

LAND PRIVATIZATION AND TITLING AS A STRATEGY TO DIMINISH LAND
LOSS AND FACILITATE ACCESS TO CREDIT: THE CASE OF COMMUNAL
LANDOWNERS IN THE PENINSULA OF SANTA ELENA, ECUADOR

By

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To my parents Hortensia and José, my sisters Tania and Reina, and my niece Daniela.

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By

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The Peninsula of Santa Elena is a semi-arid area located in the coastal region of Ecuador and populated by descendants of the indigenous Huancavilca tribe. These inhabitants are currently known as comuneros because of their organization in comunas. Since the early 80s the Government of Ecuador has been building a large irrigation project: a primary system of irrigation canals, with the purpose of revitalizing agriculture on lands jointly owned by the comuneros. However, the comuneros are unable to take advantage of the infrastructure because of their low capital endowment. The existence of groups of individuals with enough economic power and willingness to make use of the canals created uncertainty regarding the land rights of comuneros, lowering their incentives for land investments and prompting land sales at low prices.

The research centered on the experiences of four comunas in the south of the Peninsula, where irrigation canals are already built; and four in the north, where additional canals are planned.

The competition for land and the impossibility of having individual control of the land due to the communal structure raised a risk of losing land rights for the comuneros. Land privatization among comuna members is recommended to mitigate such risk. This strategy would allow the comuneros to have better control of the land; to make more profitable decisions over the resource, as they would be able to enjoy land as an asset; and to have greater abilities to obtain institutional credit.

Due to the lack of a formal land market in the area, land is currently not accepted as collateral for credit. Therefore, after land privatizing and tilting, comuneros will not be able immediately to take advantage of the “collateral premium” attached to individual land ownership. While a formal land market develops, comuneros would be able to increase their capital endowments through smaller on-farm activities or off-farm businesses if those are encouraged by institutions offering credit in the area. In order to provide this financial support, such institutions will need to meet several requirements, which are along the lines of microfinance practices successfully applied in developing countries.

Institutional changes in the land tenure system and in the credit market would increase the opportunities and abilities of the comuneros to take advantage of the canals, which in turn will increase the potential productivity of the land for these kinds of investors.

CHAPTER 1 INTRODUCTION

Beginning in the early 1980s, the Government of Ecuador¹ has been building a large irrigation project to revitalize agriculture in the Santa Elena Peninsula. The intended primary beneficiaries were indigenous people organized into communal land holdings, known as *comunas*. However, in virtually all areas the canals have thus far reached, the *comunas* have lost the adjacent lands, sometimes by force, but more often through communally sanctioned sales to commercial farmers and land speculators.² While there are no comprehensive records of these sales, anecdotal evidence strongly suggests that prices paid to *comuneros* (members of the *comunas*) were well below what would be expected of land with ready access to a reliable water source. Regardless of the terms of these sales, that the land was sold indicates that the *comuneros* valued the uncertain to them future income stream from the land less than the more certain income stream projected by the buyers. The research reported in this thesis attempts to answer why this difference existed. Central to this investigation are the implications of having communal, versus private (i.e., individual), land titling.

¹ The Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas y Península de Santa Elena (CEDEGE) is the governmental institution in charge of building and managing irrigation infrastructure in the coastal region of Ecuador.

² Commercial farmers and land speculators are usually people with considerable economic and political power in the country.

This study was undertaken to gain a better understanding of past events and, importantly, to determine if institutional³ structures constrained the scope of actions by comuneros and, in so doing, resulted in the valuation gap and subsequent sales. Where these were found, recommendations were made to alter those institutions in areas into which the canals will expand. The findings also have relevance for other regions of the world where there are communal land holdings and pressures for more intensive development.

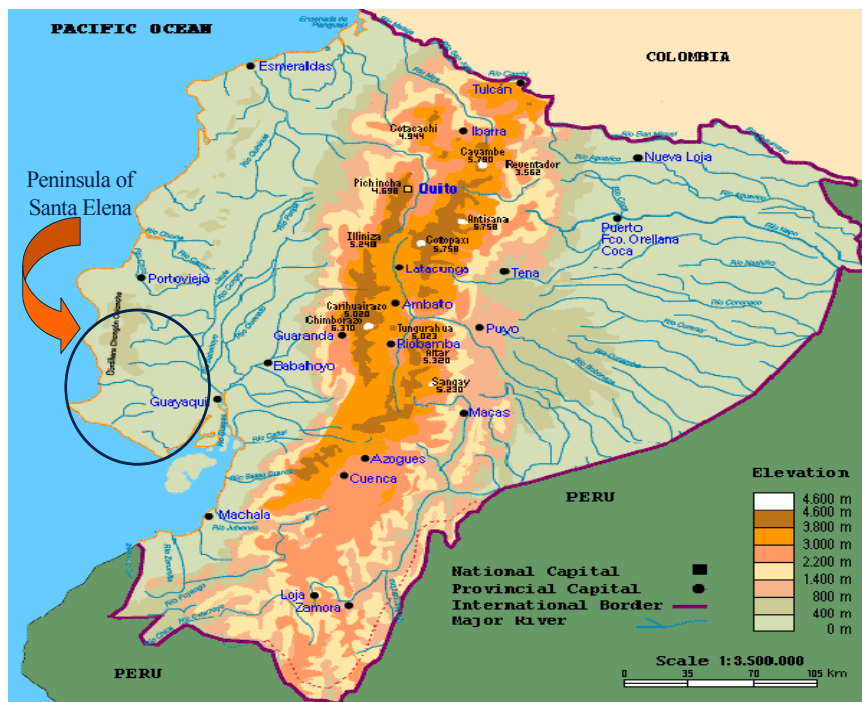


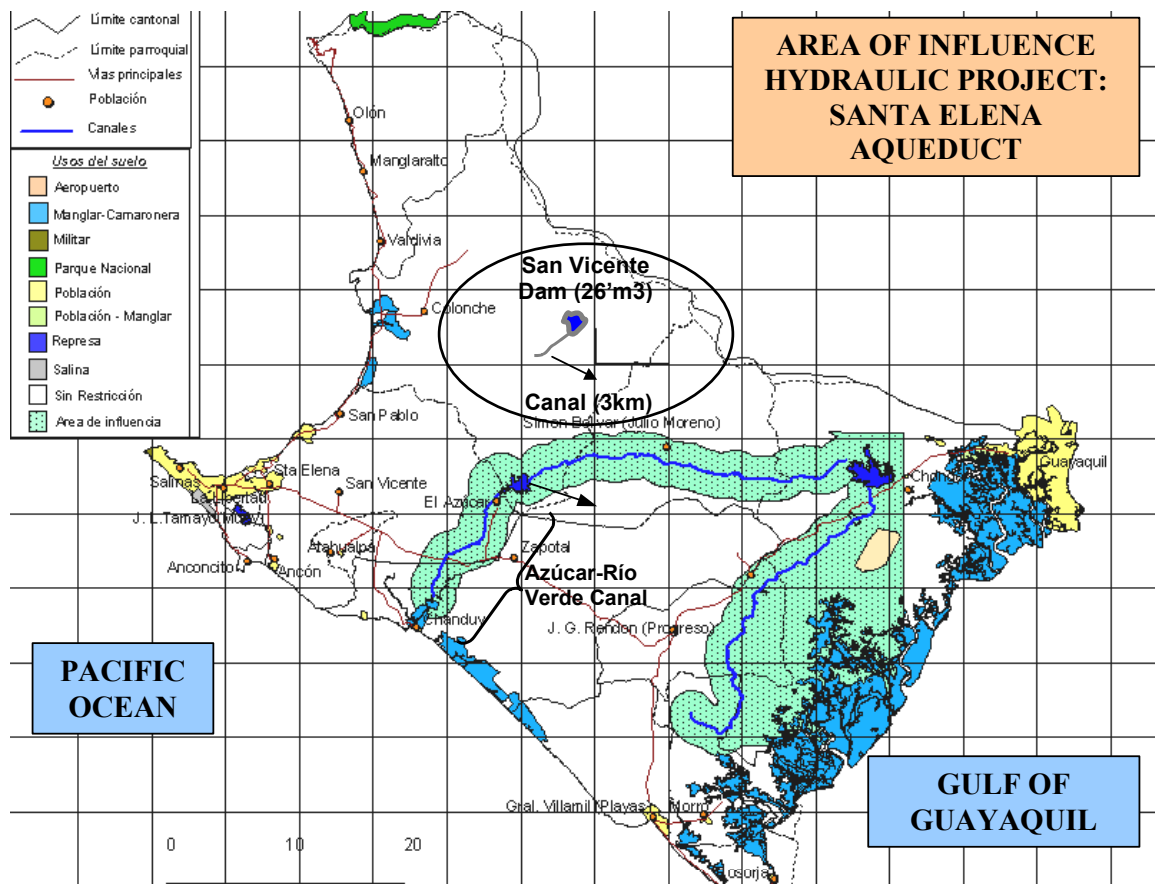
Figure 1-1: Location of the Peninsula of Santa Elena

Problematic Situation

The Peninsula of Santa Elena (PSE) is located in the coastal region of Ecuador with an area of 6,050 km². Since more than 100 years ago, deforestation of the Peninsula by its

³ Here the term institutions is used to refer to economic institutions. An economic institution would be “A system of rules that defines the kinds of exchanges that can occur among individuals and that structure their incentives in exchange.” Economic institutions can be “markets and property rights, systems of land and animal tenure, obligations of mutual insurance within lineage groups, and other systems of exchange that are determined by implicit contracts or social norms” (Hoff, Braverman, and Stiglitz, 1993, p1).

inhabitants produced semi-desertification, resulting this in a reduction of the agricultural potential of the area. Nowadays the PSE's population goes around 300,000 people, 30% of which lives in rural areas. The majority of rural population is descendant from the indigenous Huancavilca tribe and is organized in comunas. Seventy-four comunas are spread across the Peninsula. Land in these communities has been held communally for generations.⁴



Source: Estudio del Potencial Agroindustrial y Exportador de la Península de Santa Elena y de los Recursos necesarios para su implantación. ESPOL, CEDEGE, University of Florida, PROMSA. The areas in black have been added to the map.

Figure 1-2: Irrigation infrastructure

⁴ Land reform was never applied to these lands because they were occupied and managed by the Huancavilcas since before the Spanish colonization. See Alvarez (1999).

The research focused on the comunas already influenced by the primary system of irrigation canals built by the Ecuadorian government and those that will be affected by the ongoing enlargement of that system. Figure 1-2 illustrates the irrigation infrastructure built so far.

Land security had not been an issue in the PSE before the construction of the irrigation infrastructure. Problems did not used to go beyond some disputes between comuneros about boundaries, which were easily resolved by the comuna's government. With regards to transferability of rights,⁵ plots of land have usually been assigned to comuneros without any alterations of use rights along the life of the comunero. If the comunero/a died, his/her family would take care of the land. Also, in some cases, land sales have occurred among comuneros through "negotiation" of the certificate of possession. Sales to outsiders used to happen in a few occasions and the individuals had to affiliate to the comuna in order to become eligible for a certificate of possession.

The irrigation canals increased the productive potential of adjacent land, increasing its [derived] demand. However, to exploit this potential, it was necessary to develop secondary irrigation systems off the government-built primary system. The apparent inability of the comuneros to take advantage of this infrastructure due to lack of capital, along with the ability of commercial farmers to obtain such capital created the situation in which the latter group valued the land more than the former. Moreover, while individual comuneros had use of separate parcels of land, it was owned communally. As such, each individual could not control decisions about land sales to outsiders. In other words, the

⁵ See Hoff, Braverman, and Stiglitz (1993). In chapter 11, by Hoff, she identifies two clear dimensions of land rights systems: transferability of rights and security of rights. Transferability of rights is concerned with the presence of restrictions to transfer land rights whereas security is about the power of relevant institutions to enforce the respect of assigned rights.

security of each individual's access to land was jeopardized by the votes of all other individuals in the community or by the decisions made by a politically powerful subset of comuneros. That "threat" only became real when others outside the community began coveting the land, when the canals were built.

To justify and pay for operating and capital costs for the irrigation infrastructure already in place and the planned execution, the Government is exerting increasing pressure for canal utilization through intensive agricultural production. As a result, the Government is torn between, on the one hand, its desire to see benefits for comuneros, as well as obligations to prevent illegal or exploitive land sales and, on the other hand, the promise of higher utilization of and fees to the irrigation system from commercial farmers. The outcome of this situation is an atmosphere of disputes for land between comunas and individuals, which has further reduced incentives for land investments by the comuneros.

The inevitable result has been the creation of an extra-legal market for land in the PSE. Because the Ecuadorian Law prohibits selling of land belonging to indigenous communities, and also communal rules in the PSE prohibit individual sales of land, most of the land sales at the moment have been illegal and have created division among the comuneros. Arguably, most gains have been for the new landowners due to the very low prices paid for the land, even though some of them must face communal claims over that land. Asymmetry of information⁶ plus economic need has led many comuneros to accept those prices and sell land. This has been so even when that action led them to work as

⁶ In this case, more and better information about market opportunities for the buyers of land than for the sellers.

farm laborers for other landholders (sometimes the buyers of the land) or to depart from the community and look for a job in urban areas.

Even when the government on social grounds is supposed to support comuneros, it may decide in favor of the commercial farmers. This is because: 1. utilization of the irrigation infrastructure is an important objective for the development of the region; 2. the collection of fees is needed to offset capital and operating costs; and 3. increasing agricultural exports is desired to create a more favorable trade balance. It seems certain that if no action is taken, either by the communities themselves or by the government, the pressure over communal land in the PSE will continue until virtually all of the more productive land is in hands of higher income individuals. The final result would be the generation of a landless society.

The following problem tree (Figure 1-3) can help visualizing this problematic situation.

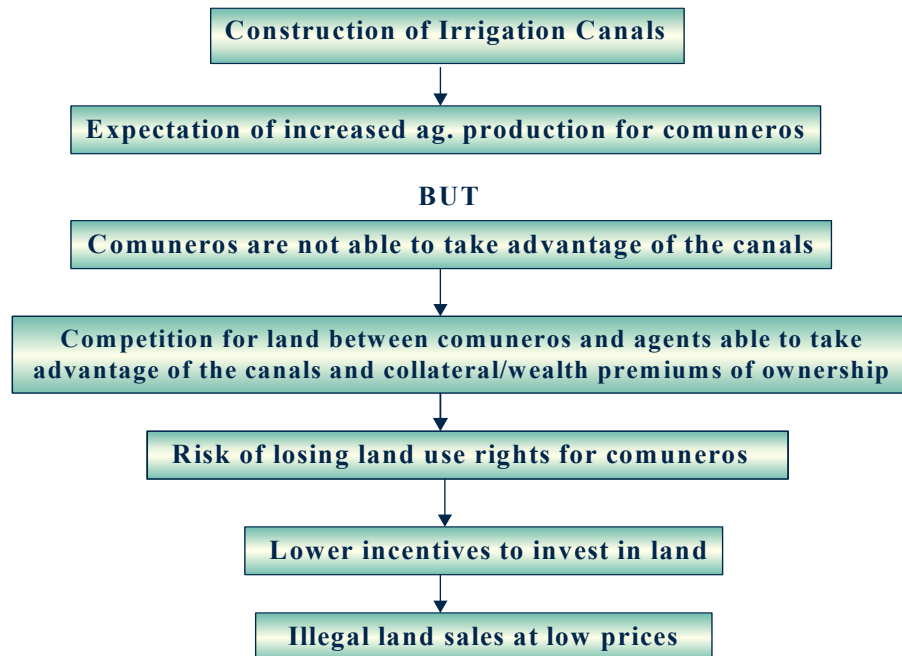


Figure 1-3: Problematic Situation over communal land on the PSE

Figure 1-4: Comunas of the Peninsula of Santa Elena

Of the eight comunas chosen for the research,⁷ four are located in the south of the Peninsula, where irrigation canals are already built. Another four are in the north, where additional canals are planned (see Figure 1-4). In the south, the Comuna El Azúcar is the most affected by land sales, which happened during and after the construction of the irrigation infrastructure. This is because one of the most important dams of the area (Dam El Azúcar) is located in the middle of the comuna. The Comuna Pechiche is crossed by

⁷ The fieldwork developed for this thesis is detailed in the Appendix.

the Canal Azúcar-Río Verde; as a result, Pechiche has suffered land invasions and illegal land sales facilitated by corrupt comuna representatives. Río Verde and San Rafael are also crossed by the Canal Azúcar-Río Verde and have already sold most of the adjacent land. Conflicts among comuneros due to land sales in these two comunas are fewer than the ones which occurred in El Azúcar during land distribution and sales, and those ongoing in Pechiche.

In order to facilitate land sales, Río Verde, San Rafael, and El Azúcar adopted the strategy of land privatizing among the comuna members. These happened as soon as they felt threat of invasions by outsiders. Land privatizing and selling was preferred to losing the land for nothing. In most of these cases, land titles were obtained with the help of the buyer in order to “formalize” the sale. In Río Verde and San Rafael, comuneros selling land had to give a fee to the comuna after the sale, which have helped to the reconstruction of roads after hard rainy seasons, to buy small assets, or even to create a Communal Bank, like it happened in Río Verde.

The comunas in the north were chosen for this research because the future irrigation canals planned by the government are slated to cross their lands. Because of the works finished so far in this area (reconstruction of the San Vicente Dam and a canal 3km long connecting the Dam and the Río Nuevo) and the information many outsiders have about the plans of the government in these lands, the comunas Las Balsas and Cereza-Bellavista have already suffered land conflicts with outsiders and even land sales.

Out of these four comunas, just Cereza-Bellavista has adopted the strategy of land privatizing (this started in 1996). This case seems different from those that occurred in the south because the purpose of land privatizing in Cereza-Bellavista has not been to

sell the land but to protect it from invasions. So far, around 196 comuneros (out of 250 members of the comuna) have become owners of the land. Each comunero received from 25 to 50 hectares, although not all have already obtained land titles. With these lands, the comuneros know they have all the rights that land ownership entails. Some sales in this comuna have already taken place, especially by comuneros owning large amounts of land in different plots.

The differences in extensions of land belonging to the eight comunas before and after the irrigation infrastructure, along with the reason of the changes are shown in Table 1-1.

Table 1-1: Changes in communal land extensions after canal construction

South	Original extension (ha.)	Approx. Current extension (ha.)	Reason
El Azúcar	9,000	300	Land sales
Pechiche	3,587	3,000	Land sales and invasions
Río Verde	3,560	1,400	Land sales and invasions
San Rafael	4,884	3,300	Land sales
North	Original extension (ha.)	Approx. Current extension (ha.)	Reason
San Marcos	7,449	7,449	No change
Manantial de Guangala	1,687	1,687	No change
Cereza-Bellavista	9,915	9,675	Land sales
Las Balsas	33,120	29,120	Land invasions

Source: Fieldwork May through August 2002: Interview to cabildos.

The survey undertaken for this research (see Appendix) reveals the problem of under-exploitation of land, especially in those comunas of the northern area, which hold large areas of land relative to their population. This indicates the danger these comunas are or will be exposed to when the irrigation infrastructure is finished if they continue cultivating such low percentages of land. See Table 1-2.

Table 1-2: Land holding and production by interviewed comuneros

Land holding & Production	North	South	Total
Total observations	45	43	88
Comuneros with land	93%	51%	73%
Total land holdings (ha.) found in survey	732.45	133.13	865.58
Range of land holdings (ha.)	0.45-125	0.10-60	
Total land in production (ha.)	128.76	7.47	136.22
Percentage of land in prod.	18%	6%	16%
Main crops	Maize	watermelon, tomato, pepper	
% of cultivated land (main crops)	66%	77%	
Average expenses/ha (\$)	84	1641	
Range of expenses/ha (\$)	4 – 444	444 - 1,835	

Source: Fieldwork May through August 2002: Survey of comuneros.

As we can see in Table 1-2, most of the interviewed comuneros in the north hold plots of land, while in the south just half of them were found keeping land. We can also notice the wide ranges of land holdings and expenses per hectare in the north as well as in the south, which reflects the existence of differences in economic level and political power among comuneros.

The comunas researched in the north differ from those in the south. The main differences are outlined in Table 1-3.

Problem Statement

The inability of the comuneros to take advantage of the canals due to lack of capital, along with the ability of commercial farmers and land speculators to obtain such capital, and the impediment of individual control of communal land, generated a situation of risk of losing land rights by the comuneros which further reduced incentives for land investments. This has led and is still leading the comuneros to make inefficient decisions over the land resource, such as selling it at low prices.

Table 1-3: Differences between comunas in the north and in the south, PSE

Comunas in the south	Comunas in the north
They have been influenced by the first phase of canals built on the Peninsula and had experienced land sales because of that infrastructure.	They will be influenced by the irrigation infrastructure in the future.
Three of these comunas (Pechiche is the exception) have already privatized most of their land with the main purpose of selling it. Now they would like to have more land to be able to produce it themselves.	The only comuna that has privatized land is Cerezal-Bellavista. The purpose of the privatization has been to avoid invasions, even though some comuneros have already sold part of their land. The other comunas have either denied discussing about privatization or they have just found it difficult to agree about it, mainly because they are afraid of the consequences seen in the south.
Nowadays they are concentrated on income generating activities different from agriculture: fishing, commerce, handcraft. However, those that don't find other sources of income work as farm employees for large landowners (on the land that used to be theirs).	Agriculture is much more active on this area than in the south although the only crop that dominates in commercialization is maize. They still have forest resources, produce charcoal and trade wood. Commerce and farm working are important activities in this area too.
The standard of living is somewhat higher in most of these comunas than in the north because of three main reasons: They are nearer to the ocean, so they can benefit from more income sources; They collected money from land sales – invested already on consumption or on more liquid assets -; and They are nearer to the main city of Guayaquil and the main road that leads to tourist points.	More restricted about communication infrastructure and income opportunities than the south.

Purpose and Hypotheses

The purpose of this thesis is to determine if institutional changes could empower the comuneros to make a more profitable use of the land, with particular emphasis on institution-driven incentives and capabilities of comuneros. The primary institutional structure that will be examined is the land tenure system. Privatization of land will be

proposed. To ensure greater benefits from land privatizations, credit markets will be examined.

No quantitative model is estimated to predict the extent of changes resulting from proposed institutional reforms. Rather, a theoretical model is developed to examine the implications of communal versus individual land tenure. Using this model the thesis will demonstrate why the building of the canals precipitated sales of the most desirable comuna lands. The model will also show how privatization could favorably alter the ability of comuneros to use their lands, including securing better terms when selling their land. Credit market reforms are addressed, primarily, by drawing from the considerable literature on rural financing, adapting those lessons to the situation on PSE.

To confirm the nature and extent of the situation on PSE, a survey of comuneros was undertaken, as well as focus groups with comuneros, and interviews with comuna representatives and officers of credit institutions on PSE, see Appendix.

The questions to be addressed in this thesis are the following:

- Will land privatizing and titling increase comuneros' incentives (or at least eliminate disincentives) and abilities to make more profitable decisions about their land resource? Also will it increase non-comuneros' willingness to pay a higher price for land, as their transaction costs would be lower?
- Will institutional changes in credit markets be required to ensure fullest benefits from land privatizing?

The stakeholders or agents involved in this research are:

- Comuneros
- Commercial farmers, land speculators
- Government – CEDEGE, BNF, Land registration and enforcement institutions
- Financial institutions on the area (mostly NGOs)

Primary Objective

The primary objective of this thesis is to determine if institutional changes in the land tenure system and in the credit market could improve the profitability of land use for the comuneros of the PSE.

Secondary Objectives

The secondary objectives of this thesis are as follows.

1. To explain the difference in land valuation that exists between comuneros and commercial farmers and how this stimulated a risk of losing rights for the comuneros.
2. To understand how land privatizing and titling would help reducing (ideally eliminating) the risk of losing land rights for the comuneros and the probable effects of this reduction over the comuneros' demand for land and for land investments.
3. To know what are the main deficiencies of the current financial services on the PSE and what strategies could be applicable in order to overcome them and help strengthening the effects of land privatizing and titling.

Content of the Study

The thesis will include an analysis of the effects of the canals on the actions of two types of individuals: the comuneros and commercial farmers/land speculators. This analysis will be done in the second chapter through adaptation of a theoretical model developed by Gerson Feder and David Feeny: "Investment, production and land price determination." The model will highlight the characteristics and abilities of the comuneros as opposed to the commercial farmers and show how, given the constraints they faced, the land sales, even at low prices, were rational and how land privatization and titling would alter this situation and increase demand for land and capital investments for that land. Land privatizing and titling is proposed as a necessary although not sufficient strategy to encourage the comuneros to make more efficient decisions about

their land, which can be done either through investments in the land or through engaging in profitable contracts such as rental contracts, sale contracts, etc.

It is recognized in this thesis that to achieve enhanced agricultural development for the PSE, land titling would have to be accompanied by institutional changes in financial markets. Changes in terms of strategies developed by famous microfinance institutions around the world that would be required for the PSE will be briefly described in the third chapter.

Finally, the expected movement of variables discussed in chapter 2 after land privatizing and titling, and after successful implementation of strategies in the financial market, is indicated in the last chapter (conclusions and recommendations). Also, possible strategies that could be followed by the comunas, such as alliances with NGOs or among groups of comuneros in order to access to larger amounts of credit required to take advantage of the canals will be pointed out in that chapter.

CHAPTER 2

THEORETICAL APPROACH

Consideration of the probable effects of privatizing and titling communal lands in the PSE is made employing a variant of the model developed by Gershon Feder and David Feeny, “Investment, production and land price determination.”¹ Their model depicts a rural economy where land rights are subject to risk. In that economy, land rights are linked to the credit market, so access to credit is positively related to the value of the land and negatively related to the probability of land loss.

The contribution of the model is the analysis of the effect that risks in property rights can have over the demand for land and over the demand for investments per unit of land. As Hoff² explains, this model identifies three sources of efficiency costs produced by land rights insecurity: a distortion in farmer’s incentives to invest in land; an undermined possibility of using land as collateral for debt; and depression of the price of rural land.

Overview of the Model

The model assumes that the objective of the farmer is to maximize an expected utility that is separable in two arguments: current consumption and next period’s wealth. This is reached through allocating his/her initial endowment and borrowed funds among three uses: current consumption, land acquisition, and investment in physical capital.

The components and assumptions of the model are as follows:

¹ See Chapter 12 in Hoff, Braverman, and Stiglitz (1993).

² See Chapter 11 in Hoff, Braverman, and Stiglitz (1993).

- For simplicity, just a two-period horizon is considered for the analysis, so the second period's wealth is also the terminal wealth. It should be noted that the second period is of indeterminate length.
- Land acquisition, consumption, and investment decisions made in the first period determine production in the second period.
- Capital is completely used up in the process of production. While no deviation is made from this assumption in the formal model, its restrictive nature should be recognized. In particular, the requirement that capital be exhausted by the farmer denies the possibility of applying capital to increase the value of the land.
- The utility function is linear in terminal wealth
- Risk to property rights is represented by a non-zero probability ϕ that the current decision-maker will lose both the second-period output and the land (dispossession either by force or by legal action).
- The possibility of obtaining land through actions different from purchases is viewed as an exogenous probabilistic event.

Notation of the Model

T = land

P = price of land

k = capital-land ratio Note: Capital is a numeraire variable. That is, Capital is \$1 per unit. As such, k becomes the number of dollars of Capital used per unit of land.

C_o = first period consumption

W_o = initial wealth

ϕ = probability of ownership and output loss in the second period.

U = utility of first-period consumption

y = dollar value of output per unit of land

r = interest rate.

Land and capital are used to produce next period's output through a neoclassical production function that exhibits decreasing returns to scale. The per hectare output is presented in equation 1.:

$$y = y(k); y' > 0; y'' < 0 \quad (1.)$$

Utility of current consumption is a concave function with decreasing marginal utility, see equation 2:

$$U = U(C_o); U' > 0; U'' < 0 \quad (2.)$$

Credit is assumed to be rationed and that ration to be binding for all farmers. Land is assumed to be the only collateral and the loan ration is proportionate to a borrower's landholding [actually land acquisition] value. S would be the amount of credit a farmer may receive. $S = s(\phi)PT$, with s being the proportion of land value banks are willing to give as loans. As would be expected, $0 \leq s \leq 1$ and s is a function of the risk of land loss with $s' < 0$. A fixed interest rate, r , is assumed.

The farmer selects C_o , T , and k so as to maximize:

$$\text{Max}_{C_o, T, k} U(C_o) + [1-\phi] T [y(k)+P] - [1+r]s(\phi)PT$$

Where $\{U(C_o)\}$ is the utility of current consumption and $\{[1-\phi]T[y(k)+P] - [1+r]s(\phi)PT\}$ is the expected terminal wealth, that is, output plus land value times the probability that they will still be possessed at the end of period 2, minus debt repayment.³

This maximization is subject to a budget constraint whereby the uses of the money (land acquisition, capital investment, and current consumption) cannot exceed the sources (initial wealth plus borrowed funds), see equation 3:

$$W_o + s(\phi)PT = kT + PT + C_o \quad (3.)$$

Solving for C_o from the constraint (i.e., $C_o = W_o + s(\phi)PT - kT - PT$), and substituting the right-hand side into $U(C_o)$, the expression for the farmer to maximize becomes

$$\text{Max}_{T, k} U(W_o - PT[1-s] - kT) + [1-\phi] T [y(k)+P] - [1+r]s(\phi)PT$$

³ As an aside, this formulation suggests risk neutrality, that is unless the ϕ assumed by a farmer is biased upwards (risk averseness) or downward (risk loving).

At the optimal choice of T and k, the first-order derivatives have to equal zero. The expression above is hereafter referred to as F. For the first order conditions, see equations 4 and 5:

$$\frac{\partial F}{\partial T} = [1-\phi] [y + P] - U' \{P[1-s] + k\} - [1 + r] s(\phi)P = 0 \quad (4.)$$

$$\frac{\partial F}{\partial k} = [1-\phi]Ty' - TU' = 0 \quad (5.)$$

To verify that the choice of T and k maximizes the utility function, the first element (first row, first column) of the Hessian needs to be negative and the determinant of the matrix positive (see equation 6).

$$[H] = \begin{bmatrix} U'' \{P[1-s]+k\}^2 & U'' \{P[1-s]+k\} T \\ U'' \{P[1-s]+k\} T & T[1-\phi]y'' + T^2 U'' \end{bmatrix} \quad (6.)$$

The first element is: $U'' \{P[1-s]+k\}^2 < 0$.

The determinant is: $\Delta = T[1-\phi] U'' \{P[1-s] + k\}^2 y'' > 0$

Once the second-order conditions are satisfied, the model can be used to analyze how the optimal choice functions react to changes in the parameter P. Differentiating the first-order conditions with respect to P and arranging the terms into matrix form, yields equation 7:

$$[H] \begin{bmatrix} \frac{dT}{dP} \\ \frac{dk}{dP} \end{bmatrix} = \begin{bmatrix} [1-\phi] [y-y'k]/P - U'' \{[1-s]P+k\} [1-s]T \\ -T^2 U'' [1-s] \end{bmatrix} \quad (7.)$$

By using Cramer's rule we get equations 8 and 9:

$$\frac{dT}{dP} = \frac{1}{\Delta} \{ [1-\phi] [[y-ky']/P] [T[1-\phi]y'' + T^2 U''] - U'' [[1-s]P + k] T^2 [1-s][1-\phi]y'' \} < 0 \quad (8.)$$

and

$$\frac{dk}{dP} = \frac{1}{\Delta} \{ -[1-\phi] \{ [y-y'k]/P \} U'' \{ [1-s]P+k \} T > 0 \quad (9.)$$

This means that the choice of T , that is the quantity of land demanded, is going to be negatively affected by an increase in the price of land, i.e., a downward sloping demand curve for land. However, the capital-land ratio, k , is positively affected by an increase in the price of land. Feder and Feeny interpret this result as the farmers substituting capital for land when land prices go up.

The model can also be employed to show that the optimal choice of T is negatively affected by an increase in the risk to ownership if land prices are held fixed, see equations 10 and 11:

$$[H] \begin{bmatrix} \frac{dT}{d\phi} \\ \frac{dk}{d\phi} \end{bmatrix} = \begin{pmatrix} y + P - \{[1-\phi] y' - [1+r]\}Ps' + TU'' \{[1-s]P + k\}Ps' \\ Ty' + T^2U''Ps' \end{pmatrix} \quad (10.)$$

$$\frac{dT}{d\phi} = \frac{1}{\Delta} \{ \{ [y + P - \{[1-\phi] y' - [1+r]\}Ps' + TU'' \{[1-s]P + k\}Ps'] T[1-\phi] y' + T^2[1+r]s PU''/[1-\phi] - T^2U''[[1-\phi]y' - [1+r]]Ps' \} < 0 \quad (11.)$$

The expression $\{[1-\phi] y' - [1+r]\}$ is greater than zero because the credit constraint is assumed to be binding. This means that the expected⁴ marginal productivity of the land has to be greater than the cost of capital for the individual to be willing to ask for credit.

Because the demand for land is downward sloping, and given that the supply of land is fixed,⁵ there is an equilibrium price for land that depends on ϕ , the probability of

⁴ By “expected” is meant both the usual meaning of uncertainty regarding actual productivity and/or market conditions and, in addition, accounting for uncertainties regarding risks of dispossession, i.e., ϕ .

⁵ The physical supply of land is always fixed. The economic supply of land could increase making available, through irrigation infrastructure for example, some currently unproductive land. In this model, it seems that economic supply of land is at the frontier of possibilities of production, that is, all the land has been transformed to be available for economic use.

losing land. In other words, if the demand for land is reduced after an increase in ϕ , the equilibrium price of land is going to decline too because the supply of land cannot be moved, see equation 12.

$$\frac{dP}{d\phi} = - \frac{[dT/d\phi]}{[dT/dP]} < 0 \quad (12.)$$

Through its negative effect on reduction in the price of land, the model shows that the capital-land ratio, k , also is negatively affected by an increase in the risk to ownership, see equation 13.

$$\frac{dk}{d\phi} = \frac{dk}{d\phi} + \frac{dk}{dP} \frac{dP}{d\phi} = \frac{dk}{d\phi} - \frac{dk}{dP} \frac{[dT/d\phi]}{[dT/dP]} = \{Ty'[1-\phi][y-y'k]/P + T^2U''[1-s] \{Py'[1-s] + y'k - y - P\} + TU''[r+\phi]s'\} / [dT/dP] \Delta < 0 \quad (13.)$$

That is, the equilibrium capital-land ratios decline in consequence of higher uncertainty. The interpretation of this result is that higher risk of losing land “increases current consumption at the expense of demand for both land and capital goods.” However, “the price of land declines to clear the market at the original level of land use as the supply of land is fixed. All of the decline in the purchase of investable resources is thus absorbed by the capital good, reducing capital-land ratios” (Feder and Feeny, p255). The final effect is a decline in the output per unit of land as y is a function of k .

These results are in conformity with an economy where credit is available for everybody, where the land market is developed, and where credit is related to land value and to security of land rights. Then, in this economy any increase or decrease in the risk to ownership will have an effect over the capital-land ratio through its effects on the land and credit markets.

Modifying the Model to Conditions on the Peninsula of Santa Elena

In this subsection will be presented the modification of the Feder and Feeny Model to conform to conditions on the Santa Elena Peninsula. Particular focus will be on the impacts of development, by the Government of Ecuador, of the system of canals through the Peninsula intended to serve as the basis for an irrigation system.

Feder and Feeny modeled a situation in which there were essentially homogeneous individuals determining the amounts of land, capital, and credit they would obtain and all were subject to approximately the same levels of risk. The situation on PSE was, and remains, quite different. Rather than being homogeneous, there are two distinct types of farmers in or potentially in these markets: the comuneros and the commercial farmers or, more generally, non-comuneros. These will now be briefly introduced, including their access to credit and land markets and the direct impacts of the canals over them.

Comuneros

Traditionally and by Ecuadorian law, virtually all lands on PSE are held communally. The communities are known as comunas and their members as comuneros. Due to overuse and severe degradation and near-desertification of much of the land, as well as the lure of job opportunities in urban areas, primarily Guayaquil, from a peak of one to two million people in the first third of the 20th Century, PSE's population fell to under 300,000. For the remaining comuneros, in general, while the land was not very productive, at least it was not in short supply. Indeed, there were areas in many comunas that were either unused entirely or only used sporadically and/or at very low levels of intensity. With effectively a zero shadow price on lands, individual comuneros were virtually assured of secure usage rights on plots previously allocated to them by the comuna.

Credit market. Because Comuneros had usage, but not individual ownership rights, ‘their’ land could not be used as collateral.⁶ As such, Comuneros had effectively no access to credit.⁷ In terms of the Feder and Feeny model, $s = 0$ and hence also $S = 0$.

Land market. Legally, the communally held lands cannot be bought or sold. This, combined with no access to credit markets effectively precluded individual comuneros from the land markets. So, unlike the farmers envisioned by Feder and Feeny, the amount of land, T , is not a decision variable for the comuneros. In addition, land is not part of a comunero’s wealth, W_o , both because he/she does not individually own the land he/she uses and because, at least before the canals, most land had an effective (shadow) price of zero. As such, $TP = 0$ in equation 3 and elsewhere. In addition, the first order condition related to T is not in effect (equation 4) nor the subsequent analysis to the extent it is based upon that first order condition. Rather, the Comunero is reduced to one decision variable, k , with its first order condition described in equation 5.

As a result, the comunero faces a maximization problem as follows:

$$\text{Max}_k U(W_o - kT) + [1-\phi] T y(k) \quad (14.)$$

Direct impact of the canals. The primary constraint to increased agricultural productivity on the PSE is the low and irregular availability of water. The canals were intended to alleviate this problem. However, to utilize the water effectively requires investment in secondary irrigation systems (i.e., pumps, pipes and/or secondary canals, sprinklers, drip irrigation systems, etc.). With no significant attachable assets, such

⁶ In addition, as long as the productive potential of the lands was low, their value as collateral would, likewise, have been low or even nil.

⁷ A description of the kind of financial services these comunas have access to will be found in chapter 3.

investments were beyond the means of the comuneros and, as such, the canals were of only marginal value for agricultural production.

Commercial Farmers

Unlike the comuneros, there is no commonly used term to describe the other group. ‘Commercial farmers’ includes non-comuneros interested in entering the PSE land market either to engage in agricultural production or for speculation, in anticipation of rising demands for these lands by others wanting to produce agricultural products. In general, these are individuals with considerable financial means and political influence. Ironically, the Feder and Feeny model presented above, which was intended to describe peasants, can be employed without modification for this group.

Credit market. This group clearly has access to credit markets, being also able to enjoy a “collateral premium⁸” for the land, which suggests a higher shadow price of the land and consequently stimulates investment and improves expectations from future land “reselling”. However, as Feder and Feeny described, the proportion of the land value that banks would be willing to extend loans depends upon the risk of dispossession. This risk, even though small, exists for the commercial farmers on PSE because purchases of communal lands are technically illegal under Ecuadorian law.

Land markets. The legal prohibition against purchasing communal lands would seem to render moot access to land markets. However, it is a reality of all societies that, given sufficient political influence, knowledge, and ‘considerations’ all things are possible. As such, if this group desired access to the PSE land market, which actually they desire, they could gain it.

⁸ As noted by Feder and Feeny, page 248: the “collateral premium” is “the result of the owner’s ability to obtain additional and cheaper credit by pledging the land as collateral.”

Direct impacts of the canals. Unlike the comuneros, the commercial farmers had access to the capital necessary to use the canals to increase agricultural yields.

The Overall Impacts of the Canals

To the surprise and disappointment of many, the building of the canals did not bring an agricultural and economic renaissance to the comunas, but rather the sale of most lands along the canals to commercial farmers. These events may be readily explained employing the Feder and Feeny model (with the above-described modifications for the comuneros) and recognizing that these two groups have different degrees of access to land and credit markets and, importantly, that they may face different degrees of risk.

Prior to the development of the canals, commercial farmers had little interest in land on the PSE and, due to the land's low productivity and large supply relative to the population, comuneros had secure usage rights and ample lands to apply their severely limited labor and capital endowments. The canals increased the demands for these lands for commercial farmers. In terms of the model, within ranges of k feasible for commercial farmers, but not for comuneros, the canals greatly increased y' because of the greater agricultural potential made possible through water availability. Through overt and covert actions in the political arena, commercial farmers and their supporters were able to lower the risks they would face from making essentially illegal purchases, invasions, or false claims over communal lands. These political actions may be viewed as a fixed investment in intangible assets to lower risk and, in so doing, further increasing commercial farmer demands for lands adjacent to the canals.

Nonetheless, to buy land, there must be a seller. The comuneros had an incentive to sell as a result of:

- The low potential value the canals represented to enhance the productivity of adjacent lands for comuneros. This is due to the comuneros having effectively no access to capital.
- The increase in demand for land by the commercial farmers brought a risk of losing land rights to the individual comunero. This risk appeared in three versions. Land invasions of unfenced areas by non-comuneros were in many cases the first source of risk to emerge after the construction of the canals. Another version took the shape of negative externalities among comuneros. As the lands were communally held, no individual comunero could decide if and when to sell the lands he/she used. Rather, a comunero might be forced to (or not to) relinquish lands through a vote by the community or by a politically powerful subset of the community. The final source of risk was (and still is) the increasingly strong desire by the Government to move lands into the most productive hands in order to be able to secure fees for water usage and other taxes and begin recouping the high capital and operating costs of the canals. This imperative further reduced the threat of dispossession for the commercial farmers, but had the reverse impact for the comuneros.

Increased risk of losing land rights translated into lower incentives to use capital and lower yields, in turn, reduced even incentives to retain lands (or, otherwise stated, increased incentives to vote or lobby in the comuna to sell). As Feder and Feeny indicate in their model explanation, when risk of losing land rights goes up, current consumption is preferred to accumulation of land and capital goods. This conclusion is going to be even more real in the case of “resource-poor households”⁹ who, as analyzed by Carter and Salgado (2001), tend to favor safe portfolios. Using the mathematical model, and considering that the comuneros cannot officially participate in the land market, the effect of an increase in risk of losing land rights over the comuneros’ capital-land ratio is shown in equation 15.

$$\frac{dk}{d\phi} = y' / [y''(1-\phi) + U''T] < 0 \quad (15.)$$

The increase in demand for land by the commercial farmers impacted positively on the price of these lands. The canals generated a demand for land by non-comuneros that did not exist before thus determining a price for the land which otherwise could have been effectively zero. The higher price of the land represented then the competition for land near the canals that started to occur in the region, therefore increasing the risk of losing land rights for the comuneros. In other words, the risk of losing land rights became a function of the land price. In mathematical notation:

⁹ As called by Carter and Salgado, “Land Market Liberalization and the Agrarian Question in Latin America.” Chapter 10. In Alain de Janvry, Gustavo Gordillo, Jean-Philippe Platteau, and Elisabeth Sadoulet (2001). *Access to land, rural poverty, and public action*. Oxford University Press.

$$\phi(P), \text{ and } \frac{d\phi}{dP} > 0.$$

In addition, as Carter and Salgado indicate, the shadow price of land (understood as a rental shadow price) for capital-constrained individuals would be lower than that for unconstrained individuals. As a result, the land value for the comuneros would be lower than for the non-comuneros resulting in pressures to carry out the transference of land rights from comuneros to non-comuneros.

The conditions of low access to capital and effectively zero shadow price of the land, and the effects of increasing land price and risk of losing land rights, together made land sales rational for the comuneros of the Peninsula. However, it is important to notice that those incentives for selling land applied for the comunas as groups of comuneros; this is because the individual comunero does not have complete control of the land, so individual transactions are not allowed.

The sequence of effects of the several variables analyzed so far may be depicted in Figure 2-1.

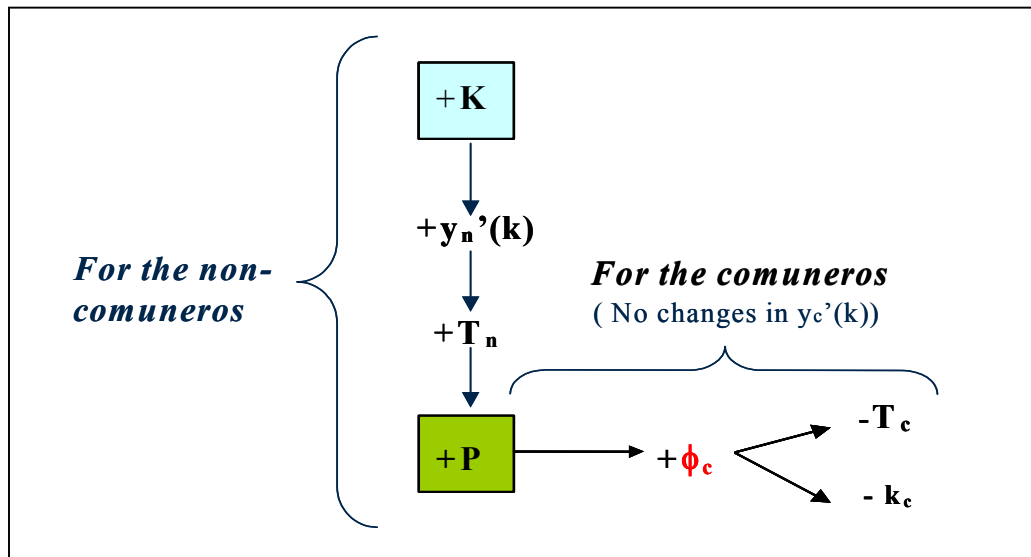


Figure 2-1: Effects of the canals over non-comuneros and comuneros

Where K symbolizes the canals, and the signs $+$ and $-$ increase or decrease in the variables respectively. The subscript n represents the non-comuneros or commercial farmers while the subscript c represents the comuneros. T characterizes the amount of land demanded by the different agents. There is no change in y_c' because comuneros are unable to reach investment thresholds sufficient to utilize the canals (i.e., sufficient to develop secondary irrigation systems).

As a result of the construction of the irrigation canals, the potential productivity of the land for the non-comuneros went up, providing the impetus for an increase in the demand for communal lands. On the other hand, the canals did not represent any potential increase in the productivity of the land for the comuneros. Once the purchases of land occurred, this had a positive effect over the land price, which represents the competition for these lands that started to take place. This competition for land endangered the land rights the comuneros used to have, which had the effects of altering their investment decisions, reducing their capital-land ratios, and of encouraging the comuneros to sell their land.

Table 2-1 summarizes the maximization problem of the two groups.

Differentiation is made for the risk variable between the commercial farmers and the comuneros because the risk of losing land rights is different for each group.

As we can see, the risk of losing land rights for the comuneros (ϕ_c) is the variable ultimately affecting the comuneros demand for land (as a group) and for land investments (as individuals). This however, is a controllable variable which can be diminished or eliminated through land privatizing among comunas' members, and titling. This strategy would also reduce transaction costs for land buyers, as it would make land transactions

easier -thanks to the actual existence of a land title-, and clearer -ensuring the transference of land property rights to the new landowners-, which would also increase the willingness of buyers to pay higher prices for the land.

Table 2-1: The maximization problem of commercial farmers and comuneros

	Commercial Farmers	Comuneros
Maximization Problem	$\text{Max}_{C_o, T, k} U(C_o) + [1-\phi_n] T [y(k)+P] - [1+r]s(\phi_n)PT$ $\text{S.T. } W_o + s(\phi_n)PT = kT + PT + C_o$	$\text{Max}_{C_o, k} U(C_o) + [1-\phi_c] T y(k)$ $\text{S.T. } W_o = kT + C_o$
Required Modifications from Feder and Feeny model	None	$s = 0 ; PT = 0$
Effects of P and ϕ	$\frac{dT}{dP} < 0 ; \frac{dk}{dP} > 0$ $\frac{dT}{d\phi_n} < 0 ; \frac{dP}{d\phi_n} < 0 ; \frac{dk}{d\phi_n} < 0$	$\frac{dk}{d\phi_c} < 0$ <p>Additionally for the individual comunero: $\phi_c(P)$; $\frac{d\phi_c}{dP} > 0$</p> <p>For the entire community:</p> $\frac{dT}{d\phi} < 0$

On the Area of Study

The strategy of land privatizing and titling is actually considered for the area of the PSE once taking into account the information collected during the fieldwork developed for this research. As part of the survey of 88 comuneros (described in the Appendix) they were asked what they thought were the benefits from land titling, if any. The results are in Table 2-2.

Table 2-2: Perceived benefits from land titling

Benefits from title	North	South	Total
Security	58%	47%	52%
Collateral	29%	33%	31%
Can sell	13%	16%	15%
Can rent	2%	12%	7%
No benefits	7%	5%	6%
Higher price	2%	2%	2%

Most of the interviewed comuneros see benefits in titling land. Security is the most important characteristic they perceive from land titles, which reveals the problem of land insecurity (or risk of losing land rights) they are experiencing because of the increased demand for land produced by the irrigation infrastructure. In the north, this benefit is better appreciated than in the south probably because the southern comunas have already lost most of the land near to the canals, land that has suffered greater insecurity. Titles are also very well seen as a mean to access to institutional credit. Some comuneros also see the option of selling land as a benefit from land titles. This type of benefit was somewhat more frequently cited in the south than in the north probably because the income generating activities in the south are less concentrated in agriculture than those in the north.

Later on in the survey, the comuneros were asked about the best strategy regarding land property rights that the comuna as institution should follow. Their answers are summarized in Table 2-3.

Table 2-3: Communal strategies about land property rights

Opinion about communal strategy for land	North	South	Total
a) Privatize all the land of the comuna among members*	51%	37%	44%
b) Privatize most of the land and keep some communal land*	49%	58%	54%
c) Provide titles to assigned or privatized land	76%	56%	66%
d) Rent communal land	22%	42%	32%
e) Sell communal land	10%	14%	12%

*a and b are mutually exclusive

The strategy of providing titles to assigned or privatized land (in the case of implementing land privatization) was the most accepted by the interviewees, demonstrating their desire to experience land ownership. Between the strategies of

privatizing all the land among the members versus privatizing just part (or most but not all) of the land and keeping some land under communal tenure, the last one was preferred. This reveals the desire of the comuneros to maintain the communal institution even if land privatizing and titling is put into practice. Actually, one of the reasons why some comuneros rejected the strategy of land titling was fear of the comunero losing interest in the communal institution and therefore, the survival of the institution. Other reasons were the fear of land selling after land titling, and of having to pay taxes over the land. Renting and selling communal land was less often considered an attractive strategy for the land of the comuna. In fact, several of those choosing these options stressed that land selling or renting should be just to other comuneros (from the same or other comunas).

Implementing land privatizing and titling on the comunas of the PSE would require the approval of this strategy by each comuna. Specifically, the members of the comunas would need to approve and implement the splitting of all or part of the communal land among the comuna members, and the comuna would provide all the documents individual comuneros would need in order to obtain land title. As mentioned before, three of the comunas researched in the south privatized their land during or shortly after the construction of the canals, but this with the main purpose of materializing land sales once experienced the threaten of invasions.

The only case where the strategy has been clearly applied as prevention for land invasions is Cerezal-Bellavista. This case can serve as an example that land privatizing and titling in the PSE is actually feasible (of course, the details of the strategy will depend on the situation and preferences of each community). However, not all the

comuneros of Cerezal-Bellavista that received land in ownership have obtained titles. The main reason for this is the cost of obtaining a title. Also, the absence of financial institutions willing to accept land as collateral does not encourage the comuneros to seek immediate formal documentation for their land. However, they plan to obtain land title at some point in the future.

Land Rental Markets

One of the options through individual land ownership is the development of land rental markets. It has been suggested several times that land titling might prompt land sales by the comuneros. However, it must be considered that after land privatizing and titling, the shadow price of the land for the comuneros would be higher so they would be expected to ask for a higher price. Nonetheless, land sales are not the only alternative outcome after land privatizing and titling in the case the comuneros prefer not to produce on the land themselves. Rather, land rentals may be a good option for many comuneros.

The information gathered in the fieldwork indicates little experience in land rentals within the communal structure (see Table 2-4). Moreover, renting land was seen as a beneficial possibility from land titling by only 7% of the comuneros interviewed (see Table 2-2). Still, as found in the results of another question in the survey which are shown in Table 2-5, renting is an option the comuneros considered viable or desirable with the land once individual ownership is obtained.

Table 2-4: Individual experiences in the land rental market

Experiences negotiating land	North	South	Total
Rent in	9%	5%	7%
Rent out	9%	2%	6%

Sadoulet, Murgai, and De Janvry¹⁰ talk about the benefits that land rentals can bring to small farmers. They observe that land rental markets have an advantage over land sales markets specially when “the other markets needed to make land markets work and to make use of land in ownership efficient fail, and when there are high transaction costs on the land sales markets.”(p199). This usually happens in rural areas of developing countries.

Table 2-5: Strategies with land after privatizing and titling

Best option for individual land	North	South	Total
Cultivate all	58%	40%	49%
Rent part and cultivate the rest	49%	26%	38%
Sell part and cultivate the rest	18%	7%	13%
Sell all	7%	12%	9%

These authors mention two main benefits from land rental markets. They give financial relief to landlords in periods of household crisis without the need to alienate the property, and they help to reduce market failures for both landlords and tenants.

The first benefit would occur because renting land allows for “short-term adjustments to land holdings”; that means, landowners can rent land out in periods of crisis or rent land in for expansion. In this sense, the authors stress that in periods of financial uncertainty land rental markets give more flexibility to landowners than the land sales market:

...adjustment of land holdings via the rental market provides more flexibility than the sales market. Households often require short-term adjustments to their operational farm size to accommodate life-cycle variations in resource allocation or transitory situations in the availability of family labor or in cash needs. Selling land with the intention of buying it back when needs turn around would obviously entail large transaction costs and the likely impossibility of retrieving the same plot of land later on, or one in a convenient geographical location. (p198)

¹⁰ Chapter 8 in De Janvry, Gordillo, Platteau, and Sadoulet (2001)

The other advantage of land rentals is that they can also help in reducing market failures that landlords and/or tenants may face. This benefit would happen in the case of share tenancy. When the rental contract is of a share tenancy type, both landlord and tenant can reduce problems related to incomplete or missing markets. On the tenant side, those problems are related to weak access to credit/insurance and lack of managerial skills, abilities that landlords usually have. For the landlord, he/she usually lacks family labor and draft animals, which the tenant can provide without the need of supervision as both agents are in partnership. Sadoulet et al. observe that share tenancy is a very common practice in least developed countries, where agriculture is mainly unmechanized.

In the case of the comuneros of the PSE, even though they face the same problematic situation around the land, the economic situation of the several families in each community does vary. Therefore, there may be comuneros with better or more resources and skills than others, cases in which renting land out in share tenancy to poorer or landless comuneros can be very much beneficial as these last farmers would be able to “scale up the agricultural ladder¹¹”, while the landlords would benefit from the fruits of the land at the same time that they develop other income generating activities.

Nevertheless, as described at the beginning of this document, comuneros are in general capital-constrained individuals. So, there are additional benefits of land ownership such as the “collateral premium” of land, or other advantages that just large farmers or simply more powerful individuals do count on. Time, institutional changes in the credit markets, other institutional efforts such as in education and/or extension, and

¹¹ See Chapter 8 by Sadoulet, Murgai and De Janvry in De Janvry, Gordillo, Platteau, and Sadoulet (2001)

governmental support in title enforcement would be required for the comuneros to take advantage of those benefits. Thus, until that happens, another option for the comuneros to increase their working capital would be renting land to private individuals (outsiders from the community) for a period of time being this more possible through fixed rental contracts.

However, wealthier individuals have a disadvantage with respect to comuneros if competing for land: they are unknown in the community and therefore less trustworthy. This situation has become worse after bad experiences suffered in the area of study where wealthier tenants have taken over larger extensions of land than what was agree upon and, furthermore, they have claimed land ownership over that land. Besides that, this kind of individual tends to use land in a more capital-intensive way trying to reach high profitability, then larger extensions of land may in many cases be required in order to take advantage of economies of scale. In that case, the communal institution could play a very important role in renting out especial remaining communal land to outsiders, say private agents or NGOs, creating this way a type of fund for communal needs, while comuneros can sell their labor and learn about modern agricultural techniques. A further option would be to use those funds for provision of working capital to comuneros, something that could be done through financial institutions with experience in the area and good reputation. More about this can be developed in future studies.

CHAPTER 3

FINANCIAL INSTITUTIONS

As suggested before, through land titling the comuneros of the Peninsula would potentially enjoy an increase in the shadow price of their lands as privatized and titled lands would become an asset for the individual comunero. Referring back to the model, PT (i.e., the market value of the land) would then become part of the comunero's wealth. This would encourage comuneros to make a more efficient use of their land, which could be done through land investment decisions or through engaging in profitable contracts with others (i.e., rentals or sales). However, a change from communal to individual ownership of land with the freedom of obtaining titles (or granting of titles) would probably not by itself make the comuneros less "capital-constrained"¹. An important factor on which the actual existence of a higher shadow price of the land would depend is the ability of the landowner to experience and take advantage of what Feder and Feeny called the "collateral premium" attached to land. The "collateral premium" refers to the increase in property value due to its service as collateral for credit.

However, unlike PT, credit [$S=s(\phi)PT$] would not immediately become greater than zero in the comunero's equation. This would happen because PT could take time getting to levels high enough for financial institutions to see the attraction of owning land in the area. Also, financial institutions would require time until getting confident enough about the security of the comuneros new land rights. Therefore, the "collateral premium" would

¹ See Chapter 10 by Carter and Salgado in De Janvry, Gordillo, Platteau, and Sadoulet (2001)

not be a benefit for the comuneros at first. Nevertheless, with PT in the equation, comuneros would feel more comfortable about making land investments through risking other assets such as livestock, household belongings, or even through risking their own reputation in what is known in the microfinance field as “social collateral”.

For the comuneros actually to be able to enjoy a “collateral premium” over their lands and/or to raise capital for agriculture through other probably smaller economic activities, financial services in the region will need to be willing and able to adapt loaning practices (interest rates, maturities, etc.), collateral requirements, savings opportunities, etc. to accommodate these small landowners.

As many writers in development microeconomics recognize, failures of financial service providers in rural areas are usually due to the poor or unsuitable administrative structures of the lending organizations and their systems of repayment incentives.² Besides informal lenders, the few credit suppliers offering their services to small farmers in the area of study are non-traditional institutions, such as NGOs and a couple of small organizations belonging to the comuneros. Some of these institutions use innovative lending practices, however they have not yet been able to get rid of restrictions - such as special collateral requirements - that prevent many comuneros from participating. The only formal rural credit provider near the area of study is a governmental bank, however it has little interaction with comuneros. As a result, the demand for credit by the comuneros of the area is still much larger than the supply, which suggests that the current institutions could improve their practices and that commercial banks still need to find the benefits from entering the area. This situation limits the economic development of the

² See for example Braverman and Guasch in chapter 3 of *The Economics of Rural Organization*, 1993

Peninsula and reduces its potential from the irrigation canals and from any land privatizing and titling.

As will be shown later in this chapter, due to the long history of communal land holdings, accepting land as collateral is uncommon among the financial institutions currently offering credit on the PSE. This is, of course, because of the lack of individual landowners among the comuneros but at the same time because of the absence of an active and secure land market, which has led to a lack of culture about the issue. Privatizing land should encourage a more active and secure land market and attract formal lenders. However, as noted before, this process is expected to be slow as confidence in the area is developed. Therefore, currently existing institutions on the area should in the meantime start being aware of the requirements they need to fulfill both now and in the future (regarding land as collateral as well as innovative guarantees and loan practices) in order to help with the empowerment of the comuneros. Any financial institution entering the area should also consider those requirements.

Land investments will depend on the availability of financial institutions willing to accept land as collateral, as well as on the ability of the comunero to actually use land as collateral (to bear the risk of losing the land). It will also depend on the ability of the comunero to accumulate capital through off-farm activities such as trade, handcraft, or other small businesses, or also through small on-farm activities such as raising domestic animals. These activities would strengthen the comuneros' capital endowment, which later on would help them to be able to make larger agricultural investments. These kinds of smaller productive activities can be very well encouraged through microfinance service institutions willing to implement innovative financial practices. Of course,

improving information about markets and innovative agricultural practices, and performing stronger extension efforts are also critically important factors that would need to be considered in order to help the comuneros reaching a profitable level of output. Strategies to ensure this goal would need to be implemented by specialized extension institutions; however, they are not in the scope of this thesis.

As a result, this chapter will categorize important strategies for rural microfinance that have been developed around the world since the late 70s and have successfully targeted the poor. But first, financial institutions currently offering credit on the area of study are briefly described with an analysis of what they are in general lacking in order to meet the comuneros' requirements for capital improvement.

Financial Institutions in the Peninsula

From the survey of 88 people from 8 comunas on the PSE (four comunas in the northern area and four on the south), 29 people were found to be current borrowers, which corresponds to 33% of the sample.

Financial services on the Peninsula are actually very limited in coverage and sustainability. 67% of the people in the sample do not receive credit from any source, and many of those currently counting on credit cannot be sure of counting on the service on a long-term basis nor with investment flexibility. Out of the 59 people in the sample that not receive credit just 15% manifested not to be willing to ask for credit. This is because of the high interest rates they are charged, bad credit experiences they have had in the past, many requirements and constraints, and of course, fear of not being able to repay (risk aversion). However, these reasons could be narrowed down to two main ones: inability to meet physical collateral requirements and risk aversion. Samuel Popkin (1979) makes a good analysis of peasants' behavior regarding to risk:

Although poor and close to the margin, however, there are still many occasions when peasants do have some surplus and do make risky investments: the fact that they are poor and risk averse does not imply, either logically or factually, that they do not make investments. Peasants make long-term as well as short-term investments, and therefore have long-term and short-term investment crises, and they make risky as well as secure investments. (p18-19)

Popkin also recognizes: “whenever a small loss would be disastrous, peasants will be extremely risk averse.” (p18). Hence, risk-bearing capacity can vary each period according to the dynamics of the peasant’s environment. This leads to the conclusion that the households in the sample not willing to ask for credit could change their minds in any period depending on the situation at hand and their process of decision-making. Popkin this way shows that peasants are nothing less than rational agents trying to take the best advantage of the opportunities and abilities they have, and therefore willing to accept a higher risk than usually recognized.

That analysis goes with the case of the PSE where 84% of the people in the sample were willing to ask for credit. Furthermore, even though agriculture is a risky activity by itself, 41% said they wanted to receive credit for agriculture and 63% had agricultural plans for the future (with or without credit).

About “high interest rates”, experiences in the area and around the world show that interest rates high enough to cover operation costs do not alter credit demand.³ This is due to the fact that the actual problem in rural areas is lack of financial services.

Savings services are also lacking in the Peninsula, the comuneros continue with the culture of saving through domestic animals (pigs, goats, hens and chickens), which they

³ “Desai and Mellor (1993) show in their review that the loan demand coefficient is negative, but inelastic, regarding the interest rate.” P90 Rural Finance for Food Security for the Poor. Zeller, Schrieder, Von Braun, Heidhues. 1997. International Food Policy Research Institute, Washington, D.C.

sell in times of “fiestas” or times of need. Also, people living outside the comunas usually send remittances in the form of food to their relatives in the comunas.

Brief information about the financial institutions currently offering credit to the comuneros of the area of study is specified next. Table 3.1 gives a summary of the loan characteristics of these institutions.

Local lenders and intermediaries are the common source of credit in peasant communities as the very limited credit opportunities lead producers and small business owners to use these sources. The terms of these kinds of loans however are beyond the control of the comuneros and usually they absorb a large part of what otherwise could have been the comuneros' profits.

Fundación “Santa María del Fiat” is a Catholic institution oriented to provide religious and social services to the northern communities of the Peninsula. The local director, Priest Bertram, is interested in increasing the income generating potential of the comuneros. However, being a religious institution, Priest Bertram does not charge any interest nor exert any pressure if the loan cannot be repaid. For these reasons, it seems unlikely for this Foundation to be a sustainable lending service.

Escuela Superior Politécnica del Litoral (ESPOL) is an educational institution with campuses on Guayaquil and Santa Elena (PSE). ESPOL expanded its influence on the southern part of the Peninsula through a renewed vision of progress for the area, resultant from a petroleum exploitation project allowed by the Ecuadorian Government. ESPOL agreed with the Government to invest part of the project's profits on the social and productive development of the Peninsula. To fulfill this commitment, ESPOL created the Program for the Development of the PSE in the year 2000. One of the components of

Table 3.1: Financial institutions in the PSE

	Institution	Number of borrowers found in sample			Range / amount	Monthly Interest R.	Repayment Time (months)	Types of warranties	Uses
		Total	North	South					
1	Caja Solidaria (PRODEPINE)	8	5	3	40-160	n/a	1-3/until cancelled	comuna's government backup and previous deposit	pigs, commerce, household expenses
2	Fundación Sta. María del Fiat*	1	1	0	240	0	7	previous deposit	savila production
3	Centro de Promoción Rural (CPR)	8	8	0	12-500	0-3	4-9.	household appliance, land title** (1case)	maize and cattle production
4	FINCA	6	2	4	20-600	3.5-27	4-9.	household app., working tools, deposit	commerce, agriculture, sowing inputs
5	Precooperativa Carlos Fernandez#	1	1	0	300	n/a	1	household appliance	town activities
6	Local lenders	5	5	0	85-240	2-5.5	1-6.	nothing	commerce, maize prod., ag. equipment
7	Intermediaries	1	1	0	1400	n/a	until cancelled	n/a	short cycle agriculture
8	Fundación Propueblo*	1	1	0	255	n/a	n/a	n/a	apiculture
9	ESPOL*	2	0	2	700-10000	1.4	more than 12	comuna's government backup	short cycle agriculture
10	Fundación Eugenio Espejo	1	0	1	328	2	4	n/a	commerce
11	Banco Comunal#	2	0	2	30	6.7	1	Nothing	commerce
12	Fundación Troja	1	0	1	175	n/a	1-3.	comuna's government backup	chickens
* Give credit just for very special occasions, so they are not really institutions offering credit as a service.									
# Just local institutions (that is, just for the community where they belong). They are 100% operated by comuneros									
** This case came from the only comuna on the north that has already privatized the land (Cerezal-Bellavista).									
Larger coverage than the others									
Number of observations: 45 North, 43 South. 88 Total									

this program included productive projects with the purpose of encouraging the comuneros' abilities or empowering them for using their own resources such as land and water sources. Some of these projects included lending, with the amount of the loans as high as proven needed by the borrower and the maturities as long as required for the profitability of the activity. About guarantees, ESPOL just asked for the comuna's government backup. However, because of the complicated international market for petroleum and other problems, ESPOL has been receiving fewer profits since a year ago, making it impossible to continue with the loan experiences. Results from these lending experiences are mixed, that is, some borrowers have been successful in their activities and are making repayments on a regular basis while others have not been able to overcome adverse market conditions making repayments hard to accomplish.

Fundación Propueblo is interested in the development of the comuneros' skills of the northern part of the Peninsula so as to lead them to activities environmentally friendly and profitable, such as honey production, candle elaboration, handcraft from recycled paper, and sometimes crop projects. Each of these and other activities represent a program or component for the institution; loans are extended to the participants in different ways according to each program. Usually, Propueblo is also in charge of trading (exporting) the resultant products.

Precooperativa Carlos Fernandez is an institution with history as it was founded by a Priest approximately 9 years ago in the comuna Manantial de Guangala. After it functioned for about three years, it ceased its operation, but was soon reinstated by comuneros. Nowadays it is still in operation serving people from Manantial with savings and lending services. Loans are usually for commerce, such as grocery stores, cloth

selling, and the like. In spite of low technology, this institution shows a degree of organization rarely seen in the rest of the area.

Banco Comunal, as it is called by the comuneros of Río Verde, is an institution recently created by the members of this comuna. The Comuna Río Verde raised some money after the selling of communal land.⁴ They decided to loan these funds to the comuna's members. The amount of each loan is fixed \$30 with a maturity of 1 month. At the time of the fieldwork, the bank had already loaned the whole amount (\$3,000) to 100 participants. The lending system in this comuna is very active compared to other comunas, because the commerce (of handmade cloth, fruit, fish, groceries, etc.) is very active too. Those who have traditionally been offering loans in the community are fellow comuneros with somewhat better possibilities; the interest rate however has been as high as 30% monthly. The Banco Comunal is intended to give better opportunities to the comuneros of Río Verde through lending at a much lower interest rate. Another way to obtain money for commerce has been *cadenas* (chains). These are similar to the RoSCAs (Rotating Savings and Credit Associations),⁵ where 40 to 200 comuneros get together, each one contributes \$2 or \$3, and the entire amount rotates each month until every member of the group have taken advantage of the loan.

Fundación Torja has been known for working with “animal keeping” projects, such as goats, pigs, and chickens, specially in the southern part of the Peninsula. The Foundation works through projects, where the participants are chosen according to their

⁴ Both from the privatization of land among the comuna's members (where each beneficiary had to give a contribution to the comuna), and from sales of communal land by the community as a whole.

⁵ These associations created by rural people for their own benefit became famous in African countries but similar kinds of groups operate in rural areas around the world adopting different names.

attendance to Toja's seminars (about animal keeping) and to the infrastructure they already count with, among other criteria.

Fundación Eugenio Espejo is a promising institution that started serving poor urban and rural sectors of the PSE in 1997 with a startup fund of US\$5,000. Currently, they have formed five communal banks, like village banks,⁶ in four towns of the southern area of the Peninsula (two of them are comunas). Each bank has 32 participants, mostly women. Currently the Foundation handles a portfolio of US\$25,000. Loans are offered from US\$80 to US\$350 for production or for trade, not for consumption. Maturities are from 4 to 6 months. They assert their repayment rate is 100%. One of the communal banks has been able to raise US\$7,000 in savings of its participants. The Foundation also has alliances with other NGOs especially for offering seminars and training workshops about nutrition, administration and cooperative behavior. Many inhabitants of the area are waiting to be included on the institution's program until more funds are obtained.

Caja Solidaria, CPR and FINCA are the institutions that were found offering a slightly larger credit service to the comunas under study. The program **Caja Solidaria** belonging to the Program for the Development of Black and Indigenous People (PRODEPINE) works also with a "village banking" methodology, where starting loans are given to groups, in this case all women, in different communities. The groups distribute the loans among their members with an interest rate set by each group. The participants are requested to save a minimum amount of money per month (this amount is also decided by the group members). The loans are repaid monthly and each time a

⁶ Methodology developed by John Hatch and the American NGO Finca. See "How Lending to the Poor Began, Grew, and Came of Age in Bolivia" by Elisabeth Rhyne, 2001 page 8. See also the section "Strategies to overcome traditional lending problems" in this chapter.

higher amount of money is ready to be loaned again to the group members resulting from the savings and interest rate of the loans. Groups are evaluated periodically and provided with training and seminars about different subjects by PRODEPINE.

Centro de Promoción Rural (CPR) is one of the most successful and growing programs working on the area of study. This institution began its operation on the Peninsula in the late 70s and is characterized by providing individual loans to comuneros that are previously selected according to variables such as attendance at CPR seminars, reputation about responsibility, experience in the activity, not having any other loan at the same time, among others. CPR also prefers to work with women rather than with men because they believe women are usually more responsible.

CPR works closely with people of the northern area of the Peninsula. It uses an office strategically located near a bus stop for many routes of the public transportation system. It holds regular meetings with a peasant organization that represents the communities. Usually, the loans are associated with a project, say maize, yuca, or watermelon production, commerce, etc, activities that constitute the desire of the comuneros. In each community there is a group of comuneros participating in the project (on an individual basis), they have meetings and report to CPR, that way they are held accountable for one another even though they do not guarantee each other.

CPR implemented a strategy of post-harvest handling and commercialization of maize, where the institution buys maize from the producers at a higher price than what the traditional intermediaries pay. Later on, CPR trades it. This strategy seems to be very helpful to the comuneros, some of who were interviewed for the survey of this thesis.

Collateral accepted by CPR is usually household appliances bought not before 1997; this restriction prevents many comuneros from participating in CPR's loans because of the degree of poverty they face. Land titles from comuneros belonging to the comuna that have already privatized land are accepted for collateral only as the last resource because CPR does not want to become a landowner in the area, although this decision might have been also influenced by the fact of a missing formal land market. Of similar importance to collateral exigencies is the fellow approval of each comunero for him/her to take part in the group of borrowers of CPR.

CPR's interest rate for loans is usually 1.5 or 2 points lower than the market interest rate. The institution has a loan recovery rate of 99% and repayments are monthly instead of being at the end of the production cycle. This implies that applicants are required to have another income generating activity (other than the loan investment) so they can repay the loan even if adverse environmental or market conditions hit.

As CPR's staff recognize, their success is very much due to the fact that most of the field staff are natives of the area, and those who are not, have become familiar enough with it, that they are not seen as outsiders. CPR's close relationship with its clients and their representative organizations, along with the acceptance of their clients' own productive plans, explain their success as well. CPR would like to expand its operation to the south of the Peninsula but they do not see it happening for at least 5 years.

Another institution currently offering credit in the area of study is a governmental institution, the **Banco Nacional de Fomento (BNF)**. This bank has a history of credit service to farmers, however it has a reputation of not providing sufficient funds, requiring

excessive paperwork, lengthy delays before loan approvals, and serving richer, rather than poorer, farmers.

According to the manager of the bank's office in Santa Elena at the moment of the fieldwork, the only branch of the BNF that has losses is the one in charge of the south coastal region of the country, which includes the PSE. The bank interrupted its operations for awhile due to this problem but more than a year ago it came back to operation. Nevertheless, most of the comuneros that participated in the fieldwork for this thesis were not aware of this.

Besides the lack of information about the renewed operation of the bank, the bad experiences that many comuneros have had with the bank in the past prevent them from visiting it again. The BNF however, is willing to make loans to clients holding a savings account in the bank for agricultural activities (crop production and animal keeping) handcraft, and commerce. The amount of each loan would depend on the client's account balances. The bank would loan up to \$8,000 per borrower.

There is a restriction for obtaining a loan to people holding old debts with the bank: they cannot obtain a new loan if they do not previously pay that debt. These people have up to five years to repay the old debt, however again, many comuneros are not aware of this opportunity and the ones that are aware do not feel able to repay old debts because of their level of poverty. The small loan recovery rate is what produced the BNF bankruptcy in the past; however, currently the requirement of old debt repayment is really limiting the comuneros' access to credit. This is noticed, as other institutions such as CPR are also requiring their potential borrowers not to maintain any old debts with the BNF.

The interest rate for loans in use for the bank at the moment of the fieldwork was 18% annually for any kind of loan. BNF can accept several kinds of warranties depending on the amount of the loan, such as two guarantors, guarantors plus a pledge, house or land titles, the support of a communal institution, and livestock. These kinds of guarantees have always been accepted by the bank, however the lack of technical support in the area and the often-adverse market conditions is what in most cases prevented borrowers from repaying their loans in the past. As a result of this, many comuneros have lost indispensable machinery or other kinds of agricultural tools, which have prevented them from developing agriculture in the future. With respect to the support of the communal institution as a guarantor for comuneros, the bad loan recovery experiences produced a denial by the bank to loan to community members again.

Repayments for agriculture are still at the end of the production cycle, however comuneros argue that what is the end of the cycle for the bank is not yet the end of the cycle for them. About efficiency, the manager in Santa Elena indicated that just 8 days were needed for a loan application to be approved, and 15 days when titles are submitted as collateral.

In conclusion, most of the methods of the BNF are similar to those in the past and even similar to traditional commercial banks. Lack of advertising and the “old debt repayment” requirement are other difficulties that prevent the bank from reaching the comuneros of the Peninsula.

An institution that is internationally well known for its work with microfinance is **Banco Solidario**. Even though there is a *Banco Solidario* operating in several rural areas of Ecuador, it does not reach the PSE yet, but it is concentrated on the urban areas of

Cantones Guayaquil and Durán (near the PSE). However, this institution seems not to rely on group guarantees as BancoSol in Bolivia does, but it requires physical collateral. As indicated by a credit assistant of the institution, *Banco Solidario* plans to start offering financial services in the PSE during 2003.

After knowing a little better these financial institutions, it seems safe to say that the current supply of financial services in the area of study have the weaknesses and face the conditions indicated in Table 3.2.

Table 3.2: Problems of financial institutions in the PSE

Weaknesses of Financial Institutions
Limited funds
Low reach in terms of number of clients and of ability to offer long-term services
Lack of flexibility about guarantees
Difficulties to give clients investment flexibility
Lack of voluntary savings services
Lack of technical support in agriculture (through connections with organizations of market and technical assistance).
Weak advertisement of services (specially BNF)
<i>Specifically on the south of the PSE:</i> Financial institutions are unable to offer larger loans as required in order to re-start agricultural activities (more than \$800).
Conditions of the area
Little ability of willing borrowers to offer physical collateral.
Adverse environmental and market conditions for agriculture make loan repayments difficult.

These problems are due to four major traditional problems that need to be faced in general by financial institutions serving rural areas: high risk; high operation or administrative costs (related to the fact that this niche of the market is composed of small units); lack of reliable physical collateral; and, as a consequence of the previous problems, lack of self-sufficiency.

Those problems are usually present in rural sectors because of the physical characteristics of these areas, the education level of its people, and the characteristics of the economic activities they perform. In the case of the Peninsula of Santa Elena, roads are in general unpaved and the area suffers a lack of means of transportation. Also, the communication infrastructure is scarce; in most of the comunas just one or two families have a phone line. These situations isolate those areas from more developed ones.

Lack of education of the comuneros is another weakness, which makes it difficult for financial institutions to trust on the comuneros' abilities to manage their own businesses. Tables showing house characteristics, numbers of members per household, average expenses per kind of household, and communication and transportation means will be found on the appendix to this document.

Finally, the very nature of agriculture, different from industrial and commercial activities, makes the provision of credit riskier and more costly. Agriculture⁷ is not, however, the only income generating activity the comuneros perform. Actually, as shown in Table 3.3, just 7% of the households in the survey rely solely on agriculture.

Table 3.3: Source of income of the rural family in the PSE

Source of income	North	South	Total
Just wage earner	27%	14%	21%
Just own business	9%	29%	18%
Just agriculture	11%	2%	7%
Wage earner and own business	13%	33%	23%
Agriculture and own business	4%	5%	5%
Wage earner and agriculture	27%	5%	16%
Wage earner, own business, and agriculture	9%	12%	10%
% households / wage earning as part of household portfolio	76%	64%	70%
% households / own business as part of household portfolio	36%	79%	56%
% households / agriculture as part of household portfolio	51%	24%	38%

⁷ Crops and raising animals

As we can see in this table, own businesses constitute an important source of income (56%) for the comuneros interviewed in the sample. Own businesses usually require smaller loan amounts to get initiated, grow and survive than agriculture, and have the ability to make capital grow faster in shorter periods. Small businesses could very well be considered as an excellent support for agricultural activities, serving as a backup for agricultural loans or being the loan investment in order to raise capital for agriculture. These small businesses can be encouraged through microfinance practices.

Thus, a mix of traditional and innovative financial practices would be required for the area of the Peninsula. Traditional requirements because accepting land as collateral for credit is an old practice in most areas of the world, which have the advantage of being very secure and it would be necessary for larger amounts of credit –due to the transaction costs it involves. Innovative practices because serving rural areas is not an easy task so it requires the adoption of new paradigms in order to reduce risk and costs; also, through this kind of practices smaller amounts of credit can be provided and a larger portion of peasants can be reached.

Internationally well-known innovative financial practices could be implemented in the Peninsula in order to overcome the problems previously mentioned. Those practices or strategies are described in the following section.

Strategies to Overcome Traditional Lending Problems

The microfinance movement was known to the world through the experiences of institutions such as the Grameen Bank and the Bangladesh Rural Advancement Committee in Bangladesh; the Bank Rakyat Indonesia (BRI) in Indonesia; the Bank for Agriculture and Agricultural Cooperatives (BAAC) in Thailand; Banco Solidario

(BacoSol) in Bolivia; and experiences of NGOs such as Accion International in Latin America and FINCA around the world.

From these experiences with microcredit around the world, lessons may be drawn about how to overcome problems that usually prevent commercial banks from reaching rural areas, especially small farmers, and that have led many non-traditional lending programs to failure. The strategies these institutions have developed have allowed them to reach a much larger portion of the poor than programs oriented to providing help in the form of donations. They have also shown that working with small farmers and microentrepreneurs can be a profitable business.

Diverse strategies to overcome each one of those main problems encountered when serving rural areas that would be suitable and needed for the area of the Peninsula are specified next. These strategies are not all followed at the same time by the famous microfinance institutions but each one finds its own mix of strategies so as to conform to the needs of their market area and achieve the goal of rural development.

To Reduce Risk

Operating close to the people

This is frequently viewed as the most important requirement for a financial institution to start its operations in a rural area. It needs to know about the people it is going to work with. The leading institutions in rural microfinance consider their clients as members, which reflect the closeness between lender and borrower (Versluysen, 1999). A financial institution must know the way of living of the people of the area, the infrastructure, the income generating activities, the culture of the society (holidays, non-working days, etc.), the main needs of the people, the factors that have caused failure of other credit programs, to mention some.

Operating physically close to the people also has the advantage of ensuring satisfaction of the credit demand of this niche of the market. It is well recognized in the current literature in development microeconomics that the transaction costs small farmers face for obtaining credit from formal lenders is one of - if not the primary- impediment to borrowing (Zeller et al., 1997). Those transaction costs are mainly information costs (about loan procedures), transportation costs, and opportunity costs of stopping their daily activities. Also, another factor that prevents them from asking credit from banks is the fear of rejection. Having lending institutions near to them or even going to their houses greatly facilitates credit demand.

Maintaining close relationships with leaders in the market area, such as in the markets of inputs or of agricultural products, is an important strategy too. As Hoff and Stiglitz, 1993, point out: “Screening, incentive, and enforcement problems in credit markets are often mitigated through interlinkages between the credit market and other markets – for example, for land and for commodities.” (p46).

Commitment, transparency, and long-term relationships with the people of the area are sources of success that have been present in virtually all microfinance institutions. As Rhyne (2001) points out about Prodem, Bolivia: “Rather than emphasizing one particular investment, the Prodem philosophy held that a long-term relationship between lender and borrower would give the borrower the financial flexibility needed to grow gradually, taking advantage of opportunities in a slower but safer way.” (p69). This kind of behavior has the main advantages of supporting a sustainable economic growth for the clients and of producing commitment for repayment.

Complete awareness of the way the comuneros behave and work, of how they structure their relationships, and of who the most powerful actors are, is imperative for any financial institution to work on the PSE. This has been already proven by the experience of CPR.

Technical know-how

This addresses knowledge about lending to the poor. It is clear enough that microfinance differs in a significant way from traditional commercial lending; therefore trying to serve this niche of the market without assistance regarding rural microfinance is prone to fail. For example, this can be the case of NGOs wanting to offer financial services for the first time or of traditional commercial banks willing to expand their activity to rural areas. As Drake and Rhyne, 2002 observe:

Internal problems are generally worse for banks that integrate the microcredit product into existing operations. Given that microcredit is a new product line, it generally becomes a division or unit under a larger department. In many cases department heads do not understand microcredit, and the product is doomed from the start. Anecdotal evidence suggests that banks handling medium and large business loans often apply a very centralized approach to the microcredit program. Other banks, lacking adequate pricing and methodology, find that the endeavor is not profitable enough to merit continuation and simply exit the market. (p61)

To enter the microfinance field, an institution needs to know the geographical area and its people but it also needs to know the peculiarities of the microfinance business. Furthermore, getting assistance or becoming an associate of an experienced microfinance agency could be very helpful in order to avoid repeating other institutions' mistakes. Rhyne, 2001 points out the good attitude of Prodem towards this concern:

During the first year alone Prodem received six technical-assistance visits from Acción and its affiliates in other countries. Prodem staff also made six visits to the other affiliates to see their operations firsthand. (p76)

Lending based on character and current capacity to repay

Rhyne, 2001, asserts that instead of lending to small farmers through bureaucratically determined projects, financial institutions engaged in microfinance should adopt the philosophy that clients know better what investments are best for them. In order to achieve this level of loan flexibility without incurring in the high costs of controlling each client's investments and assessing and attaching small, difficult to value assets, lending should be based on the client's character, which is usually known to institutions through peer references.

Lending based on character is most commonly done through peer group lending or so-called solidarity groups. In this methodology usually small farmers receive loans on an individual basis but with their solidarity group collectively taking responsibility for repayment. Each group decides who can join and who cannot, depending on how responsible each individual is. Berenback and Guzman⁸ summarize the characteristics of solidarity group programs as follows:

- Three to ten microentrepreneurs join together to receive access to credit and related services such as training and organization building.
- Group members collectively guarantee loan repayment, and access to subsequent loans is dependent on successful repayment by all group members.
- Loans are appropriate to borrower needs in size, purpose, and terms

The main purpose of this strategy is reduction of the problem of imperfect information between lender and borrower, which usually increases the risk of lending in rural areas. Trying to solve this problem through traditional ways (collecting individual information about the borrower) can be extremely costly due to the large number of small

⁸ The Solidarity Group Experience Worldwide, Chapter 7 (p119) in Otero and Rhyne, "The New World of Microenterprise finance", 1994, Kumarian Press.

units. With peer group lending the responsibility of choosing creditworthy participants is left to the group, something that they can do with very little or no cost. Then, loans are based on the clients' character instead of the clients' assets and the risk of choosing the wrong borrower is very much reduced. This strategy also benefits the client itself as "individual borrowing transaction costs" (Zeller et.al.,1997 p105) are reduced too. Also, as analyzed by Otero and Rhyne, 1994, peer group lending and "the promise of ongoing--and increasing--access to credit for borrowers who repay on time" (p3) are intended to create "repayment motivation", a more effective strategy than individual control of the client's investments.

Lending based on character can also be done through the "village banking" methodology. This methodology, developed by John Hatch from FINCA, works through the formation of small banks in villages where a loan is given to a group of people and the group creates its own rules in order to lend to the group members. Usually, several loans are given to the group so it can lend to its members. The groups collect the repayments with an interest rate as well as savings (in some cases, forced savings) and that way they can increase the number of members and/or loan quantities. The role of the financial institutions is to support the groups with loans, monitor how well the groups are doing, and provide basic training to them. Prodepine (with the Cajas Solidarias) and Eugenio Espejo Foundation are already applying this methodology in the PSE with very good results.

Most microfinance institutions use peer group lending as the only source of loan guarantee, although when working with larger microenterprises tangible collateral is usually required. Not all of these institutions use the exact same methodology when

working with solidarity groups. For example, in the case of the Grameen Bank, a study by Jain and Moore (2003) shows that group lending is not actually enforced as usually understood, that is, exerting pressure on the group members for repayment and denying them future credit until the debt is cancelled. Instead, enforcement is directly applied to the individual, and the concept of solidarity groups is used as part of “an array of norms and practices designed to give borrowers a sense of affinity with “their” microcredit organization and to instill within them a culture of financial responsibility and discipline.” (p9) Also, Grameen Bank lends especially to the very poor. In the case of BancoSol, even though the selection of borrowers is left to the group, BancoSol does a final approval of each group member. Unlike Grameen Bank, BancoSol lends to individuals who already own and operate a business, and enforcement is applied to both the individual and the group. Therefore, the characteristics of solidarity groups will depend on standards set by the financial institutions, which will need to match with the people’s culture on each specific area. As Versluysen (1999) observes:

Social customs too can be adopted--and adapted--in the organization of microfinance, as in the case of self-help groups, such as ROSCAs and African kinship groups...Working with existing affinity groups presents many advantages. The groups are self-selecting and are based on mutual trust; coaching for group formation can be kept to a minimum; starting costs are negligible; and the social collateral of peer pressure improves loan recovery and reduces arrears. (p223-224)

Another innovation in microfinance is lending based also on the client’s current capacity to repay rather than assuming the risk of defaulting if the client’s venture has worse than expected outcomes. This new paradigm, used by Prodem (now BancoSol), Bolivia, indicates that the client must have an already existing income generating activity that can ensure loan repayment even if the investment made with the loan did not succeed. Rhyne (2001) indicates:

Prodem saw that it was risky for lender and client alike to base loans on income from a new project. If the project didn't work out, Prodem would lose a client, and the client would lose doubly –a failed project and a debt too large to repay. (p69)

This goes with what Versluysen (1999) recognizes as the “golden rule” of microfinance: “The “golden rule” of microfinance is that credit only makes sense if there is no doubt that borrowers will make good use of the funds, and that, after repaying the loans and interest, they will have enough money left to support themselves and their families, and begin accumulating personal savings.” (p41)

Enforcement of the institution's rules

The study made by Jain and Moore (2003) shows that microcredit programs in Bangladesh⁹ owe part of their success to the fact that “the programme managements have created a social and institutional environment that places strong social and moral pressures on borrowers to follow programme norms, above all to repay loans on schedule.” (p12) These institutions understand the importance of high loan recovery when serving the poor because that is what can make a program sustainable.

Enforcement creates discipline through showing the borrower that defaulting can be “very unpleasant” (Jain and Moore, 2003, p17). Rhyne (2001) indicates that in the case of Prodem, they did put in force the group guarantee with a slogan: “zero tolerance”; she observes “Whenever a client missed a payment, the loan officer and the solidarity group were not to rest until they resolved the situation.” (p71-72).

The enforcement strategy can become complex for financial institutions when analyzing the reasons for individuals defaulting because even if defaulting is legitimate and late payments should be accepted, allowing them would give a wrong signal about

⁹ Grameen Bank; ASA (the Association of Social Advancement); BRAC (the Bangladesh Rural Advancement Committee); Proshika; and CARD Rural Bank.

the institution's tolerance. Nevertheless, in the case of agricultural loans, enforcement should be applied more carefully because adverse environmental or market conditions can prevent an entire group of farmers from repaying. In those situations, rescheduling repayments for all borrowers in the same areas, as the Grameen Bank did in flooded areas of Bangladesh in 1993 (Zeller et al., 1997, p101), can be a better strategy than blind enforcement.

For the PSE, the “defaulting” situation is very well known to the comuneros and it has created in many of them a mentality of averseness to lending. The case of BNF for example affected many comuneros. Essential agricultural tools, such as irrigation pumps or other machinery, were submitted as collateral for investing in crops that at time of harvest the harvest itself was disappointing due to the low product prices. The farmers defaulted on their loans and lost their machinery, jeopardizing future crop production. In situations like this, where the loan investment can be very risky, making sure the comuneros have other income generating activities that could help repaying the loan would be very advantageous for both, the institution and the client.

Prodem in Bolivia was well prepared to lend to rural families. Rhyne (2001) explains:

...Prodem made a few critical adjustments to the urban solidarity group methodology. It taught its loan officers how to construct a cash flow statement for a client's family, taking into account the seasonal patterns of investment and income. The loan officer used this cash flow pattern to determine how big a loan client could afford and to work out a repayment schedule that allowed for ups and downs of income. Clients would have to pay something each period, but the amount would vary with each client's own income pattern, a practice it called differential quotas...Prodem also developed a large database on agricultural products. If a client said he had planted one hectare of potatoes near the lake, Prodem's database would project the likely physical yield, income, and profits from that activity. This data base, though expensive to keep current, further assisted Prodem in evaluating

client ability to repay. Prodem loan officers gradually became experts on local agriculture. (p164)

In conclusion, enforcement is required for sustainability, that is, in order to ensure the provision of financial services in rural areas. However, and relating to the previous strategies in this section, knowledge about the clients' activities and culture is essential so as not to damage their future economic possibilities through blind enforcement.

Field staff stimulus

As we saw in the previous strategy, high loan repayment would not only depend on the clients but also on the job the institution's staff perform through enforcing the institution's rules. Also, total honesty by the staff is essential as they handle important amounts of money. The work of field staff is hard as they have to go to the clients, so they have high responsibility in their hands. Therefore, fair payments and continuous recognition of the importance of their jobs in contributing to economic development is required. As Jain and Moore (2003) observe, staff remuneration represents the "major (non-financial) expenditure" of microcredit programs in Bangladesh. Their staff is paid as high as commercial banks' staffs. In the case of Fedecredito, a credit cooperative in El Salvador, they "offered field staff 1 percent of all loan collections, and as a result, its field staff recovered nearly all loans..." (Rhyne, 2001, p61). The idea that staff is as important as clients, is to be considered.

Furthermore, staff for microfinance institutions needs to be carefully chosen as their character can greatly influence the institution's success; of course, motivation has an important role in keeping and increasing that character. Rhyne (2001) explains about Prodem, "The organization was full of people conscious that they were braking barriers, doing something unprecedented, changing their country." (p72) The same way, Jain and

Moore (2003) recognize as one of the sources of success for microcredit programs in Bangladesh the fact that “these institutions have evolved systems of personnel management and motivation that evoke good work performance from field staff operating in difficult environments.” (p12)

Diversification of investments

As is well recognized in financial literature, diversification of a portfolio reduces its risk. The same would happen in rural microfinance. Diversification can be done through lending to urban and rural clients, or to different income groups and professions (Zeller et al.). Nevertheless, as Zeller et al. observe:

...diversification has its trade-off in reduced exploitation of economies of scale. While theory calls for a trade-off point where marginal benefits of diversification equal marginal costs, the proper balance is, in reality, often difficult to determine. However, it is obvious that specialized rural credit institutions that lend to only a few crop enterprises are extremely vulnerable in times of drought or pests. (p90)

Prodem recognized that the rural family itself diversifies its economic activities in order to reduce the high risk they are exposed to (Rhyne, 2001). The case of the PSE corroborates this; in Table 3.3 we can see that 54% of the interviewed households rely on more than one source of income. They combine agricultural activities with small businesses (which can be groceries stores, wood sales, handcraft, etc.) and off-farm employment (wage-earning activities). Allowing the client flexibility regarding how they use their loans, as suggested in the previous strategies, is a way of promoting such diversification. Rhyne (2001) explains:

Prodem’s overall rural strategy is based on diversification of risk at multiple levels: the client’s own diversification, Prodem’s selection of different types of clients, diversification of localized risk through national coverage, and provision of a range of products with diverse risk profiles, such as money transfers in addition to credit. (p165)

Also, even though Grameen Bank and similar institutions in Bangladesh are quite different from Prodem when talking about services, they too give their clients investment flexibility, applying this way a type of diversification. However, while Prodem is worried about the ability of the individual borrower to repay and tries to personalize loans according to the client's needs, Grameen Bank provides "only a very limited range of loan sizes and no choice about repayment schedules" (p12) (Jain and Moore, 2003). Jain and Moore notice that this methodology has the purpose of keeping costs as low as possible because of the large number of clients they have to serve. Also, Grameen Bank offers just credit, not savings services.

The case of the PSE would be closer to Bolivia's case, where Prodem operates, than to Bangladesh, where Grameen Bank works. This is because the number of clients in the Peninsula is not as high as in Bangladesh; therefore a more specialized attention could be given to the comuneros in order to prompt economic development.

To Reduce Operative Costs

All the strategies to reduce risk also indirectly help to reduce costs to financial institutions. However, there are strategies that can directly reduce operative costs; those are all related to efficiency and are explained as follows:

Offering credit in cash instead of in kind

This is a common strategy for all NGOs providing successful financial services. It goes with the idea of giving the clients investment flexibility, which benefits them as they know better where to invest. Receiving credit in kind constrains borrowers to a specific investment in order to receive the service. On the other hand, it results in fewer costs to the NGO to provide cash directly to the client than providing inputs for production due to the several transaction costs involved in lending in kind. Those costs are related to buying

(sometimes importing) inputs, storing them and controlling storage, distributing them among clients, to mention some. In the Peninsula of Santa Elena, CPR still provides some in-kind credit but just in special occasions (with the very poor). Those kinds of loans are sometimes seen as donations by the institution although such is not said to the client and something is expected from the client in exchange. Fundación Propueblo and Fundación Troja, even if not precisely providing in-kind credit, they work through specific projects. It can be perceived that the purpose of these programs is not to provide a long-term financial service to the clients but to give the initial encouragement in terms of capital and knowledge and in some cases to provide a medium-term technical assistance.

Peer group lending

Peer group lending or, in general, lending based on character is another source of efficiency as it saves the institution the cost (in terms of field staff's time) of selecting creditworthy clients and reduces the risk of adverse selection.

Efficiency in decision-making

Related to the strategy of operating close to the people, the decision-making process needs to be decentralized in order to be effective and efficient. There is not too much advantage in having staff working in the field if they do not have the authority to make decisions; that is, to approve loans, enforce repayments, etc. Rhyne (2001) recognizes,

For loans based on character and capacity, the old model of loan processing and approval didn't fit. The old model relied on extensive documentation and centralized decision-making. According to Prodem, only people at the branch level knew enough about the client and the setting to make a good judgment. Therefore, Prodem pushed loan approvals out to the field. (p70)

This strategy, considerably reduced application time, processing, and disbursement for Prodem.

Lean staff and plain office

Another characteristic of successful microfinance institutions is that they usually have a lean staff (as few people as possible performing each one more than one specialized activity) and a simple office. For example, Rhyne (2001) points out a “very profitable” commercial bank in Manila that counted just with a manager, a bookkeeper and an accountant (p61). In the case of Prodem, Rhyne (2001) explains that the same loan officer that approved a client as creditworthy is the responsible for the loan repayment as well. Rhyne observes, “When loan officers are responsible for repayment on time from their own clients, they select clients more carefully and have grater incentive to pursue bad payers.” (p71). The same way, Versluysen (1999) points out as a lesson from the case of BRI’s *unit desa* program in Indonesia: “Strong management and simple modular structures are as important as regular supervision in ensuring good portfolio and low arrears.” (p125).

Focused financial services

Since high costs are one of the primary limitations to lending to the poor, simplicity in procedures of services and reduced number of services have been considered to be key strategies to succeed in the microfinance field. As a result, the fewer and more focused services are, the better. Rhyne (2001) identifies this tendency as “minimalism--the idea that credit should be provided with very few other training or technical services--” (p81).

However, in the case of Grameen Bank, even though it provides very focused financial services (just credit in fixed loan amounts), Versluysen (1999) observes that the Bank does offer training to its borrowers:

Grameen also tutors its members, beginning with a week-long induction course for new groups, and continuous follow-up training at center meetings. There is also skills’ training, and the bank organizes birth-attendant workshops, and mother and

girl-child workshops to broaden women's awareness of their roles and improve their skills in managing their small businesses. There also is an intensive in-house training program for women who are elected center chiefs... (p84)

Moreover, in areas where agricultural activities are an important source of income, providing just financial services without at least a connection with organizations of technical assistance can be very dangerous. Small farmers usually lack knowledge about effective and cost efficient agricultural techniques as new plagues are borne more often than before and also old ones become resistant to traditional chemicals. In addition, lack of information about market opportunities for new products, lack of knowledge about cropping techniques for those new products, and adverse market conditions for traditional products, contribute to failure of crop investments by small farmers. Therefore, provision of credit for agriculture without assuring technical and market assistance to clients is not recommendable.

Otero and Rhyne (1994) observe that financial institutions have to deal with this dilemma also when trying to reach self-sufficiency:

When nongovernmental organizations (NGOs) move toward becoming financial institutions, differentiating between financial and nonfinancial services becomes an important consideration. Most microenterprise programs, at all levels of self-sufficiency, provide nonfinancial services in a nontraditional form. These services include preparing the borrower to manage and use credit, assisting in the formation of guarantee groups, training in areas related to production, and holding special meetings. These services prepare impoverished entrepreneurs to meet the requirements for lending. One position argues that these nonfinancial services are a social investment in a poor population with a corresponding social cost. This cost, the argument goes, should be subsidized, since no provision of financial services, however efficient, can cover it. The counter position is that these services are a necessary cost of lending to the poor and therefore should be built into full-cost pricing. (p19)

The idea that "financially viable institutions provide only financial services" (p11) (Otero and Rhyne, 1994) must be considered carefully as rural areas usually require strong training efforts.

A useful implication from this strategy is the idea that financial institutions should not engage in providing production inputs. Nevertheless, as mentioned in a previous strategy, relationship with leaders in the market area is recommendable so as to make sure that important productive inputs are provided and that way reduce the probability of client investments' failure. Another way to apply the strategy could be not to engage in training efforts that go beyond the productive activities of the borrowers. For example, Fundación Eugenio Espejo in the Peninsula have connections with other NGOs which are specialized in other kinds of training so as to ensure provision of those services to the borrowers.

Collateral Alternatives

Financial institutions traditionally prefer physical collateral, especially immobile assets such as land. However, as Zeller et al. (1997) recognize,

...small farmers in traditional land tenure systems and the rural poor rarely hold the deeds to land. Also, the rural clientele might be reluctant to enter into self-binding contracts, such as loan contract, because they fear losing their securities (Platteau 1992a, 1995). (p91).

Also, as analyzed before, even when land titles are provided, it is not easy for banks to accept land as collateral if a land market is not in good function yet. Therefore, collateral alternatives are to be considered in order to improve the access of rural poor to institutional credit. The most known collateral alternatives in the microfinance field are briefly described as follows.

Social collateral

It is understood as the confidence a lender can deposit on a borrower due to the fact that there is a group of people willing to make themselves responsible for their friend's loan. This type of collateral deals with the moral pressure of fulfilling a promise and

keeping a good reputation among the rest of members in the group and in the community. This kind of collateral has been widely applied by microfinance institutions although when working with larger loan amounts it is not used by itself but physical collateral is also required. As Zeller et al. recognize, in order to effectively implement this kind of collateral, “steady and reliable financial intermediation; close contact with groups; and appropriate group management, technical assistance, and training are crucial for the success of this financial intermediation strategy” (p92).

Client’s character

Zeller et al. (1997) point out that in the case of not using solidarity groups, lending based on character is still possible as an alternative for physical collateral. This can be done through maintaining close contact with “member-based” institutions; informal groups in the community, and/or institutions having a commercial relationship with the loan applicant. All these agents can give valuable references about borrowers. Most of the institutions operating in the PSE already use this strategy.

Household appliances, machinery, and livestock

Collateral alternatives based on the borrower’s character are widely used by microfinance institutions. However, depending on the characteristics of each geographical area, usually some kind of physical collateral is still required by microfinance institutions although this is not always openly declared. For example, Versluysen (1999) indicates how the Grameen Bank takes extra measures to avoid defaults or losing money from defaults:

It is true that Grameen demands no collateral as a pre-condition for lending, and that it uses peer pressure as its main form of security. However, equipment, livestock, and poultry remain the bank’s de facto property until a loan has been repaid in full. The members’ savings in emergency funds provide additional

security and, for house-building loans, the bank retains title buildings until the loan are repaid in full. (p91)

Physical collateral of less value than land, usually mobile assets or goods, is preferred by many NGOs when serving the poor. This is because transaction costs involved in accepting this kind of collateral are small, and these goods are usually enough to exert pressure for repayment as their shadow price is higher for the borrower than for the financial institution.

The case of Financiera Calpiá in El Salvador explained by Navajas and González-Vega (1999), asks in first place for as many household appliances or furniture (TVs, refrigerators, stoves, tables) as possible for collateral. In second place, the Financiera accepts machinery and livestock. Machinery, they say, needs to be registered which implies time and money and also it is not as easy to sell as household appliances because it is a specialized good. About livestock, Calpiá requires a document called “*Carta de Compra*” (Letter of Purchase), where it is stayed that in case of livestock sales by the borrower, the output belongs to Calpiá. The authors stress that this kind of collateral is accepted just as complementary because of the high mobility and risk intrinsic in livestock. Finally, immobile assets are accepted just if the loan amount is high enough to justify the transaction costs involved in the asset registration.

Savings programs

Forced savings in order to access to credit is a strategy already being used with good results in the PSE by PRODEPINE (Cajas Solidarias), Fundación Santa María del Fiat, FINCA, Fundación Eugenio Espejo, and Precooperativa Carlos Fernández. Savings need to reach at least a specific percentage (which varies among institutions) of the requested loan and that percentage is blocked to the client until the loan is repaid. This

strategy serves as a form of collateral as well as a way to observe the client's ability to set aside resources after consumption. It also tends to improve the client's discipline and commitment. Zeller et al. (1997) also observe that in the case of group loans, "the group often benefits from this security deposit by earning interest, and the lending institution can easily collect the collateral if the loan is not paid, although the collateral is generally of less value than the loan principal (Desai 1980a)"(p92).

Products in storage

This kind of collateral as a way to encourage agricultural development for small farmers was known in Ecuador in the 70s when the Ecuadorian government created and managed public storage of grain. However, the main purpose of this public program was to protect the price of the grains and just a few people took advantage of storage certificates as collateral for credit. As in most public programs, the ones that obtained more benefits were larger farmers. Nowadays, there are in Ecuador commercial agencies (the *almaceneras*) handling storage and providing negotiable certificates, however, this services are not close to the rural poor.

Experiences in other countries about providing small farmers with storage services and certificates able to be submitted as collateral for credit have left important lessons. The case of Bulgaria, where in 1999 banks started accepting warehouse receipts as collateral for agricultural credit--due to the existence of a very weak land market--is described by the Organisation for Economic Co-operation and Development (2001):

In 1998 the adoption of new regulations covering the storage and trade in cereals was approved. This set of regulations created the basic framework for the functioning of the warehouse receipts system, which in essence improves access of grain producers to commercial bank credit. The main purpose of the WRS [Warehouse Receipts System] is to increase liquidity to cereal growers at a reasonable price. This system is based on licensed public warehouses that are entitled to issue receipts for grain storage. The warehouse receipts can be used as

collateral for loans from commercial banks. In practice, this gives agricultural producers the opportunity to use credits for working capital without being forced to sell their crops immediately after harvest. Participation in the WRS was low in 1999, but rose sharply in 2000. The number of licensed warehouses has increased appreciably in 2000 and the storage capacity has more than doubled to 1.6 million tonnes. The amount of grain stored is estimated at 85 000 tonnes of wheat and about 5 000 tonnes of barley. (p28)

Coulter (1995) talks in detail about this strategy, which he calls “Inventory credit”.

He mentions several alternatives or approaches to the strategy; out of those, two seem more suitable to the case of the PSE:

- Centralized warehouses or silos managed by a specialized warehouse operator, which does not trade in the items stored, but simply holds the stock as security for bank lending;
- Warehouses operated by individual borrowers, under the supervision of a surveillance company.

As Coulter observes, the second approach would seem better to apply when “warehouses are too small for a storekeeper to operate economically”(p12). In these circumstances, the bank may be content for the borrower to hold the stocks, providing that they are regularly inspected by a surveillance company. “If the borrower disposes of the grain without the bank’s authorization, the bank can bring criminal charges.”(p12). He specifies that this approach have been successful in the Philippines.

Among the recommendations Coulter gives for successful implementation of “inventory credit” are:

- It should be a profitable business instead of a public service;
- Loans need to be “for less than the market value of the grain”(p20), this with the purpose that the borrower continues “to have some equity tied up in the stock”;
- Market information and forecasts are required;
- Receipts or certificates need to be negotiable documents of title, which “helps reduce transaction costs and facilitates the development of “forward” and “futures transactions”(p27).

The author also recognizes the risks involved in inventory credit, which should be prevented. Among those risks are:

- The “physical security of the produce”, which requires insurance services “against fire and extreme weather conditions”(p38);
- The possibility of the borrower selling the product without authorization of the lender, to which he suggests the law should provide “a procedure for a bank to register its security interest”(p39);
- “Modest” fluctuations in the prices of the subject grain, which can be caused by a wide provision of this kind of credit are a risk too as they would reduced the activity’s profitability: “As banks increasingly make funds available for storage, the inter-seasonal price pattern should become smoother and there will be fewer opportunities for profitable trading. The level of speculative risk, and the possibility of banks being forced to realize assets in the form of stock, will increase.”(p40).

Risks therefore need to be balanced with the benefits that could be obtained from inventory credit. The two main benefits are: farmers’ losses from low prices at the time of harvest would be reduced, and access to credit would be improved.

To Reach Self-sufficiency

Self-sufficiency of a financial institution is a consequence of good performance in reducing administrative costs and clients’ default (or losses from clients’ defaults). However, a business--or commercial--perspective through new paradigms and changed operational structures so as to become profitable institutions can greatly contribute to reach self-sufficiency. Otero and Rhyne, 1994 stress this point as follows:

Financial self-sufficiency is a prerequisite for making financial services widely available to microenterprises. Yet debate continues on whether it is feasible for most institutions. A financially self-sufficient credit operation must cover the following through fees and interest charges: operating costs, including loan loss reserves; the cost of funds; and inflation. To achieve genuine commercial viability, it must also yield a profit to owners. (p17)

In order to achieve self-sufficiency, some more strategies should be considered, those are detailed as follows:

High-enough interest rates

Subsidized interest rates have been proved to erode loan funds especially in economies facing high levels of inflation. The innovation applied by microfinance institutions goes with the fact that the actual problem in rural areas is not high interest rates but access to credit. Rhyne (2001) observes:

Ohio State University and others pointed out that the interest rate was actually only a small fraction of a poor client's total transaction cost in obtaining credit. Time and opportunity costs, as well as out-of-pocket costs for transport, made the process of obtaining credit very expensive. If Prodem could bring down a client's transaction cost, that client would gladly pay the financial charges. (p70)

Also, Zeller et al. (1997) point out¹⁰ “the loan demand coefficient is negative, but inelastic, regarding the interest rate.”(p90). This means that where credit services are weakly available (or unavailable) high interest rates are not going to significantly reduce credit demand. As later on Rhyne (2001) stays, Prodem's interest rates were higher than commercial banks' rates but still considerably lower than informal lenders (loan sharks) rates. With those rates, she explains, Prodem could cover its high operative costs despite of the fact that those costs were “very high by banking standards” (p77) (23% of the portfolio).

Nevertheless, operating costs are not the only cost a financial institution may face, that is why donations (or international sources of cheap credit) are still very important for microfinance to be sustainable and able to expand its services to more microentrepreneurs. This is recognized by Zeller et al. (1997), who found that out of 10 microfinance institutions from Africa and Bangladesh, all of them “depend on subsidies for institution building and expansion of program outreach.” (p108); but immediately

¹⁰ Zeller et.al. (1997) refer to Desai and Mellor (1993)

they stress: “Recurrent expenditures to ensure the operation of the financial institution should, however, not be subsidized.” (p108).

Ensuring enough funds

Funds are many times the main worry for a microfinance institution. Usually, funds come from donations, and they can be just one time donations. Having the ability to access to loans from commercial banks would give great relief to microfinance institutions in terms of availability of resources. However, this would happen only if the microfinance institution can give signals of financial viability, which would count for coverage of operative costs, and high repayment rates, among other criteria. Christen and Drake¹¹ explain this idea:

Early pioneers who sought to bring microcredit closer to the formal banking sector in Latin America recognized that the vast amounts of funding required to reach the region’s poor with credit could only come from the banking sector itself. They also recognized the importance of generating verifiably high levels of repayment and overall financial performance as an important pre-condition for accessing commercial sources of funding. (p3)

Zeller et al. (1997) indicate some factors that can show if financial institutions are operating in a “cost-covering way” (p105) and therefore if they are close to financial viability. Those are:

- Subsidization level,
- Administrative costs,
- Loan recovery rates,
- Length of operation,
- Growth and diversification of activities, and
- The source and cost of funds.

¹¹ In Drake and Rhyne, 2002

Maintaining a good relationship with commercial banks and getting them, this way, involved in microfinance enhances sustainability and profitability for both kinds of institutions.

Market oriented services

In order to reach profitability, microfinance institutions need to offer services suitable for the niche of the market they are serving. Examples of those services are: savings products, consumption loans and insurance services.

There are already many examples in the microfinance literature showing the ability of rural households to save. As Rhyne and Otero (1994) recognize, “Savings are equally important for enterprise growth for it is from savings that most investment in enterprises comes (Liedholm and Mead 1987, 38).” (p13) This statement sounds very logic when we remember the lack of credit access the poor suffer, therefore, in order to sustain a microenterprise, the money have to come from savings. Savings in rural areas however, if not counting with financial services (or reliable enough financial institutions), is usually in the form of domestic animals, attitude that can be changed once counting with reliable savings products. Zeller et al. (1997) observe that “savings options improve the ability of rural households to adjust ex post their investments and consumption. It relaxes the stress on disposable income and improves their risk-bearing capacity.” (p98)

As mentioned before, some of the institutions currently operating in the PSE require savings from the clients mainly in order to access to credit, that is, forced savings; however one of those institutions, *Precooperativa Carlos Fernandez*, offers voluntary savings service. The fact that this institution belongs to comuneros (it is member-based) makes an important confirmation of the idea that poor peasants do save.

Rhyne and Otero (1994) talk about some “principles” that usually encourage savings from customers:

First, the most widely desired savings instruments offer safety, convenience, ready access to money, and a positive real return. Second, more people want a good place to save than want loans. Thus, savings services can reach deeper into the community. The opportunity to save should not be limited to those who borrow. Last, lending to microenterprises can be financed to a significant extent by savings from the same communities, provided savings services are designed with customer needs in mind. (p16-17)

Versluysen (1999) extracts two lessons about savings from the case of Bank Rakyat Indonesia and its smaller units called *unit desa*:

Savings mobilization is the key for the sustainability of the units’ lending. Their experience and track record show that rural savings can grow if small savers have access to safe, transparent and adequately remunerated savings instruments.

Because rural savings have traditionally exceeded the units’ lending volume, the units derive a large part of their profits from the internal transfer of excess liquidity to BRI’s commercial-bank branches. (p125)

Zeller et al. (1997) however recognize that transaction costs faced with savings mobilization can prevent rural clients from depositing funds. In order to reduce these costs, they specify, innovative institutions follow strategies such as combining “the collection of savings with the provision of loans or the collection of loan repayments”; collecting savings “during weekly and monthly meetings of savings groups at the community level”; and reaching clients by foot or bicycle, “depending on population density”, as cases in India and Bangladesh. (p88)

Another important service to consider is consumption loans. Zeller et al. (1997) observe that this product has become accepted by microfinance institutions due to “the recognition that consumption and production in rural households are intertwined and inseparable” (p89); also, “Consumption loans are often productive because they preserve the productivity of labor, which is the main production factor in poor households” (p89).

Therefore, these kinds of loans are being considered as “working capital” loans. A fact that confirms these ideas is that:

In the portfolio of informal financial institutions, consumption loans for food, health, education, and social obligations play an important role, often accounting for a higher share in total lending than loans for agricultural production and other income-generating activities. (p95)

These authors also stress the fact that “The presence of human capital loans does not necessarily interfere with the sustainability of financial market development programs.” (p95). They mention surveys in Benin and Cameroon as examples: “repayment rates for production loans were 95 and 85 percent versus consumption loans of 90 and 89 percent in the survey regions of the two countries, respectively (Heidhues 1992).” Another example of a microfinance institution offering consumption loans is Mibanco in Perú. Among other kinds of loans for microentrepreneurs, this institution offers micro loans for education and emergency loans to face unexpected situations¹².

About insurance services, Zeller et al. (1997) stay that “theory and empirical evidence on insurance services provided by informal institutions stress the economic demand of the poor for insurance services.” (p100). Although the name can be misleading, by insurance services the authors refer just to loan provision for personal emergencies. As they observe, several microfinance institutions in Africa and in Bangladesh (including the Grameen Bank) “provide limited coverage of individual’s risk of loan default, such as illness or death of family members, via group emergency funds.” (p100). This kind of loans therefore, serve as a back up for the borrower to be able to repay a productive loan, for which repayment is imperative, after suffering special calamities. However, they stress, covariate risk cannot be covered by this strategy:

¹² See <http://www.mibanco.com.pe/prodsistprest.htm>

Protection against covariate risk affecting the whole community or region, often caused by natural calamities or political instability, can hardly be provided by local finance institutions. Horizontal or vertical integration into a regional or national finance system with reinsurance mechanisms is, therefore, required for local rural finance programs, given that they have proven to be sustainable. Mechanisms that cope with covariate risks can be effective in stabilizing consumption of rural households. (p100-101)

Finally, remittances would be an interesting service in rural areas such as the PSE because typically some household members migrate to the cities or, in general, to more developed areas, and are responsible for periodically sending food or other products to their families. Usually, people in the rural communities have no more choice than waiting for their relatives to go to visit or to send somebody else in order to receive these remittances. If counting with remittances services, however, money deposits can be done in the more developed areas and withdrawn by the family members in the rural communities. This would save time to the poor and help in smoothing consumption. For this to work better, connections with commercial banks would again be very helpful.

Large scale

Success in the microfinance field is in great part due to the reaching of a large number of clients. Serving the rural poor is very expensive as the loan amounts are very small and every client requires field staff visits, among other costs. Therefore, counting with a relatively large number of clients would weight the average transaction costs for the microfinance institution. Also, large scale is required because of the large number of microentrepreneurs whose credit demand is unsatisfied, this is stressed by Otero and Rhyne (1994):

Attention to scale is imperative because there are millions of entrepreneurs who lack access to financial services. If these millions are to be reached, then models for financing microenterprises must have design features that allow for continuing expansion. Ten years ago the standard microenterprise program reached only

hundreds –at best, one or two thousand – microenterprises. Today, many programs reach tens of thousands, and the stunning examples have surpassed a million. (p2)

A way of reaching a large number of clients is through using already existing infrastructure (offices) such as public service offices, or even through commercial bank agencies, to which Christen and Drake (see Drake and Rhyne, 2002) call “the ultimate irony”:

...the ultimate irony of microfinance may be that the best way to reach a large number of the truly poor with financial services will be through commercial banking institutions, not microfinance NGOs. (p15)

CHAPTER 4 CONCLUSIONS AND RECOMMENDATIONS

This thesis has examined the effects on the Peninsula of Santa Elena of the irrigation canals. The irrigation infrastructure did not bring an agricultural and economic renaissance to the comunas, but rather the sale of most lands along the canals to commercial farmers and further disincentives to invest on the land because of land insecurity. Land titling would have three positive effects over this problematic economy:

- It would reduce¹ the risk of losing land rights for the comuneros, increasing their incentives (or at least eliminating disincentives) and abilities to make more profitable decisions about their land resource.
- It would increase willingness to invest in land, including through credit because land becomes an asset for the individual comunero (PT becomes part of their wealth maximization), so he/she can risk land itself or other assets in order to receive loans for agricultural investments.
- It would help regularize the land market, so allowing the non-comuneros to access to land in a more organized and legal way, at the same time stimulating them to pay a higher price.

To maximize gains from titling, other institutional changes would also be necessary. As Gould (2201) indicates:

...land security cannot increase incentives for investment; it can only eliminate disincentives. This means that land titles will only generate greater investment where land security is the limiting factor of production ...weak agricultural markets, poor soils, and insufficient credit constitute greater obstacles to agricultural production than land tenure security. (p34)

Land titles therefore would be expected to at least eliminate disincentives for land investment in the PSE. A key issue is that with private and titled land, the comuneros

¹ The term “reduce” is used here instead of the term “eliminate” because the ultimate elimination of risk will depend on the enforcement that the public authority makes of the land title documents.

would have more options than if not. Land privatizing and titling is a necessary although not sufficient condition because other institutional changes that also will need to be implemented will depend on this one.

In the southern comunas of the PSE there has been some land privatizing and titling, but this was only to facilitate land sales decided communally. In the north, where the canals are still under construction, there is the potential for comuneros to learn from the experience of the southern comunas.

Land titling might not be an easy task. It might require public action in order to lower administrative barriers (i.e., paperwork, complex procedures, etc.) which would be burdensome for comuneros. Also, special treatment may have to be given to the comuneros regarding the actual cost of obtaining land titles as well as the payment of land taxes.² One strategy for obtaining titles might be to manage their acquisition in groups so as to reduce transaction costs.

Through land ownership, comuneros would have better control of the land in order to avoid invasions and illegal transactions, and they would enjoy land as an asset, which would encourage them to invest on the land. However, due to the socioeconomic conditions under which the comuneros live, they would not be able to take advantage of all the benefits that land ownership can offer, or at least not immediately. In particular, comuneros would not be able to exploit immediately the “collateral premium” attached to land, which refers to the increase in property value due to its service as collateral for credit. This follows because of the current lack of a formal land market in the area.

² However, these ideas should be carefully managed if implemented because of the several distortions that can result from special policies (distortions produced by the differences that have to be set among kinds of individuals, which Espinel, 1991 calls “institutional rents”).

Therefore, there are institutional measures financial institutions will need to take in order to assist the comuneros for agricultural development while a land market develops. These measures should be along the lines of microfinance practices successfully applied in developing countries, which use innovative strategies in order to reach small farmers or microentrepreneurs.

Changes in Relevant Variables

If changes in the credit market are successfully applied, then with land titles the observed variables in the problematic situation created by the irrigation canals will be expected to change as shown in Table 4-1.

Table 4-1: Changes in relevant variables after institutional changes in the land tenure system and credit market

Variables	Movement	Reasons
ϕ_c	↓	Titles with enforcement (support of governmental institutions)
P	↑	Because the demand for land would probably keep increasing, particularly as participation of comuneros as buyers could be anticipated.
T_c	↑	This change would be at least relative to current trend. Comuneros would be able to produce their own land or sell a part of it and produce the rest. Also, some comuneros would be able to participate as buyers or lessees in the land market. ³ This would be a result of land becoming an asset for the comuneros (PT on the equation).
k_c	↑	Comuneros would be able to invest on their land. The option of building secondary infrastructure can be considered.
$y_c'(k)$	↑	Marginal output for the comuneros would now be potentially greater.

Actually, these institutional changes are not the only ones that would be required in order to reach the expected movements in the studied variables, but other efforts that

³ Especially those who know about agriculture but has sold their land and now want to be part of the farmers again, or those that did not get land before from the community and now could buy it to produce with credit support.

have not been deeply analyzed in this thesis, such as in education and/or extension, would also be of critical importance.

Recommended Strategies for the Comunas and NGOs

Even under the best of circumstances, it seems likely that access to sufficient capital for individual comuneros to develop secondary irrigation systems to fully exploit the canals would take a considerable amount of time unless non-governmental organizations are able to attract grants or donations, or unless the Government builds the secondary systems. However, there are other alternatives where the comunas can take direct action instead of waiting for governmental or non-governmental assistance. Some of those alternatives are:

- Privatization does not have to apply to all comuna lands. Indeed, there may be areas within comunas with production possibilities, such as livestock or forestry more efficiently handled on a larger scale than would be feasible for individual comuneros. In such instances, it might be advantageous to maintain the communal land tenure system, operating those areas like a cooperative, or engaging in contracts with NGOs or with particular individuals.
- NGOs can be very helpful as intermediaries or guarantors between financial institutions and comuneros, so the comuneros can have access to funds in order to build secondary infrastructure. For this to be plausible, NGOs serving as intermediaries need to have recognized experience in the area as well as good contacts and financial health. Later on, the loans can be repaid with funds raised by the comunas from land sales⁴ or land rentals.
- The comuneros can also organize formal associations or cooperatives, so they can ask for large loans as a group.

It is important to notice that these strategies involve the direct action of the comuneros, which is imperative for the reaching of the agricultural development desired for the region. However, for this development to happen as soon as possible,

⁴ Communal land sales or individual land sales if the requirement of a contribution to the comuna after individual land sales is maintained.

governmental support through efficient and honest public services (such as land registration), and enforcement of contracts (such as land rental contracts) is indispensable.

APPENDIX A

METHODOLOGY AND PURPOSE OF THE FIELDWORK

The research for this thesis was centered on eight comunas in the Peninsula of Santa Elena (PSE), which were chosen for their location with respect to either the actual or planned irrigation infrastructure, and for the experiences they have had around their communal land. Four comunas were selected in the south: El Azúcar, Pechiche, Río Verde and San Rafael. These comunas have sold most of the land near to the irrigation canals. The other four comunas are in the northern area of the Peninsula: San Marcos, Manantial de Guangala, Cereza-Bellavista and Las Balsas. The last two comunas in this area have lands near to the San Vicente Dam, which have recently being rebuilt, and to a canal 3km large connecting this Dam and the Rio Nuevo. In the future, more canals will further influence these and the other two comunas of the north.

Comunas in the southeast of the PSE were not chosen for the research because they no longer hold land near to the canals, all that land has been in hands of wealthier agents, outsiders of the comunas, for several years ago.

The fieldwork consisted of visits to the eight selected comunas for the purpose of knowing: their main needs; their feelings and believes about their land; their expectations from the canals; and the strategies they consider viable for solving land problems and for coming out of poverty. The visits were divided into three stages: 1. Interviews with cabildos (comunas' governments); 2. Focus groups with comuneros; and 3. Survey to 88 comuneros.

The first stage included an interview to the “cabildo”¹ of each community. The purpose of this stage was to get to know basic socioeconomic data of each community through the vision of the comunas’ representatives. The information gathered in this stage was mainly about the land area of the community, area in conflict, land use, presence and condition of natural resources, presence of development institutions, and plans of the comuna for the future.

Focus groups, one in each comuna, were used in the second stage. The number of participants in each group fluctuated between eleven and fifteen. The only requisite for participating was to be an inhabitant of the comuna. The purpose of the focus groups was to get to know the economic reality of the population through their participants; to get deeper insights about their opportunities with the land and other resources; to know their understanding about the land situation - that is, conflicts with property rights in the comuna as well as in the region-; and to know what is the value and usefulness of the land for them, the predisposition or capability to plan for the future, and their expectations for the future.

The third stage of the research was a survey for a total of 88 households belonging to the eight comunas under study. The survey covered socioeconomic information; details about agricultural production, irrigation, credit, productive organization, plans for the future, valorization of the land and the system of property; and information about the incomes and expenses of the families (the questionnaire of the survey is in Appendix III). The purpose of the survey was to have detailed information about the economic activity

¹ Committee that governs and represents each community.

of some households of each community (9 to 12 households per comuna) in order to uncover:

- Their level of poverty,
- Their rights over the land,
- The usual amount of land in production,
- Their agricultural techniques, expenses and yields,
- The supply of credit available to them as well as their capability to obtain credit,
- Opinions about changes in land property rights as well as their willingness to individually own the land, and
- Their main sources of incomes and most important expenses

Most of the people in the comunas were very open to answer the survey questions, as were the focus groups participants and the cabildos. During the third stage of the research, a report of the information gathered during the first two stages was provided to the cabildo of each comuna. A copy of these reports was also handed to the Program for the Development of the Peninsula of Santa Elena in the Escuela Superior Politécnica del Litoral (ESPOL).

The research work also involved interviews to credit providers of the region: Banco Nacional de Fomento (BNF), Centro de Promoción Rural (CPR), ESPOL, and Fundación Eugenio Espejo. Conversations were also held with a representative of Fundación Santa María del Fiat. The interviews were about the policies of these institutions for loans, their willingness and capability to supply more credit to the members of the comunas, as well as their plans for the future. Banco Solidario and the Fundación para el Desarrollo Agrícola y Rural (FUNDAR), institutions that are planning to offer financial services in the region, were also interviewed. Information about the other financial institutions

operating in the research area, which are briefly described in Chapter 3, was obtained through the comuneros.

In addition, representatives of the “Comisión de Estudios para el Desarrollo de la Cuenca del Río Guayas y Península de Santa Elena” (CEDEGE) were consulted about the construction of the San Vicente Dam, the future beneficiaries of the infrastructure, and the plans to empower the local peasants to use the new infrastructure.

Finally, an expert in agricultural law and development was also interviewed about the conflicts among Ecuadorian laws affecting the comunas and about recommendations to the land situation in the region.

APPENDIX B
SOCIOECONOMIC LEVEL OF THE COMUNEROS (SOURCE: SURVEY JULY-
AUGUST 2002)

Table B1: Distribution of households according to number of members

Members per household	North	South	Total
1 to 3	11%	12%	11%
4 to 5	42%	37%	40%
6 to 7	31%	28%	30%
8 to 10	13%	19%	16%
11 to 14	2%	5%	3%
Total people in interviewed households	252	268	520
Females	42%	45%	43%
Males	58%	55%	57%

Table B2: House characteristics

House materials	North	South	Total
wood	4%	0%	2.3%
block	47%	56%	50.0%
block and wood	13%	23%	18.2%
cane and wood	16%	7%	11.4%
cane and block	4%	7%	5.7%
cane	16%	7%	11.4%
Floor materials	North	South	Total
wood	47%	19%	33%
cement	36%	58%	47%
dirt	11%	23%	17%
wood and dirt	7%	0%	3%

Table B3: Average monthly expenses per type of household

Members per household	Average Expenses (\$)	
	North	South
1 to 3	84	126
4 to 5	164	236
6 to 7	202	247
8 to 10	222	185*
11 to 14	565	352*

*As the tendency suggests, expenses in the south are higher than in the north. These two cases might just represent miscalculations in income, which normally occurs with too large households.

Table B4: Communication and Transportation means

Communication & Transportation	North	South	Total
Radio	56%	74%	65%
TV	51%	70%	60%
Car	7%	26%	16%
Motor bike	9%	2%	6%
Bike	67%	67%	67%

APPENDIX C
SURVEY TO COMUNEROS OF THE PENINSULA OF SANTA ELENA

Date:

Comuna (commune):

Precinct:

Person #:

Sex () House material _____ Floor Material _____ # Rooms ____

Socioeconomic Information

1. How many people are living in this house?

Age	Sex	Relationship with the head of the household	Years of education

2. Do you have radio? TV? Car? Motorcycle? Bike?

3. Are you member of the comuna? Yes____ No____

4. If yes, how many communal meetings have you attended in the last 12 months? ____

5. What are your occupations?

Crop growing ()

Animal keeping ()

Mining ()

Fishing ()

Charcoal elaboration ()

Commerce ()

Handcraft ()

Apiculture ()

Any other () specify _____

Productive Information

6. How many hectares do you have in possession? _____

7. How many hectares in production do you have? _____

8. How many hours a day do you spend in your plot?

January to April : _____

May to December: _____

9. What are you producing in your land?

Crop	Extension (ha. or # of plants)	Cycle	Yields	Amount for sell	Price/unit (highest price vs. lowest price)	Market
a.						
b.						
c.						
d.						
e.						

Animal	Quantity	Type of product	Season for sealing	Amount for sell	Price/unit
a.					
b.					
c.					

10. What are your main expenses in crop growing and animal keeping?

Crop	Expenses per cycle	\$
a.	Seeds() type _____ Fertilizers() type _____ Pesticides() type _____ Herbicides () type _____ Labor () _____ Water use () _____	
b.	Seeds() type _____ Fertilizers() type _____ Pesticides() type _____ Herbicides () type _____ Labor () _____ Water use () _____	
c.	Seeds() type _____ Fertilizers() type _____ Pesticides() type _____ Herbicides () type _____ Labor () _____ Water use () _____	
d.	Seeds() type _____ Fertilizers() type _____ Pesticides() type _____ Herbicides () type _____ Labor () _____ Water use () _____	
e.	Seeds() type _____ Fertilizers() type _____ Pesticides() type _____ Herbicides () type _____ Labor () _____ Water use () _____	
Animal	Expenses per cycle	\$
a.		
b.		
c.		

11. What machinery and/or equipment are you using?

Machinery and/or equipment	Quantity	Annual or cyclical expenses (include expenses on gas)

Irrigation

12. Do you use irrigation? Yes_____ No_____ What extension? _____

13. If yes, what system are you using?

By hand () With pumps and hoses() Any other () specify_____

14. What is the source of water?

Well () Albarrada (natural water deposit)() River () Canal ()

15. What is the distance of your plot from the selected options?

Credit

16. Did you receive credit for the crops or animals that you have? (Specify the activities where the money was finally invested on)

No	Yes	Source	Amount	Interest	Term	Warranties	Activity

17. If you had more access to credit, in what activity would you invest it?

Organization

18. Are you taking part of any productive organization? Yes__ Which one?_____ No __

19. Do you pay dues to that organization? How much and on what dates?__

Plans for the Future

20. Are you planning to produce more the next year? Yes_____ No_____

21. If yes, are you increasing the extension of land? By how much and of what product?_____

Or are you planning to make a more intensive use of the same land? Of what product?_____. Is this going to be with your own money or with a loan?

22. If no, what are the factors that impede you to produce more?

23. What do you think you are going to be producing 5 years from now? What extension and yields?

Valuation of the Land and Property System

24. Have you ever rented, bought, or interchanged land? How many? At what price?
25. According to your experience with land, how much do you consider the selling price per hectare should be?
26. According to what you have listened, what is the land price in the region (PSE)? ____
27. What benefits do you think that possessing a land title has?
28. Would you consider the comuna should:
- a) Divide and title all the land of the comuna equitably among the comuneros
 - b) Allow the entitlement of land already in possession and leave the rest communal
 - c) Not allow the entitlement of anything and leave all the land communal
 - d) Rent part of the communal land
 - e) Sell part of the communal land
29. What option looks like the best for your land?
- a) Rent a part of it and cultivate the rest
 - b) Sell a part of it and cultivate the rest
 - c) Sell all your land and change to another occupation
 - d) Cultivate all your land

Details of the Activities of the Household Members

30. What is the occupation of the household members? (Including the interviewee)

	Activity	How much does she/he make?	How many hours a day and days a week?	Remittances
Male				
Female				
Children				

31. What other sources of income does this household have? (Donations, bonus, scholarships, etc.)

32. How much money per month (or week) does this household need to survive? _____

33. How much of that total is used in:

- a) Food
- b) Education
- c) Transportation
- d) Health care
- e) Gas (to cook)
- f) Water
- g) Electricity
- h) Dues to the comuna or other organizations
- i) Any other expenses (specify)

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BIOGRAPHICAL SKETCH

María José Castillo Vélez was borne in Guayaquil, Ecuador, on August 29th, 1977. She graduated with her bachelor's degree in economics at the Escuela Superior Politécnica del Litoral (ESPOL) in Guayaquil, in July 2000. She came to UF for her master's degree in food and resource economics in fall 2001.