, going beyond formal legislation. Women have to be already in a better-off position, that is, they have more chances of becoming landowners if they are also literate, managers of their farms, and living in areas with access to public offices and access to social programs such as titling programs. The more isolated and poorer the area, the stronger the resistance to modify the status quo and the more limited the impact of purely legal changes. Legislation on property rights, inheritance, marriage and divorce, and marital property has made progress in explicitly recognize women's rights to family property. However, it is clear that changes in legislation, institutional reforms, land distribution and titling programs have not been sufficient to increase women's opportunity to own and control land and other collateral, resources and services.

Access to land via state programs of land distribution and land titling programs has also become more gender-egalitarian over the past decades. The most common

measure has been adoption of mandatory joint titling of land to couples either in programs of state land adjudication or in land titling programs. Yet, joint ownership of land tends to take places in those areas with more economic dynamism. In these areas, women are also younger and more educated compared to women in other areas of the country, and can arguably negotiate land rights with their husbands in better terms.

Marital status critically affects women's economic rights regarding land ownership. The highly precarious situation of rural women in de-facto unions is a serious concern. The land tenure situation of women in peasant and native communities is particularly complicated. On the one hand, customary laws can retard the enforcement and spread of improvements that benefit women in statutory law. On the other hand, customary law may provide better implicit protection to common law wives.

The differences in the patterns of female land ownership and the differences in the factors associated with each pattern suggest that the improvement of women's conditions with respect to assets will require a multidimensional approach, with actions taken in several fronts but perhaps not with the same uniform intensity. In some regions it might be critical to emphasize the provision of education as an instrument to improve women's ownership of land; in other regions the most effective way might be to advance women's rights might be to furnish public offices to process joint titles.

Table 1.1: Incidence of Individual Female Agrarian Producers by Region

	Incidence			Geographic Distribution		
	CENAGRO 1994	ENAHO 2008	CENAGRO 2012	CENAGRO 1994	ENAHO 2008	CENAGRO 2012
Costa Norte	16.7%	28.0%	18.2%	8.2%	13.6%	9.0%
Costa Centro	26.2%	32.4%	31.1%	3.0%	5.3%	3.2%
Costa Sur	25.0%	29.0%	29.6%	2.2%	1.4%	2.2%
Sierra Norte	18.3%	21.1%	32.1%	11.3%	13.5%	13.3%
Sierra Centro	23.7%	27.0%	26.3%	34.7%	27.7%	32.6%
Sierra Sur	22.0%	27.1%	27.1%	30.8%	25.9%	30.8%
Selva	9.0%	14.3%	10.2%	9.1%	11.5%	7.9%
National Level	25%	20%	30%	100%	100%	100%

Source: Peru 1994 CENAGRO, 2008 ENAHO, 2012 CENAGRO.

Table 1.2: Illiteracy Rates of Agrarian Producers by Region

	Illiterate Women as % of All Women Producers	Illiterate Men as % of All Men Producers	Illiteracy Gap
Costa Norte	43.8%	27.6%	16.2%
Costa Centro	65.9%	23.9%	42.0%
Costa Sur	46.9%	37.7%	9.2%
Sierra Norte	57.7%	31.3%	26.4%
Sierra Centro	71.0%	33.0%	38.0%
Sierra Sur	77.1%	32.8%	44.3%
Selva	57.1%	29.7%	27.4%
National Level	65.5%	31.0%	34.5%

Source: Peru 2008 ENAHO

Table 1.3: Land Acquisition by Region

	Inheritance			Market Purchase		
	Women	Men	Total	Women	Men	Total
Costa Norte	56%	19%	22%	20%	27%	26%
Costa Centro-Sur	52%	21%	27%	15%	41%	36%
Sierra Norte	55%	36%	39%	38%	56%	53%
Sierra Centro	82%	66%	70%	12%	22%	20%
Sierra Sur	70%	47%	53%	27%	42%	38%
National Level	71%	46%	51%	21%	36%	33%

Source: Zegarra / GRADE 1999

Table 1.4: Marital Status of Agrarian Producers by Region

	Common-Law (♀ + ♂)	Married (♀ + ♂)	Widow/Widower (♀ + ♂)
Costa Norte	31.3%	44.1%	6.4%
Costa Centro	26.0%	54.0%	5.4%
Costa Sur	24.6%	51.9%	5.6%
Sierra Norte	37.2%	37.7%	10.2%
Sierra Centro	21.6%	50.0%	14.4%
Sierra Sur	21.1%	52.0%	15.5%
Selva	46.4%	32.9%	5.3%
National Level	30.1%	44.7%	10.7%

Source: Peru 2008 ENAHO

CHAPTER 2

WOMEN'S OWNERSHIP OF LAND IN MODERN PERU: CHARACTERISTICS AND EMPIRICAL ESTIMATION OF DETERMINANTS

2.1 Introduction

In Peru, as in many other countries, women have progressively gained formal land rights over time, particularly in the last four decades. This progress has not spread uniformly because of varied historical, institutional, socioeconomic and regional factors, which in turn have resulted in heterogeneous likelihoods and patterns of female land ownership in Peru. This essay searches for the specific causes of the extent of women's ownership of land within their households, defined as the percentage of owned land that is owned by women, alone (individual ownership) or sharing the title with their husbands (joint ownership).

I assert that local economic development, particularly development that contributes to household wealth accumulation, promotes joint ownership for women for three reasons. First, household wealth has a positive effect on land purchases, which in turn have a positive effect on land ownership. Second, higher wealth is associated with higher probability of formal titling. A third, less straightforward reason concerns the positive effect of wealth on inheritance, which in turn happens to have a positive effect on joint ownership of land. Inheritance is not a likely source of joint land ownership. Indeed, under Peruvian law inherited land, or any inheritance, even during marriage, is the sole property of the inheritance recipient. About half of parcels with joint titles, however, were acquired through inheritance, that is, the spouses declared that originally

they brought their individually owned (inherited) parcels to the marriage, although the title for the land ended up being joint. While, as discussed later in the essay, this is related to the specifics of the titling process in Peru, it nonetheless establishes the connection between household wealth, inheritance, and joint ownership. Geographic variation also plays a significant role, not only because of differences in levels of economic development, but also due to cultural and historical traditions.

It is more difficult to estimate the determinants of individual female land rights, because no single women household heads without land, and few women household heads in couples are included in the sample to provide a basis of comparison. However, my descriptive analysis shows that wealth plays a less significant role for women sole owners of their pieces of land. These are predominantly widows who have outlived their husbands and inherited property from them.

The remainder of this essay consists of five sections. Section 2.2 introduces the data for this study and carries out a thorough examination of the Peru 2000 Living Standards Measurement Survey (LSMS) methodology for identifying land rights holders. After specifying what information on formal land ownership is available and what information is unfortunately missing, Section 2.3 describes the main features that characterize both joint and individual female land rights (FLR). This section also discusses the relationship between female land ownership and household wealth.

The next two sections deal with the estimation of the determinants of FLR and substantiate that such determinants differ for joint titles and individual titles. Section 2.4 deals with women in married couple households and empirically estimates the determinants of joint land ownership, in particular the effect of household wealth on

women's likelihood of acquiring formal land rights shared with their husbands or common-law partners. Section 2.5 focuses not on widows but on women in couples with individual land rights. Finally, I offer conclusions in Section 2.6.

2.2 Defining and measuring FLR with limited data: Representativity concerns

There is little information about land ownership in Peru. My data come from the Living Standards Measurement Surveys (LSMS), well-known national level household surveys carried out in many developing countries under the auspices of the World Bank since the early 1980s.[1] In Peru, the LSMS surveys were launched in 1985; and continued in 1991, 1994, 1997, and the most recent one is for the year 2000. These surveys regularly include information on family structure, housing conditions, ownership of assets, and access to public services. Data on a wide variety of demographic and economic outcomes at the individual level for household members are also collected on a regular basis.

The Peru 2000 LSMS covered the entire country and collected information for a total of 3,977 households, rural and urban. For the purposes of this research, only rural landed households where it is possible to determine the sex of the title holder are relevant, which leaves a working sample consisting of a cross-section of 592 households.

[1] The LSMS were established by the World Bank "to explore ways of improving the type and quality of household data collected by government statistical offices in developing countries. The objectives of the LSMS were to develop new methods for monitoring progress in raising levels of living, to identify the consequences for households of current and proposed government policies, and to improve communications between survey statisticians, analysts, and policymakers" (Deaton 1997; Grosh and Glewwe 1995 and 2000). General information is available at www.worldbank.org/lsms.

The steps followed in the construction of my sample are detailed in Appendix A, which also provides a brief description of the Peru 2000 LSMS general design, and a discussion of the definition and measurement of women's land ownership given common data restrictions.

The Peru 2000 LSMS is representative of the distribution of property ownership at the national level. Given the restrictions imposed on my sample, however, it is relevant to consider whether the individuals and households in it remain nationally representative, or whether (and in what ways) they are different from those women and households that did not make it to the sample.[2] This discussion lays the groundwork for the empirical analysis to follow and has important repercussions in the rest of the dissertation, as my study of the determinants and effects of FLR is also based on landed households with complete title information.

The 2000 version of the Peru LSMS included a set of questions, not collected in previous surveys in the country and not applied again since then, on land ownership and identity of the landowner at the parcel level, allowing the analysis of property rights with respect to gender for titled land. Besides the availability of information on ownership for each parcel comprising a household's total farmland, the 2000 version of the LSMS has the advantage of being comparatively more representative of women's land ownership than other Peruvian datasets with more observations (larger sample) but with truncated geographic and time coverage.

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[2] The LSMS has representativeness at the rural level, and possibly at the farm level. Since there are rural and urban farms, it is not fully clear whether the 'rural farm' level is representative. A non-representative final sample creates losses in terms of the reliability of the results (they could be distorted), the generalizability of the findings, the comparability of evidence across countries, etc.

The Peru 2000 LSMS followed a three-step process to define land rights.[3] The questionnaire first asked respondents whether each parcel belonged to them, another household member, or some other person. Respondents were then asked what document they had for the parcel, and the year of such document. Finally, if a title existed it was asked if such title was in the name of the household head, the spouse, both of them, another family member, another person, or in co-property with any of them. The lack of a formal document poses the problem of not being able to determine whether the land belongs to a household member at all, to a non-kin person, etc. Information on the title, nevertheless, does not necessarily translate into information about the titleholder, as the identity of the landowner is available only for land titles under the name of the principal adults (either one of them or both). The identity of the owners of parcels titled to individuals other than the household head or her/his spouse is not discernible because the questionnaire does not specify the relationship of that individual with the household head.[4] About three quarters of respondents who declare owning land report having a title for at least one of the parcels comprising the farm. Yet, almost one tenth of households with all their parcels titled have an unidentifiable titleholder, that is, they are not owned by the declared household head or his/her spouse.

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[3] The standard LSMS survey protocol instructs the farm activity module, including the land ownership and title-holding sections, is to be administered to the household member identified as the best informed regarding those issues, usually the head of the household. It is reasonable to assume that most of the respondents to the questions on land holdings and titles were men, except in the cases of widows or other single-female heads of households. The survey trusted the word of the respondents, who were not asked to show the actual title or property documents to the interviewer. Although it is impossible to rule out underreporting, there is no evidence to suggest these practices resulted in major underestimates of women's ownership of land.

[4] If the landowner is a son or a daughter, for example, the survey records him/her simply as 'other household member' but does not specify the relationship with the household head, and does not report information on sex either. Furthermore, it is not clear whether this family member is also a household member, in which case some algorithm could be devised to infer identity. See Appendix A.

For this reason, although land ownership in rural Peru certainly cannot be reduced to titled land, in this dissertation I use the term female land rights (FLR) in its measurable form, that is, the formal legal, private rights of a woman to the tenure, use and transfer of a piece of land, held by her alone or in co-ownership with her husband or common-law partner, or other family member. In addition, since knowing the sex of the landowner is possible only when the title is in the name of the household head or the spouse, my definition of FLR is circumscribed to female heads or female spouses of male heads only. It is impossible to know if these limitations mean my sample over or under estimates FLR.

The fact that the Peru 2000 LSMS questionnaire establishes legal property rights over land with clarity only when there is a formal title document raises concerns regarding the accuracy of the measures of women's ownership of land obtained using this data. One of the cases in point is the non-negligible number of women who inherited land but have no title for it.

Some key indicators to assess the differences among landed households by level of title information (identifiable title, unidentifiable title, no title) are presented in Table 2.1. A first look at this table exposes large inequalities among landed households disaggregated by title status, with households with titled land being considerably better off in relation to untitled landed households. In the absence of bias, no substantial differences between the second (and third) column and the fourth column should be appreciable. There seems to be some selection based on wealth. Untitled farms are significantly more likely to belong to poor households; they are half the size of titled farms yet comprise the same average number of parcels per farm (three), implying more

fragmentation among untitled farms. Farmers with little parcels conceivably have modest incentives to undergo the trouble and expense entailed in obtaining a title. In fact, data not presented in the table indicate that the share of households with untitled land decreases steadily with farm size, going from half of the smallest farms (less than ¼ of a hectare) to one tenth of the largest ones (more than 10 hectares).

The uneven geographic distribution of titled and untitled farm households across regions conforms to the marked regional patterns in the coverage of land titling programs in Peru discussed in the previous essay.[5] The fact that half of the cases lost due to lack of title are located in peasant or native communities is also consistent with the evolution of agrarian policy. Farm households that have acquired land through their membership in peasant communities are therefore highly likely to own untitled land.

The form in which the land was acquired is also closely linked with holding or lacking a title. Table 2.1 shows that almost two thirds of the untitled parcels were acquired through inheritance of the head of the household or his/her spouse. In contrast, market purchases are clearly more frequent among plots with complete information on the landowner; nearly one third of titled parcels were obtained by purchase, compared to only 4 percent of untitled parcels.[6] Households with the means to buy land in the market

[5] The opportunity to take advantage of governmental titling campaigns has not been equal for all households. As discussed in Essay 1, regions such as the North Sierra with a higher urban/rural ratio relative to other regions and active local governments have had more access to land titling programs (also, women in that region have an established farming tradition, etc.).

[6] Further cross tabulations of land ownership with information on the farm's tenancy regime suggest that the absence of title is in part associated with a somewhat atypical form of land acquisition. Roughly 10 percent of the 248 landowning untitled households identified their tenancy regime as "quasi ownership", a category the survey reserves for those households whose property rights are based on a family member having hold use rights over the land in question for at least 30 years.

are perhaps in better economic position to process a title, or they live in a region where markets are more extensive.

The principal adults (household heads and their spouses) are on average middle aged and poorly educated, with one fifth of them being illiterate.[7] Being located in the Southern Sierra region, belonging to a peasant community, and speaking Quechua, arguably amount to women living in a context of ignorance and poverty. Female heads/ spouses in untitled landed households are noticeably younger than the principal females in the other landed households (almost one third of principal females in untitled households are older than 45 years old, whereas almost half of those in identifiable titled households are so). Rather than a selection bias situation, this could be merely a manifestation of the so-called agricultural ladder effect: younger households start out renting/ sharecropping from relatives before inheriting (Spillman 1919).

Table 2.1 shows that the final sample is consistent with regional averages and reflects well-known biases in geographic and cultural factors, as well as biases in the coverage of Peruvian titling programs. I find these are reasonable grounds to conclude that my sample construction does not create considerable problems of selection or lack of representativity (that could occur, for example, if there were a large group of landowning women in the last column of the Table 2.1; most likely in those landed households with no title the landowners are men). In any case, I adjusted the original sampling weights to ensure the sample is representative of landowning titled farm households in the year 2000.

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[7] Women are significantly less educated than men: 37 percent of female heads/spouses are illiterate, while only 9 percent of male heads/spouses are.

Despite all these limitations, the information on plot ownership by sex contained in the Peru 2000 LSMS allows for relatively precise measures of property rights with respect to gender for documented land. In addition to providing a binary indicator for the presence or absence of FLR in a household, it makes it possible to determine the share of total farmland owned by the wife, the husband, and/or both.

2.3 Characterizing the intrahousehold distribution of land property rights in rural Peru

This section establishes the main observable differences between landed households with and without FLR, and among households with FLR, showing that households and women with FLR are a heterogeneous group. Indeed, while households with FLR tend to be better off than others along a number of dimensions, households and women with FLR cannot be treated as if they were all the same. Particular attention is given to the differences between households where both husband and wife have land rights (joint), and households where there are only individual FLR (either the case of an older widow owning all the land or a partnered woman with individual rights over at least part of the total farmland). I provide separate analyses of these two groups in Sections 4 and 5.

2.3.1 Measures and characteristics of gendered property rights within the household

Table 2.2 presents a basic description of the intrahousehold distribution of land in the sample. Around one third of households with formally defined ownership have an

adult woman with property rights in land, with this woman owning on average one fifth of the total farmland reported in her household.[8] Within the group of households with FLR, the share of total household land owned by women is two thirds.

The presence of FLR is evidently more likely in households women head alone (mostly as widows), as opposed to households in which the two principal adults are a couple and are both present (which I refer to as dual-headed households). Nonetheless, as is shown in the next section, well over two thirds of women with land rights live in dual-headed households.[9]

Households with FLR can be further disaggregated into households with joint female-male ownership of all or part of the family land, by far the most common situation, female land ownership exclusively, and households with separate individual land ownership by both women and men (mixed ownership). Among partnered landowning women, 75 percent of them share joint ownership of the land with their husbands, owning on average half of the farm's total land. Principal females also hold individual titles to land, either owning the entire farm (mostly if widowed or single heads of households), or part of the land (in dual-headed households, with both wives and husbands owning land individually). The case where women in couples own their own piece of land while their husbands own another (mixed ownership) is the least common, comprising only one tenth of the households with FLR. In these cases, women own on average slightly above one third of the total land owned (separately) by the couple.

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[8] For this measure of FLR as a continuous variable, I imputed 0.5 in the case of households where the couple shares joint ownership of the land.

[9] In contrast to other countries of Latin America, such as Paraguay and Brazil, where households with female land rights are usually those that self-declared female-headed households (Deere et al.2004).

According to Table 2.3, farms owned by women alone are the smallest (almost 3 hectares of land), with 77 percent of them being minifundios. While on average farms with joint FLR are the largest, well over one third of households with mixed ownership are in the small farm category. Overall, the incidence of households with FLR (in particular those with joint FLR) is higher in the better-off Sierra regions, which should have a positive influence on the income levels of households with FLR, as closer and more developed markets arguably signify more market-oriented farm production and more possibilities of off-farm work or better remunerated wage-employment (comparatively more prevalent in the better off regions). Northern Sierra, the most economically developed area within the highlands, is clearly the region where most of the women with FLR are located (around one third of them), and the area with the highest concentration of FLR as women with land rights represent 56 percent of all women in the region. A 41 percent of households with joint FLR are in the Northern Sierra, in contrast to only 14 percent of households without FLR. A 28 percent of women with exclusive female ownership (single women heads of households) are in the Northern Sierra; notice however that this type of FLR is almost as important in the Southern Sierra, with 22 percent of cases clustered there. It is interesting that both the wealthiest and the poorest Sierras have a similar presence of female-only individual land rights, although probably because of different reasons. In poor areas, it may be that men migrated out leaving women behind. In better off areas, they may be widows. The case of mixed female land ownership is intriguing, as despite the farms under this regime are relatively large (compared to female-only land rights, for example) they are clearly more predominant within the Southern Sierra, suggesting that wealth does not necessarily have a linear

effect on women's ownership of land. The connection between female land ownership and economic development and household wealth is resumed in the last segment of this section, after some key links between the type of FLR and the different ways in which women and men acquired land are established.

2.3.2 Forms of acquisition of female land rights

The heterogeneity within FLR becomes more evident when we consider the characteristics of the ownership itself (type and year of title, etc.), and how the land was acquired. Table 2.4 presents the forms of acquisition of FLR at the parcel level and demonstrates that individual female ownership of land is strongly associated with inheritance, whereas joint ownership is related to market purchase. Information on male parcels is included for comparative purposes and for the gender analysis of the differences.[10] Both Peruvian rural women and men acquire land principally through inheritance, conforming to the pattern reported by Deere and León (2003, 2001) for Latin America. This general pattern, however, varies noticeably by gender of the owner. Inheritance is significantly more important for women farmers than for men farmers, especially as a source of individual ownership. Over 70 percent of parcels (individually) titled to women have been acquired through inheritance, compared to half of the parcels titled to men. Market purchases are most important for joint parcels.

[10] Out of the total number of parcels where it is possible to establish ownership (formally titled parcels with identifiable owner), 13 percent are owned by women, 70 percent are owned by men, and 17 percent are jointly owned by the household head and the spouse.

Land acquisition through other means, such as via transfers from the state or community parcelization, has a relatively low incidence. The state land redistribution programs of the late 1960s may seem to have had little direct impact on women's acquisition of land, representing only 5 percent of the female parcels in the sample, but this number might be deceiving, as access to land via the agrarian reform is probably captured inaccurately in a survey undertaken in 2000. More than three decades have elapsed since the 1969 agrarian reform and the time of the survey, and land originally acquired by farmers through the reform has passed from parents to children, thereby becoming inherited land and being reported as such in the 2000 LSMS. In addition, there is an obvious age issue, as some women that gained land in the 1960s might have no longer been alive by the year the sample was taken.

Female ownership of land is associated with less formal title documents. While the level of formality (in terms of the type of title) for individual and joint FLR is similar, the contrast with male land ownership is clear. As Table 2.4 shows, almost one quarter of female parcels have as document merely a judge's certificate ("*escritura del juez")*, a recognition of ownership of comparatively lesser legal standing, while roughly only one tenth of male parcels do so. This relates to the fact that female parcels have, on average, the oldest titles. For instance, slightly over one third of female parcels were titled by 1979 or earlier, and less than one fourth were titled between 1990 and the year of the survey. In contrast, around half of male parcels and joint parcels were titled in the period 1990-2000.[11] Joint parcels are among the most recently titled (the median year is 1988) which

[11] Furthermore, 42 percent of male parcels and 35 percent of joint parcels were titled within 5 years prior to the survey, compared to only one fifth of female parcels.

is consistent with a scenario in which governmental titling programs took some specific actions to increase this kind of titling. Joint female ownership of land is clearly a recent phenomenon. I divided the year of the title in before and after 1984 because it was in that year that the Peruvian Civil Code introduced changes that favored women's acquisition of land (details of this are developed in Essay 1), and it clearly shows the effects.

The case of parcels with joint ownership is worthy of further comment as it suggests that marriage or family law probably affect the reporting of property ownership. It is puzzling that although inheritance from parents or husbands is the main form of land acquisition by women, most landowning women in the sample have joint titles. If women acquire land mostly through inheritance and if single women and single men carry their individual land rights into marriage, one would expect a somewhat large share of households with mixed ownership of land. As per Table 2.4, half of the parcels jointly owned by couples has been acquired through mechanisms that justify a joint title: market purchase (probably after marriage), and agrarian reform. The other half of parcels with joint titles, however, was acquired through inheritance. Put differently, the household reports joint title for the total farmland even though spouses brought their individually owned parcels to the marriage. A married couple jointly inheriting land is not likely; in any case, the LSMS did not offer such a situation as an optional answer. As mentioned earlier, this could be an indication that although the Peruvian law does not stipulate a common property regime in marriage and legally marriage itself does not justify that the title is joint, there are some property rights gained through marriage (in practice, marriage conveys some property rights).

This apparent mismatch between women's forms of land acquisition and their type of ownership may be a side effect of the land policies of recent years. Indeed, a plausible explanation of inheritance as a source of joint land is the indirect impact that land-titling campaigns might be having on women's acquisition of land. It is possible that land originally inherited either by the husband or the wife individually at some point but never formalized with a title or some kind of document, becomes joint land (and passes to form part of the community property of the *"conjugal couple")* because the titling of the land takes place later on, when this individual is married. As explained in Essay 1, if the individual does not have a way to prove that this land was inherited by him/her, then the law compels him/her to put the title in the name of both spouses in observation of the stipulations of the current Civil Code.

Table 2.5 illustrates that whether this is a matter of reporting or the effect of land titling programs, it appears to work to the detriment of women. Almost one third of the parcels declared as female inheritance ended up with a joint title, whereas slightly over one tenth of parcels declared as male inheritance did so. These figures are even more striking if considering that the female group includes widows. Table 2.5 also informs that parcels inherited by women and parcels inherited by men have a similar likelihood of being untitled (35 percent versus 41 percent, respectively). In other words, the information on whose names are on the title suggests that women and men are similarly likely to have a title to their plot of land and thus secure access (Doss, Grown, and Deere 2008). The gender bias, as I explain later, is not among untitled parcels but among titled parcels (say, parcels with joint title that should have been female only, etc.).

While the LSMS survey does not distinguish between land inherited from parents or from spouses, Table 2.5 offers some clues. Cross tabs on the acquisition of parcels reveal that widows and single women in the sample are more likely to have inherited land than women with permanent companions. A 50 percent of widows and 59 percent of single women acquired their land through inheritance. In contrast, only one third of the women with permanent companions acquired their land through this means. Inheritance remains as the main form of land acquisition by women in this group, although market purchases are relatively close in importance to inheritance.

2.3.3 Household wealth and female land rights

Wealthier households are more likely to have female land rights. As Table 2.6 shows, a variety of indicators of wealth, such as presence of appliances in the household, materials of the walls, number of stories (house is two-stories or more), etc., are associated with a statistically significant higher likelihood of FLR. Obviously, there is some circular causality here, as households with FLR are perhaps better off than those without in the first place. For example, the fact that inheritance is the main form of land acquisition by women, and is significant in over 40 percent of households with FLR, introduces a situation of selection for inheritance, as the fact that FLR is associated with inheritance may be one of the reasons why FLR households are more affluent than others. The causal arrow from wealth to female land ownership is probably stronger, however, because inheritance is more predominant among poor and small farms than among better-off, larger farms.

According to Table 2.6, the prevalence of poverty is clearly lower among households with FLR, which is consistent with the significant difference in the variable "business" (whether the household runs a business or not).[12] Households with and without FLR have a relatively similar average net annual household income per capita (US$678 and US$513, respectively). Though somewhat small in magnitude, this difference is statistically significant. A brief examination of the percentage of households with FLR by quintiles of households according to annual income per capita finds that households with FLR are overrepresented in the top income-per-capita quintile, which supports the argument that better off households are more likely to have FLR.[13] In the lowest income per-capita quintile, only one fifth of landed households has FLR, quite less than the one half among the richest farms. The poorest 40 percent of the sample accrues only a quarter of the households with FLR, while the richest 20 percent clusters over a third of households with FLR.

For the most part, the structure of household income does not vary significantly by FLR status. On average, households with and without FLR have a similar annual labor income, both from the farm and off-farm activities of the household members (similar in the dollar amount as well as the share that amount represents of total household income). Similarly, households with and without FLR exhibit comparable shares of agricultural production consumed at home and sold in the market, and income from sources such as

[12] Another indicator of wealth, ownership of urban property, is significantly different by type of household (although small in magnitude). Only 7 percent of households without FLR own urban property, while twice that much (14 percent) of households with FLR do so.

[13] This is consistent with Deere et al. (2004) finding about households with FLR being associated with higher net household income.

property rents and social programs show negligible differences as shares of total household income.

Although both groups of households are similarly dependent on farm income for their subsistence, and both rely on off-farm activities in about the same proportion, households with FLR depend significantly less on production for own consumption and significantly more on regular transfers as sources of income. Production for own consumption represents slightly over one quarter of the yearly income of households with FLR, it accounts for almost one third of the income of households without FLR (this difference is statistically significant). Regular transfers, a less direct indicator of wellbeing, make up a small portion of total income of households, but the share is twice as large for households with FLR.

Table 2.7 further explores the relationship between FLR and household wealth in the form of land size strata. The prevalence of FLR is nearly the same across land size categories, as is the share of farmland owned by the wife (in the case of husband/wife households) and by the widow (in the case of households headed by a lone woman).[14] Considering that, as a general rule, the prevalence of market purchases of land increases steadily with farm size, it makes sense that the likelihood of joint land ownership is appreciably higher among the larger farms (small and medium-size farms). Among microfundios and minifundios, the situation is different. Inheritance is the main form of land acquisition by women, occurring in over 40 percent of households with FLR.

[14] If considering only those wives with FLR, the share of land owned by the wife steadily decreases, from 0.63 in microfundios, to 0.53 in minifundios, to 0.47 in small farms; it goes up to 0.61 in medium-size farms.

Table 2.8 presents a summary of the different ways in which women acquire land. Among those women in households without FLR, those who are legally married are almost twice as likely to become landowners than those women living in consensual unions (43% versus 25%). This is so because of the inheritance rights that Peruvian law recognizes for wives but not for unmarried partners. In both cases, these No-FLR households are in small farms and are within the medium quintiles of income. Their geographic location does not register any particular concentration in the more affluent regions of the coast or Northern Sierra. The likelihood of owning land as a widow (having acquired the land by inheritance) is somewhat similar to the likelihood of being in a couple (legally married or not) and have acquired the land by market purchase (13% versus 16%). The big difference is that landowning widows are clearly prevalent in the Southern Sierra region and belong to the lowest income quintiles, while landowning couples are mostly located in the more affluent Northern Sierra and report significantly higher income levels. The case of women who are in a couple and own land individually (arguably acquired the land before marriage, as inheritance from their parents or a previous husband), while their husbands own land individually as well (mixed ownership) is rare. These few households are, however, among those with the highest levels of income and the largest farms.

2.4 Joint ownership of land

In this section I test the hypothesis that regional and household wealth promote joint ownership for women. Couples in married or consensual union households are approximately 90 percent of all landed households with an identifiable title holder. The sample for this section consists of those dual-headed households with joint land titles and

those dual-headed households with no FLR at all (18 percent and 75 percent of dual-headed households, respectively).[15] Out of this total of 493 households, nearly two thirds are married couples, and the remaining one third are consensual unions[16].

2.4.1 Descriptive analysis: the effect of household wealth

An examination of the information contained in Table 2.9 establishes that households with joint FLR are in a better off situation than dual-headed households with only male land rights. While the access to public services such as piped water, sewage and electricity are similar between the two types of dual-headed households (data not reported on table), main farm characteristics such as farm size and access to irrigation depict more favorable conditions for households with presence of FLR.[17] Also, households with joint FLR are less likely to be poor, have more presence of domestic appliances in the household, use stronger materials for the construction of the house in the farm, and apply more for credit. Households with joint FLR also are significantly more likely to own a business besides the farm activity, and property in an urban area, which is consistent with the small fraction of them that live in peasant communities.

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[15] The remaining 7 percent is divided almost equally between households in which both partners hold individual land titles, and households in which only the woman in the couple holds the title of the land.

[16] In preliminary regressions I disaggregated married and consensual (making consensual the default category), but the coefficients for married were not significant. I decided to keep married and consensual together.

[17] Data not reported on Table 2.9 indicate that dedication to agricultural vs. non-agricultural activities is similar across types of households (about three quarters of every type of household conducts a combination of agricultural and pecuary activities), as is proximity to market (around one hour and a half for all households).

Joint land ownership seems to be connected not so much to the individual characteristics of household members but to the characteristics of the household, specifically wealth, and to regional and contextual/environmental variables. Table 2.10 shows that while women in joint FLR households are older, they are otherwise similar to women in households with only male land rights regarding literacy, levels of education, and even household composition, except of course for a larger presence of children under 6 years old among the households with younger partnered women. Male partners of women with and without FLR are also similar among themselves.

2.4.2 Multivariate analysis of the determinants of joint ownership of land

My estimation strategy is twofold: I first estimate the determinants of the presence of joint FLR (the likelihood of having joint FLR). This is a probit model, the dependent variable is a yes/no dummy, and the regression was run for the entire sample of dual-headed households (households with husband and wife). I then probe for an answer to the question: conditional on having some FLR, what determines the percentage? For this estimation of the determinants of the extent of joint FLR I exclude the zero values in the yes/no dummy mentioned above and zoom into the households with joint FLR. In this case the regression is a conventional OLS (Ordinary Least Squares), the dependent and now continuous variable is the percentage of total farmland which is jointly held, and the sample consists of all those dual-headed households already with joint FLR.

I test the hypotheses that wealthier households are more likely to be characterized by FLR although the percentage share is lower.

2.4.2.1 Empirical strategy and specification of the model

For the first stage of the estimation the dependent variable is a binary variable that is equal to 1 whenever in the respondent's household the woman (either a wife or common-law partner) appears as a co-owner in the formal title to at least part of the total farmland as of the time of the survey. For the second stage of the estimation, the dependent variable is defined as the share of total land owned in the household that is owned jointly by the couple. This variable is different from zero whenever in the respondent's household the woman (either a wife or common-law partner) appears in the formal title to at least part of the total farmland as of the time of the survey. When the entire farmland is jointly owned, the dependent variable is equal to 1.

Both the probit and the OLS models are estimated with robust standard errors adjusted for clustering at the district level, which means that my regression allow observations to be interdependent within a district, although they must be independent between districts. This formally accounts for the possibility that land acquisition by a woman might be related to land acquisition by other women in her area (which seems to be the case).[18]

As the main indicator of wealth I am using quintiles of land size. Presumably, farms of considerable extent were purchased rather than inherited and thus the likelihood of joint title is higher. I also include number of parcels as controls for the household's wealth. Additional measures of household wealth include the materials of the floors and walls of the house, and the presence of any domestic appliance.

[18] In any case, allowing for cluster effects does not affect the estimated coefficients, only the estimated standard errors and variance-covariance matrix of the estimators.

Besides land size quintiles, the model includes variables for the main forms of land acquisition, interaction terms between the forms of acquisition and land quintiles, a dummy to account for the presence of the government through titling programs, regional dummies, and the conventional individual and household characteristics.

The variables specifying the form of acquisition of the land are constructed at the household level and take into account all the parcels the household owns (recall that acquisition was asked for every parcel). If the farmland was obtained by way of communal parcelization or state redistribution, the chances of a woman appearing in the title are much smaller than if the land was purchased in the market, or inherited. I set up three categories of land acquisition: inheritance, market purchase, and "other". The default (and therefore omitted) category is "other". I introduce inheritance in the equation of the determinants of joint FLR because, as shown in Table 2.4, inheritance as a form of acquisition accounts for virtually half of joint parcels: A 20 percent of parcels with joint title were acquired through female inheritance and 29 percent through male inheritance. Both inheritance and purchase are measured as a percentage term: Percentage of all household land inherited or purchased, respectively.

I do not include plain household income in the regressions because it does not capture a cumulative effect, like the other variables, and it is quite sensitive to specific factors that might have affected households in the year 2000. Instead, I use income per-capita quintiles, with the bottom (poorest) quintile as the base category.

Adding a dummy for land inheritance and interaction terms for inheritance and land quintiles, and a dummy of land market purchase and interaction terms for market purchase and land quintiles, allows me to compare the relative importance of these two

types of land acquisition (purchase versus inheritance) for joint land title. The intuition is that the size and significance of the eight interaction coefficients tell a story of purchase helping the chances of joint title in richer households (land is purchased together and titled jointly) but inheritance helping the chances of joint title among poor households. For example, a husband inherited land, which would make that land legally solely his, but since there was no title, when titling campaigns came that land was titled as joint. Of course, this could work also the other way: land inherited by a woman, legally solely hers, ends up titled as joint.

The interaction between land market purchase and the richest land quintiles is expected to be larger and/or more significant than the interactions with the poorer land quintiles because the richest land quintile is arguably more likely than the other quintiles to acquire land via purchase.

A "regional titling intensity" variable is introduced to control for a stronger presence of the state and titling programs in some regions more than in others.

A set of regional dummies is included to account for geographic and local factors with an influence on the wealth of the household. The Northern Sierra (the default and therefore omitted category for the geographic dummy variables) is the most economically developed. Joint FLR titles have the highest incidence in this region because of a higher presence of the state with titling programs, more economic opportunities (for both men and women) that favor income generation and the purchase of land, etc., all of which leads to expect more female land ownership in general in this area.

I also include a dummy for belonging to peasant or native communities. The large majority of these communities are located in the least economically developed regions of

the country, with considerable isolation from market mechanisms and a large component of production for subsistence. In these communities, the literature reviewed in essay 1 indicated, men are the primary recipients of the communal assets in representation of their households.

The standard variables about individual characteristics and family composition are included as well. Age and education of the female spouse: age, in years, and education measured as the number of years of schooling completed. I do not include a quadratic term for age because I assume a linear relationship between age and the probability of land ownership.[19] A dichotomous variable for the language of the female spouse is equal to 1 if she speaks Quechua or another native language, and equal to zero if she speaks Spanish. In general, Quechua-speaking people are economically disadvantaged in terms of incomes and well-remunerated jobs, which speaking Spanish is associated with better chances in the labor market. Language is also likely to pick up some cultural and institutional dimensions of the context. Quechua as the language spoken by a woman arguably signals a higher likelihood of traditional customs practiced in the household relative to Spanish-speaking households.

Regarding family composition variables, I include two: the number of working adults in the household (including the household head), and the number of children under the age of 6. More working members are conducive to more household income, which in

[19] Inspection of the data via plots of the relationship between age and FLR indicate that indeed a linear parametrization is appropriate. Age and FLR have a steady and statistically significant positive relationship of around 0.22, controlling for each and every variable in the model including geographic regions. The strength of the relationship is uniform.

turn increases the chances of buying land. When land is bought (as opposed to inherited), the chances of a joint title are higher.

Table 2.11 summarizes my selection of variables determining joint FLR and presents their average values and standard deviations.

2.4.2.2 Estimation results

Results of the estimation of the determinants of joint FLR are presented in Table 2.12. The far right column reports the most important results. The large, positive and statistically significant coefficient for total farm size confirms that household wealth does increase the likelihood of joint FLR. This effect, however, seems to subside as the household gets wealthier. Taking as base category the poorest land quintile, the positive effect of land size quintile on joint FLR significantly decreases as the size of farm increases, which implies that the effect of household wealth (in the form of land size) on the likelihood of joint FLR is stronger for the smaller farms. This suggests that the effect of household wealth on the likelihood of joint FLR is nonlinear. The exploration of the relationship between joint FLR and inheritance and market purchase of land that follows sheds light on this issue.

Both female inheritance and market purchase of land are positively and significantly related with joint FLR, yet female inheritance is more important among smaller farms (land size quintiles 2 and 3, being quintile 1 the reference category) and market purchase is more important for larger farms, as indicated by the negative signs in the interaction terms between market purchase and land size quintiles, with the reference category in this case being the wealthiest quintile (quintile 5), implying that the richest

land quintile is arguably more likely than the other quintiles to acquire joint FLR via purchase. Comparing the size and significance of the coefficients for inheritance and market purchase, the positive effect of inheritance on joint FLR is arguably larger than the positive effect of market purchase.

Regarding the estimation of the determinants of the extent of joint FLR (within the subsample of those households with joint FLR, and presented in Table 2.13), I find that once you have joint FLR, the percentage of joint FLR significantly decreases as land size decreases. That is to say, once you have joint FLR, the percentage increases with land: the richer you are the larger the extent of joint FLR in the household. Household wealth positively related to joint FLR.

2.5 Individual ownership of land

Given Peruvian law, it is rather obvious that widows in landowning farm households will end up owning land.[20] In fact, widowhood is a perfect predictor of FLR, which is the reason why this section does not deal with widows, but rather with partnered women who do own pieces of land with the title solely in their names, and so do their husbands. In other words, the sample for this section of the essay consists of those dual-headed households displaying either the absence or presence of "mixed" ownership of land. As mentioned in section 3.1, this is the least common type of women's land ownership and represents only 10 percent of all households with FLR (19 cases).

[20] Under the Peruvian default marital regime, in the case of widowhood, land (either purchased by the couple or even if inherited solely by the husband that just died) will end up in the hands of the widow, appearing in the survey as female-only land.

The dependent variable is a dummy variable that takes the value of 1 when the female spouse owns land and the title is solely under her name, and 0 otherwise. The same set of explanatory variables used in the previous section for joint FLR are used here.

The regression results presented in Table 2.14 show that individual FLR are strongly related with only two factors: Women are native Quechua speakers living within peasant communities, and inheritance as the form of land acquisition especially among the smaller farms. All these factors have a positive effect on the likelihood of partnered women owning land with an individual title. Aside from inheritance and location in peasant communities, no other factor seems to be critical for women's individual land title holding in dual-headed households. Geographic regions are irrelevant as determinants of mixed FLR because the chosen base category (Southern Sierra) is precisely the region where peasant communities are predominantly located. Interestingly enough, despite inheritance is extremely important for mixed FLR, women's age, which has a plausible strong correlation with inheritance, is not significant for mixed FLR. This suggests that the mechanisms by which women's inheritance of land takes place in peasant communities may differ in important ways from the typical inheritance from fathers or husbands. Unfortunately, little is known about the specifics of inheritance in peasant communities.

2.6 Conclusions

Peru is a country of marked economic and social inequalities, vast welfare differences and substantial variations in living standards across the country. The

relationship between wealth, and FLR, however is not linear, as wide disparities in living standards, coexist with a distribution of land ownership by gender in which both the poorest and the richest areas of the Sierra region function as hot spots, with higher than average proportion of female land rights.

This essay empirically estimated the determinants of the two distinct types of female land ownership in Peru, each of them associated with different factors depending on geographic location. In the case of joint FLR, located in the comparatively better off Northern Sierra, the key factor is household wealth which has a positively effect that increases at a decreasing rate. For individual FLR, located primarily in the worse off Southern Sierra, the critical explanatory factors have to do with the relatively unknown characteristics of the peasantry and the forms of access and management of land where long-standing and deep-rooted peasant community organizations exist.

One specific factor appears to have a direct influence on female land ownership, both joint and individually held by women in households headed by a couple: inheritance. In both cases as well, inheritance has a stronger effect among the smaller, less wealthy farms. Yet inheritance seems to be associated with cultural and regional characteristics that differ for joint FLR versus mixed FLR. In the case of joint FLR, inheritance takes place mostly in the most affluent sierra of Peru, the Northern Sierra, and in the context of private ownership of land. In contrast, the inheritance that is significant for individual land ownership occurs in the poorest sierra, the Southern Sierra, and in the context of peasant communities. While women's joint titles are related to inheritance practices, land acquisition by market purchase is also important in this case.

Women with mixed FLR are an unusual and interesting group. They are in peasant communities, are in a couple, and own land individually. Alas, they are too small a group (only 19 cases) to draw meaningful and statistically significant conclusions.

One important consideration to keep in mind is that this essay estimated the determinants of female land rights among farms with *titled* land. Looking within this particular sample might be masking the true importance of some female characteristics (such as their education or marital status) that my results deemed as not statistically significant. For example, among farms with titled land, a woman married vs. in common-law union makes no difference for FLR. The first essay in this dissertation, however, showed that a woman in common-law union faces a more precarious and vulnerable situation with regards of her acquisition of land rights. In my opinion, both findings are not irreconcilable because most likely a woman's marital status is a significant determinant of female untitled land. Not being married might be an important factor affecting the high incidence of untitled land for women. Unfortunately, my database does not allow the estimation of the determinants of women's land being titled because in the absence of a title is impossible to establish the identity of the landowner. Education is another variable likely to be important for titling versus no-titling of women's land. More recent databases, in particular those of that are constructed to monitor de progress of the national titling programs, have collected better information in this respect (who the landowner is even if the land has no title). The problem with these databases is that they are not nationally representative, as they are collected as the titling programs progress and in the areas where the titling programs are taking place.

Table 2.1: Inequality among Landed Households, by Title Status

	All Landed	Identifiable Title	Unidentifiable Title	No Title
	b/sd	b/sd	b/sd	b/sd
Operational farm size	3.2	3.8	2.9	1.8
(in hectares)	(6.9)	(7.9)	(8.1)	(3.2)
Average parcel area (in hectares)	2.1	2.5	1.8	1.0
	(6.2)	(7.1)	(6.0)	(2.7)
Prevalence of poverty	0.62	0.59	0.53	0.71
	(0.49)	(0.49)	(0.50)	(0.45)
Sierra North	0.16	0.21	0.09	0.05
Sierra Center	0.25	0.25	0.53	0.19
Sierra South	0.28	0.21	0.00	0.50
Other regions(Costa & Selva)	0.31	0.33	0.38	0.27
	1	1	1	1
Principal woman speaks Quechua	0.48	0.42	0.45	0.62
	(0.50)	(0.49)	(0.50)	(0.49)
Location in peasant communities	0.27	0.18	0.01	0.51
	(0.44)	(0.39)	(0.10)	(0.50)
Average age of principal woman	43.5	44.9	44.4	40.1
	(15.4)	(15.2)	(18.9)	(14.5)
Female literacy rate	0.67	0.63	0.79	0.72
	(0.47)	(0.48)	(0.41)	(0.45)
N	882	592	55	235
Parcel acquired by:				
Inheritance	0.57	0.54	0.60	0.65
Market purchase	0.20	0.31	0.11	0.04
State land redistribution	0.10	0.08	0.07	0.12
Squatter	0.05	0.02	0.10	0.08
Community distribution	0.08	0.05	0.12	0.11
	1	1	1	1
N	2006	1248	90	668

Source: Peru 2000 LSMS
Note: Only households with principal female present.

Table 2.2: Formal Presence of Female Land Rights in the Household

	All landed households[1]	Dual-headed households	Single-female headed hholds	Diff
	b/sd	b/sd	b/sd	b/se
Prevalence of FLR	0.34	0.27	0.91	-0.64
	(0.47)	(0.44)	(0.29)	(0.04)***
Average % of total farmland female owned	0.22	0.14	0.90	-0.76
	(0.35)	(0.26)	(0.29)	(0.04)***
Average farm size (in hectares)	3.8	4.1	2.1	1.9
	(7.87)	(8.18)	(4.00)	(0.51)***
N	592	529	63	
Types of Female Land Rights				
Exclusive female ownership[2]	0.38	0.13	0.99	-0.86
	(0.49)	(0.34)	(0.10)	(0.03)***
Mixed ownership[2]	0.08	0.12	0.01	0.11
	(0.28)	(0.33)	(0.10)	(0.03)**
Joint ownership	0.54	0.75	0.00	0.75
	(0.50)	(0.43)	(0.00)	(0.04)***
Average % of total farmland female owned (among households with FLR)	0.66	0.53	0.99[3]	-0.46
	(0.27)	(0.21)	(0.05)	(0.02)***
Average farm size (in hectares)	3.7	4.4	2.2	2.1
	(7.20)	(8.04)	(4.16)	(0.73)**
N	187	130	57	

Source: Peru 2000 LSMS

[1]This table includes only landed households in which FLR is formally defined. It excludes those households with no female adult present (single-male headed households).

[2]In both cases here, women hold titles in their (individual) name. In single female-headed households the adult female usually owns all the land, and in dual-headed households both spouses own land individually (separate parcels).

[3]It is not 100 percent because in a few households some other family member (but not a husband) owns a small part of the land.

+ $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 2.3: FLR at the Household Level, by type of land ownership

	All households w/FLR	Female Only[1]	Mixed[2]	Joint	Male only (for comparison)
	b/sd	b/sd	b/sd	b/sd	(w/o FLR)
Farm size (in hectares)	3.7	2.6	3.6	4.6	3.9
	(7.2)	(5.8)	(2.7)	(8.4)	(8.2)
Microfundios[3]	0.08	0.12	0.09	0.05	0.09
Minifundios[3]	0.70	0.77	0.53	0.68	0.66
Small farms[3]	0.16	0.07	0.38	0.19	0.18
Medium farms[3]	0.06	0.04	0.00	0.08	0.07
	1	1	1	1	1
Poverty level	0.48	0.47	0.56	0.51	0.65
	(0.50)	(0.50)	(0.51)	(0.50)	(0.48)
Costa	0.11	0.14	0.17	0.08	0.10
Sierra North	0.34	0.28	0.18	0.41	0.14
Sierra Center	0.20	0.17	0.18	0.23	0.28
Sierra South	0.18	0.22	0.28	0.14	0.22
Selva North	0.06	0.08	0.06	0.05	0.16
Selva Center-South	0.11	0.11	0.13	0.10	0.10
	1	1	1	1	1
N	187	75	18	94	405

Source: Peru 2000 LSMS

This table includes only landed households in which FLR are defined.

[1] Women hold titles in their (individual) name. This column includes only single female-headed households.

[2] Women hold titles in their (individual) name. This column includes only dual-headed households where both spouses own land individually (separate parcels).

[3] Following the criteria used by Deere (1990) in her study in Northern Peru, I use four farm categories based on size: microfundios (farms with areas of less than ¼ hectare), minifundios (farms between ¼ and 3½ hectares), small farms (farms between 3½ and 10 hectares), and medium-size farms (farms larger than 10 hectares). Deere (1990) points out that back in the 1970s, minifundios were generally considered to be those farms with 3.5 hectares or less (the minimum it would take to generate subsistence from the farm). Other authors have defined minifundios in Peru as those with less than 5 hectares. My sample is comprised of 44 microfundios (9 percent of total weighted sample); 342 minifundios (67 percent of total weighted sample); 136 small farms (17 percent of total weighted sample); and 70 medium-size farms (7 percent of total weighted sample).

Table 2.4: Forms of Land Acquisition at the Parcel Level

	Parcels w/ Identifiable Owner	Female Parcels[1]	Joint Parcels	Male Parcels
Form of Land Acquisition				
Female inheritance	0.12	0.53	0.22	0.02
Male inheritance	0.42	0.18	0.29	0.50
Market purchase	0.31	0.22	0.44	0.28
State land redistribution	0.08	0.05	0.05	0.10
Community distribution & other	0.07	0.02	0.00	0.10
	1	1	1	1
Types of Titles				
Registered title	0.28	0.26	0.34	0.26
PETT title/unregistered title	0.30	0.27	0.26	0.31
Title of possession, private	0.04	0.04	0.00	0.05
Title of possession, peasant community	0.14	0.10	0.11	0.16
Document of sale	0.04	0.04	0.05	0.04
Judge's certificate	0.15	0.24	0.20	0.12
Other	0.05	0.05	0.04	0.06
	1	1	1	1
Year of Titling				
1984 and later	0.63	0.46	0.60	0.66
Before 1980	0.26	0.39	0.24	0.25
During 1980s	0.24	0.38	0.27	0.21
1990s & 2000	0.49	0.23	0.48	0.54
	1	1	1	1
Median Year of Titling				
Female inheritance	1985	1984	1980	1990
Male inheritance	1986	1980	1987	1987
Market purchase	1992	1972	1991	1995
State land redistribution	1989	1988	1990	1990
Squatter	1997	1970	1988	1997
Community distribution	1990	1975	1994	1990
Average	1989	1980	1988	1990
N	1248	158	202	888

Source: Peru 2000 LSMS

[1] This column includes parcels in single female-headed households, as well as in dual-headed households where both spouses own land individually (separate parcels) and hold titles in their (individual) name.

Table 2.5: Title Information at the Parcel Level

	All	Female Inheritance	Male Inheritance	Market Purchase	State redistribution	Squatter/ other	Parcelization
	b/sd	b/sd	b/sd	b/sd	b/sd	b/sd	b/sd
Female parcel	0.13	0.55	0.06	0.09	0.08	0.02	0.04
Male parcel	0.70	0.14	0.82	0.66	0.82	0.95	0.95
Joint parcel	0.17	0.31	0.12	0.25	0.10	0.03	0.01
	1	1	1	1	1	1	1
Female Illiteracy rate	0.38 (0.49)	0.40 (0.49)	0.39 (0.49)	0.40 (0.49)	0.36 (0.48)	0.37 (0.49)	0.29 (0.46)
Poverty incidence	0.61 (0.49)	0.39 (0.49)	0.74 (0.44)	0.51 (0.50)	0.49 (0.50)	0.86 (0.35)	0.65 (0.48)
Average age of principal woman	45.6 (14.9)	51.8 (13.4)	42.6 (14.2)	48.0 (15.8)	47.5 (13.3)	49.4 (12.0)	35.7 (12.7)
Woman speaks Quechua	0.50 (0.50)	0.55 (0.50)	0.62 (0.49)	0.29 (0.46)	0.52 (0.50)	0.26 (0.44)	0.67 (0.47)
Household headed by couple	0.91 (0.29)	0.61 (0.49)	0.96 (0.19)	0.93 (0.26)	0.96 (0.20)	0.98 (0.13)	0.96 (0.20)
Principal woman							
Common law union	0.25	0.19	0.27	0.26	0.22	0.29	0.21
Married	0.66	0.42	0.69	0.67	0.74	0.69	0.75
Widow/divorced	0.08	0.32	0.04	0.07	0.04	0.02	0.04
Single	0.01	0.07	0.00	0.00	0.00	0.00	0.00
	1	1	1	1	1	1	1
N	1248	135	454	402	134	39	84
Share of parcels without title	0.36 (0.01)[1]	0.35 (0.03)[1]	0.41 (0.02)[1]	0.07 (0.01)[1]	0.44 (0.04)[1]	0.62 (0.05)[1]	0.53 (0.04)[1]
N	668	79	296	36	70	117	70

Source: Peru 2000 LSMS

[1] Numbers in parenthesis are the linearized standard errors of column proportions.

Table 2.6: Female Land Rights and Household Wealth

	All Identif b/sd	Hholds w/FLR b/sd	Hholds w/o FLR b/sd	Diff[1] b/se
Structure of Household Y				
Net farm income	0.21	0.22	0.20	0.02
Off-farm income from employment	0.31	0.32	0.30	0.01
Production for own consumption	0.30	0.26	0.32	-0.05*
Regular transfers & other	0.06	0.09	0.04	0.05**
Social programs & property rents	0.13	0.11	0.14	-0.03
	1	1	1	
Prevalence of poverty	0.59	0.48	0.65	0.17
	(0.49)	(0.50)	(0.48)	(0.05)**
Any appliance present	0.34	0.45	0.28	0.17
in the household	(0.47)	(0.50)	(0.45)	(0.05)***
House has two stories	0.30	0.36	0.26	0.10
or more	(0.46)	(0.48)	(0.44)	(0.05)*
Household runs a business	0.30	0.40	0.25	0.15
	(0.46)	(0.49)	(0.43)	(0.05)**
Income per capita (YPC) quintiles				
Bottom YPC quintile	0.18	0.12	0.21	-0.11**
Second YPC quintile	0.19	0.13	0.22	-0.09*
Middle YPC quintile	0.20	0.19	0.21	-0.02
Fourth YPC quintile	0.22	0.23	0.21	0.02
Top YPC quintile	0.21	0.33	0.15	0.18***
	1	1	1	
Household is located in	0.18	0.12	0.22	-0.10
peasant community	(0.39)	(0.32)	(0.41)	(0.04)**
N	592	187	405	

Source: Peru 2000 LSMS

Notes: [1] Unpaired (two-sample) t test on the equality of means.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 2.7: Female Land Rights by Farm Size

	Full Sample b/sd	Micro fundios b/sd	Mini fundios b/sd	Small Farms b/sd	Medium Farms b/sd
FLR	0.34	0.30	0.35	0.32	0.31
	(0.47)	(0.46)	(0.48)	(0.47)	(0.46)
Degree of FLR	0.22	0.22	0.24	0.18	0.20
	(0.35)	(0.39)	(0.36)	(0.29)	(0.34)
N	592	44	342	136	70
Within Households with FLR					
Distribution by size	100%	7%	62%	20%	11%
FLR female only	0.38	0.56	0.41	0.17	0.27
FLR mixed	0.09	0.10	0.07	0.21	0.00
FLR joint	0.53	0.34	0.52	0.62	0.73
	1	1	1	1	1
N	187	13	117	37	20
<u>Female Parcels</u>					
Inherited	0.71	0.48	0.80	0.66	0.10
Purchased	0.22	0.36	0.16	0.20	0.81
Other	0.07	0.16	0.04	0.14	0.09
	1	1	1	1	1
N	158	11	103	30	14
<u>Joint Parcels</u>					
Inherited	0.51	0.66	0.56	0.48	0.06
Purchased	0.44	0.17	0.40	0.47	0.79
Other	0.05	0.17	0.04	0.05	0.15
	1	1	1	1	1
N	202	8	118	46	30

Source: Peru 2000 LSMS

Table 2.8: Pathways to FLR

		N	%
"Potential FLR"	Partnered woman, formally married. No FLR now, but she will inherit.	256	43%
	Partnered woman, in consensual union. No FLR now, and she will not acquire FLR from inheritance.	149	25%
Actual FLR	Woman is a widow. She owns the entire farm land.	75	13%
	Woman came to marriage with land, and retained FLR.	18	3%
	Woman in married or in consensual union and acquired land jointly with her husband (land was acquired via market purchase only).	94	16%
		592	100%

Source: Peru 2000 LSMS

Table 2.9: Characteristics of Dual-Headed Households, by Presence of Joint FLR

	All Dual-headed Hhs	with Joint FLR	without Joint FLR
	b/sd	b/sd	b/sd
Farm size (in hectares)	3.99	4.50	3.85
	(8.23)	(8.44)	(8.18)
Dummy for Irrigation	0.56	0.62	0.55
	(0.50)	(0.49)	(0.50)
Household located in peasant community	0.19	0.10	0.22
	(0.39)	(0.30)	(0.41)
Household is poor	0.62	0.51	0.65
	(0.49)	(0.50)	(0.48)
Presence of any appliance in the household	0.32	0.46	0.28
	(0.47)	(0.50)	(0.45)
Roof concrete/wood/teja	0.47	0.55	0.45
Roof calamina/eternit	0.40	0.36	0.41
Roof hay or other	0.13	0.09	0.13
	1	1	1
Applied for credit	0.09	0.15	0.07
	(0.29)	(0.36)	(0.26)
Family owns business	0.29	0.46	0.25
	(0.46)	(0.50)	(0.43)
Family has urban property	0.09	0.16	0.07
	(0.28)	(0.37)	(0.25)
Sierra North	0.20	0.41	0.14
Sierra South	0.20	0.14	0.22
Other regions	0.60	0.45	0.64
	1	1	1
N	493	94	399

Source: Peru 2000 LSMS

Table 2.10: Individual Characteristics within Dual-Headed Households, by Presence of Joint FLR

	All Dual-headed Hhs	with Joint FLR	without Joint FLR
	b/sd	b/sd	b/sd
Woman' s age	42.59	44.31	42.12
	(14.02)	(13.70)	(14.09)
Woman older than 45	0.40	0.48	0.38
Male age	46.66	48.03	46.28
	(14.56)	(13.87)	(14.74)
Age difference between principal adults	4.06	3.72	4.16
	(6.07)	(4.92)	(6.35)
Woman's years schooling	3.94	4.16	3.88
	(3.51)	(3.69)	(3.46)
Male years schooling	6.16	6.65	6.02
	(3.57)	(3.61)	(3.56)
Schooling difference between principal adults	2.21	2.49	2.13
	(3.06)	(3.33)	(2.98)
Woman speaks Quechua	0.43	0.42	0.44
	(0.50)	(0.50)	(0.50)
Woman Quechua x peasant community	0.13	0.07	0.14
	(0.33)	(0.26)	(0.35)
Ratio independence	0.63	0.67	0.62
	(0.24)	(0.26)	(0.23)
Number children under 6 years old	0.83	0.67	0.87
	(0.88)	(0.78)	(0.91)
N	493	94	399

Source: Peru 2000 LSMS

Table 2.11: Descriptives of Regression Variables for the Determinants of Joint FLR

	All Dual-headed Hhs b/sd	with Joint FLR b/sd	without Joint FLR b/sd
Dependent variable			
Dummy joint land	0.22	1.00	0.00
	(0.41)	0.00	0.00
Independent variables			
Woman's age	42.59	44.31	42.12
	(14.02)	(13.70)	(14.09)
Male partner's age	46.66	48.03	46.28
	(14.56)	(13.87)	(14.74)
Female head schooling	3.94	4.16	3.88
	(3.51)	(3.69)	(3.46)
Male head schooling	6.16	6.65	6.02
	(3.57)	(3.61)	(3.56)
Woman is married	0.68	0.71	0.68
	(0.47)	(0.46)	(0.47)
Woman speaks Quechua	0.43	0.42	0.44
	(0.50)	(0.50)	(0.50)
Woman Quechua and lives in peasant community	0.13	0.07	0.14
	(0.33)	(0.26)	(0.35)
Number household members	5.41	5.15	5.48
	(2.07)	(2.02)	(2.08)
Ratio independence	0.63	0.67	0.62
	(0.24)	(0.26)	(0.23)
Number sons 6 to 15 years old	0.74	0.48	0.81
	(0.91)	(0.65)	(0.95)
Number sons 16 years old to more	0.47	0.55	0.45
	(0.76)	(0.84)	(0.74)
Location is peasant communities	0.19	0.10	0.22

	(0.39)	(0.30)	(0.41)
Households is poor	0.62	0.51	0.65
	(0.49)	(0.50)	(0.48)
Income quintile 1	0.23	0.25	0.22
Income quintile 2	0.22	0.11	0.25
Income quintile 3	0.21	0.12	0.23
Income quintile 4	0.20	0.28	0.18
Income quintile 5	0.15	0.24	0.13
Family has savings	0.04	0.09	0.03
	(0.21)	(0.28)	(0.18)
Presence of any appliance in the household	0.32	0.46	0.28
	(0.47)	(0.50)	(0.45)
Floor material: dirt or other	0.80	0.77	0.81
Roof material: calamina/eternit	0.40	0.36	0.41
Roof material: hay or other	0.13	0.09	0.13
House has two stories or more	0.30	0.42	0.27
	(0.46)	(0.50)	(0.44)
Access to piped water	0.47	0.51	0.45
	(0.50)	(0.50)	(0.50)
Access to electricity	0.40	0.33	0.41
	(0.49)	(0.47)	(0.49)
Access to latrine	0.12	0.18	0.11
	(0.33)	(0.38)	(0.31)
Dummy Coast	0.10	0.08	0.10
Dummy Sierra Center	0.27	0.23	0.28
Dummy Sierra South	0.20	0.14	0.22
Dummy Selva North	0.14	0.05	0.16
Dummy Selva Center South	0.10	0.10	0.10
Farm size (in hectares)	3.99	4.50	3.85
	(8.23)	(8.44)	(8.18)

Number of parcels	2.64	2.83	2.59
	(1.85)	(1.90)	(1.84)
Land quintile in joint2	0.24	0.24	0.24
Land quintile in joint3	0.21	0.20	0.22
Land quintile in joint4	0.14	0.14	0.14
Land quintile in joint5	0.13	0.15	0.12
Female inheritance	0.09	0.22	0.05
	(0.28)	(0.42)	(0.22)
Male inheritance	0.46	0.35	0.49
	(0.50)	(0.48)	(0.50)
Female Quechua and inherited land	0.05	0.12	0.03
	(0.22)	(0.32)	(0.17)
Fem inheritance x land quintile 2	0.02	0.05	0.01
Fem inheritance x land quintile 3	0.03	0.08	0.01
Fem inheritance x land quintile 4	0.01	0.03	0.00
Fem inheritance x land quintile 5	0.01	0.03	0.01
Market purchase of land	0.33	0.46	0.30
	(0.47)	(0.50)	(0.46)
Land market purchase x quintile 1	0.07	0.10	0.06
Land market purchase x quintile 2	0.09	0.14	0.08
Land market purchase x quintile 3	0.07	0.08	0.07
Land market purchase x quintile 4	0.05	0.06	0.04
N	493	94	399

Source: Peru 2000 LSMS

Table 2.12: Determinants of Joint FLR in Dual-Headed Households, marginal effects

	Coefficient me100	Coefficient me100	Coefficient me100	Coefficient me100
Individual and family composition characteristics				
Age female	-0.014	0.08	-0.367	-0.371
Age male	-0.205	-0.29	0.081	0.022
Female schooling	0.559	0.761	0.345	0.223
Male schooling	0.731	0.441	0.857	0.829
Woman is married (d)	4.037	3.071	0.358	0.437
Woman speaks Quechua (d)	31.171***	33.572***	31.050***	31.669***
Quechua x community (d)	-14.248+	-14.508*	-15.061**	-13.702**
N members in household	0.49	0.306	0.154	-0.098
Ratio independence	9.978	8.126	2.307	2.754
N sons 6to15 years old	-7.264**	-7.185**	-7.759**	-7.098**
N sons 16 to more years old	3.292	3.7	4.844+	5.929*
Dwelling characteristics and income quintiles				
Location in peasant community (d)	4.452	4.341	8.11	8.633
Household is poor (d)	-3.318	-5.663	-4.909	-5.312
Income quintile 2 (d)	-10.534*	-9.657*	-10.961**	-10.408**
Income quintile 3 (d)	-11.064*	-9.923*	-10.972**	-10.916**
Income quintile 4 (d)	0.435	0.604	-2.493	-3.058
Income quintile 5 (d)	4.604	4.001	-0.42	-0.249
Household savings (d)	13.429	12.204	11.079	9.223
Any appliance in household (d)	4.483	3.959	7.491	6.408
Floor of dirt or other (d)	-3.808	-4.114	-1.595	-1.843
Roof calamina or eternit	6.68	7.83	14.365*	13.678*
Roof of hay, estera (d)	5.245	2.832	11.483	14.427
House is two stories or more (d)	4.12	5.991	3.873	4.149
Access to piped water (d)	-5.073	-6.556	-4.533	-2.736
Access to electricity (d)	-1.491	-2.095	-0.539	-0.53
Access to latrine (d)	4.921	3.579	4.945	1.746
Dummy Costa North (d)	-17.079***	-15.998***	-15.523***	-13.745***
Dummy Costa Center-South (d)	-16.900***	-15.872***	-14.746***	-13.334***
Dummy Sierra Central (d)	-31.932***	-33.813***	-32.636***	-31.705***
Dummy Sierra South (d)	-23.842***	-25.035***	-24.004***	-22.666***
Dummy Selva North (d)	-19.724***	-19.208***	-19.229***	-18.041***
Dummy Selva Center-South (d)	-19.122***	-18.569***	-18.179***	-16.840***

Land and land size quintiles (lowest is the base category)				
Number of parcels		2.553*	2.202+	2.459*
Land quintile 2 in joint (d)		-4.184	-8.157	-11.998*
Land quintile 3 in joint (d)		-7.961+	-12.750***	-15.634***
Land quintile 4 in joint (d)		-8.860+	-8.880+	-11.499**
Land quintile 5 in joint (d)		-5.414	-8.335	-12.584*
Inheritance of land & interactions between land inheritance and land quintiles				
Female inheritance (d)			8.155	11.795
Male inheritance (d)			-8.910*	-0.497
Quechua x female inheritance (d)			-7.732	-7.727
Fem inherit x land quintile 2 (d)			69.424**	73.052***
Fem inherit x land quintile 3 (d)			71.500***	76.014***
Fem inherit x land quintile 4 (d)			49.028	57.492+
Fem inherit x land quintile 5 (d)			22.899	37.395
Market purchase of land and interactions between market purchase and land quintiles				
Land acquired by market purchase				25.103+
Acq by purchase x landquitile 4 (d)				-2.498
Acq by purchase x landquitile 3 (d)				-1.81
Acq by purchase x landquitile 2 (d)				-4.285
Acq by purchase x landquitile 1 (d)				-11.654**
Mean of Outcome	0.2	0.2	0.2	0.2
Pseu.R-squared	0.24	0.25	0.32	0.34
N	493	493	493	493

Source: Peru 2000 LSMS
Marginal effects; (d) for discrete change of dummy variable from 0 to 1
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 2.13: Determinants of the Extent of Joint FLR in Dual-Headed Households, marginal effects

	Coefficient b	Coefficient b	Coefficient b
Individual and family composition			
Age female	-0.654	-0.925	-0.942
Age male	0.534	0.432	0.216
Female years of schooling	-0.278	-0.918	-0.303
Male years of schooling	1.306	1.267	0.076
Women is married (d)	6.189	4.329	2.096
Woman speaks Quechua (d)	41.808***	41.145***	46.948***
Female speaks Quechua x community (d)	-85.968**	-62.054***	-59.163*
Number of hh members		4.759+	4.049
Independence ratio		29.119	25.726
N sons 6 to15 years old		-13.111*	-16.244*
N sons 16 years old and more		1.924	4.984
Dwelling characteristics and income quintiles			
Hh located in peasant community (d)	59.465***	45.752*	36.999
Household is poor (d)	-10.547	-9.889	-15.768
Household has savings (d)	25.817*	24.824+	18.678
Presence of any domestic appliances (d)	-23.380**	-34.807***	-34.152***
Floor dirt (d)	-12.097	-14.293+	-18.526+
Roof calamina or eternit (d)	-4.246	-3.778	-4.038
Roof hay or other (d)	-8.566	-10.939	-9.69
House is two stories or more (d)	-25.848*	-36.168***	-39.000***
Income quintile 2 (d)		27.978*	28.699*
Income quintile 3 (d)		3.253	1.727
Income quintile 4 (d)		13.295	6.042
Income quintile 5 (d)		11.51	6.062
dummy Costa North (d)	-31.575	-33.235	-27.995
dummy Costa Center-South (d)	-37.219*	-43.505*	-45.375+
dummy Sierra Central (d)	-57.453***	-68.386***	-81.664***
dummy Sierra South (d)	-41.228**	-43.484*	-58.409**
dummy Selva North (d)	-55.315**	-66.059**	-71.293**
dummy Selva Center South (d)	-49.920*	-68.526**	-78.175**
Access to piped water (d)		12.595	12.381
Access to electricity (d)		2.132	6.231
Access to latrine (d)		4.131	4.101

Land size deciles (highest is the base category)			
Number of parcels		-3.743	-2.725
Farm size			-16.343**
Inheritance			
Percent of land from fem inheritance	-0.036	-0.139	-0.102
Presence of female inheritance (d)	-32.972+	-41.139**	-44.499*
Presence of male inheritance (d)	-6.854	-16.316	-11.07
Quechua x female inheritance (d)	10.327	19.701	30.88
Market purchase			
Land acquired by mkt purchase (d)	6.285	-3.583	-12.939
Acquired by purchase x land quintile 2 (d)	8.489	2.016	34.318
Acquired by purchase x land quintile 3 (d)	18.296	25.346	29.581
Acquired by purchase x land quintile 4 (d)	21.497	20.033	40.4
Acquired by purchase x land quintile 5 (d)	-25.104	-20.073	-15.348
Mean of Outcome	68.9	68.9	68.9
R-squared	0.49	0.58	0.64
N	130	130	130

Source: Peru 2000 LSMS
Marginal effects; (d) for discrete change of dummy variable from 0 to 1
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 2.14: Determinants of Individual FLR in Dual-Headed Households, marginal effects

	Coefficient me100	Coefficient me100	Coefficient me100	Coefficient me100
Individual and family composition variables				
Age female	0.099**	0.043	0.031	0.001
Female schooling	0.303*	0.098	0.094	-0.001
Fem speaks Quechua (d)	-1.503	-1.503	-0.599	-0.051
Fem Quechua x peasant community	99.861***	99.911***	99.840***	99.999***
Market purchase of land (d)	2.102	2.005	1.177	0.181
Female inheritance (d)	38.372**	36.100*	39.321**	1.428
Dwelling characteristics and income quintiles				
Location in peasant community (d)	-23.502***	-20.877***	-11.939***	-3.055
Dummy Costa North (d)	-1.094	-0.286	4.351	-0.012
Dummy Costa Center-South (d)	-1.168	-0.948	1.318	-0.011
Dummy Sierra Central (d)	-1.028	-0.9	0.397	-0.038
Dummy Sierra South (d)	1.044	-0.271	6.713	0.006
Dummy Selva North (d)	-1.012	-0.782	2.814	0.215
Dummy Selva Center-South (d)	0.193	-0.555	3.274	0.979
Household is poor (d)		0.452	0.568	0.051
Number of parcels			0.496*	0.024
Access to piped water (d)			-1.346*	-0.092
Access to electricity (d)			0.979	-0.008
Access to latrine (d)			1.145	0.15
N members in household			-0.035	-0.003
Inheritance				
Fem inheritance x landquintile 2 (d)				97.877***
Fem inheritance x landquintile 3 (d)				28.188
Fem inheritance x landquintile 4 (d)				85.469***
Fem inheritance x landquintile 5 (d)				38.712
Mean of Outcome	0.1	0.1	0.1	0.1
Pseu.R-squared	0.34	0.41	0.48	0.63
N	435	422	422	422

Source: Peru 2000 LSMS
Marginal effects; (d) for discrete change of dummy variable from 0 to 1
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001
(d) means variable is dummy

CHAPTER 3

FEMALE LAND RIGHTS AND THE DIVISION OF LABOR BETWEEN SPOUSES IN RURAL FARM HOUSEHOLDS IN PERU

3.1 Introduction

A number of analytical and qualitative case studies have documented the importance of formal land ownership for women's economic security and the improvement of their positions within their households (Deere and León 2001a; Deere and Doss 2006; Abraham, Gaspart, and Stevens 2005; Agarwal 1994, 2003). This expectation is rooted in the assumption that female land rights will increase women's bargaining power.[1] Redistributions of property rights to land towards women via the formal titling of their land or via the inclusion of their names as co-proprietors in deeds previously held by their husbands alone, the theory predicts, can affect the distribution of other household resources and participation in paid employment.

This essay challenges the conventional wisdom about the bargaining power hypothesis, which would make us expect a more equal distribution of domestic and market activities between the spouses that share ownership rights over the land they live in and work on. My main argument is that the impact of women's land ownership on wives and husbands' time allocation outcomes is heterogeneous and contingent upon size of the farm as well as upon the broader social and regional framework.

[1] In the context of household decision-making, bargaining power refers to the influence a household member has over a household decision in relation with the influence of other household members.

Using data on a representative sample of couples in landed and formally titled agricultural households drawn from the 2000 Living Standards Measurement Surveys (LSMS), I estimate the effect of female land rights on the time allocation decisions of couples in Peruvian rural farms households, for each spouse separately and also in relation to one another, and find that the larger the farm, the longer the hours landowning women spend working on the farm but there is no tradeoff with their housework hours, resulting in considerable increases in their weekly workloads. In contrast, the workloads of the husbands tend to decrease, significantly so among larger farms, in part via reductions in their hourly dedication to farm work.

Among minifundios, farms between ¼ and 3½ hectares, female land rights (FLR) are associated with negligible alterations in women's time allocation patterns. Among small farms, which are those between 3½ and 10 hectares, my results indicate that FLR significantly increase wives' total hours of work (paid and unpaid), both overall and relative to their husbands. FLR seem to create incentives for women to raise their participation in farm work, but there is no tradeoff with housework. Women continue to provide the bulk of housework in the household, and to that they add hours of work on the farm. These results appear to give little support to the notion that female land rights improve women's bargaining power with respect to time allocation, perhaps because in the case of rural Peru FLR do not improve women's "exit" options and cultural norms regarding female domestic work make it relatively inflexible.

Rural Peru provides an interesting case in which to look at the intrahousehold gender dynamics and test the hypothesis that land ownership affects women's time allocation because, unlike other Latin American countries where women with land rights

tend to be lone heads of households, the large majority of Peruvian female landowners are married or in a consensual union (Deere et al. 2004). Among principal women, 90 percent are partnered.[2] Divorced or single people are the exception.

This essay is organized as follows: in section 3.2 I provide an analytical framework for this study, with a brief overview of the main economic approaches to bargaining power. Comparing the stylized facts, assumptions, and theoretical predictions of these models, I examine how each of them deals with the issue of evaluating the effect of FLR on time allocation. This section also discusses the empirical evidence associated with such theoretical models, particularly regarding the role of FLR in bargaining over time allocation in Latin America.

Section 3.3 addresses a number of conceptual and methodological issues crucial in the analysis of household decision-making processes, including the problems of defining and measuring women's time use. In Section 3.4, I present my sample and examine the observed time allocation behavior of couples in Peruvian rural farm households, focusing upon the differences in the patterns of time use by FLR status and by size of the farm. Section 3.4 also seeks out the underlying factors contributing to these differences by delving into the relationship between wealth and the chosen observable time outcomes. The empirical strategy carried out in this essay to tackle the problems of endogeneity and selection bias are sketched out in Section 3.5, which also presents the results of the estimation of the effect of FLR on several outcomes of time allocation, such

[2] Principal woman, in the context of a couple, refers to the wife or spouse within a household, to distinguish her from other women that might be present in the house (daughters, aunts, nieces, granddaughters, grandmothers). In the context of a lone head of household, the principal woman refers to a mother, or a grandmother, or the woman that the other household members recognize as the main decision-maker.

as the observed workload differential between spouses and the distribution of farm work between the spouses. Lastly, in Section 3.6 I offer the contributions of my analysis and some concluding remarks.

On the one hand, female rights over land seem to promote a more gender equal distribution of farm work between spouses; on the other hand, they seem associated with a longer overall workday. If labor outcomes of landowning women are a reflection of their increased bargaining power, one interpretation of the results of this essay is that bargaining power might be happening at the cost of women's overwork. Yet, the relative length of total work day is not the only measure of bargaining power. Landowning women may have more say in household decisions, or more discretionary income, even though they work longer hours—which unfortunately cannot be assessed this with this data.

3.2 Modeling the relationship between the intrahousehold distribution of property rights, bargaining power, and family behavior

The early formalization of intrahousehold resource allocation relied on the unitary economic approach, which conceptualizes the household as an undifferentiated unit where all the members have a common set of preferences and a joint utility function (Becker 1965). Household outcomes are interpreted as results of the maximization of a unified utility function subject to a single budget constraint, containing the pooled income and factor supply for the entire household. The pooled budget constraint of the standard model implies that time, a component of the household budget, is also allocated by a joint decision. Therefore, under the standard model, family decisions are based on

factors relevant to efficiency, such as the productivity of each household member in non-market work and their market wages. The share of income or wealth of individuals within the household is not predicted to affect outcomes.

The development of bargaining models of the household challenged the foundations of this unitary approach on both theoretical and empirical grounds. The pioneer work of Manser and Brown (1980) and McElroy and Horney (1981) enriched household modeling by formalizing the heterogeneity of preferences and interests of the individuals comprising the family. The outcomes of the household are modeled as the solution to a Nash bargaining game in which each individual's fallback position or threat point is given by their exit options, i.e. their respective utilities if negotiation failed. The model typically refers to a married couple negotiating over resource allocation within the household, with the threat point for each spouse defined by their utility outside the marriage. Stronger fallback positions translate into more bargaining power in negotiations. The Nash bargaining model predicts that a redistribution of property rights of land towards women will raise women's threat point and increase their relative bargaining power. As a result, women's position at home improves, taking the form of greater participation in decision-making and/or greater control over the household's income and resources.[3]

Like the unitary model, this bargaining model assumes that household members pool resources and allocate them jointly (Doss 1996). In contrast to the unitary model,

[3] Even if FLR do not effectively lead to an increase in a woman's bargaining power, the strengthening of her fallback position and exit option may nonetheless be realized. Regardless of her abilities to bargain with her partner, a woman with land rights is in a better situation than a woman without land rights because her husband is aware that if the marriage fails she will be able to keep part of the land. This potentially translates into better conditions for the wife.

this bargaining model interprets the intrahousehold allocation of resources as a reflection of the distribution of bargaining power in the household, rather than a reflection of preferences. Allocations, hence, are dependent on the identity of the family member who generates or controls resources, and on the factors influencing the threat point of individuals. Property rights over land affect the balance of power within the household.

Subsequent developments of the bargaining framework introduced the role of social norms in the determination of intrahousehold allocations. Lundberg and Pollak (1993) developed a "separate spheres" model in which spouses bargain over distributional issues from within their socially assigned gendered spheres of action, which therefore constitute their respective fallback positions. Rather than the dissolution of the marriage, the failure of cooperation or agreement between spouses leads to a default equilibrium in which gender roles determine each individual's activities and contributions to the household. In line with this approach, some allocation outcomes are not reflections of preference or productivity differences between husband and wife, and are not achieved through bargaining power and negotiation (Lundberg and Pollak 1996).

The theory of bargaining predicts that differences in the asset endowments of wives and husbands affect the relative bargaining power of spouses during marriage depending on the division of assets upon divorce (cooperative model) or on the relative control during marriage (non-cooperative model). Early contributions to the literature on bargaining in agrarian societies emphasized the issue of ownership versus control of the land, arguing that it is not just land rights, but land rights combined with effective control over production that lead to better outcomes for women (Agarwal 1994). In that tradition, much of the empirical work on assets and bargaining power has proxied bargaining

power with assets brought to marriage or assets controlled by each spouse in marriage. Recent research, however, is turning to indicators of the value of assets to be taken upon divorce as proxies for bargaining power, with interesting results.

For the African case, for instance, Fafchamps and Quisumbing (2005) and Lim et al. (2007) had access to data sets that allowed them to create a measure for assets brought to marriage, a measure for control of assets during marriage, and a measure for assets each spouse would take with him/her in case of divorce. Both studies found that assets brought to marriage and assets controlled during marriage had no effect on household outcomes. Assets as exit option did. Presumably, in households with FLR women have more control when they are the sole owners of a piece of land (inherited from her parents, perhaps, or from a previous husband).

The separate spheres approach brings in cultural norms, and is perfectly consistent with the possibility that norms are sticky. As identities and cultural norms are difficult to change, women's ownership of land is not necessarily conducive to improvements in their status in the short run. FLR may have lagged effects; it might take years for increased bargaining power to change cultural norms.

What is the conceptual basis for the hypothesis that FLR affect time allocations through bargaining power? The standard unitary framework presupposes efficient productive resource allocation, which means that household members make decisions influenced primarily by the productivity of the farm unit. In this context, FLR should not make any difference whatsoever. In contrast, in the bargaining model, the presence of FLR in the household alters the incentives and relative bargaining power of both spouses. The wife gains influence over household decisions and she may gain a larger share of

market income which could induce her to work longer hours in paid employment in order to further increase her consumption. Alternatively, she could use the increased bargaining power to do less housework or to reduce her labor hours overall. The exact outcome is theoretically indeterminate, that is, bargaining implies that a woman has a goal regarding time use and tries to achieve it, but how do we know what this woman wants?

If a woman dislikes household work, or prefers more leisure overall, an improvement in her bargaining power should lead to a reduction in her hours of housework.[4] Yet, a growing body of literature suggests that FLR do not decrease women's time doing domestic work. One interpretation is that FLR are not conducive to the fortification of women's bargaining power and the improvement of their fallback position. Another interpretation is that notwithstanding the strengthening of women's bargaining power, social roles still assign them the bulk of the housework, or that regardless of their bargaining power women specialize in housework because of comparative advantages. As a result, women may opt for greater consumption, rather than greater leisure.

The empirical evidence throughout the world is that while bargaining power is relevant for some household outcomes, there is little flexibility of housework hours for women, regardless of their FLR status, income, wealth, and social standing. Married women in particular, landowning or not, are likely to show modest variations in their time allocations to domestic work. In a study on flower workers in Ecuador, Newman (2002) finds that when both the man and the woman work in the flower industry, the domestic

[4] This could happen via the reduction of her workload in absolute terms (less housework produced in the household) or on account of other household members sharing out in domestic activities (redistribution towards other members).

labor time of the man increases slightly, but women's time devoted to domestic work does not decline at all. For urban adults in Bolivia, the gender inequality in the allocation of time seems to be centered on the paid vs. unpaid work-time distinction. Medeiros, Osorio, and Costa (2007) describe a gender-based division of labor unequal not so much because of who does what type of work but because of how much work of each type each gender does: women's entry into the labor market generates only a partial trade-off between paid and unpaid work, as women usually end up engaging in a double shift of paid and unpaid work.

Total workload might be a better indicator of women's bargaining power, in the sense that it does not present the 'stickiness' that housework displays because of the influence of social norms. It is not possible, however, to make claims a priori about whether there is a direct or an inverse relationship between FLR and total hours worked. Furthermore, a number of other factors come into play. Smaller workloads, for example, are arguably indicators more of household wealth than of bargaining power. Everything else equal, less hours of work for either husband or wife usually denote the household is better off (as a result of the wealth effect).

It is difficult to distinguish the effects of increased assets themselves from bargaining power effects on labor supply, as the claim of a relationship between land ownership and bargaining power is complicated by problems of endogeneity, selection, and omitted variables, which poses challenges to the accurate estimation of the FLR effects. Indeed, time outcomes I interpret to be expressions of women's bargaining power (such as a redistribution of domestic work between the spouses) could actually be a wealth effect. Farms of different sizes are likely to organize and allocate their resources

in substantially different ways. For example, owning little land might mean that one or two members of the household are enough to deal with all the farm activity and the other members ought to look for work off the farm, or simply end up increasing their hours of housework. On the other hand, households with bigger land holdings might require more members to take care of the farm.

A number of studies have found that as household wealth grows, rural households tend to replace hired labor for family labor (Kabeer 2012; Crabtree 2002, de la Peña 2000; Escobal and Agüero 1999). Wealthier farms are more able than other farms to meet expenses such as hiring outside labor, sending their children to school, and/or keeping a stay-at-home wife. A wealth effect could lead wives in the more affluent households to display lower labor force participation rates and/or fewer non-domestic hours worked (perhaps the same should be observable for men, although men's labor time is less flexible). It would not be surprising, then, to find principal women engaging in more hours of housework in wealthier households in relation to poorer ones. The workload of one spouse relative to the other spouse would be a better indicator of bargaining power. However, empirical studies have shown that there are a number of economic and cultural factors weakening the FLR-BP relationship. The strength of the BP-FLR relationship is conditional on a number of factors. Land ownership probably gives women more bargaining power, but if husbands nonetheless control the households' decision-making processes due to well established cultural practices, husbands can effectively prevent their wives' control of the land, neutralizing any potential influence of FLR on household decisions.

The reverse scenario is also possible. Married women without explicit land rights can nonetheless exert control over land as a result of marriage norms and/or of laws associated with marriage which confer some legal rights over land. In the Peruvian case, however, since under the default marital regime only property acquired during the marriage is considered joint property (if not acquired via inheritance), a woman married to a man who had land prior to the marriage does not give her any rights in that land. Both the positive and negative scenarios illustrate the point that legal land ownership does not necessarily give women any additional rights— cultural norms could override property rights. Nonetheless, since there is no indirect land claim through marriage, the existence of direct claim through title matters a lot.

While plausible, FLR stand also as a problematic measure of women's bargaining power in the household. For one, there is an uncertain path of causality between the two; FLR are arguably conducive to greater bargaining power for women, but the causality could also go the other way around: women's bargaining power could be what led to FLR in the first place. The intrahousehold distribution of property rights on land as a measure of the relative bargaining power of wives and husbands is likely to be endogenous with respect to the bargaining power of the spouses. In particular (or specifically), women's acquisition of FLR could be correlated with unobservables that also affect women's bargaining power. For example, unobservable women's individual characteristics – including those relevant to their bargaining power – might improve their access to land. Households or individuals with different levels of FLR may have different characteristics, preferences, etc., and these differences may determine simultaneously FLR and the household behavior being examined. While it may appear that women's title to property

confers them bargaining power, consideration of unobservables sometimes shows that a third factor (for example, higher wealth or better geographic location), causes both.

Failing to take account of the potential endogeneity of FLR can well lead to a substantial under or over estimation of the FLR effect. If women who acquired FLR are unobservably more assertive and independent than average rural women to begin with and are therefore more motivated or empowered, or are better positioned (socially, geographically, etc.) to be economically active compared to wives without FLR, then a positive effect of FLR on female labor force participation may be overstated. The regression will yield an estimated FLR effect that is biased up. On the other hand, if wives with FLR have an unobservable higher preference or likelihood to stay home, then a positive effect of FLR on female labor force participation may be understated.

The following sections, by comparing the FLR-differences in the time use patterns of individuals otherwise similar in human capital, assets/wealth, other household characteristics, and geographic location, aims to identify adverse or favorable selection into FLR in dual-headed households.

3.3 Issues in the measurement of women's time use and task allocation using the 2000 Peruvian LSMS

This section considers the difficulties involved in defining and measuring key variables, such women's work, and then assesses the merits and drawbacks of the measures used in this study.

It is difficult to accurately define and measure women's market work because it is often informal, seasonal, or unpaid. One main problem in measuring rural women's work

is the simultaneity of women's activities. Describing the gender division of labor in peasant households on the haciendas of Cajamarca in northern Peru, Deere (1991) indicates that in rural areas women's allocation of labor between household and farm production is "especially interactive", as women engage in both productive and domestic work at the same time – grazing animals while minding the kids and spinning wool for cloth production.[5] Although engaging in productive activities, rural women might not report those hours of work if performed while doing domestic or care work (like watching children). That is the problem of under-enumeration. There is a high likelihood of overlapping the reported hours of housework and farm work for women in any survey, particularly in the case of unremunerated family workers, for whom labor time and housework time are rarely separate categories (Deere 1990).

This raises concerns about selection problems based on female attitudes towards their own work. It would be a problem if women with higher regard for their own work (women in better position, more confident, more educated, that is, more likely to have FLR) were more likely to identify their work as non-domestic and therefore be more likely to report it as such.

Specifically regarding the Peru 2000 LSMS, aside from the common problem of the respondent's potential imprecise memory of time dedicated to various activities, there is some chance of overestimation of time dedication because the survey was conducted from May thru June, one of the busiest times of the year for farmers (harvest time).

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[5] Deere (1991) in her work in Cajamarca, found in her interviews that women considered such a scenario as leisure, that is, as what they would do while 'resting' every afternoon. In general, as Deere and others argue, establishing what exactly might be "leisure" in the context of a peasant economy is difficult, particularly for women.

Numbers, however, are consistent with national statistics and general evidence for Peru and Latin America for that season (Velazco and Velazco 2012; Diaz, Saldaña and Trivelli 2010).

In Peru, the LSMS were an early attempt to collect time use data. The LSMS surveys are not time-use surveys but they do gather some information on how individuals allocated their time. Questions on the labor force participation rates of household members and time dedicated to domestic and non-domestic activities were typically asked of each household member 6 years old and older.

One of the first questions in the module about economic activity requests information on time dedicated to housework. Housework questions refer to the past 7 days and are reported in daily hours and weekly days. There is no disaggregation of domestic activities; which makes it difficult to get a sense of how big the problem of simultaneity might be (and under and over-estimation).

In the survey's module regarding the economically active population, the members of the household declare their principal and secondary labor activities in the past 7 days and in the past 12 months.[6] Along with a description of the activity, individuals declare the number of hours per day, days per week and months per year allocated to such activity. This information is collected regardless of whether the occupation is paid or unpaid. The Peruvian LSMS surveys catalog the work activities

[6] An economic activity is defined as the job, profession or skill carried out by a person during the survey's reference period. Principal or primary activity is the one to which the person dedicates the most hours to. Secondary activity is the activity, after the primary job, to which an individual dedicates the most time to (Cuánto S.A. 2000b, p.51). The 12-month horizon is included to capture seasonality, an important issue to account for especially in rural areas. In my sample, the 7-day and the 12-month data are the same for the majority of cases because only a small fraction of economically active people changed jobs throughout the year.

reported by respondents using a standardized international industrial classification for economic activities (CIIU, Clasificación Industrial Internacional Uniforme). No pre-defined categories of farm or off-farm work are used, which facilitate the creation of ad-hoc categories. My classification of non-domestic activities includes work conducted on the farm, and off-farm activities whether as independent workers or wage workers. I distinguish between agricultural field work and animal care as the two categories constituting what I am labeling as farm work.

From the available information, three distinctive work categories are subject to analysis: (1) unpaid domestic work (household labor), (2) unpaid non-domestic work (which includes both farm work and production for own use), and (3) paid non-domestic work (off-farm or market work, which can be agricultural or non-agricultural). With this data I calculated each spouse's weekly workload, defined as number of hours per week dedicated altogether to farm work, off-farm work, and housework. The length of one day of agricultural work was self-declared. I allowed 17 hours as maximum total daily workload. In order to ensure the comparability of time dedication across households, and to establish some uniformity in any potential overestimation bias, I use the information for the past 7 days (then this period is the same for all households, which would not be the case if I use the 12-month version instead).

My study is based on formally defined land rights, that is, titled land, where ownership and therefore enforceable claims are clearly established. It is probably best anyway, because potential ownership is not the same as actual ownership. While female ownership of land does not automatically translate into bargaining power, since we are

dealing with titled people we can assume they are very likely to be aware of what land ownership means (therefore, closer connection between FLR and bargaining power).

Since I have information on ownership of land by gender, not on use or control of land by gender, for the purposes of my research FLR constitute a plausible measure of the spouses' relative bargaining power if conceptualizing FLR as an exit option rather than as indicating control. FLR are a good proxy for the exit option available to each spouse (threat point) as they represent for wives the possibility of keeping part of the land in the case of divorce (half where joint ownership) and can be used by women to negotiate better conditions within marriage.

3.4 The Peruvian rural setting: couples' time allocations in landowning farm households

This section discusses the composition of peasants' work time, that is, the combination of market activities with housework and work in the farm, by itself and in connection with the distribution of land rights in the household (FLR) and the size of the farm.

Since I am testing hypotheses regarding the work patterns of spouses, the original sample of 592 households presented in Essay 2 is further reduced to those households with both husband and wife present (adult male and female present). A total of 63 cases of single women (household heads) are excluded from the regressions regarding the impact of FLR on outcomes dealing with bargaining power. Additional 16 cases with outlier values of farm size (too small or too large) are dropped, resulting in an effective cross-section of 513 landed married or common-law couples for whom there is complete

information on formal ownership. As in Essay 2, adjustments made to the sampling weights ensure the working sample is representative of landowning titled farm households in the year 2000.

3.4.1 Patterns of time use of wives and husbands

Table 3.1 establishes that both spouses work long hours in rural Peru, with a typical workload of close to 60 hours per week dedicated altogether to domestic and non-domestic activities.[7] Not surprisingly, when domestic work is factored in, wives work more hours than do their husbands. Although over three fourths of the husbands in the sample declare they do some housework, their wives do carry on most of it. Data not presented in the table indicate that wives' domestic hours average 32 hours per week, four times the amount of housework contributed by their husbands, and more than half of the total housework produced in the household.[8] On average, 82 percent of surveyed peasant wives report doing work other than household chores, of which about one third (28 percent of all women in couples) work in off-farm activities as independent or wage workers, receiving compensation in cash or kind for this work. As expected, a higher percentage of husbands are economically active (98 percent), and the prevalence of off-farm work among them is also higher (40 percent).

[7] If a spouse did not participate in the labor force at all, her/his non-domestic hours were entered as zero.

[8] Husbands report an average of one and a half hours of housework per day, four days a week. Wives report an average of five hours per day, seven days a week. Differences are statistically significant.

Most wives and husbands in the sample engage in only one non-domestic activity (average of 1.2 activities at the same time, with respect to the week prior to the survey), although over the course of a year nearly one third of wives and over two thirds of husbands carry out two or more economic activities. Spouses participating in the labor force work on average six days of the week. The gender differences in the number of hours per day and months per year are statistically significant, with economically active wives working on average two hours less per day and slightly more months of the year compared to their partners.

The large and significant difference in the work time structure of spouses confirms the important role gender plays in determining the proportion of domestic to non-domestic work done by individuals. Table 3.2 considers separately wives who did domestic work exclusively versus wives who also conducted non-domestic activities in the week prior to the survey, and verifies that female labor force participation is almost independent of specific household circumstances such as the ages of their children or the employment status of their partners. Furthermore, economically active women do not relinquish housework, dividing equally their work time into domestic and non-domestic activities. Upon closer examination of the work patterns of the women in the sample, it is apparent that their weekly workloads vary significantly depending on whether or not these women are economically active. There is a strong positive correlation between their total hours worked and their participation in the labor force.[9] The fact that economically active wives work on average 23 more hours per week (approximately one third more)

[9] On the contrary, the workloads of husbands are quite similar irrespective of their labor force participation.

than wives who stay home and do exclusively housework suggests that in rural Peru there is a low tradeoff between the two types of work, perhaps lower than other studies have found: for every additional hour of market work, there is a 0.8 per cent reduction in domestic work.

Wives who participate in the labor force are significantly younger than economically inactive wives. Interestingly, half of them speak Quechua compared to only one fifth in the other group, which is consistent with the clumping of these women in the Sierra region and with the higher incidence of poverty among those women in the labor force (the poorer the area, the higher the female labor participation rate). In contrast, full-time homemakers are located in the better-off regions.

Table 3.3 delves further into these patterns by considering variations by geographic location, illustrating how geographic location seemingly affects the sexual division of labor in Peruvian rural households. Wives' workloads vary by region, in all likelihood reflecting different gender roles, different costs of leisure, etc. Women in the Sierra region have heavier workloads than women in the Costa or the Selva, associated with higher rates of female labor force participation.[10] As a matter of fact, women in the Sierra region are more likely to join the labor force than women in the other regions. Farm production opens the opportunity of self-employment, which is less dependent on the characteristics of local labor markets. Besides, women in the Sierra have a long tradition of participation in farm production.[11] Notice the large differences between the

[10] Data not presented in Table 3.3 finds that principal women in the Southern Sierra work an average of 71 hours per week, compared to 64 in the Northern Sierra, 52 in the Northern Selva and 47 hours per week in the Southern Coast.

[11] Regarding the labor force participation rates of men, the regional variations are negligible.

Northern and Southern Sierras: in the Southern Sierra female labor force participation is much higher than in the Northern Sierra (94 percent vs. 77 percent, respectively). This might be an indication of female labor force participation in the Southern Sierra being more associated with economic need than with women's independence and bargaining power. In the Northern Sierra, on the contrary, the conditions and characteristics of female labor force participation seem more correlated with women's independence and bargaining power. Not only is the rate of female labor force participation different between Northern and Southern Sierras; the "nature" of this participation is different as well. Most of the economically active women in the Southern Sierra (78 percent of them) have animal production as their primary activity and work as unremunerated family workers in about the same proportion of the cases (77 percent). In contrast, economically active women in the Northern Sierra engage in a wider range of activities, including commerce and manufacture (in the Southern Sierra manufacture is almost non-existent). In addition, women in the Northern Sierra are self-employed and working off the farm in nearly half of the cases compared to between one fifth and one third in the rest of the regions. Also, and according to data not presented in Table 3.3, about one third of women in the Northern Sierra declared a primary and a secondary activity (that is, declared working two jobs) during the reference period of the survey. In contrast, only one fifth of women in the Southern Sierra region declared to be in such situation.

Another subdivision of interest is farm size, since couples are likely to organize themselves differently depending on the size of their farms (Table 3.4). As in the previous essay, farms are grouped into four categories based on size: microfundios

(smaller than ¼ hectare), minifundios (between ¼ and 3½ hectares), small farms (between 3½ and 10 hectares), and medium-size farms (above 10 hectares). Large variations in the total work-time for women and men across farm-size strata signal that beyond the sexual division of labor, group differentiation is also important. Notice the big difference between minifundios and small farms regarding the percentage of males who hold two jobs or more (30 percent versus 14 percent). This is probably so because minifundios are poorer, which is consistent with the fact that 25 percent of them are located in the Southern Sierra region while only 3 percent of small farms are.

3.4.2 Female land rights, farm size and the sexual division of labor

I stratify the sample by farm size. The stratification of the sample helps avoid confounding the effect of FLR with the effect of owning a farm of a certain size. I show later that this stratification is useful in elucidating the differentiated effects (in size as well as in direction) of FLR on couples' time allocations.

Graphs 3.1 and 3.2 depict a peculiar association between FLR and the couples' patterns of time allocation, an association that varies in strength and direction depending on the size of the farm. A first feature to notice is that FLR status involves different time allocation behaviors for women and men. Hardly unexpected, the rates of labor force participation for husbands are virtually the same; there are minor differences by FLR status across land size strata. There is no indication of a wealth effect for wives; and if any, it goes in the direction opposite from expected. In general, FLR do not seem connected with female participation in the labor force. In minifundios and medium-size farms, the labor force participation rates are similar between women with and without

FLR, and their corresponding weekly workloads are similar as well. In minifundios (poorer than farms of larger size), household members including the wife have no other choice but to join the labor force. If a wife's participation in the labor force is already reasonably probable, FLR are not likely to raise such odds appreciably. In bigger farms (medium-size ones, for example), wives might already be doing what they prefer to do (little non-domestic work, for instance). In that case, FLR does not plausibly cut back on those hours much further, i.e. FLR are not likely to have a significant effect either.[12]

Landowning women in small farms, on the other hand, march to the beat of a different drummer. This case stands out because the prospects of landowning women to engage in non-domestic activities are far wider than those of their landless counterparts, with the latter working on average 15 more hours per week. In this land stratum, 91 percent of wives with land rights combine domestic chores with work in their own farms or with off-farm activities, while only 74 percent of wives without FLR do so. Women's participation in the labor force can certainly be thought of as an indicator of their bargaining power rather than just another control that merely reduces the time available for housework, yet for this group of farms FLR seem to imply a low tradeoff between domestic and non-domestic work. This is consistent with my earlier point that non-domestic work seems to be more flexible and changeable than housework.

Husbands' labor force participation rates and their weekly workloads are about the same irrespective of FLR status, but husbands of landowning women work fewer

[12] It is only among microfundios that wives with FLR display lower participation in the labor force than do wives without FLR, with the corresponding smaller workloads. Although the gap in the labor force participation rates of women with and without FLR is substantial (0.75 versus 0.95, respectively) and the workload gap between the two groups is very large as well (46 versus 62 hours per week, respectively), the small number of cases in this size stratum rests statistical validity to these differences.

hours on the farm compared to the husbands of landless women. Husbands in households with FLR simply work less hours per week, that is to say, less farm hours are generated in these households (see Graph 3.3).[13] There is a large tradeoff between domestic work and farm work for women with FLR in small farms. Not surprisingly, the relationship between FLR and the distribution of farm work between the spouses is positive across farm sizes, as shown in Graph 3.4, yet markedly so only in small farms.[14] Although farm work remains disproportionately in the hands of husbands irrespective of property rights, FLR are associated with larger women's share of the couples' combined farm work across farm size strata, which links up FLR with lesser gender inequality in the management of the farm.

Table 3.5 shows a critical distinction between women with and without FLR in small farms: the remarkable difference in the predominant category of work, namely self-employed versus unremunerated family worker. Notice that there is no such difference among minifundios in connection with FLR status. Also interesting is that women with FLR in small farms are less dedicated to agricultural work as their exclusive activity (higher dedication to animal care in comparison with landless women).

These differences in the relationship between household wealth and the time allocation patterns of wives and husbands suggest that economic variables such as land rights and wealth affect women's and men's work in particular ways. It also suggests the possibility that women with land rights (or their households) have some other

[13] While for wives the relationship between FLR and hours of farm work varies in direction depending on farm size, for husbands the presence of FLR is always associated with less farm hours, irrespective of the size of the farm.

[14] In fact, women´s share of the couple´s farm work is much higher for households with FLR among microfundios too, but the microfundio cases are too few to make any statistically significant claim.

characteristics that explain the results. There might be unobservable factors that explain both the time allocations (length of workday) and FLR.

3.5 Multivariate Estimation

The LSMS data enable the construction of indicators of the intrahousehold distribution of domestic and non-domestic activities among household members, as well as indicators of the degree of specialization or diversification of each household member in domestic versus non-domestic activities. The analysis focuses on minifundios (297 cases comprising two thirds of the weighted sample) and on small farms (128 cases representing 18 percent of the weighted sample). The very few cases in the first and fourth land size categories (farms smaller than ¼ hectare and larger than 10 hectares) render it difficult to make any meaningful comparisons of prevalence rates by FLR status of the household. In particular, microfundios are of trivial interest because in addition to being few in number, they are garden plots for all intents and purposes, although sometimes if farmed intensely (i.e., with the right crop—alfalfa, for instance) they can generate high agricultural income.[15]

3.5.1 Estimation strategy

The empirical challenge is to determine whether wives with FLR might have had the same time allocation patterns even if they had no FLR. Regression results in this

[15] There are 37 microfundios and 67 medium-size farms (8 and 7 percent of the weighted sample, respectively). Total = 529 farms.

section indicate that the differences in time structure by FLR persist after the application of controls. The determinants of time allocation decisions are examined using different intrahousehold resource allocation models, focusing on the effects of women's ownership of land on women's intrahousehold bargaining power through their participation in domestic and non-domestic activities.

Ideally, the estimation of FLR effects on time allocations should be based on a dataset with two points in time, before and after a woman obtained land rights, and with information on household decision-making. This would make possible to rigorously compare pre and post-FLR situations and empirically test causality. In contrast, cross-sectional data offers only correlations. The data I have is not ideal but nonetheless offers important insights.

My empirical strategy centers around a treatment outcome framework, which consists on determining what the time allocations for women with FLR would have been had they had no FLR. Operationally, this amounts to constructing the appropriate comparison group for the 'treated' group (Ravallion 2001; Rubin 2005); in this case wives whose households have presence of FLR. Measuring the effects of FLR via simple comparisons of the time allocation outcomes of women with and without FLR can be misleading if, as suggested by the descriptive analysis, the two groups of women are not comparable. Favorable family measures are substantially higher for households with FLR. Principal adults in households with FLR are better off in several dimensions compared to principal adults in households without FLR.

To address endogeneity and selection issues, I model selection into FLR using two methods: the selection on observables model and the propensity score matching

technique. These models propose different ways to correct results for the unobservable differences between the FLR and No-FLR groups. The estimated coefficients obtained from the two models are presented side by side as a way to assess the reliability of the results. Models of selection on observables assume selection on the unobservables is zero, with the underlying key assumption being that the relevant outcome differences between any two groups of individuals are captured in their observed characteristics, such that any potential bias vanishes conditional on the selected observables (Heckman and Robb 1985). The propensity score matching (PSM) approach offers a more convincing comparison of two groups with systematic differences. Although PSM does not explicitly address unobservables bias either, it does aim at producing unbiased estimators of a 'treatment' by balancing out the groups being compared in terms of the covariates ruling both the selection into treatment and the outcome under study. By reducing differences in the observable characteristics of two groups via matching, the differences in their outcomes are taken as driven by their treatment status only (Rosenbaum and Rubin 1983). If women with FLR have labor patterns that differ significantly from those of women without FLR after controlling for the relevant individual, household, and geographical characteristics, then it is plausible to argue that the differences in time allocations are due to differences in FLR. In addition, to the extent that the problematic unobservables are correlated with observed covariates, then balancing out the latter may help to balance out the former.

In theory, an individual's participation in the labor force is simultaneously determined with her/his housework activities. Time allocation between domestic and non-domestic work are not independent outcomes because both result from the same

bargaining process. Although clearly not ideal, I estimate separate regressions using domestic work and non-domestic work as (separate) dependent variables, using OLS, as a first step to get a sense of the relationship between FLR and the two outcomes. The results are subsequently refined by modeling selection into FLR. Next, I estimate these regressions using a model that allows for the errors of each regression to be correlated (that is, although the outcomes are separate, the assumption is that they are related by some underlying process). This can be done with techniques such as Seemingly Unrelated Regression (SUR) to estimate different outcomes of a joint process. In all models I run the regressions with FLR as a regressor, as if it were "given", i.e., ignoring (for now) the issue of the endogeneity of FLR.

The fact that women with FLR are a relatively small group compared to women without FLR increases the chances of finding good matches for the landowning group. There is a larger pool to choose from. The 5-1 nearest neighbor technique is used.[16]

3.5.2 Specification of the model

I estimate five different outcomes: (1) wife's participation in the labor force; (2) each spouse's weekly workload; (3) wife's number of domestic hours, in absolute terms and also as share of her total hours worked per week; (4) each spouse's farm hours; and finally (5) the distribution of farm work between wife and husband. Table 3.5 presented tabulations of the dependent variables to be estimated in the two size strata of interest.

[16] Non-participants are matched with "like" participants using the propensity score. a number of matching methods are available. As opposed to a one-to-one matching, a k-nearest neighbor technique means that the propensity score is used to identify the top k nearest neighbors to the query (Caliendo and Kopeinig 2008).

Given that I am controlling for household wealth, I interpret the first outcome as a measure of women's bargaining power. The variable for female labor force participation is equal to one if the respondent was economically active (engaged in paid or unpaid employment) by the date of the survey (past 7 days actually), and zero otherwise. The second outcome arguably signals each spouse's wellbeing in terms of time. The heaviness of their workloads gives indication of how much time is left for leisure. Table 3.5 shows that the disparity in average workloads between husbands and wives is significantly larger among households with FLR, not controlling for other factors. As discussed earlier, this is due not only to the fact that landowning wives work more hours than wives without land rights; husbands in households with FLR work on average less hours than husbands in households without FLR. The case of small farms is remarkable, with wives working an average of 18 more hours per week than their husbands, compared to a gap of only 2 hours between spouses in households with no FLR (of the same size).

The third and fourth outcomes provide measures of the specialization of the spouses (separately) in different types of work. Housework hours as share of total workload, in particular, capture the composition of the individuals' work time and inform about the spouses' specialization or diversification between domestic and non-domestic activities. Also, non-domestic work can be interpreted as an indicator of bargaining power. Consistent with the discussion in the previous section, wives' dedication to domestic work (housework hours as share of their own total workload) is significantly lower for women with FLR among small farms. In small farms, wives with land rights are clearly less specialized in housework compared to landless wives, exhibiting noticeably higher diversification in non-domestic work, particularly towards work in their

farms. This is possibly driven in large part by demographics, considering these women are older and more educated; perhaps staying home represents for them the possibility of more leisure, or less hard work.

Lastly, the fifth outcome is a measure of the division of labor between wives and husbands. The distribution of farm hours between spouses, a manifestation of the degree of gender inequality in the management of the family farm, is defined as the number of farm hours worked by the wife as a percentage of the combined number of farm hours worked by the couple (differences in number of hours versus relative shares). Data not shown in Table 3.5 indicates that if measuring diversification in terms of hours dedicated to own-farm work in relation to off-farm work hours, households with FLR are more diversified as well. There is little variation in the off-farm hours of men. Overall, in small farms the work patterns of women are more elastic and vary more in connection with FLR, therefore the increase in diversification happens through women, and is concentrated in those households with FLR. Among minifundios, to the contrary, time structure is similar irrespective of FLR, indicating that there is no high tradeoff between domestic work and farm work for women with FLR in minifundios, or perhaps that those two types of work are blurred together.

Control variables are assumed exogenous or not related to FLR or to the process of acquisition of FLR. They might show variations but are not impacted themselves by FLR or the process of acquisition of FLR. They capture the most relevant characteristics of the regional, demographic, economic, social, institutional, and cultural context surrounding the farmers, relevant to explain wives' and husbands' labor choices. The explanatory variables are grouped into four broad categories: (i) variables associated with

differences in bargaining power between spouses, including FLR, the difference in age and education between husband and wife. (ii) economic variables, which include household wealth, income per-capita quintiles, female and male education, number of working members, as well as a control for the total number of work hours produced in the household. (iii) variables related to the family's demographic characteristics and household composition, including the couple's ages, household size, number of children younger than 6 years old, as well as measures of the presence of teenage sons and daughters. I also include a quadratic term for age. Finally, (iv) regional variables.

I use a 0-1 dummy variable for female land rights, equal to one if in the respondent's household the wife holds a formal title to at least part of the total farmland as of the time of the survey, and equal to zero otherwise. Education is measured as the number of years of schooling completed. Difference in education between spouses is measured as years of schooling of the husband minus years of schooling of the wife. The variables to control for wealth include farm size, household's access to basic services such as piped water, sewage and electricity; and yes/no dummies for poverty prevalence and for presence of any domestic appliance in the household. These variables serve as proxies for long-run economic status, and have the advantage of lacking the endogeneity problems of income. Also, women in households without access to basic services often spend a lot of time getting water or fuel, so it has implications for time allocation. Family composition variables, standard in any model, and indicators of household structures (nuclear, extended, etc.) assess the possibilities for task-sharing within the household. The same full set of control variables is applied in all regressions. Different outcomes have the same explanatory variables, as they are all part of an underlying process.

Besides the standard demographic, socioeconomic, and geographic controls, the matching equations explicitly formalizing the process of FLR acquisition include an indicator for whether a woman acquired land through inheritance (indicator equal to one) or through other means (indicator equal to zero).

Differences in age and education between wife and husband are expected to have a positive impact on women's weekly workloads. The greater the age difference between spouses, that is, the older the husband is with respect to his wife, the more bargaining power he has over her. This possibly translates into more female workload, more female housework. Similar reasoning applies to differences in education.

Household size is likely to have a positive effect on women's workload. The larger the household, the greater the demand for wife's housework and market work. Family composition and age structure also matter. The younger the children or the larger the number of dependents, the more time the wife has to spend at home taking care of them, or doing market work to help support them. Daughters of any age substitute their mothers in housework production.

Table 3.6 reports the average values and standard deviations of the explanatory variables used in the regressions. The model is estimated for the full sample and also separately for minifundios (¼ to 3½ hectares) and small farms (3½ to 10 hectares), with robust standard errors adjusted for clustering according to survey design. Results are weighted by sample weights. In general, households with land titles that include women's names have older and more educated members than those of households with land titled in men's names only.

Tables 3.7 through 3.10 present the results, including the marginal effects of the variables at the mean of the explanatory variables. FLR have an overall effect on the spouses' weekly workloads, but this effect is different for wives and husbands in size as well as in direction. Two contrasting cases: the results for married couples in minifundios do not unambiguously support the bargaining hypothesis, while in small farms the empirical evidence in somewhat consistent with family bargaining over the individual allocation of time.

Among small farms, FLR significantly reduce the workloads of husbands and significantly increase the workloads of wives. What type of work are they adjusting? How does that affect the internal composition of their time? Is there an effect on the gender distribution of domestic, farm or off-farm work between spouses? FLR have a statistically significant impact only on the hours dedicated by spouses to farm work. The small and not significant coefficients of FLR in the regressions on housework hours confirm that economic variables such as land rights have a negligible effect on the domestic work dedication of the principal adults of the household. Full regression results (not offered in these tables) indicate that other bargaining indicators, such as the age difference between spouses, along with household composition variables and the age of the individual are the key determining factors of women's housework hours. The signs of the coefficients are also the expected ones. Wife's age has a negative sign. An older woman has more bargaining power then does less housework; she is also likely to have older children still at home who can help her out with the household chores. Wife's education has a negative sign, as more years of schooling improve the opportunity cost of the wife's housework.

I find that the amount of time women work in agriculture is inversely related to farm size. In turn, women's time dedicated to animal care has a positive relationship with the size of the farm, as women on larger farms are likely to have larger herds and spend more time on their own activities. These results on hours worked on the farm compare to those reported in Deere (1990, 1982), where women on medium-sized farms generally did not work in the fields but were more engaged in animal production activities and cooking for field hands. This pattern has generally held up in most studies (the inverse relation between farm size and female field work), attributed to male off-farm wage work.

The number of paid hours (off-farm work hours) is also virtually unaffected by FLR. With the exception of sex and schooling, nothing but geographic location seems to matter in the determination of wives' hours of market work. The large size and the high statistical significance of the coefficients of the regional variables highlight the critical importance of the specific market conditions and the available job opportunities.

In general, FLR do not have a significant effect on women's housework time. Housework hours of wives are virtually unaltered, regardless of farm size. Likewise, FLR has no effect over wives' share of time dedicated to domestic work. This share is quite similar across women, irrespective of FLR, probably because since so much of wives' time goes to domestic work, it would take a large change to alter the composition of wives' work. This implies that the Nash bargaining model does not seem consistent with the Peruvian case, which lends some credibility to the argument that economic variables such as land rights have little effect on outcomes largely defined by social or cultural factors. Non-cooperative bargaining models (such as the separate spheres framework)

might be better suited for describing the interactions among household members in contexts similar to rural Peru. Cultural norms regarding domestic work make it relatively inflexible – it does not seem very responsive to changes in hours of market work or other variables, etc. Perhaps tradition and cultural norms prevent women from significantly reducing their housework hours, which results in an increase of their total workload.

3.5.3 Findings from econometric analysis: results for minifundios (¼ to 3½ hectares)

The main result for minifundios is that FLR are associated with negligible alterations in wives' labor force participation rates as well as in the number and composition of their hours of work. The farm hours of both spouses go down slightly, resulting in no change in the distribution of farm work between them. Reported in Table 3.7 are the OLS (selection on observables) and PSM estimates of the relationship between FLR and the time allocation patterns of couples in minifundios. Both sets of results coincide in the direction of the FLR effect. Nonetheless, the size and significance of the coefficients vary depending on the method used. In the case of female participation in the labor force, the matching estimate is larger in magnitude than the OLS estimate. Assuming the PSM result is more reliable, the OLS estimation understates the effect of FLR on female labor force participation.

There is also a reduction of housework hours and an increase in non-domestic hours. Regardless of the significance of the result, this could be interpreted as a tradeoff in the "desirable" direction, with the added 'plus' that it does not translate into overwork for women.

Conventional OLS as well as PSM results also indicate that among minifundios FLR do not significantly affect wives' weekly workloads. An almost full tradeoff between farm work and housework seems to be taking place (less farm work, more housework; both changing in almost the same number of hours). These changes, however, do not result in significant alterations of these women's time composition, as there is no effect on the share of time dedicated to non-domestic work. Contrary to expectation, the "holding" of land rights seems to make these women less interested in working in the farm. In theory, the acquisition of FLR should motivate them to work more on their farms. However, for women in minifundios, given their characteristics, it might make more sense and be more desirable for them to leave the labor force. Given the size of the farm, the poverty level among these farms, and their location in regions where women's role in agriculture is important, landowning women in this group are probably doing as much farm work as they would like (or more farm work might not be needed). In this context, an increase in women's bargaining power could manifest itself in a reduction of work on the farm. Surprisingly, these women increase their domestic work, suggesting that among minifundios FLR tend to intensify women's reproductive role, if only slightly (the estimated effect on the share of wife's time dedicated to housework is positive but small and not statistically significant). Maybe this is not about gender roles but merely about fractions.

Table 3.8 compares some descriptive statistics for the full sample of minifundios and the sub-sample resulting after applying PSM. By examining the similarities between the FLR and No-FLR groups in both samples, it is possible to evaluate how effective the matching has been. Table 3.8 confirms that the matched sample is much more

homogeneous than the unmatched sample. The gap between individuals and households with and without FLR is smaller for most of the variables in the matched sample. For example, the gap in prevalence of households in the second income quintile is 21 percent in the unmatched sample but only 8 percent for the matched sample. Similarly, the discrepancy in the fraction of households located in the poorest region, South Sierra, is -0.13 in the unmatched sample and only -0.05 in the matched sample. The difference in average women's age, nonetheless, remains significant. Prevalence in the top income-per-capita quintile is no longer significant but remains large.

3.5.4 Findings from econometric analysis: results for small farms (3½ to 10 hectares)

The most interesting and significant effects of FLR on the time allocations of spouses happen among small farms. Table 3.9 presents these results. Both the OLS and the PSM results point to a large and positive effect of FLR on wives' probability of entering the labor force. Controlling for personal and household characteristics, FLR substantially boost female labor participation rates, with estimates varying from 15 to 17 percent depending on the estimation method. Given that these women do not relinquish their housework hours (wives are virtually leaving their housework hours unaltered), their weekly workloads end up increasing significantly, in the order of 9 hours per week.[17] There is a large and significant increase in the predicted workload of wives. Almost the

[17] It is possible that the positive and significant effect of FLR on female labor force participation is leading to an upward bias in the FLR coefficient in the female workload equations given that (as mentioned in the descriptive analysis) economically active women have noticeably heavier workloads. This issue needs to be explored further.

entire increase in female workload happens through the addition of hours dedicated to farm work, which means these women are clearly increasing their involvement in the farm. Nonetheless, these changes are not large enough to alter the domestic/non-domestic structure of wives' time.

In contrast to the FLR effect on wives, husbands in households with FLR experience an overall decrease of their work hours in relation to husbands in households with no FLR. This decrease is statistically significant at eight less hours per week. Husbands sharing land rights with their wives reduce their farm work hours (though not significantly), probably because wives are taking over. In other words, husbands are leaving the farm, and their wives are replacing them. The decrease in male farm hours is equal to the increase in female hours in the farm.

Although the changes in the farm hours of both spouses are not large enough to alter their individual compositions of time, FLR significantly affect the distribution of farm work between wives and husbands. From initial descriptive statistics we know that wives do around 40 percent of the total number of farm hours generated by the couple in households with FLR, and around 28 percent in households without FLR. Controlling for the relevant individual and household characteristics, the presence of FLR brings a 13 to 15 percent shift in the redistribution of the combined farm work of both spouses toward the wife (statistically significant result).

Table 3.10 compares the means of the regressors before and after matching for small farms. Comparing the regressors on poverty and geographic location, it is clear that a large share of North Sierra households and "rich" households were taken out in the process of matching. Several significant differences remain. The large discrepancies raise

the possibility that among small farms part or even the entire gap in time outcomes is due to selection bias. Given the relatively high degree of selection into FLR among small farms on the basis of observable traits (especially wealth indicators), the estimated coefficients may reflect unobserved differences between women with and without FLR rather than actual effects on labor force participation and workload, and should be interpreted with caution.

3.6 Conclusions

A better understanding of the mechanisms by which the time allocation decisions of individuals are affected by the ownership of assets is critical to determine in what ways and to what degree women's formal ownership of land increases their wellbeing and economic empowerment within the household. This essay formalizes FLR as a determinant of the labor allocation patterns of wives and husbands in rural Peru using available data on land ownership.

My results contribute to the modeling of household decision-making in the context of gender inequality in the intrahousehold distribution of assets. While insightful and relevant in some contexts, cooperative bargaining models of the household tend to overestimate the expected positive link between FLR and women's welfare wherever social and institutional factors undermine this connection and cultural norms override property rights. My findings have practical implications as well, particularly for the formulation of policy recommendations regarding equitable access to land in minifundios, which in the case of Peru constitute the majority of agricultural units.

For the most part, the available economic perspectives on household behavior tend to overestimate the positive effects of FLR on women's welfare. Cooperative bargaining models of the household overlook key economic and cultural barriers that undermine the expected positive connection between FLR and women's position within their households. Land ownership might not be sufficient to guarantee women their economic independence; cultural norms can override property rights in both positive and negative ways. Non-cooperative models might be better suited for describing the interactions among household members.

The different predictions of each model imply contrasting interpretations for the distributions within marriage and for observed family behavior. I outline scenarios representing variations in the form of the bargaining game (cooperative and non-cooperative bargaining models) and show that FLR have differentiated effects.

My research offers three main findings. First, FLR have a heterogeneous effect depending on the farm size category. FLR are relevant for women's time allocations on small farms (3½ to 10 hectares). The most significant effects for women take place in these farms. Unfortunately, the degree of positive selection on the observables that determine FLR and the time outcomes for this group (female labor participation in particular) is sufficiently large that selection bias cannot be ruled out as the full explanation for the FLR affects. The unobservable interplay of economic and cultural forces in shaping the labor patterns, and in general the livelihood strategies of peasant farmers, need to be explored further.

A second important result is that the presence of FLR in the household affects wives and husbands differently. Land ownership does not necessarily bring the same

benefits to women and men. In fact, shared legal land rights have opposite effects on female and male weekly workloads, in general associated with an increase in wives' workloads and a decrease in husbands' workloads. The larger the farm, the larger the gender workload gap between spouses, to the detriment of wives. In small farms in particular, FLR significantly lead to wives' overwork, increasing their weekly workloads in the order of approximately 9 hours, which more than compensates for their partners' workload reduction. This finding could reflect selection effects, as hard-working women are more likely to demand and get land rights. If we take the labor outcomes (specifically higher labor force participation) of landowning women as a reflection of their choices (that is, as result of their increased bargaining power) then higher bargaining power might be happening at the cost of women's overwork. Therefore, it is not clear that women are worse off or better off with more work and arguably more participation in the farm (more visibility of their work, etc.) but less leisure.

Third, and in connection with the above, FLR have mixed effects on the division of labor by gender. Whereas the alterations in the individual structure of work time associated with FLR are negligible in both minifundios and small farms, I find that women's ownership of land significantly changes the relative distribution of farm work between husbands and wives in small farms.

While the fundamental importance of land ownership as a source of social and economic security for women is beyond discussion, the formal ownership of land does not seem to yield significant measurable effects on workload. Institutional and structural factors mediate the transition of formal land ownership from an abstract right to an economic right for women, measurable by concrete household outcomes and gender

results within the family. The analytical and methodological quest to identify the barriers hindering the potential positive impact of FLR on women's welfare, as well as the factors that enhance it, lies ahead. In the meantime, it seems clear that women, particularly those in impoverished rural areas, face disadvantageous conditions that cannot be reversed simply by giving them formal ownership of land and including their names in the deeds.

Table 3.1: Work Patterns of Couples, Differences by Gender[1]

(with respect to past 7 days)	All Spouses b/sd	Wives b/sd	Husbands b/sd	Diff[2] b/se
Average weekly workload	57.9	59.8	56.0	3.8
	(19.6)	(21.9)	(16.7)	(1.3)**
Prevalence of domestic work	0.88	0.99	0.77	0.22
	(0.32)	(0.08)	(0.42)	(0.02)***
Labor force participation rate	0.90	0.82	0.98	-0.16
(economically active)	(0.30)	(0.39)	(0.12)	(0.02)***
Work time composition				
% total time to domestic work	0.36	0.58	0.15	0.44***
% total time to farm work	0.46	0.30	0.61	-0.31***
% total time to off-farm work	0.18	0.12	0.24	-0.12***
N	1026	513	513	
Non-domestic work				
Average number of hours/day	6.7	5.5	7.8	-2.2
	(2.4)	(2.4)	(1.9)	(0.2)***
Average number of days/week	5.6	5.5	5.6	-0.1
	(1.6)	(1.7)	(1.4)	(0.1)
Average number of months/year	10.4	10.6	10.2	0.4
	(2.9)	(2.9)	(3.0)	(0.2)*
Incidence of off-farm work	0.38	0.35	0.40	-0.05
	(0.32)	(0.48)	(0.49)	(0.1)
People with two or more jobs	0.24	0.17	0.27	-0.1
(percentage)	(0.15)	(0.11)	(0.18)	(0.1)
N	917	408	509	

Source: Peru 2000 LSMS.
Notes: [1] Sample means and standard deviations are weighted by selection probability.
(domestic and non-domestic work hours different from zero).
[2] Unpaired (two-sample) t test on the equality of means.
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3.2: Wives' Characteristics by EAP Status

	All Wives b/sd	Wives EAP b/sd	Wives No-EAP b/sd	Diff[1] b/se
Age (in years)	43.2	42.0	48.6	-6.7
	(14.2)	(13.7)	(15.2)	(1.8)***
Illiteracy rate	0.34	0.34	0.38	-0.04
	(0.48)	(0.47)	(0.49)	(0.06)
Quechua-speaking	0.43	0.48	0.20	0.28
	(0.49)	(0.50)	(0.40)	(0.05)***
Labor force participation of husbands	0.97	0.98	0.96	0.02
	(0.16)	(0.15)	(0.20)	(0.02)
Childless	0.11	0.09	0.16	-0.07
Children under 6 years old	0.43	0.46	0.33	0.13*
Children 6-15 years old	0.28	0.29	0.23	0.06
Children 16 y.o. and up	0.18	0.16	0.28	-0.12*
	1	1	1	
Average weekly workload	59.8	63.9	41.3	22.7
	(21.9)	(20.7)	(17.4)	(2.3)***
Weekly hours of housework	31.9	29.8	41.3	-11.5
	(14.8)	(13.3)	(17.4)	(2.1)***
Household located in Costa	0.10	0.08	0.17	-0.09*
Household located in Sierra	0.67	0.71	0.58	-0.13**
Household located in Selva	0.23	0.21	0.35	-0.14**
	1	1	1	
Poor	0.61	0.63	0.54	0.09
	(0.49)	(0.48)	(0.50)	(0.06)
N	525	408	117	

Source: Peru 2000 LSMS.
Notes: [1] Unpaired (two-sample) t test on the equality of means. Two-sample data were not assumed to have equal variances (results were similar assuming equal variances).
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3.3: Time Allocation Differences, by Geographic Region

	All b/sd	North Coast b/sd	South Coast b/sd	North Sierra b/sd	Center Sierra b/sd	South Sierra b/sd	North Selva b/sd	South Selva b/sd
Some Market Activity	0.82	0.80	0.48	0.77	0.89	0.94	0.63	0.86
(women)	(0.39)	(0.41)	(0.51)	(0.42)	(0.32)	(0.24)	(0.49)	(0.35)
Workload women				#	obs	=	509	
Less than 50 hours/week	0.36	0.38	0.58	0.29	0.44	0.16	0.51	0.36
50 hours/week or more	0.64	0.62	0.42	0.71	0.56	0.84	0.49	0.64
Total	1	1	1	1	1	1	1	1
Workload males				#	obs	=	529	
Less than 50 hours/week	0.37	0.55	0.33	0.47	0.34	0.14	0.50	0.41
50 hours/week or more	0.63	0.45	0.67	0.53	0.66	0.86	0.50	0.59
Total	1	1	1	1	1	1	1	1
Incidence of off-farm activ	0.35	0.40	0.19	0.55	0.27	0.27	0.38	0.32
for women [N=408]	(0.12)	(0.22)	(0.11)	(0.28)	(0.14)	(0.08)	(0.11)	(0.12)
Sector (women)								
Agriculture	0.26	0.28	0.50	0.12	0.31	0.08	0.38	0.55
Animal Production	0.51	0.37	0.31	0.49	0.48	0.78	0.44	0.21
Manufacture	0.04	0.05	0.00	0.16	0.01	0.02	0.00	0.00
Commerce/Services/Other	0.19	0.30	0.19	0.24	0.19	0.12	0.18	0.24
	1	1	1	1	1	1	1	1
Category (women)								
Self-employed	0.30	0.30	0.38	0.47	0.29	0.22	0.20	0.29
Unremuned Family W	0.67	0.63	0.63	0.53	0.68	0.77	0.72	0.66
Wage Worker	0.03	0.07	0.00	0.00	0.04	0.02	0.08	0.05
	1	1	1	1	1	1	1	1
Sector (males)				#	obs	=	509	
Agriculture	0.36	0.39	0.52	0.17	0.44	0.19	0.55	0.58
Animal Production	0.48	0.56	0.33	0.57	0.42	0.64	0.36	0.32
Commerce/Service/Other	0.16	0.06	0.15	0.26	0.14	0.18	0.09	0.10
Total	1	1	1	1	1	1	1	1

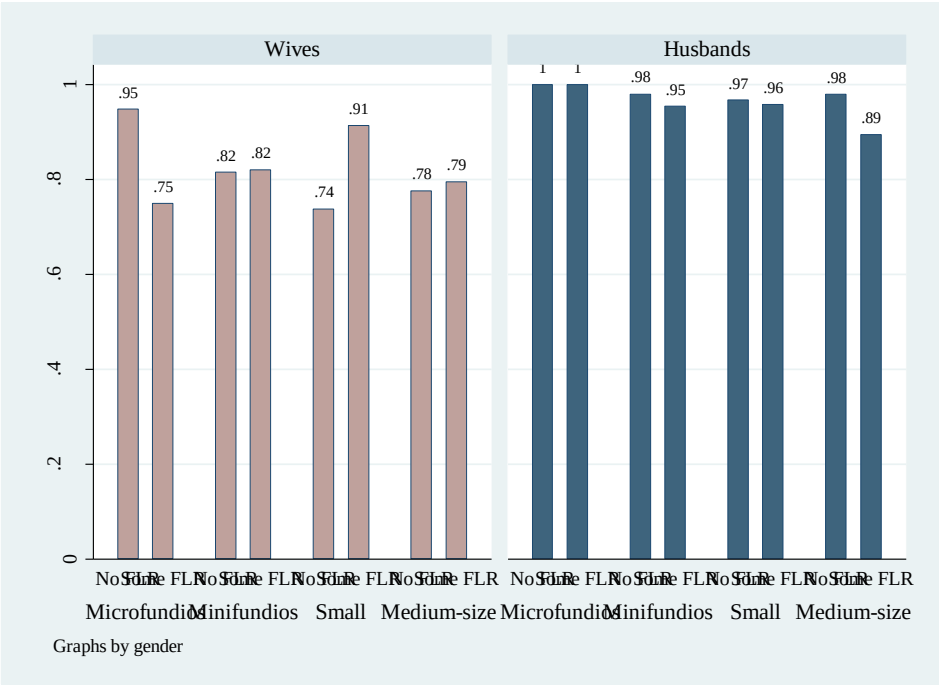
Source: Peru 2000 LSMS.

Table 3.4: Spouses' Time Outcomes, by Farm Size

	Full b/sd	Micro b/sd	Mini b/sd	Small b/sd	Medium b/sd
Female labor force participation	0.82	0.90	0.82	0.80	0.78
	(0.39)	(0.30)	(0.39)	(0.40)	(0.42)
Women´s weekly workload					
30 hours per week or less	0.09	0.15	0.07	0.09	0.20
30-50 hours per week	0.27	0.31	0.26	0.27	0.22
50 hours per week or more	0.64	0.54	0.67	0.64	0.58
	1	1	1	1	1
Men´s weekly workload					
30 hours per week or less	0.07	0.03	0.07	0.07	0.15
30-50 hours per week	0.30	0.33	0.27	0.36	0.38
50 hours per week or more	0.63	0.64	0.66	0.57	0.47
	1	1	1	1	1
Percentage of women with two jobs	0.17	0.06	0.19	0.17	0.13
Percentage of men with two jobs	0.27	0.27	0.30	0.14	0.24
N	397	19	229	96	53
Wife's average age	43.2	44.1	42.6	44.8	43.4
	(0.70)	(2.90)	(0.80)	(1.42)	(2.07)
Wife is illiterate	0.34	0.32	0.38	0.28	0.23
	(0.02)	(0.08)	(0.03)	(0.04)	(0.06)
Household is poor	0.61	0.49	0.66	0.50	0.62
	(0.02)	(0.09)	(0.03)	(0.05)	(0.06)
Household is located in:					
Coast	0.10	0.06	0.08	0.20	0.07
Northern Sierra	0.21	0.07	0.24	0.20	0.04
Central Sierra	0.27	0.40	0.32	0.14	0.00
Southern Sierra	0.19	0.33	0.25	0.03	0.00
Selva	0.23	0.14	0.12	0.44	0.89
	1	1	1	1	1
N	513	37	297	128	67

Source: Peru 2000 LSMS.

Figure 3.1: Labor Force Participation of Wives and Husbands, by FLR Status and Farm Size



Source: Peru 2000 LSMS.

Figure 3.2: Weekly Workloads of Wives and Husbands, by FLR Status and Farm Size

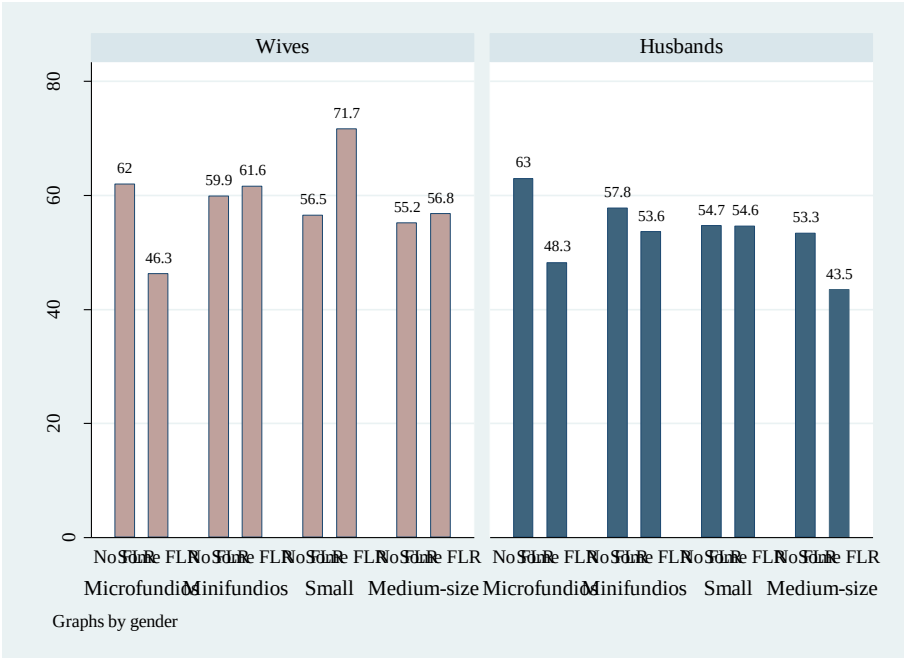


Figure 3.3: Farm Work Weekly Hours of Wives and Husbands, by Farm Size and FLR Status[1]

(only for those economically active)

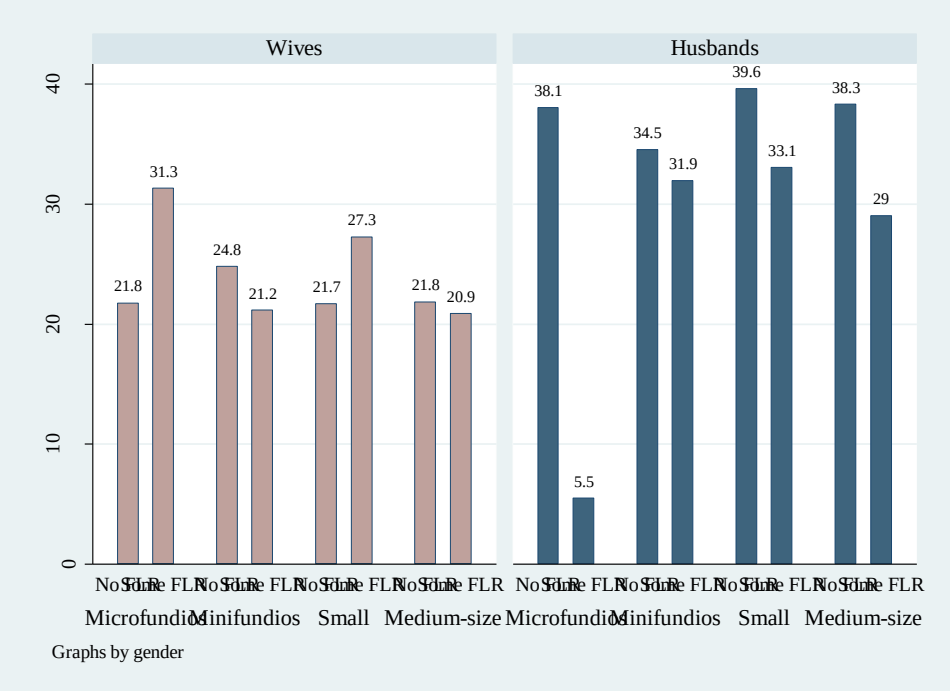
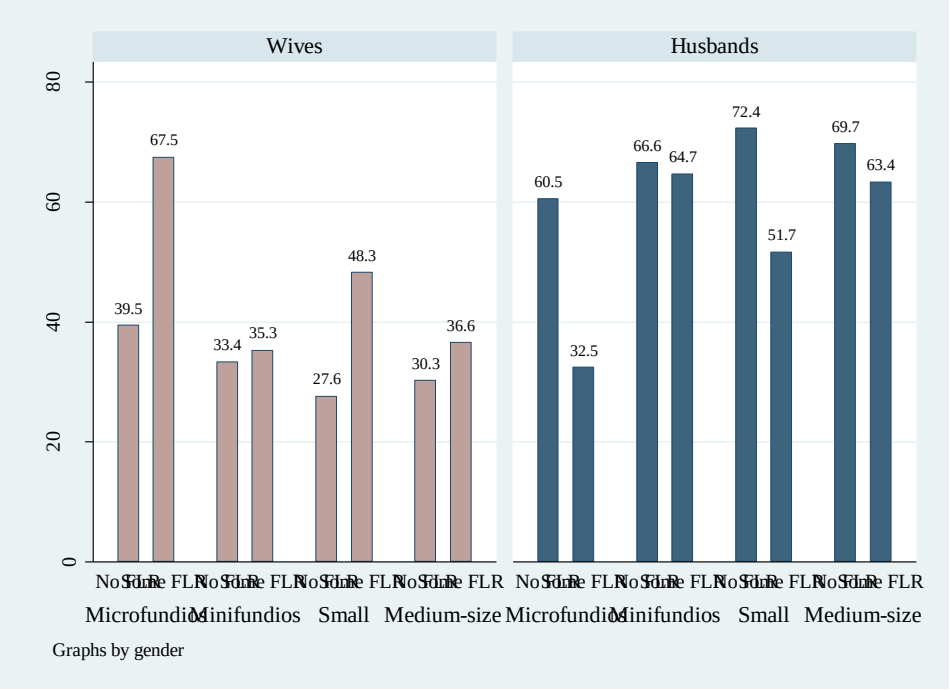


Figure 3.4: Distribution of Farm Work between Spouses, by Farm Size and FLR Status[1]

(each spouse's share of the combined farm hours produced by the couple)



Note: [1] Defined for households with at least one spouse economically active (with respect to past 7 days.). Sample means are weighted by selection probability.

Table 3.5: Spouses' Time Outcomes, Minifundios and Small Farms

	Minifundios			Small Farms		
	w/FLR b/sd	w/o FLR b/sd	Diff b/se	w/FLR b/sd	w/o FLR b/sd	Diff b/se
Female labor force participation	0.82 (0.39)	0.82 (0.39)	0.00 (0.05)	0.91 (0.29)	0.76 (0.43)	0.15 (0.10)*
Wives' average workload per week	61.6 (19.4)	59.9 (21.2)	1.8 (2.8)	71.7 (27.5)	56.5 (19.1)	15.2 (5.8)*
Wives' hours of domestic work per week	33.2 (15.6)	30.4 (14.7)	2.8 (2.2)	34.9 (14.0)	34.6 (14.2)	0.3 (3.4)
Wives' hours of farm work per week	17.4 (17.2)	20.3 (20.5)	-2.9 (2.6)	24.9 (17.8)	16.4 (17.4)	8.5 (4.1)+
Category of work[1]						
Self-employed	0.32	0.34	0.00	0.42	0.17	0.25**
Unremunerated fam worker	0.60	0.64	-0.04	0.58	0.80	-0.22**
Wage worker	0.08	0.02	0.06	0.00	0.03	-0.03
	1	1		1	1	
Wives' economic sector						
Agriculture	0.28	0.20	0.08	0.16	0.43	-0.27**
Animal production	0.42	0.54	-0.12	0.60	0.44	0.16
Manufacture, commerce, etc.	0.30	0.26	0.04	0.24	0.13	0.11
	1	1		1	1	
Husbands' average workload per week	53.6 (17.2)	57.8 (16.4)	-4.1 (2.4)+	54.6 (17.9)	54.7 (14.4)	-0.1 (3.6)
Husbands' hours of farm work per week	31.2 (20.7)	34.1 (20.9)	-2.9 (3.0)	32.4 (23.9)	39.3 (18.8)	-6.9 (5.3)+
N	77	219	296	29	96	125

Source: Peru 2000 LSMS

[1] Principal job, with respect to the 7 days prior to the survey

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3.6: Descriptives of Regressors, Dual-Headed Households

	Minifundios			Small Farms		
	w/ FLR b/sd	w/o FLR b/sd	Diff b/se	w/ FLR b/sd	w/o FLR b/sd	Diff b/se
Wife speaks Quechua	0.43	0.49	-0.06	0.28	0.31	-0.03
	(0.50)	(0.50)	(0.07)	(0.46)	(0.46)	(0.11)
Wife inherited land	0.35	0.04	0.31	0.31	0.06	0.25
	(0.33)	(0.02)	(0.06)***	(0.28)	(0.04)	(0.10)*
Household located in peasant community	0.10	0.23	-0.13	0.12	0.15	-0.03
	(0.30)	(0.42)	(0.05)**	(0.33)	(0.36)	(0.08)
Presence of conflict in the household	0.26	0.14	0.12	0.30	0.12	0.18
	(0.22)	(0.11)	(0.06)*	(0.28)	(0.10)	(0.11)+
Woman's age	46.5	41.2	5.3	45.6	44.5	1.1
	(13.6)	(13.9)	(1.93)**	(13.6)	(14.2)	(3.2)
Household has domestic appliances	0.48	0.27	0.21	0.61	0.27	0.34
	(0.50)	(0.44)	(0.07)**	(0.50)	(0.45)	(0.11)**
Household is not poor	0.45	0.30	0.15	0.61	0.45	0.16
	(0.50)	(0.46)	(0.07)*	(0.50)	(0.50)	(0.12)
Household is in bottom income per capita quintile	0.19	0.23	-0.04	0.02	0.19	-0.17***
Household is in top	0.29	0.12	0.17**	0.51	0.22	0.29*
Hh is located in CostaN	0.04	0.06	-0.02	0.11	0.11	0.00
Hh is located in CostaCS	0.02	0.03	-0.01	0.09	0.08	0.01
Hh is located in SierraN	0.43	0.17	0.26***	0.42	0.12	0.30*
Hh is located in SierraC	0.26	0.34	-0.08	0.12	0.14	-0.02
Hh is located in SierraS	0.15	0.28	-0.13*	0.06	0.02	0.04
Hh is located in SelvaN	0.04	0.10	-0.06**	0.08	0.27	-0.19**
Hh is located in SelvaCS	0.06	0.03	0.03	0.12	0.25	-0.13*
N	77	220	297	29	99	128

Source: Peru 2000 LSMS
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3.7: Probit/OLS versus Matching Time Allocation Results, Minifundios (¼ to 3½ hectares)

	Selection on Observables, Probit/OLS		Propensity Score Matching	
	FLR Coeff.[1]	Outcome Mean	FLR Coeff.[1]	Outcome Mean
Wife's labor participation rate[2]	-8.203	0.80	-12.719+	0.70
N	173		112	
Wife's total weekly workload	-2.41	60.1	-4.574	59.5
Husband's total weekly wkld	-1.497	56.1		
Wife's housework hours	4.722	30.3	5.352	30.2
Wife's farm hours	-4.829	18.3	-6.357+	17.3
Husband's farm hours	-2.049	32.7		
Wife's housework hours as share of total hours worked	4.991	0.55	7.729	0.56
N	173		136	
Wife's share of combined farm work of the couple[3]	2.670	0.32	2.141	0.31
N	149		117	

Source: Peru 2000 LSMS
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001
All specifications include standard controls: couples' education and ages, wealth variables, household size, family composition variables, and regional dummies. As an additional control, for each outcome of one spouse I included the corresponding outcome of the other spouse.
[1] For discrete change of dummy variable from 0 to 1.
[2] Coefficient is expressed in marginal terms and has been multiplied by 100 for ease of interpretation.
[3] Defined for households with at least one spouse economically active.

Table 3.8: Means of Selected Regressors, Minifundios (¼ to 3½ hectares)

		Unmatched Sample	Matched Sample
Peasant communities	No FLR	0.23	0.19
	Some FLR	0.10	0.11
	Difference	-0.13	-0.08
Female inheritance	No FLR	0.04	0.05
	Some FLR	0.35	0.13
	Difference	0.31	0.08
Woman is Quechua-speaker	No FLR	0.49	0.55
	Some FLR	0.43	0.43
	Difference	-0.06	-0.12
Wife's age	No FLR	41.2	41.7
	Some FLR	46.5	44.6
	Difference	5.3	2.9
Presence of domestic appliances in household	No FLR	0.27	0.30
	Some FLR	0.48	0.43
	Difference	0.21	0.13
Household is not poor	No FLR	0.30	0.30
	Some FLR	0.45	0.35
	Difference	0.15	0.05
Household is located in North Sierra	No FLR	0.17	0.21
	Some FLR	0.43	0.40
	Difference	0.26	0.19
Household is located in South Sierra	No FLR	0.28	0.24
	Some FLR	0.15	0.16
	Difference	-0.13	-0.08
N		297	226

Source: Peru 2000 LSMS
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3.9: Probit/OLS versus Matching Time Allocation Results, Small Farms (3½ to10 hectares)

	Selection on Observables, Probit/OLS		Propensity Score Matching	
	FLR Coeff.[1]	Outcome Mean	FLR Coeff.[1]	Outcome Mean
Wife's labor participation rate[2]	15.020**	0.80	17.032***	0.70
N	190		121	
Wife's total weekly workload	9.198+	59.5	8.735+	57.6
Husband's total weekly wkld	-8.639*	54.3		
Wife's housework hours	-1.036	34.3	-0.168	33.6
Wife's farm hours	9.321*	19.6	7.348	17.9
Husband's farm hours	-4.011	37.1		
Wife's housework hours as share of total hours worked	-7.441	0.62	-7.144	0.62
N	198		134	
Wife's share of combined farm work of the couple[3]	15.222**	0.33	13.191*	0.30
N	180		114	

Source: Peru 2000 LSMS
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001
All specifications include standard controls: couples' education and ages, wealth variables, household size, family composition variables, and regional dummies. As an additional control, for each outcome of one spouse I included the corresponding outcome of the other spouse.
[1] For discrete change of dummy variable from 0 to 1.
[2] Coefficient is expressed in marginal terms and has been multiplied by 100 for ease of interpretation.
[3] Defined for households with at least one spouse economically active.

Table 3.10: Means of Selected Regressors, Small Farms (3½ to10 hectares)

		Unmatched Sample	Matched Sample
Wife's age	No FLR	43.3	44.8
	Some FLR	46.2	43.6
	Difference	2.9	-1.2
Wife's literacy rate	No FLR	0.36	0.30
	Some FLR	0.20	0.22
	Difference	-0.16*	-0.08
Number of children under 6 years old	No FLR	0.9	0.7
	Some FLR	0.4	0.6
	Difference	-0.4*	-0.1
Household is not poor	No FLR	0.45	0.53
	Some FLR	0.64	0.50
	Difference	0.19*	-0.03
Household is in bottom income per capita quintile	No FLR	0.19	0.09
	Some FLR	0.06	0.10
	Difference	-0.13*	0.01
Household is in top income per capita quintile	No FLR	0.20	0.26
	Some FLR	0.49	0.34
	Difference	0.29**	0.08
Household is located in North Sierra	No FLR	0.14	0.22
	Some FLR	0.45	0.29
	Difference	0.31**	0.07
Household is located in North Selva	No FLR	0.25	0.18
	Some FLR	0.07	0.12
	Difference	-0.18***	-0.06
N		198	134

Source: Peru 2000 LSMS
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

APPENDIX

SAMPLE CONSTRUCTION AND GENERALITIES ABOUT THE PERU 2000 LSMS

The Peruvian 2000 LSMS collected information for a total of 3977 households. The main division in the survey is the distinction rural/urban. Rural areas were defined as those cities and towns (centros poblados) with less than 2,000 inhabitants (Cuánto Institute, 2000). The 2000 Peruvian LSMS survey is stratified into seven geographic regions: Urban Coast, Rural Coast, Urban Sierra, Rural Sierra, Urban Selva, Rural Selva and Metropolitan Lima. The sampling design ensures representativity at the rural/urban level and at each of seven regions mentioned.

The rural portion of the survey comprises 1,360 households, of which 1,064 are involved in farm activities (information on land ownership is available only for farm households).[1]

My sample was determined following a number of steps, as illustrated in Table A. First, because of the nature of my research question, I center the analysis on landed households; this reduces the sample to 940 farm units. I further focus on those households where it is possible to establish the identity and sex of the landowner(s). Households with all their parcels untitled or owned by unidentifiable individuals are excluded. Information is lost for 806 parcels, corresponding to 307 households. This represents 40 percent of the parcel subset and 34 percent of rural landed households. Information on title holding was successfully completed in 633 households,

[1] I use the terms household, farm, agricultural household, and farm household interchangeably.

corresponding to 1323 plots. Additional 41 cases of households with no woman present (households headed by a lone male) are dropped. The restriction of the sample to those whose owners reside in the household, hold a formal title document for at least part of their land, can be identified (i.e. principal adults only), and have a principal woman present, results in an effective cross-section of 592 households and 1248 parcels for which there is complete information on formal land ownership.

The Peruvian LSMS surveys typically contain a module on household activities in agriculture and animal husbandry, which allows the identification of owner-operated farm households. The information on landholdings is gathered at the plot level for farm households only. The survey inquires about the size and uses of all parcels owned or worked by the respondents, and gauges the quality of the land via questions such as whether the parcel is irrigated or rain fed, presence and types of ecological problems, time distance to the capital of the district, and main routes of access to the parcel.[2] Additionally, for each listed parcel, two measures of value are collected: the potential replacement price (the estimated price at which the parcel could be bought if a similar plot were to be purchased today), and the potential rental price (how much the respondent would have to pay in rent). No data is collected on decisions regarding the management of the plot.

The Peruvian survey does inquire about the tenancy regime of the land to determine whether the parcel is owned by the respondent, rented, or sharecropped. For

[2] The answer options for uses of the parcel include land area under cultivation (permanent crop, seasonal crop), pasture area, woodland area, fallow land area, and other. Types of ecological problems included erosion, soil salination, drainage, extreme steepness, and other. Routes of access to the parcel included paved road, unpaved road, dirt road, and others.

each owned plot the respondent is also asked about how the land was acquired, and the answer options include inherited by the head of the household, inherited by the spouse of the household head, purchased in the market, distributed by the community or by the state, or acquired via squatting. The Peru 2000 LSMS data on inheritance of land inform who inherited, but unfortunately not from whom. The answer options on inheritance do not distinguish between parcels inherited from parents and parcels inherited from spouses, information that would be useful in discerning the relative importance of parents versus spouses as sources of land ownership for women among titled households. For example, for the Peruvian case, perhaps more than for other Latin American countries, information on the parents' landholdings would contribute significantly to making such distinction, and to the general understanding of land acquisition by women given the importance of inheritance for female landowners.[3] Alas, the LSMS collects no information on the landholdings of a woman's parents or on any other characteristics of a woman's (or anybody's) family of origin.

In the Peru 2000 LSMS, only the date of titling of each parcel was collected, not the date of land acquisition. Even if information on the date of land acquisition were available in the survey, it would remain impossible to determine whether the land was acquired before or after marriage because the LSMS did not ask for the date of marriage or the number of years a couple has been married or living in consensual union. Therefore, it is not possible to establish which happened first. This impossibility limits

[3] In their study of the determinants of women's land ownership in Honduras and Nicaragua, Katz and Chamorro (2003) found that parents' landholdings (parents of the woman or her husband's) were not significant in explaining the amount of land women owned. Women in these countries, however, are much less likely to inherit land than in rural Peru, and less likely to farm.

not only the efforts to investigate the importance of marriage as a mechanism by which Peruvian rural women acquire land in titled households; it also hinders any conjecture on the subject among households owning untitled land.[4].

Throughout this dissertation, I use the term "household head" in a slightly different way than the definition used in the Peru 2000 LSMS. I refer to household heads (plural) what the LSMS calls 'household head and spouse'. Sometimes I use the term "principal adult" or "principal adults" to refer to either the husband or wife, or both. I do not use the term "principal-adult" to refer to a son, or a daughter, even if the household only has one conventionally defined head. Under no circumstance I use children or other household members as heads. In that sense there is no 'child-headed' households in my sample. Under my definition, then, dual-headed households cannot be widowers and their daughters, or widows and their older sons. Only spouses reported as dual heads of household.

Whenever both husband and wife are present in the household, sometimes I talk about "dual heads" or talk about dual-headed households. Dual-headed household always means a couple, either married or in consensual union. Although husband and wife are the ones that generate most of the income in the farm and household, I do not base my definition strictly on economic participation. I do not use the term "dual-headed household" to refer to a mother and a son, for example. Like the LSMS, I refer to

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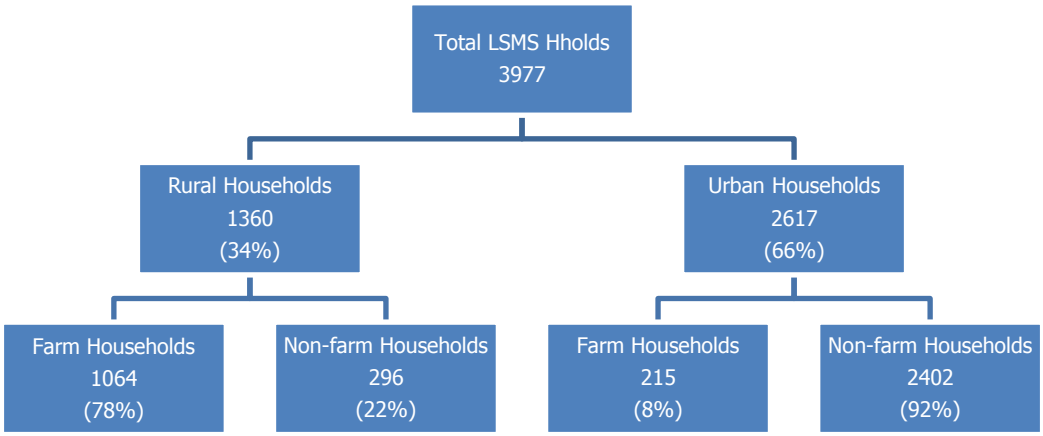
[4] The cross tabulation of the date of land acquisition and the date of marriage would generate the possibility to determine the individual land owned (titled or not) by each spouse at the time of marriage. In turn, crossing this with information on the form of land acquisition would enable, in some cases, to deduce a married woman's potential claim over the untitled land in her household. Although it is not strictly possible to establish ownership of untitled land, under certain conditions inferences can be made on the potential occurrence of FLR if some untitled parcels became titled. In the case of purchased land specifically, it is possible to deduce whether a parcel is rightfully the property of both spouses jointly, as under the prevailing marital regime in Peru land bought after marriage is legally the property of both spouses regardless of the existence of a title.

household head or heads as those recognized as such by the other members of the household (Rosenhouse 1989).

I am calling lone-female headed households those households in which the principal adult is a woman and there is no (male) partner present. Similarly, lone-male headed households are those with a male head with no (female) partner.

Table A: Basic Structure of Peru 2000 LSMS Sample



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