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PETTY PRODUCERS, POTATOES AND LAND:

A Case Study of Agrarian Change in the
Cochabamba Serrania, Bolivia

Colin Leslie Sage

Thesis Submitted in Accordance with the Requirements
for the Degree of Doctor of Philosophy

University of Durham

Department of Geography

February 1990



25 JUL 1991

ABSTRACT

Petty Producers, Potatoes and Land: A Case Study of Agrarian Change in the Cochabamba Serrania, Bolivia

Colin L. Sage

The thesis comprises a study of agrarian change in one highland, ex-hacienda locality in the Cochabamba region of Bolivia and documents a process of agricultural intensification and crop specialisation amongst small producers. The thesis demonstrates that, since the Agrarian Reform, a process of commoditization has transformed the locality, leading to its incorporation into the regional economy as a major producer of potatoes. It examines the role played by a dynamic sector of truck operators and commercial intermediaries in stimulating this process.

The thesis reconstructs the emergence of the hacienda, and the forms of production which co-existed on the estate. It documents the implementation of the Agrarian Reform and the distribution of land titles to ex-labour-rent tenants which consolidated the pattern of usufruct holdings and consequently formalised inequality between households. The contemporary situation is characterised by an intensive farming system which places considerable demands upon local environmental resources.

The thesis conducts a detailed analysis of the existing pattern of land ownership, labour relationships and the distribution of other productive resources, to demonstrate that access to the means of production, control over the production process and disposal of the fruits of labour are highly uneven between households. However, inequality in the control over agricultural operations, besides the movement of labour from poor to rich households, do not by themselves provide sufficient evidence of differentiation between units. The thesis examines other dimensions which play a vital role in determining the social and economic trajectory of households. These include the role played by non-agricultural economic activities and the organisational structure of households. The thesis demonstrates the value of moving beyond the boundaries that conventionally define the analysis of household production, in order to examine dynamics within the domestic unit. Case studies are used to illustrate this approach.

TO

My Mother

AND

To the Memory of

Bryan Anderson

(1949-1987)

ACKNOWLEDGMENTS

This thesis has spent a long time in gestation. The difficulties of transforming powerful personal experiences and relationships in the field into objects of analysis in my study have been compounded by the demands of two successive teaching posts at the University of Leeds. However, during the time in which I have been engaged in research upon this topic many individuals have contributed practical and moral support and encouragement.

I first wish to thank the people of Santa Rosa (a pseudonym) for their warmth and hospitality, especially the Guzman family who shared their food and their lives with me for eighteen months. Juan Vasquez helped me enormously with the household census; and nearly everyone responded with patience and tolerance to my constant stream of questions.

In Cochabamba and La Paz CERES offered a stimulating research environment in which my work was encouraged; Jorge Dandler and, especially, Juan Torrico provided practical and moral support in the field. Life in Cochabamba was a wonderful antidote to the rigours of fieldwork: Mike and Aida West offered jazz and conversation, Mike and Elsa limitless "cubalibres"; and, above all, Bryan Anderson was on hand with "chuflays", hot baths and the Guardian Weekly. It is sad that he will not see the results of my work; it is tragic that we will not see the results of his own excellent fieldwork in Chillijchi.

In the U.K. staff and postgraduates in the Departments of Geography and Anthropology in Durham offered advice and support prior to my departure for Bolivia. In Leeds I would like to thank Professors Alan Wilson and David Beetham for their support and encouragement during the periods in which I have worked in the School of Geography and Department of Politics.

Many friends offered solace during my periods of angst when this work felt an impossible burden, while my support group from the Commitment Seminar impressed upon me the value of "just doing it". But above all it is due to Janet Townsend's patient supervision, and her constant stream of encouragement, advice and support that has enabled me to complete this work. I would like to thank her more than anyone.

Finally, fieldwork and the first phase of research was made possible by the financial support of the, then, Social Science Research Council.

DECLARATION

This is to certify that none of the material contained within this thesis has previously been submitted by me for a degree either within the University of Durham or any other university.

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GLOSSARY

(Includes both Spanish and Quechua terms)

- Alcalde:** Ceremonial, elected position in rural communities
- Aljiri:** System used to transport hacienda produce to market
- Anticretico:** System whereby sum of money is lent with a plot of land changing hands as surety
- Aporque:** Ridging-up of soil around base of plant
- Arrendero:** Tenant paying cash rents
- Arriero:** Muleteer
- Arrimante:** Secondary level of tenancy on the hacienda who secures land through the first labour-rent tenant
- Arroba:** Unit of weight; approximately 12.5 kgs
- Audencia:** Meeting
- Awayo:** Carrying cloth
- Ayni:** Reciprocal exchange of labour
- Bayeta:** Woollen cloth
- Barbecho:** Natural vegetation regrowth after fallow
- Cacha:** As Aljiri
- Campefino:** Peasant
- Carga:** Unit of weight measurement for potato and other tubers. In Santa Rosa this is equal to 100 kgs, though varies according to area (see Ch.4:VI.2 for details)
- Carnaval:** Carnival (February)
- Chacra:** Cultivated plot requiring lengthy fallow period
- Challa:** Maize stalk
- Chapara:** First class potato
- Chapu:** Beverage of cane alcohol and water
- Chark'i:** Dried meat
- Chicha:** Maize beer
- Chicharron:** Fried pork

Chicheria: Place where maize beer is sold

Colonato: System of labour-rent tenancy on the hacienda

Colono: Labour-rent tenant on the hacienda

Compadrazgo: Fictive kin relationship of co-godparenthood

Compadre: Man linked to others through compadrazgo

Concepción: Virgin Saint of Santa Rosa

Corregidor: Post responsible for administration of canton

Costal: Sack

Diezmo: Tax levied by hacienda on crops produced by colonos

Dirigente: Union leader

En Compania: Sharecropping arrangement

Encomendero: Large landowner during the colonial period

Encomiendas: Large estates established under the colonial regime

Estancia: Small and dispersed highland settlements

Expediente: Agrarian Reform documents

Fiesta: Festival

Guano: Manure

Hacendados: Hacienda owners

Hacienda: Agricultural estate worked extensively under a system of labour-rent tenancy

Jillicata: Headman on hacienda

Jornal: Daily wage labour

Jullusq'a: Rot

Latifundio: Large, pre-capitalist agricultural estate

Latifundistas: Owners of latifundios

Mayordomo: Labour overseer on hacienda

Mayoristas: Wholesalers

Mesa: Offering to the spirits which is burnt in the fields

Mestizo: Refers to people of mixed Spanish-American descent who are also economically powerful

Minifundio: System of small plots owned by peasants

Mink'a: Traditional, collective work team

Minoristas: Retailers

Mishka: Early, irrigated potato

Mita: Rotational system of water use

Mitanaje: Servile labour duties performed by women on the hacienda

Mit'ani: Woman who performs mitanaje duty

Mot'i: Boiled maize kernels

Murmu: Third class potato

Oca: Native Andean tuber (Oxalis tuberosa)

Pachamama: Earth goddess

Padrino: Godfather

Papalisa: Native Andean tuber (Ullucus tuberosum)

Papa Tarpuja: System of payment to women employed in potato cultivation. In return for a day's labour at time of planting and a day of harvesting work, they receive the harvested crop of one furrow

Partera: Local midwife

Patrón: Used to refer to owner of hacienda

Pegujales: Land held by labour-rent colonos on hacienda

Peón: Labourer

Pesada: Unit of weight for grain, approximately 100 kgs

Piqueros: Small independent landowners

Pongos: Labour-rent tenants

Pongueaje: Servile labour duties performed by male colonos

Prestacion Vial: Labour obligation levied by the state on rural adult males to perform a fixed number of days labour on road maintenance

Puna: High, largely treeless plateau

P'uña: Large earthenware vat used to contain chicha

Qanqocho: Sack

Qolqe: Second class potato

Q'orpear: Preparation of land ready for planting

Quintal: Unit of weight, approximately 50 kgs

Rescatismo: System for the purchase and commercialization
of peasant produce by intermediaries

Rescatistas: Intermediaries who purchase and market peasant
produce

Rhanqheras: Travelling merchants who exchange manufactured
goods for peasant produce

Serrania: Area of highlands and steep inter-montane valleys

Sierra: Highlands

Sindicatos: Unions

Tambo: Wholesale potato market

Temporal: Late, rainfed potato

Tink'a: Gift

Todos Santos: All Saints' day

Tranca: Road check-point

Transportistas: Independent truck owner-operators

Trueque: Reciprocal exchange of goods

T'una: Smallest class of potato

Vecinos de Pueblo: Residents of small rural towns, many of
whom have commercial relations which
subordinate small producers

Vendedor Ambulante: Unlicensed street hawker

Waycha Paceña: Potato variety (Solanum stenotomum subsp.
stenotomum) grown in Santa Rosa

Wifapo: Malted maize used for making chicha

Yerbaje: Tax levied by hacienda on colono livestock

Yunta: Yoke of oxen

Yuntero: Person who drives yoke of oxen

CHAPTER ONE

Theoretical Issues in the Analysis of Agrarian Transition

I.1 Introduction: The locality

Approximately one hundred kilometres northwest of the city of Cochabamba, within the Province of Ayopaya, lies the locality of Santa Rosa. The main settlement, comprising some thirty-five households, sits on a narrow shoulder of flat land halfway up a hillside stretching from the narrow, boulder-strewn valley floor at around 2,000 metres to the open, treeless puna land at over 4,000 metres above sea level. The remaining thirty households of Santa Rosa are scattered in small clusters above the main settlement with which they are connected by a network of paths.

Access into the area is difficult because of the extremely rugged terrain; the single road to Cochabamba via the town of Quillacollo crosses a pass at over 4,200 m, and between Santa Rosa and the village of Morochata it is frequently blocked by slumping hillsides or washed away by swollen rivers. Restoring the direct road link with the markets of the Cochabamba valleys every year after the heavy seasonal rains is hampered by the lack of state investment which limits infrastructural development in the area. The state plays a largely tributary role, with a nominal presence that serves to legitimate networks of local power exercised by intermediaries in alliance with local landowners and vecinos de pueblo, residents of the larger rural settlements. Transport into and within the area is provided by independent truck owner-operators (transportistas) who, through their organisation (sindicato), monopolise the movement of goods and people. Moreover, cultural distinctions reinforce the economic, social and political subordination of the largely monolingual Quechua speakers of the highlands (serranía), to the rural elite (Dandler 1971).



The low level of infrastructure, high friction of distance, widely dispersed population and the dominant position of the hacienda constrained economic development in the Morochata zone until the implementation of the Agrarian Reform Law of 1953. It would be foolish to suggest, however, that hitherto the area was submerged in autarchy for, prior to the Reform, the hacienda produced significant surpluses for the regional economy. Nevertheless, overall the level of productive forces was low, with insufficient labour a major factor in restricting production on the hacienda. Since the early 1960s, however, the increased penetration of merchant capital has encouraged labour-intensive commodity production, with households increasingly incorporated into a specialised, regionally-based social division of labour. Thus, today, the majority of households in Santa Rosa organise their resources in labour and means of production around the demands of potato cultivation, although for many off-farm income generation also makes a vital contribution to household reproduction.

I.2 Introduction: Theoretical issues

If this, then, is the locality, what are the questions which present themselves for examination in this thesis? Superficially, they are hardly novel. A peasant "community" which occupies a diverse physical environment has been undergoing a process of agrarian transition shaped by agrarian reform: this is barely a revelation within the Andean literature. There now exists a body of material which has documented the operation and transformation of the hacienda system, has detailed the role of rural elites in subordinating independent peasant producers, and has extensively analysed and described the rise of wage labour, rural proletarianization and outmigration. What new insights can be extracted from another intensive locality-based study?

As this chapter will later describe, the focus of the research was determined by the inhabitants of Santa Rosa rather than by preconceived notions of social organisation. The thesis follows local concerns in placing primary importance upon the material circumstances, social relations and productive enterprises that are associated with agriculture. Moreover, there are two important dimensions to the study. First, an historical analysis of production in the locality will be set in the context of regional characteristics and regional history. In other words, production in Santa Rosa is placed within the framework of a regional spatial division of labour in which the wider market structures will be seen to exert an important influence over the labour process locally. This perspective provides the foundation for the second dimension of the study, a synchronic account of current activities in Santa Rosa itself, working mainly at the level of the household. In the second half of the thesis case studies are widely used to provide detailed profiles of household and individual strategies.

The wider regional context and the sense of historical perspective are critical to this locality-based study of agrarian change. Santa Rosa is not treated in isolation as an autarchic peasant community practising a ritualised resistance to capitalism. On the contrary, many households have profited from opportunities presented by the market, and winners and losers in Santa Rosa can only be understood in the context of the regional spatial structure of production and of the circulation of capital, labour and commodities. Similarly, analysis of agrarian change in Santa Rosa requires an historical base-line from which to evaluate the present. This will be taken as 1953, the year in which the state promulgated the Law of Agrarian Reform, although this, too, will be examined in its historical context.

The study of agrarian transition in Santa Rosa is approached in the light of several contemporary debates and will prove to shed some light upon each of them. The debates are those on commoditization, food systems, agrarian reform and use of environmental resources, and this chapter will briefly review each of these in turn. However, before embarking upon a discussion of these debates, it is necessary to identify and define four related themes which form the conceptual framework of the study. These are:

- 1) Commoditization - a term used to describe the multi-dimensional changes affecting the household enterprise which are most clearly manifested by shifts in the organisation of agricultural production. This will provide the central theoretical thrust of the study, and is explained in more detail below.
- 2) Differentiation - is approached as both a dependent and independent variable of commoditization. While it refers to a growing inequality amongst households in their access to and control over means of production, it is necessary to distinguish between processes deriving from competition in the market and that resulting from the demographic cycle of household formation, growth and fission with all its consequences and implications for the transfer of property.
- 3) Economic Diversification - is taken to include a wide range of non-agricultural income-generating activities, including wage labour, which are pursued by household members. These may either serve to contribute to the material reproduction of the household or, for the better-off, extend their opportunities for capital accumulation.
- 4) Reproduction - provides a conceptual tool for the detailed observation of the ways in which households are internally organised around gender and generational divisions for task allocation. As it takes us beyond the "black box" notion of the household and into the hidden abode of the domestic sphere, it allows for a detailed examination of women's roles.

II. Commoditization

Observers of the Andean countryside have not failed to notice the vital contribution of rural labour to capitalist accumulation, whether it is employed in large-scale agricultural units, the mining industry or urban-based enterprises (cf. Long and Roberts 1978, 1984; Mallon 1983). Notwithstanding permanent outmigration, periodic involvement in wage work, though varying by frequency and duration, amongst both men and women who nonetheless retain a close association with land, has been interpreted as evidence of a process of decomposition amongst the peasantry. While the sale of labour power in some localities may indeed be central to the reproduction of rural households, elsewhere a preoccupation with labour markets can overshadow the important role of small-scale agricultural production and commercialisation.

The existence of market-oriented production raises several important questions about the nature and trajectory of small producers. First, how do we conceptualise the units of production engaged in agricultural intensification as a response to commercial incentives? Secondly, are such units differentiating, that is experiencing a growing unequal access to means of production? Thirdly, is the process of differentiation leading to the decomposition of peasant producers, resulting in the emergence of opposing classes? And fourth, precisely how do peasant producers become incorporated into the market; what is the agency that serves to extend the boundaries of the national economy? Is it sufficient to assume the logic of capitalism without identifying the interface which transmits and effects the process of agrarian change? While many of these are perennial questions it is believed that they have not always received satisfactory answers. It is intended here to address these questions in the context of Santa Rosa and the framework that is most appropriate to systematise the inquiry is the commoditization approach.

In adopting this approach it is intended to short-circuit a prolonged review of the largely familiar classical models of agrarian development propounded by Marx, Lenin, Kautsky and Chayanov. Buttel and Goodman (1989) have recently observed, as part of a current re-evaluation of the impasse in development studies (cf. Booth 1985, Vandergeest and Buttel 1988), that these universalistic deductive theories were concerned with identifying a singular logic to explain the development of agrarian systems. While they still have a value in setting the broad parameters of inquiry, Buttel and Goodman believe that such theories have encountered profound limitations to concrete applications. The "progressist" logic of the classical marxist tradition, in particular, experiences difficulties in explaining the wide variations of agricultural systems, especially the "incomplete" and uneven processes according to linear notions of transition (Buttel and Goodman 1989, Goodman and Redclift 1981). Consequently, as an intermediate and inductive category, the commoditization approach offers a preferable point of departure for the analysis of concrete agrarian systems.

Commoditization is described as a process of deepening of commodity relations within the reproductive cycle of the household (Bernstein 1979, Friedmann 1980) (1). In other words, rural households become increasingly reliant on transactions conducted through the market, both as producers of agricultural produce and labour power, and for the purchase of necessary consumption goods and renewal of means of production. It has been argued that the commoditization approach represents an improvement upon earlier models of peasant economy: the Leninist "differentiation" model, which emphasizes the destruction of peasant production and the emergence of an antagonistic class structure; and the Chayanovian model which stresses the viability, internal logic and dynamic persistence of peasant forms of organization despite capitalist encroachment (2).

"Commoditization theory attempts to find a way out of this apparent dilemma by arguing that the debate is essentially false, since simple or petty commodity production is an integral part of any capitalist social formation. Thus labour processes or units of production that exhibit "peasant" or "pre-capitalist" features are not to be seen as intrinsically "transitional" and doomed to eventual extinction, or as self-perpetuating and sealed off from the influence of the capitalist economy. Instead they must be examined closely to establish the precise ways in which commodity exchange and market mechanisms shape and reproduce these specific forms of production" (Long et al. 1986: 2).

As one of the critical objectives of the commoditization approach is to theorise the nature of small-scale commodity production within capitalism, then it is necessary to begin from a perspective where so-called peripheral economies are considered as generalized commodity economies and not "pre-capitalist", "traditional" or "peasant" societies located on the margins of capitalist markets and economic forces (Long 1986). According to Long, in a review of a lecture by Henry Bernstein at the University of Wageningen, the notion of a generalized commodity economy can be interpreted in two ways: either all the elements of production, distribution and exchange are commoditized or they are not. As forms of unpaid labour, such as domestic work, are found even in the advanced capitalist countries, the first option constitutes a rather ideal-typical model while the second option represents a closer fit to empirical situations especially in contemporary developing economies. In other words, while non-commoditized relationships and informal exchanges are sustained, households cannot, nevertheless, reproduce themselves without some involvement in commodity circuits. Moreover, while the capital - wage labour relationship may not predominate throughout the structure, the general logic governing economic life is that of capitalism (Long 1986).

In seeking to establish the central elements of the commoditization approach as well as to identify its limitations, it is helpful to draw upon an influential, if excessively recondite, article by Gibbon and Neocosmos (1985). Theirs is a wide-ranging review of debates concerning the political economy of African socialism, beginning with a critical examination of the work of Henry Bernstein, going on to establish the theoretical status of petty commodity production, and closing with an analysis of class and state in Tanzania. While only part of this work is of direct relevance here, it provides a vehicle with which to cut through an increasingly detailed, and often pedantic, debate surrounding the commoditization model (3).

Gibbon and Neocosmos identify four theoretical approaches rejected by Bernstein in favour of developing a genuinely materialist investigation of rural economy. These approaches are:

- 1) any notion of "peasantist" formulations that suggest a specific, distinctive peasant mode of production;
- 2) the notion of articulation of modes of production;
- 3) a belief in the existence of unequal exchange as the main source of exploitation of the peasantry; and
- 4) the tendency to view the present agrarian social order as a superimposition of new forms of exchange on pre-existing relations of production (Gibbon and Neocosmos 1985).

The authors then go on to conduct a rigorous scrutiny of Bernstein's early work and take issue with his formulation of simple commodity production amongst agricultural households, raising a number of critical points. Four main issues, however, stand out for detailed attention and these will provide the basis for an initial discussion of simple commodity production in general and Bernstein's early conceptualizations in particular, before going on to critically examine Gibbon and Neocosmos' own theoretical model (4).

The first issue raised within their critique of Bernstein is the use of the concept form of production. For Bernstein, simple commodity production is regarded as a form "that can exist in different historical periods and in variant relations with other forms of production" (1979: 425). Gibbon and Neocosmos, on the other hand, argue that it is possible to speak only of capitalist forms, feudal forms and never of forms spanning modes of production, which they believe Bernstein wishes to, and in this they are, in my view, correct (5).

Secondly, they take issue with his "logic" of simple commodity production which, according to Bernstein, is "subsistence in the broad sense of the simple reproduction of the producers and the unit of production (descriptively the household)" (1979: 425). Gibbon and Neocosmos argue that this constitutes "not only a subjectivist form of analysis but a peasantist form of subjectivism" (p. 162; their emphasised epithet), by which they mean that petty commodity production is defined by Bernstein, not in terms of social relations, but as a type of subjective calculation on the part of the individual producer. One of the criticisms made about the commoditization approach is that it leaves little room for subjective action on the part of petty commodity producers themselves (Long et al. 1986), a criticism that Gibbon and Neocosmos clearly do not share following their accusations of subjectivism.

This leads to a third, related point raised by Gibbon and Neocosmos, the option available to petty commodity producers to withdraw, wholly or in part, from commodity production. While for Bernstein such an option may exist under certain conditions, for his critics it is inconceivable especially when considering non-agricultural petty commodity producers such as shoemakers and tailors (6). Any notion of withdrawal must mean ceasing to be a petty commodity producer, and for Gibbon and Neocosmos, this smacks of a peasant essentialism. Unfortunately, such a

rigid interpretation cannot allow any notion of the degree to which the reproduction cycle of the household enterprise is realised through the production and exchange of commodities, and the degree to which the household continues to maintain use-value production for direct consumption. That individual households may make economic calculations regarding a balance between the two is an integral part of the model of commoditization being developed here.

The fourth, and final, point that is drawn from Gibbon and Neocosmos' critique of Bernstein's work concerns the notion of exploitation. Strictly speaking, exploitation is a relation between social classes, that is between owners of the means of production who extract surplus value from the providers of labour power during the process of production and the realisation of profit (Johnston, Gregory and Smith 1986). In the case of petty commodity producers, however, who largely retain control over the organisation of production through the combined ownership of productive means and labour power, exploitation may occur through the appropriation of surplus labour by capital. This appropriation can be conceptualized in terms of devalorized labour time. In this case, according to Goodman and Redclift, households

"continue to produce use-values for their own consumption, thereby securing part of their costs of reproduction. The production of use-values represents a potential source of subsidy to capitals in the urban sector since, by meeting part of the cost or "price of production" of the labour inputs devoted to commodity production, it exerts downward pressure on the relative prices of these commodities. Since unpaid domestic labour is not imputed at its real market price or opportunity cost, the commodity price can fall below the level necessary to ensure that capitalist producers achieve the long-run average rate of profit and so result in a loss of surplus labour by peasant households. The state may "institutionalize" this form of appropriation by imposing price controls which effectively preclude capitalist production." (Goodman and Redclift 1981: 78).

Such a clear exposition of mechanisms of appropriation seems to elude Gibbon and Neocosmos both in terms of style and theoretical argument. Instead their discussion of exploitation is preoccupied with Emmanuel's work on unequal exchange which occurs on the basis of the sale, by petty commodity producers, of a product embodying a large number of hours in order to obtain a product of capitalist industry embodying a smaller number of hours (7). As exploitation remains a dimension of the social relations of production, it cannot be conceptualized purely at the level of exchange, as Gibbon and Neocosmos undoubtedly recognise.

Nevertheless, the mechanisms by which surplus is appropriated from petty producers (e.g. through devalorized labour time, forms of unequal exchange) is an area of debate marked by no little controversy and terminological confusion (Goodman and Redclift 1981). An extremely helpful illustration of "exploitation" in its broadest sense is offered by the notion of the "simple reproduction squeeze". Bernstein defines this in terms of increasing costs of production - decreasing returns to labour. Here, households are engaged in an intensification of production involving a greater expenditure of labour-time and money in an effort to raise output, while increasingly vulnerable to failure of the material elements of production, climatic irregularities, deterioration of soils, crop pests and disease, and even death or illness in the family reducing the supply of labour, and so on (Bernstein 1979). Such a scenario is associated with falling producer prices (a decline in the terms of trade), which leads households to lower consumption, intensify their efforts and increase the transfer of absolute or relative surplus value (Goodman and Redclift 1981).

One further problem associated with the mechanisms by which surplus is appropriated from petty producers is the need to distinguish between different types of capital, especially merchant, or circulation, capital and productive capital, and their respective roles in penetrating small-

scale production. For example, while merchant capital acquires its profit purely through unequal exchange (buying cheap and selling dear), it is only productive capital which can create new value through control of the production process and the transformation of commodities (including wage labour) into new commodities. The exploitation which occurs during this process does not involve any unequal exchange, providing that labour power is exchanged at its value (Bernstein 1979). Yet, in contrast, Kay argues that merchant capital

"must engage in unequal exchange in order to acquire surplus value and profit, but this profit like that of all capital finds its real origin in the sphere of production as the unrewarded product of labour. Unequal exchange therefore does not invalidate the law of value, on the contrary it is the way in which the law of value works with respect to circulation capital."
(G. Kay 1975: 88-89).

Harriss (1989) argues that while merchant capital is not a source of surplus value, but shares in the distribution of surplus value as profits, it is hardly ever found empirically in its pure form. Rather, merchant capital appears in combination with three main sources of impurity. First, the productive activity necessary to the circulation of commodities (trading, transport and storage); secondly, with industrial capital, to which it is historically subordinated; and thirdly, with finance, or usurer's capital, which together provide the foundations for the persistence, while controlling the reproduction, of small-scale commodity producers (Harriss 1989).

As we shall see during the course of this thesis, the combination of merchant and usurer's capital and the activities of transporters and traders have together played an important role in the development of commodity relations in Santa Rosa, bringing about the incorporation of individual households into the regional social division of labour. This process does not, however, substantiate the unequal exchange proposition that the over-exploitation of family labour in Santa Rosa is functional to the provision of

cheap food in the city of Cochabamba, an argument developed with particular vigour at a more general level by de Janvry and Garramón (1977).

In returning to the article by Gibbon and Neocosmos, then, once they have finished their detailed critique of Bernstein's work, and cleared the field of rival explanatory frameworks, they create a rigid theoretical model of simple commodity production. It is useful to remind ourselves that this is a category which was only briefly addressed by Marx (Catephores 1989). Moreover, Smith questions the usefulness of applying the principles used by Marx for the analysis of the capitalist mode of production to simple commodity production (G. Smith 1985). Nevertheless, three features of the Gibbon and Neocosmos model deserve attention.

First, these authors reject any possibility of "degrees" or extent of commoditisation in constituting their specification of small-scale commodity production within capitalism.

"(O)nce peasants (or anyone else) systematically produce commodities they are all controlled - by definite and precise forms of capitalist regulation which act as the absolute limits of their activity. It is not even meaningful to talk of differential commoditization if this meant to imply degrees as opposed to types. There are only two "degrees" of commoditization: systematic or generalized commodity production (which includes petty commodity production) or occasional and non-generalized commodity production, which is not effectively commodity production at all but part of a different noncapitalist mode of production" (Gibbon and Neocosmos 1985: 165).

Thus, there is little room in the model proposed by Gibbon and Neocosmos to examine the concrete diversity of petty commodity production, including such features as levels of capitalization, productive forces, labour processes, size of product and so on (Bernstein 1986). Their concern with identifying the essential conditions of petty commodity production (as opposed to the phenomenal) provides a deductive framework for establishing the

elements of a more abstract model of simple commodity production. However, it fails to do justice to the dynamics of change represented by the commoditization process, and the variety of circumstances in which producers make decisions regarding the relative weight that is accorded to the production of use values or commodities.

The second feature of their model is that the category of petty commodity production is not restricted to the realm of agriculture and can be found in other economic spheres, for example "software/hardware computer manufacturers as well as middle peasants" (1985: 171). This view is challenged by the observations of Goodman and Redclift (1985) who argue that simple commodity production in agriculture is subsumed in ways that are special to that sector. The transition to a specifically capitalist labour process which, in industry, involves a more complex division of labour and large-scale production, is not transposed to agriculture. Here, even in the developed countries, "the direct producer ..., by and large, retains control of the labour process and understands the technical basis of production" (Goodman and Redclift 1985: 240).

The reasons for the persistence of simple commodity production in agriculture have also been explored by Mann and Dickinson, who argue that they are not to be found in notions of self-exploitation of family labour, but rather in the logic and nature of capitalism (Mann and Dickinson 1978). Furthermore, Cliffe lends weight to the position opposing Gibbon and Neocosmos by arguing that as African peasants reproduce themselves to a significant degree through their own subsistence production,

"even less can the production unit be analysed just in terms of relations of production in isolation from relations of reproduction. That peasants are producing food which can be used for their own reproduction or sale, does set them apart from cobblers in the relationship with capital and the state" (Cliffe 1987: 633).

The third feature of the model proposed by Gibbon and Neocosmos is that not all small producers in agriculture are petty commodity producers: only middle peasants can be considered to conform to this category. Poor peasant households which may sell part of their labour power are considered semi-proletarians, and rich households, one assumes, are treated as a rural bourgeoisie although this stratum is conspicuous by its absence in the article under discussion. Thus the model proposed by Gibbon and Neocosmos is complete in its abstraction: it is empirically inapplicable. Ideal-types are, of course, central to the process of simplifying reality in order to construct theoretical explanations, but these do need to be tested against and informed by concrete situations. To make no distinction between capitalized and non-capitalized petty commodity producers or between high and low levels of technological endowment - which is an indication of the degree of development of the productive forces - is to avoid recognising that, empirically, different types of enterprises fall into the category of petty commodity production. As the data from Santa Rosa indicate, it would be highly erroneous to treat all land-poor households as semi-proletarians and underplay or ignore their commitment to commodity production, for this can match that of the middle or rich strata.

However, far from being empirically informed, Gibbon and Neocosmos employ a deductive logic in order to confer upon simple commodity production "the status of a theoretical concept, whereas it is an historically contingent phenomenon" (Goodman and Redclift 1985: 238). In other words, the form of simple commodity production varies according to changes during the course of capitalist development and the type of its subsumption to capital (Cliffe 1987). This view is supported by Catephores (1989) who notes the variety of historical circumstances in which simple commodity production has predominated. Yet nowhere, Catephores argues, has simple commodity production ever become more than an enclave in the midst of an economy organized according to different principles.

Thus, the way in which simple, or petty, commodity production is constituted within any specific social formation cannot be read off according to the laws of motion of capital. Rather, it first requires the concrete investigation of empirical situations that can then lead to the inductive construction of theoretical models. It is necessary, therefore, to reject Gibbon and Neocosmos' attempt to theorise a single model of simple commodity production. Fortunately, there remains within the commoditization approach a mode of analysis which facilitates the systematization of empirical investigation. This has been especially helpful in the development of intermediate concepts which identify linkages between micro and macro levels of economic activity.

One such concept is "form of production", which has been widely used, though in different, inconsistent and ambiguous ways, by a number of commoditization scholars (Scott 1986). It was developed in response to structural marxist theory's preoccupation with "modes of production" and the need to identify the articulation of modes in social formations in which capitalism appeared to co-exist with pre-capitalist "modes". The need for fresh approaches to theorising units of production and processes of economic change has been most keenly felt where agriculture is dominated by non-capitalist units employing family labour on family land. Thus the concept of form of production has been developed as a critical tool in the analysis of agrarian social relations. It is conceived by Friedmann (1980)

"through a double specification of the unit of production and the social formation. The social formation provides the context for reproduction of units of production, and in combination with the internal structure of the unit, determines its conditions of reproduction, decomposition, or transformation" (Friedmann 1980: 160).

Carol Smith (1984a) uses the concept form of production to examine the changes taking place amongst petty commodity producers, especially in the deployment of labour, in actual practice among specific groups in particular market contexts.

"Different forms emerge as different elements in the production process (land, labour, raw materials) become market commodities, as labour processes are organised in different ways, and as labour recruitment changes... (T)he combination of external market conditions and internal labour dynamics determines both forces and relations of production as well as their relationship to each other in any particular form. One finds, therefore, no single "logic" to any particular form such as SCP. The logic of a system is given instead by the combination of elements within it .. that do vary historically in significant ways (C.Smith 1984a: 202. Original emphasis).

Form of production, then, exists at a concrete level within an economy. At the next level of abstraction it is possible to identify the variety of social relations which petty commodity producers establish with non-producers through the mode of production, that determines the way in which the surplus product is appropriated. Finally, the totality can be considered within a broader market context termed the economic system (C.Smith 1986).

Such an approach which is capable of identifying the specific linkages between economic levels (mechanisms of exchange and circulation), yet is rooted in an explicit analysis of the units and social relations of production, represents a considerable advance over much of the earlier work on agrarian transformation. It creates, in simple commodity production, a category that is distinct, but not autonomous from, the capitalist mode of production, recognising that both are equally dependent upon the mobility of labour and markets in land and other means of production. On the other hand, and perhaps most importantly, the category of simple commodity production is clearly distinguished from other household forms characterised as

"peasant" (Friedmann 1980). This is vital because "peasant" is not a theoretical concept for it has no basis in political economy and historical analysis (Ennew, Hirst and Tribe 1977). Rather, it is a descriptive term applied to rural cultivators that have existed in different types of society in different historical epochs (Bernstein 1979). To speak of a "peasant economy", therefore, is to imply an economy where the household is the basic unit of production and this is derived from the social organisation of the peasant family. The notion of family is thus central to the unit of production, yet kinship cannot determine the formation or function of such units independently of economic relationships. As Ennew, Hirst and Tribe argue:

"(T)he notion of the "family-labour farm" as the basic enterprise of a mode of production raises as problems the form of the "family" and the nature of the communal relations which sustain the operations of "familial" production. The "family" is not a natural institution and has no essential form. ... (T)he "possession" of the means and conditions of production can never be given in the enterprise or unit of production but always depends upon the social relations of production" (Ennew, Hirst and Tribe 1977: 308) (8).

This leads logically to an examination of the changing relations within and between household enterprises under the impact of commoditization. In a rigorous analysis of the differences between peasants and simple commodity producers, Friedmann argues that an underlying mechanism in the transition from the former to the latter is the "individualisation" of productive enterprises. This occurs as personal ties for the renewal of means of production (land, labour, inputs, tools) are replaced by market relations:

"The process of commoditisation ultimately implies the individual status of each household. It becomes an enterprise, whose relations to outsiders progressively takes the form of buying, selling, and competition" (Friedmann 1980: 163).

However, while increasing competition between households occurs as producers struggle to increase their control over land, labour and other factors of production, emphasis upon the process of "individualisation" tends to brush aside the apparent persistence of non-commoditized, i.e. reciprocal and co-operative, forms of exchange within rural communities.

Gavin Smith believes a "moral economy component" (9), that would recognise the value of such supra-household arrangements, must be incorporated into the model of simple commodity production, for such relations are not merely a residual prone to imminent disappearance (G. Smith 1985). Yet such Andean institutions as the reciprocal exchange of labour (ayni, mink'a) and products (trueque), or the role of fictive kin relationships (compadrazgo) in constructing social networks, should not be approached in a reverential manner as representing evidence of an altruistic, egalitarian "resistance to capitalism" in the countryside. As the discussion in Chapter Six will show, the use of terms such as ayni, conventionally applied to the reciprocal exchange of a day's labour, can disguise highly exploitative mechanisms used by land-rich households to ensure a cheap supply of labour. Given the restricted economic opportunities available in many parts of the Andean countryside and the low level of the productive forces in small-holder agriculture, it has been argued that land-poor producers are obliged to enter into such unequal relations with richer neighbours in order to guarantee their survival (Sánchez 1982).

Brass has examined the ideological value of kinship within the accumulation process. He suggests that actual (sanguineal, marital) and fictive (compadrazgo) kinship, while serving to disguise class antagonisms, are capable of exerting a powerful form of social control in the hands of rich smallholders who are able to mobilise the labour power of indebted kinsfolk (Brass 1986). The patriarchal basis of

this authority is most evident within the domestic unit, but it can also be found at a community level where it serves to structure and legitimate power exercised by a landowning elite. As commoditization proceeds and communal bonds are broken by the market (Friedmann's "individualization" thesis), relations within the household around which production is organised may be despotically reinforced in order to control the labour-power of family members (C. Smith 1986). Yet this may lead to discord over the allocation of roles and distributional rewards, and conflict between the objectives of the patriarch and the aspirations of sons and daughters (10).

It has now become more widely recognised that the view of households as constituting "a set of relationships that impose a mutual obligation to pool resources" (Friedman 1984: 49) is too static and restricted. The contribution of feminist analysis of the household as the site of domination and subordination has alerted scholars to the dangers of characterising households by reference to virtues of pooling, sharing and generosity (Harris 1981). Moreover, this approach has begun to indicate the importance of connecting the internal structure and social relations of the household to the development and intensification of commodity relations (Friedmann 1986). Thus, there is a greater sensitivity to changing gender and other divisions of labour within a household simultaneously involved in various spheres of production: agricultural and non-agricultural, producing commodities and use-values (11).

Nevertheless, the principal factor determining the impact of commoditization on the internal structure of the household will be its resource base in land, livestock, capital and labour. This will ultimately determine the nature of the household's insertion into the commodity economy and, for this reason, examining differential access to means of production remains a critical task.

The process of social differentiation lies at the very heart of understanding the development of commodity production in agriculture. As a result of intense competition, according to "classical" formulations, commodity-producing enterprises become differentiated, eventually emerging as opposing classes under capitalism. For Lenin,

"The old peasantry is not only "differentiating", it is being completely dissolved, it is ceasing to exist, it is being ousted by absolutely new types of rural inhabitants - types that are the basis of a society in which commodity economy and capitalist production prevail. These types are the rural bourgeoisie (chiefly petty bourgeoisie) and the rural proletariat - a class of commodity producers in agriculture and a class of agricultural wage-workers" (Lenin 1960: 174).

For Lenin, as well as for some contemporary marxist scholars who view differentiation into classes, such a process becomes a somewhat inevitable long-term trend towards polarization into a class of capitalists and a class of wage labourers. This linear view, which emphasises the importance of wage labour to the reproduction of apparently "proletarianizing" households, thus tends to lead to a forward projection of the differentiation process and may refer to petty commodity producers as wage workers, whether "hidden", "disguised" or "concealed" (Goodman and Redclift 1981). Watts has also noted a tendency towards an idealised type of capitalist development measured by the universalisation of wage labour. He appears to favour the view that capitalism has spawned the development of generalized commodity production and not unilinear proletarianization (Watts 1987).

It is indeed the case that in some areas off-farm employment may generate an important part of household income as, for example, in the peasant communities of Southern Peru examined by Figueroa (1982). However, it is by no means universally the case that labour markets, nor rural households, should function in this manner. Often, the restricted opportunities available to rural labour,

which reflect the form and degree of capitalist development, may ensure that the poorest stratum in the countryside continue to reproduce themselves from agricultural commodity production (cf. Painter 1986). Moreover, the use made by the land-rich of so-called "traditional" institutions for the exchange of labour, may disguise exploitative and dependent relationships between households (G. Smith 1979). Not only may static patterns of differentiation be obscured, then, but given the high-risk circumstances of peripheral agrarian societies, such patterns are unlikely to be consolidated into an established class structure: class membership in such societies being ambiguous, insecure and changing (Long 1986).

Lehmann also argues against an account of differentiation that leads to notions of polarized, solidary classes. The only alternative, he suggests, is to view differentiation in a variety of ways: by source and amount of income, landholding, institutional affiliations, even language and ethnicity, and above all by sector of activity. While all households may be engaged in agriculture or animal husbandry this is far from an exclusive activity:

"some engage in trade, wholesale and retail, in moneylending, and others migrate intermittently to mining centre, towns, far-off plantations and so on. Their livelihoods are achieved through a variety of mechanisms..." (Lehmann 1982: 140-141).

Such mechanisms of diversified economic activities, often labelled "livelihood strategies", may acquire significance for both poorer and wealthier households. Amongst a land-poor stratum involvement in non-agricultural income-generating activities, most especially the sale of wage labour, may be necessary to supplement income from the sale of agricultural commodities and use-value production in order to ensure household reproduction. Amongst members of a land-rich stratum, on the other hand, involvement in such commercial activities as trading, livestock dealing, transport, or non-agricultural commodity production such as brewing, may represent lucrative opportunities for income

generation and saving, leading to investment and the raising of the level of productive forces in agriculture. For this reason economic diversification may make a significant contribution to social differentiation and offer some functional complementarity to agricultural commodity production.

Processes of differentiation therefore require careful analysis and cannot be simply read off from abstract theoretical propositions or from empirical models applicable elsewhere. As Bernstein argues,

"Whether differentiation of (petty commodity producers) occurs, the extent to which it occurs, and the specific mechanisms through which it occurs, are always the effects of particular conditions of competition and class struggle that require concrete investigation" (Bernstein 1986: 20).

It is the purpose of this thesis to conduct such an investigation based upon a framework offered by the commoditization approach.

III. Food Systems

In the light of the valuable insights offered by the commoditization debate, a second, related set of issues are raised regarding the production and distribution of food within national economies and the technical basis of production amongst petty commodity producers. These issues have been stimulated by interventions regarding the relationship between the international food order, agrarian structures and the emergence of new farming systems (Friedmann 1982, Buttel and Goodman 1989, Raikes 1988).

With respect to Santa Rosa, there are a number of important, general questions that a "food systems" approach raises:

- 1) What is the dynamic that has led to the rise of a specialised system of agricultural commodity production within the locality?
- 2) What forces have brought about the changing technical basis of production, specifically, the tendency towards the "scientification" of agriculture and the use of high energy inputs?
- 3) What has been the role of the state and its agencies in promoting food production and rural development amongst small producers in the highlands, as opposed to its treatment of large-scale, agro-industrial farming interests in the lowlands?
- 4) Within Santa Rosa, is it only a rich stratum which is capable of taking advantage of new market opportunities or do households across all landholding categories secure their reproduction through the sale of food surpluses?

It is believed that a "food systems" approach offers valuable insights into these questions. As Friedmann (1982) observes, "food has a special conceptual status within political economy" (p.255), and the commoditization of food has been a crucial aspect of social and economic transformation. This occurs, for example, through the extension of markets to previously self-sufficient agrarian populations,

turning them into mass consumers of commercial food. Moreover, subsidized imports, under U.S. "aid" policies, have accelerated the growth of urban populations and the underdevelopment of domestic agriculture through exerting strong downward pressure on producer prices (Friedmann 1982). Chapter Three provides evidence to support these propositions in the case of Bolivia and it is here that the agrarian policies of the state are examined. With regard to the questions of production in Santa Rosa, the first is addressed in the latter part of Chapter Four while the second is explored in Chapter Five. For the moment, however, it is useful to discuss some of the main conceptual issues raised by the wider concern with food systems.

During the second half of the 1970s critical attention began to turn towards the process of agricultural modernisation which, a decade or so before, had been heralded as providing a much-needed breakthrough in raising food output. While the Green Revolution was subjected to re-evaluation and found wanting according to measures of social equity (Pearse 1980), popular, radical work called into question the corporate control of food production and distribution, especially in Latin America. The work of Susan George (1976, 1979, 1982), the Institute for Food and Development Policy (Lappé and Collins 1977, 1982), Burbach and Flynn (1980) and, among the most rhetorical, Ernest Feder (1978, 1980, 1981) besides others, focussed upon the international and corporate dimensions of food production and highlighted the extent of agribusiness control either directly, or indirectly through the supply of inputs.

The issue of food security emerged as a major policy issue in the early 1980s and began to give rise to studies of national food provisioning systems. One country which quickly seized the initiative in this regard was Mexico. In 1980, under the Presidency of López Portillo, the state promulgated a new agricultural development law, the Sistema Alimentario Mexicano, or SAM, which was designed to deal

comprehensively with the entire food system in the country (Austin and Esteva 1987, Redclift 1987). It encompassed a large number of programmes to stimulate the production of basic foodstuffs for the market through input subsidies, price supports and crop insurance. Though ostensibly directed toward the small producers in poorer rain-fed areas, actual budget allocations increasingly favoured large scale farmers in the irrigated and highly productive zones which have traditionally received the major share of state investment (Grindle 1986). Due to the oil boom generating unparalleled state revenues, nearly seven billion dollars were budgeted for the SAM between 1980 and 1982. However, the sudden fiscal crisis which confronted the state by late 1982 resulted in a severe drop in investment for rural development and by the mid-1980s Mexico was once again importing significant amounts of basic staples (Grindle 1988) (12).

With the generalised onset of the "debt crisis" throughout Latin America and Africa during the 1980s, the issue of food security has been overshadowed in both regions by the exigencies of servicing the external debt. Under the policy directives of the World Bank and the International Monetary Fund individual governments have been instructed to maximise export revenues according to the principles of structural adjustment and the logic of comparative advantage, in which grain imports (from the United States) would assuredly bridge domestic food deficits. The consequences of the "debt crisis" during the 1980s have been a drastic fall in living standards, real income and levels of food consumption with nutritional standards lower throughout the region than for many years (Szeftel 1987) (13). A series of studies has now begun to appear for Latin America which document the direct impact of monetary policy on the poorest sectors of the population; for example, Canak (1989), Armstrong (1988) on Buenos Aires, Hollist (1987) for Brazil, and Morales (1984) in Bolivia, amongst many others (14).

It is necessary to emphasise that the term "food security" is not the same as food self-sufficiency for there are many net food importing countries (such as Japan) which possess a high degree of security, while some net food exporters (e.g. Brazil) do not (Hollist and Tullis 1987). Clearly, there are important questions regarding the operation of the international food system, and the nature of each country's insertion into it, which require attention. In this regard Raikes (1988) has conducted a detailed inquiry into the reasons for Africa's current food vulnerability, and has linked this to the structure of international trade, especially the continent's relations with Europe, and the consequences of the European Community's Common Agricultural Policy. Nevertheless, in developing an analysis of internal food security most attention is directed toward the domestic agricultural sector and the ways in which productivity might be raised in order to increase food availability. However, no amount of food will end hunger without the poor having adequate and reliable sources of income with which they can purchase their food needs.

The question of access to food has been discussed in detail by Sen (1981) in terms of "entitlement", a concept which is expressed through an individual's ability to acquire food either as a direct producer or through exchange mechanisms. However, entitlements can vary according to food availability and the way in which individuals are able to express demand through the market. As Sen clearly demonstrates, famines do not generally result from food availability decline, but from the failure of people to command access to food because of their lack of resources under changing market conditions (Sen 1981; Raikes 1988).

Amongst studies of food systems in the Latin American context, Schejtman (1983) has developed a systems approach which identifies the separate spheres and types of enterprise associated with food-related activities; for example primary production, collection and transport, processing, wholesale and retail distribution and so on. While not in

itself a path-breaking analysis, the timing of Schejtman's article marks a turning point for both conceptual and empirical work on food systems in Latin America. There has gradually emerged a body of work which has critically addressed state policies and paths of agrarian transition from the general perspective of food security. In Bolivia, Dandler (1984), Dandler et al (1985) and Prudencio (1985) have conducted an examination of agrarian policies since 1952, especially with regard to the importance of small-scale production. In Peru, a number of studies around the "food question" have appeared, one excellent example of scholarship on the subject being that by Alvarez (1983), while more recently McClintock (1987) has briefly compared food security and agricultural policies in Peru and Ecuador. Finally, within an edited volume directly addressing food security for all of the major developing world regions, Tullis (1987) attempts to link the impact of the local cocaine industry on levels of food production in Bolivia and Peru. Though this article is not ultimately convincing, it does nevertheless point the way toward further "food-centred" analysis.

A major benefit of a food systems approach is that it has done much to re-establish the economic significance and viability of "peasant" agriculture. The recent orthodoxy amongst students of the Latin American countryside has emphasised the destruction and elimination of peasant production as a result of the expansion of large-scale capitalist agriculture. A leading protagonist of this position is Alain de Janvry (1981) who employs a substantial battery of census and other data in order to support his argument that the Latin American peasantry is becoming increasingly proletarianized. According to de Janvry,

"What the census data (show) is a process whereby the peasantry grows in size but simultaneously loses its status as commodity producer. It is forced onto more and more minute and eroded land plots, where it is of necessity increasingly semiproletarianized. And lack of employment opportunities blocks sufficient outmigration and perpetuates rural misery (1981: 121-122).

However, de Janvry goes on to observe,

"Under the impact of cheap food policies, a number of wage foods are marginalized out of capitalist production and into peasant farming. Under these economic conditions and given their position in the political economy, peasants are unable to accumulate as their surpluses are drained. In particular, the middle peasantry disappears as a set of producers of commodities relative to the ever-increasing weight of capitalists in total production. As the peasants' resource base deteriorates and they are forced onto less-fertile lands, their meagre production becomes relatively scarcer, and its price tends to increase. The destruction of the peasantry contributes to the crisis in wage foods and peasant crops (de Janvry 1981: 172, original emphasis).

De Janvry asserts that the tendency of peasants as commodity producers to disappear is unavoidable, although as producers of use values they are functional to the capitalist system as a reserve army of labour. While de Janvry's argument is marked by an apparently faultless logic of historical inevitabilism, it is prone to move beyond the data which will support it and becomes a wishful forward projection of historical process. He constantly seeks to emphasise the growth of large-scale commercial agriculture but, within his model of functional dualism, this must perforce be at the expense of the "peasant" sector. Besides, as Reinhardt (1988) argues, much of de Janvry's argument is couched in relative terms and it is only in a relative sense that his observations are correct, for alternative sources of data and interpretation reach quite different conclusions.

In a major review article, Ortega (1982) evaluates the importance of peasant agriculture in Latin America. For example, in Brazil most agricultural production originates in units that are small in terms of area or gross income; in Mexico peasant agriculture contributed nearly 70 per cent of maize and beans, almost 50 per cent of fruit and a third of wheat production in 1970; and in Colombia in 1973 the small farming sector provided over 63 per cent by value

of the national total for agriculture. Ortega not only demonstrates by country and by sub-sector (domestic food, export crops, livestock) the importance of small farmer agriculture but also its capacity for growth, with increases in peasant output at least matching that for the agricultural sector as a whole. Indeed, in Bolivia Ortega notes that between 1950 and 1974-1976 production of cold and temperate-climate crops, in which peasant agriculture predominates, output expanded at a rate of 4.4 per cent per year. According to Ortega, "These rates would be considered high for any type of agriculture, and in view of the conditions ... in Bolivia, they may be considered even better" (Ortega 1982: 86).

Such data suggest that the imminent fate of the peasantry is less clear cut than de Janvry's analysis would have us believe. It is undoubtedly the case that rural living standards have been deteriorating during the course of the 1980s as a result of the debt crisis, that the state has sought to squeeze agriculture either as a source of foreign exchange or for the provision of cheap wage goods to subsidise the income of urban households under devaluation. However, unequal exchange between sectors does not automatically result in either full or semiproletarianization amongst rural producers: this has to be tested empirically. And the first point of departure for such an analysis must be to examine the resource base and its potential for allowing households to intensify production in order to withstand periodic crises. Consequently, if we wish to examine the availability and role of land it is necessary to begin with agrarian structure, land tenure and the process of reform.

IV. Agrarian Reform

During the 1960s and early 1970s a consensus emerged in the literature which lambasted the traditional landholding structure of Latin America and argued that such a skewed land distribution was responsible both for rural poverty and an unproductive, technically backward agricultural sector (cf. Barraclough 1973, Dorner 1971, Stavenhagen 1970, Lindqvist 1979). Ernest Feder, for example, argued that latifundio agriculture was an unemployment agriculture and that to end rural stagnation and endemic poverty traditional landholding structures would have to be transformed (Feder 1971). Such transformation, it was generally agreed, would be effected by implementing thorough-going agrarian reform legislation. There were three countries, however, which had implemented agrarian reforms before this period - Mexico, Bolivia and Cuba (15) - and each resulted from a period of class struggle and social revolution. In Mexico nearly half the nation's cropland was redistributed through the communal ejido system (Grindle 1986), while in Bolivia agrarian reform established the importance of private property in land: only in Cuba did agrarian reform set about transforming the property basis of land and seek to construct a socialist agriculture (Deere 1986).

The concern with agrarian reform in the context of this thesis is to examine to what degree the reform process in Santa Rosa influenced or determined the social and economic outcome of the locality in the early 1980s. A number of specific questions can be posed in this regard: To what degree can the petty commodity regime which has developed in Santa Rosa be directly attributed to agrarian reform? Beyond the distribution of titles to land, how has agrarian reform (as opposed to land tenure reform) contributed to the raising of the productive forces? What is the relationship between agrarian reform as practiced in Santa Rosa and the differentiation process? Does the consolidation of private property in land and the individualization of social relations automatically and disproportionately

favour a rich stratum of households? Finally, what are the generational dimensions of reform? How do young people secure access to land some twenty years after implementation? In Chapter Three the Bolivian Agrarian Reform Law is examined on the wider national stage, and in Chapter Four the process of implementation in Santa Rosa is described. In the remainder of this current section some of the important issues raised in the literature addressing agrarian reform are addressed.

In the early 1960s a number of reforms were enacted in Latin America as a result of the conjunctural conditions prevailing in the region. Grindle (1986) identifies the reasons for this flowering of reformism. First, she argues, was the influence of the structural analysis proposed by economists and planners at the Economic Commission for Latin America, in which it was believed that agrarian reform would have a beneficial impact on national development. Second, the reverberations of the Cuban Revolution which, it was feared, would provide a role model for peasants throughout the region unless measures were taken to ease rural inequalities. Third, national political leadership which, according to Grindle, was a critical factor in bringing about the legislation of reforms. And fourth, the influence of the United States government which so feared the spread of communism that it introduced the Alliance for Progress in 1961 as a mechanism that made development aid to countries of the region contingent upon institutional reforms (Grindle 1986).

The policy of agrarian reform was treated uncritically in much of the early literature, as a necessary mechanism designed to raise rural living standards and agricultural productivity, and was therefore deserving of universal support. It was recognised, of course, that the landed elite and other powerful interest groups would be directly threatened and, therefore, resist reform. But an essentially pluralist, conflict-free view of the state assumed agrarian reform was a measure for "The Common Good"

and part of the natural order of necessary legislation for the maintenance of society (16). As work on the role of the state began to appear from the late 1970s, however (Skocpol 1985; see also Skocpol 1979), a more critical approach towards agrarian reform has emerged. Thus, contemporary work which has conducted an evaluation of two decades of reform has also been marked by an analysis of the form, function and composition of the state, though this has not resulted in any common agreement on perspective.

As an illustration of these general differences of perspective, it is useful to compare the approaches of two scholars who have each made useful contributions on the nature of the state and agrarian reform in Latin America. Merilee Grindle (1986, 1988), for example, embarks upon an analysis of the state by focussing upon the elite - the public technocrats, policy makers and decision takers - and the process by which they are autonomously engaged in increasing their own power and prestige alongside the expansion of the state. Alain de Janvry (1981, 1987), on the other hand, begins from the logic of capitalist accumulation in the periphery. For him an understanding of the state is grounded in an analysis of, first, the class structure and balance of political forces in social control of the state and, secondly, the contradictions of capitalism and the consequent crises of accumulation and legitimacy.

Notwithstanding such differences of approach, there is now a general consensus that, unlike the 1960s, agrarian reform is no longer seen as a panacea, though it remains a necessary, but not sufficient condition for rural and agricultural development (Atkins 1987, Lehmann 1978, Thiesenhusen 1989). Technical modernisation and the expansion of large-scale farming and agribusiness interests have had a dramatic impact upon the Latin American countryside, yet states appear more reluctant than ever to concede a policy of reform in favour of the landless. As Yesilada et al. observe:

"If agrarian reform means progressive changes intended to create a more egalitarian rural society then these recent dynamics have produced agrarian reform in reverse. Smallholders have been squeezed out of land markets and sometimes coerced off their land. When combined with population growth, a rapidly increasing rural proletariat has been created often unemployed or under-employed" (Yesilada et al. 1987: 2).

This thesis is less concerned with conducting an analysis of the Bolivian state at the time of the 1953 Agrarian Reform Law for the focus rests upon the consequences rather than with the causes of reform. Nevertheless, the question regarding the role of the state is vital for it highlights the co-optive, politically defusing role that agrarian reform can play. Hewitt de Alcántara (1980) clearly summarises this issue:

"A land reform is a redistribution of property sanctioned by the authority of the State. And, in the process of conferring legitimacy upon a new agrarian order, the State gathers for itself allegiances formerly owed by land reform beneficiaries to large landholding interests or, more significantly, to peasant organizations long engaged in struggling against large landowners. The State, in other words, is put in a position to exert maximum power in the countryside, to challenge both the authority of the original agrarian elite and that of the organized peasantry." (Hewitt de Alcántara 1980:22).

She discusses this statement in relation to Mexico, where some sixty years after setting in motion the process of agrarian reform, access to land remains a central concern for the rural population. Moreover, the provision of credit, production inputs and infrastructure are also elements of a programme that distinguishes agrarian reform from the mere re-organisation of land tenure. Such elements have become the essential concerns of an increasingly commercialized small-landholding sector once the basic demands for land have been met, however, they do not often provide the same focus around which the rural population is able to mobilize. On the other hand such services and benefits have been used by the state as important mechanisms

for creating a client population in the countryside, as well as to foster division amongst rural groups, especially between beneficiaries and those unaffected by reform (Grindle 1986) (17).

In Chapter Three of this thesis the relationship between peasants and the state in Bolivia is discussed regarding the respective struggle for, and rhetoric surrounding, reform. As we shall see, post-1953 agrarian policy has shifted substantially away from peasant groups, to whom there remains a high degree of verbal commitment, and in favour of large commercial enterprises. It is consequently vital to recognise the multiple functions of agrarian reform, especially its role in diffusing rural protest at the political level while ensuring an effective transition to capitalism at the economic base.

This raises the question of the relevance of models of agrarian transition deriving from the transformation of the estate. Here, we are concerned with agrarian reform as a policy tool designed to eliminate pre-capitalist social relations and encourage the development of capitalism within agriculture, which has been the purpose of all reforms in Latin America with the exception of the Cuban and possibly the Nicaraguan examples (de Janvry 1981). A highly functionalist explanation for agrarian reform has been proposed by de Janvry, incidentally, who argues that prior to the late 1950s the scarcity of rural labour required the precapitalist estates to monopolize the bulk of land and practice servile social relations. The emergence of a labour surplus in agriculture, however, provided the objective basis for intervention by the state and

".. a profound process of transformation of Latin America's agrarian structure was initiated. Feudal social relations were rapidly eliminated; internal peasants were expelled from the haciendas and hired as wage workers; semiproletarianization and functional dualism between capitalist and peasant agriculture became the dominant pattern of social relations ..." (de Janvry 1981: 82).

While this author's arguments about the relative cost of free versus servile labour are thorough, they are not an ultimately convincing basis for proving or disproving the rationale for agrarian reform. There is some merit, however, in his analysis and classification of Latin American agrarian reforms in relation to their ascribed paths of capitalist transition. First, it is necessary to distinguish the two principal, "classical" routes along which the development of capitalism in agriculture has been said to proceed.

The first is called the "Junker" or Prussian road in which the old landed estate is converted into a large capitalist enterprise and the resident peasantry, that had occupied plots of land for which it paid rent in labour, is dispossessed and expelled. Some of the now landless peasants are employed as wage labourers within the enterprise and thus this path of transition has also been called one of internal proletarianization (Goodman and Redclift 1981). Clearly, for such a complete dispossession of the peasantry to be successful there must be strong political control over rural people and the landowning elites remain in a hegemonic position at the level of the state (de Janvry 1981). Moreover, large farms dominate, agriculture is more susceptible to mechanization and a greater social division of labour develops, although income distribution is regressive blocking the expansion of the domestic market and this may lead to the emergence of non-democratic forms of government (ibid.).

The second road of capitalist development in agriculture is called the "Farmer" or American road. This path of transition arises where small farmers predominate, for example after receiving titles to land following the expropriation of landed estates or in areas of agricultural colonization. This path is one of external proletarianization as it results in a process of differentiation amongst individual producers. According to Lenin, the Farmer road was politically and economically superior to the Junker

road because it was based upon a mass of small farm units which would contribute to enlarging the size of the domestic market. Furthermore,

"The basis of the final transition from labour-service to capitalism is the free development of small peasant farming, which has received a tremendous impetus as a result of the expropriation of the landlords' estates in the interests of the peasantry. The entire agrarian system becomes capitalist, for the more completely the vestiges of serfdom are destroyed the more rapidly does the differentiation of the peasantry proceed" (Lenin 1960: 32-33).

The rapid differentiation of the peasantry indicated, for Lenin, a speedy development of the productive forces which would, in turn, lead to the most favourable conditions under which socialist re-organisation could be established. However, the ability of either model to contribute to an analysis of capitalist development in Latin American agriculture should be judged against the many warnings issued by Lenin about the infinitely diverse combinations of capitalist evolution according to different historical epochs (*ibid.*). Elsewhere he warns that

"capitalism in agriculture does not depend on the form of land ownership or land tenure. Capital finds the most diverse types of medieval and patriarchal landed property - feudal, "peasant allotments" (i.e. the holdings of bonded peasants); clan, communal, state, and other forms of land ownership. Capital takes hold of all these, employing a variety of ways and methods" (Lenin 1967: 120).

This suggests that there are many more than two roads along which capitalism may develop and the process of transition may be both long and full of conflicts and contradictions, in which the features of both labour-service and capitalist economies may be found side by side (Lenin 1960). This issue is particularly important with regard to the attention directed towards wage labour. When this is discovered it is all too often taken to prove the existence of a rural proletariat, and therefore the complete and fully-formed local development of capitalism, in which labour markets are the only measure of capitalist

development and peasant differentiation. As we have argued in section II above, this represents a forward projection of the differentiation process, and the emergence of such a clearly defined class as a proletariat should not be viewed as the inevitable outcome of agrarian transition. Rather, an internal process of transformation may give rise to household enterprises engaged in a variety of small-scale commercial activities yet where agricultural commodity production emerges as the basis of social reproduction. The role that agrarian reform plays in inducing such a path of transition must therefore be examined empirically and only then can the application of "classical" models be judged relevant or appropriate.

V. Use of Environmental Resources

During recent years there has been growing public debate around processes of environmental change in Latin America. Attention has particularly focussed upon the Amazon Basin and other lowland regions where the destruction of tropical moist forests has been proceeding at a rapid rate (cf. Moran 1982, 1983; Schumann and Partridge 1989). There is substantially less general recognition of the environmental degradation which is occurring in the Andean highlands, however, and scientific studies of local agro-ecosystems are especially lacking although guidelines and agendas for future research have begun to emerge (e.g. Mountain Research and Development 1981, Brush 1987).

It is in regard to concerns at the changing nature of the human - environment interface that the study of agrarian transition in Santa Rosa is also approached. Some of the questions asked during the course of this thesis include: Under the process of commoditization, how far does agricultural intensification in Santa Rosa deploy environmental diversity? Does specialization of production for the market utilize specific environmental resources? Finally, is there a direct relationship between processes of commoditization and environmental degradation? This section of the chapter examines the dominant concerns of recent social science research in the study of resource use in the Andean region, and highlights the problems raised by a preoccupation with general models of cultural ecology rather than a monitoring of linkages between market-oriented production and processes of environmental degradation.

One of the first major contributions to stimulating debate on environmental degradation in the Andean region is a collection of conference papers edited by Novoa and Posner (1981). In their introduction, Novoa and Posner argue that the hillside zones of tropical America are areas

marked by steep slopes, are heavily populated by some of the poorest farmers in the continent, yet they remain important producers of basic food staples, animal products and some export crops (eg. coffee). Many of these highland areas were once the centres of flourishing ancient civilizations in which significant surpluses were produced. Yet today many hill farmers are isolated from the market and suffer a marginalised poverty, while others - indeed a very large number - must seek off-farm income through migration (both temporary and permanent) to meet the needs of the domestic budget (Novoa and Posner 1981).

There are many sources of pressure producing change in the organization of agricultural production within the Andean region, though the rate at which such change occurs varies between areas, especially in relation to the ebb and flow of capitalist penetration (Guillet 1980). Nevertheless it is a feature of the region as a whole that a continuous process of adaptation to the mountain environment has also been accompanied by occasional but severe shocks: the Spanish Conquest in the early sixteenth century was the most traumatic, resulting in demographic collapse, social, political and cultural disintegration and the introduction of new crops, animals and technology. However, agrarian reform and the reorganisation of land tenure, and the pressures for closer market integration, besides population growth, are amongst the most critical contemporary forces for change within the Andean region.

Research on the consequences of both internal and external pressures for the utilisation of environmental resources by rural highland communities has yet to establish any coherent direction and momentum. This is at least partly due to the continuing influence of models of "traditional" patterns of land use and social organisation developed for pre-Colombian societies. The term "verticality", developed by John Murra on the basis of ethno-historical and archaeological research, encapsulates the Andean "ideal" of control over a maximum number of

ecological tiers within a diversified mountain environment (Murra 1975). It has since been widely adopted as an essential fact of Andean life to explain the simultaneous exploitation of multiple altitudinal zones, and the systems of redistribution and reciprocity within and between such zones that ensure the group's social reproduction (Sánchez 1977, Brush 1977, Webster 1971, Harris 1982) (18).

Much of the anthropological research conducted in the central Andean region during the 1970s and early 1980s indicates the pervasive influence of the verticality perspective with its explicit, and somewhat idealised, concern for the use of environmental resources. Yet such work has yielded an important insight into cultural ecology, resource management practices and the historical continuity of patterns of production and exchange. Powerful "agro-ethnographies" have been compiled from rigorous, committed fieldwork and archival research, and these have undoubtedly produced a body of knowledge documenting the ecologically stable and environmentally sustainable basis of an autochthonous Andean agriculture. For example, a number of studies testify to the sophisticated land and resource management systems, the complex classification schemes of both domesticated and non-domesticated plants, and the highly energy-efficient forms of indigenous agriculture (Brush 1977, 1980; Gade 1975, Hatch 1982, Thomas 1973, Winterhalder et al. 1974).

Leaving to one side the large-scale hydraulic and land engineering works requiring large investments of human labour and social organization, for example hillside terracing, irrigation systems, drained fields and so on (Mitchell 1976, Guillet 1987, Denevan 1980), a number of micro-level practices have also received attention. The essential feature of such practices is one of diversity, with the objective to reduce risk and exposure to environmental vulnerability. For example, the use of a variety of ecological zones; the diversity of crops, within and between different fields; and varietal diversity within

species, with the recognition and cultivation of many subspecies on the basis of their individual genetic characteristics (Brush et al. 1981). Such diversity contributes to minimizing risks of total crop failure due to unpredictable climatic phenomena (drought, flood, frost, hail) and other hazards (pest, disease). Moreover, the diversity of crops at different ecological levels provides for nutritional complementarity and the regular provisioning of fresh food, while spreading labour demands over a longer season by maintaining the sequential timing of production tasks and making better use of the household's labour resources (Golte 1980).

Nevertheless, it is becoming increasingly difficult to sustain belief in the prevalence of these ideal agricultural practices, and where local environmental resources are managed according to principles of sustainability, self-sufficiency, conservation and egalitarianism. Rather, throughout the region, the intensification of production for the market has become ever more widespread. Such a pattern of development poses questions for that literature imbued with a prevailing sense of social and economic autarchy, where communal authority over the management of resources remains unchallenged by individual households seeking to maximise production, where reciprocal exchange of labour and produce predominates over market relations, and where vertical ecology determines the social organisation of production.

Sánchez conducts a critique of such literature which, he argues, suggests a form of dualism in which the native Andean economy resists incorporation into the wider market economy without anywhere recognising the importance of class struggle. The approach contains a methodological error, according to Sánchez, by assuming that the Andean economy functions according to principles of reciprocity, and thus becomes preoccupied with superficial indicators such as non-monetary exchange (Sánchez 1982). As we shall see in the latter part of this thesis, the existence of

labour relationships described in terms of kinship and ritual reciprocity may often be used to disguise exploitative and dependent relationships between households and may even, in fact, be used to deepen the level of commodity relations.

More specifically with regard to the model of verticality, Sánchez (1977) argues that far from simply explaining the organisation of production according to ecological considerations, it is employed as a cultural and ideological framework by scholars to explain an Andean view of the world. Bradby also conducts a critique of the ideal of vertical control which, she argues, might be seen as a relation of property, as a planned division of labour, and as a social relation in which surplus can be appropriated and accumulated by dominant groups.

"Verticality cannot simply be thought of as an ideal, as a maximum pursued by Andean society as a historical subject. If it is, then the whole class character of the social systems being talked about ... is completely obscured. But this is the consequence of allowing a technical feature, which boils down to living on the side of a mountain, to determine directly a theory of social organization in that environment" (Bradby 1982: 111. Original emphasis).

By giving the notion of vertical control a social content it is difficult to continue to presume a consensus within communities or households spread over different ecological levels. Indeed, as Bradby observes from her own field observations, if a ruling class tries to maximise its control over different ecological levels, the class whose labour is appropriated through this maximization may seek a release from exploitation through a minimization of the levels they need to work in order to subsist (Bradby 1982). Thus, control over labour remains a critical element in exerting effective control over different ecological zones. Yet it is in the weakening of traditional mechanisms of control over labour and land that most seriously challenge the contemporary value of the verticality model.

At least two points of weakness within the model can be identified. First, the breakdown of communal authority in the management of resources has been observed (Brush 1987), and within the household ties based upon kinship cannot guarantee against labour mobility as adult sons and daughters seek improved opportunities beyond the eventual, fragmented, inheritance of land. Secondly, agrarian reform and market forces, which encourage the intensification of production, may both result in a spatial concentration of landholdings rather than their dispersal across different ecological zones.

In conclusion, it is clear that the time has come to replace the template of the verticality perspective which has been uniformly superimposed upon the Andean region. While "traditional" practices may still be retained in some areas, they must be subjected to a more rigorous scrutiny in terms of the social, economic and environmental reasons for, and consequences of, their maintenance rather than a reification of their existence. Given its explicit defence of Andean culture, it is surprising that much of the work from within the verticality perspective has accorded so little room to individuals and households as social actors with goals and aspirations, who seek to improve their patterns of consumption through the market rather than by production for subsistence across multiple ecological zones. It is recognised that the highly uneven nature of economic change results in the differential incorporation of space, and that some peripheral areas may yet continue to exist on the margins of the capitalist system. However, to suppose that the majority of Andean households remain subsistence producers untouched by the state, technical change and a commodity economy is to be guilty of a preoccupation with the phenomenal appearance, rather than the essential facts, of Andean life. Thus, it is time to embark upon a new paradigm of ecologically conscious research in the region that pays much closer attention to the actual use of environmental resources rather than to a model which might apply in an ideal world.

VI. Methodology

The data presented in this thesis largely derives from a field-based study of the locality of Santa Rosa conducted between March 1981 and September 1982. A brief return visit to the area was made in 1985, but time was too limited to collect sufficient data to permit an analysis of change over the period 1982-1985. Consequently, besides the occasional incidental observation deriving from this visit, the data throughout relate to circumstances prevailing in 1981 and 1982.

Before my first departure for Bolivia, my original research design was concerned with formulating a methodology for measuring the flow of energy through an agro-ecosystem in a highland community. At this early stage I was influenced by the work of Leach (1976), Makhijani and Poole (1975) and Rappaport (1971) who, in their various ways, indicated the energetic efficiency of indigenous agricultural systems. Though primarily concerned with the physiological aspects of human adaptation to high-altitude environments, the work of Thomas (1973) and Baker and Little and colleagues (1976) proved that work on energy flow was feasible in an Andean context.

My arrival in Bolivia coincided with the military coup of 17 July 1980 and many difficulties prevented me from commencing fieldwork until March 1981. Santa Rosa was chosen as a suitable location for the study because it possessed land across a wide altitudinal range and the obstacles involved in reaching the locality made me believe, incorrectly, that it would be only partially integrated into the regional economy. My request to live in the community was initially accepted by the corregidor (mayor), don Teodosio, and the dirigente (union leader), Hernan Caballero, and subsequently ratified by the community at my first meeting of the local sindicato (union).

Once I had established residence in a spare potato storage hut belonging to don Enrique I began to embark upon a series of conversations with local people with a view to identifying key informants and potential case study households. However, it soon became clear that the mixed agricultural system which made use of ecological diversity to provide a range of produce for local consumption, which informants in Cochabamba had assured me predominated in the area, was far removed from reality. Rather, I discovered a highly intensive and relatively specialised, market-oriented system of potato cultivation operating across the different altitudinal levels. My conversations began to convince me that measuring energy flow through the local agro-ecosystem was less important than examining the factors behind the shift to an intensive cropping system, and the consequences of this form of production for the household economy, the local resource base and social organisation. Moreover, key respondents were keen that I should document the changes in farming practices and explain the significance of the area as a major producer of a basic food staple in Bolivia. However, while my research appeared to be taking a new direction in response to local concerns, this did not immediately overcome the initial reserve that my presence engendered. Recognising that reliable data would only emerge once a relationship of trust had been established, and also to eliminate suspicions in certain quarters that I was, in fact, a qharasiri (19), I embarked upon field work in its truest sense.

Participant observation, which is the stock in trade of the anthropologist, is generally considered a form of passive research where conversation with respondents is used in a non-invasive manner. While this was the cornerstone of my fieldwork throughout, I decided to be a more active participant in agricultural activities, working for different households and gaining first hand experience of the effort and drudgery involved in the performance of different field tasks. This widened my range of contacts

and improved my standing, for no one refuses an extra pair of hands, and established a quid pro quo in asking questions. I also conducted a number of small practical projects in the fields of key informants during the cycle of potato cultivation. For example, I installed a sex pheromone trap in one field in order to establish the prevalence of tuber moths (Phthorimaea operculella); in others I sowed pyrethrum seeds to assess the effectiveness of natural barriers to pest infestation; while elsewhere detailed measurements were made of tubers harvested in ten square metre plots in an attempt to establish the response to different levels of fertilisation. It was unfortunate, however, that I was unable to conduct a chemical analysis of soils due to the lack of access to laboratory facilities in Cochabamba. Finally, towards the end of this first phase of fieldwork I conducted a survey of land parcels for some thirty households, establishing form of tenure, length of time held, recent cropping sequence, quantities of inputs and harvests and so on.

Towards the end of 1981 I felt I had established a position of sufficient trust within the community to embark upon a household survey of livestock ownership, crop production and sales. With five case study households I had already embarked upon a time-use and food consumption survey, involving daily visits and individual diary records. However, an unpleasant encounter with armed right-wing leaders of the Departmental Peasants' Federation, who were closely allied to the military regime of the time, resulted in the disappearance of all this data together with a sum of money and other belongings. I decided against repeating the diary records and proceeded instead to conduct a number of in-depth interviews and personal life histories, both for key informants within Santa Rosa as well as other important agents of change. These included members of the old landowning class, who helped to reconstruct the history of Hacienda Santa Rosa and other estates, independent truck operators who work the Morochata zone, a local doctor, a nearby landowner and other social actors.

The final phase of fieldwork included a community-wide census which sought data on: household composition and migration experience, labour relations between households (wage and non-wage), involvement in non-agricultural activities, the fertility history of women, incidences of ill-health and household budgets. A re-survey of livestock ownership, crop production and sales was also conducted at this stage. However, the data presented in this thesis do not entirely match the responses recorded during the census and upon other formal interview schedules. As most field-workers know, the collective memories of rural households are prone to inaccuracies regarding assets in land and livestock. For this reason a large number of informal discussions with a wide range of individuals were vital to triangulate on data.

The basic data sets regarding household composition and land ownership are presented in the Appendices. Besides an occasional and incidental reference, households and their members who are discussed in any detail within the text are accompanied by a number that refers to their listing in the Appendices. This should facilitate cross-referencing.

Notes

1. This would serve as generally agreed starting point for a definition of commoditization and it forms the basis of the inquiry embarked upon here. It is different to Keith Hart's rambling philosophical elaboration which he derives from what a commodity is and is not.

"(E)volution is a process of commoditization, in which a series of commodity forms succeed in enhancing the social potentialities of humanity, while undermining the concrete authenticity of a simpler past" (Hart 1982: 41-42).

Yet none of these "commodity forms" to which Hart alludes are described and neither is there a single reference to intermediate categories of social organisation between primitive society and industrial capitalism, such as simple or petty commodity production. This is a conspicuous if not eccentric absence within a volume on textile production.

2. The opposition of broadly Leninist and Chayanovian positions and attempts at establishing a synthesis of the two has been a major feature of much of the contemporary "agrarian question" debate. See, for example, Banaji (1976), Deere and de Janvry (1981), Lehmann (1982) and Long (1984). Reinhardt also uses this, now rather dated, approach in a recent work (1988).

3. Amongst many of the valuable contributions to the commoditization debate the collection edited by Alison Scott (1986) is, perhaps, the most detailed and comprehensive. The work of Henry Bernstein (1979, 1986, 1988) and Harriet Friedmann (1978, 1980, 1981, 1982) has been the most influential and the references cited here represent a fraction of their total published output. Other useful contributions have been made by: Carol Smith (1984a, 1984b, 1986); Gavin Smith (1979, 1985); Chevalier (1983); Kahn (1982); Long et al. (1986); and, arguably, Vandergeest (1988). Goodman and Redclift (1985) have made a brief but influential intervention on the importance of petty commodity production for agriculture in developed countries.

With regard to the accusation of pedantry, Long and van der Ploeg observe, in connection with the commoditization debate, that

"at times, some authors become so completely wrapped up in the exegesis of this debate that they lose sight of the need to make a break with orthodoxy and forge new lines of enquiry and theorization" (Long and van der Ploeg 1988: 32).

4. In the discussion that follows the terms "simple commodity producers" and "petty commodity producers" appear as they are drawn from the literature which is under review and this may suggest that they are simply synonymous and interchangeable. For example, Friedmann uses the term simple commodity producers to identify "a class of combined labourers and property owners within a capitalist economy" (Friedmann 1980: 162). Gibbon and Neocosmos, on the other hand, refer to petty commodity producers as "a phenomenal category of commodity producers who possess the means of production necessary to produce commodities and who engage in production on the basis of unpaid household labour alone" (Gibbon and Neocosmos 1985: 170). Scott (1986) discusses the basis for drawing a distinction between the two, in which simple commodity production is the more abstract term which exists independently of historical circumstances, while petty commodity production is a secondary level concept which embodies historically-specific, institutional elements. In the chapters that follow the households of Santa Rosa are referred to as petty commodity producers or, frequently and more briefly, as petty producers.

5. The concept "form of production" is discussed again and in more detail below.

6. As is argued below, Gibbon and Neocosmos do not restrict their model of petty commodity production to the realm of agriculture. Indeed, discussion of the form and logic of petty commodity production has been an important part of the debate around the urban "informal" sector (Goodman and Redclift 1985).

7. Emmanuel's model of unequal exchange is criticised, with regard to processes of uneven development, by Foot and Webber (1983).

8. This discussion is important for it marks a considerable advance upon earlier conceptualizations of "peasant" forms of production, and it guides the analysis that follows. For example, the term "peasant" (or its Spanish equivalent "campesino") is rarely used alone in this thesis and then in the most general sense of household production. The term "peasant" is most often used as an adjective that accompanies a further specifying noun, such as "colono", which indicates the status of labour-rent tenant upon the hacienda. "Small producer", meanwhile, indicates independent production though without a clear reference to the degree of commodity relations which the term "petty producer" embodies.

9. The term "moral economy" is most closely associated with the work in Southeast Asia of James Scott, who describes an unwritten moral code of mutual obligations between landlords and tenants (Scott 1976).

10. This issue is developed in case studies of Santa Rosa households in Chapter Eight.

11. The gender division of labour in Santa Rosa and women's roles in the production of commodities and use-values is discussed in detail in Chapter Seven. The role of women in agricultural production (i.e. the performance of field tasks) is addressed in Chapter Five.

12. It was estimated that Mexico would import more than ten million tons of food in 1989 at a cost of US\$ 3.5 billion, up from US\$ 1.4 billion in 1987. While export agriculture, comprising such commodities as coffee, horticultural products, cattle and sugar, remains highly profitable - thanks to its favoured status for federal credit and technical assistance - the production of domestic food staples, especially maize, beans and rice, have declined over several successive years (Financial Times, 12 October 1989).

13. According to Cartwright, "UNICEF has charged that the deaths of at least 500,000 children in 1988 could be attributed to the cuts in health care forced by countries' struggles to pay their foreign debt charges" (Cartwright 1989: 115).

14. The scale of the crisis in Africa has undoubtedly been more dramatic in its catastrophic effects on agricultural production and individual access to food. For a detailed examination of the crisis confronting food production in Africa see Commins, Lofchie and Payne (1986), Chazan and Shaw (1988) or Hansen and McMillan (1986) from amongst the large volume of recently published material on this topic.

15. While agrarian reform was introduced in Guatemala in 1952, this was reversed in 1954 with the overthrow of the Arbenz government (de Janvry 1981).

16. In an introduction to an edited collection of case studies of agrarian reform, Thiesenhusen treats the redistribution of property in favour of peasants under the process of reform as comparable to affirmative action in employment. Here, minorities and women in the United States are, supposedly, preferentially treated by potential employers as "recompense for years of maltreatment" (Thiesenhusen 1989: 6-7). This kind of well-meaning, though

totally unanalytical, liberalism characterises a poor and outdated introduction and conclusion to an otherwise useful range of case studies.

17. The Financial Times reported on a trip by the Mexican president, Carlos Salinas de Gortari, to La Laguna during his 1988 election campaign when he was booed and pelted with fruit by local farmers. La Laguna was the site of the first land reform programme in 1936 when President Cardenas handed out collective, or ejido land, to local peasants. While this initially guaranteed political support for the ruling party, the PRI, small farmers have become increasingly disenchanted with cheating and corruption at the hands of the government's rural credit bank, and the lack of provision of services and infrastructure. According to the F.T., "It came as no surprise, when last month, President Salinas chose La Laguna as the site of the first regional agricultural development programme of his administration" (Financial Times 12 October 1989).

18. The model of verticality is given a stronger spatial dimension in a three-fold classification used by Brush (1977). He identifies: a **compressed** type, where a steep environmental gradient places different ecological zones close together; an **archipelago** type, where zones are not contiguous but involve treks of several days, and may even support satellite communities which reside in the migration zone but remain tied to the parent community; and an **extended** type where, rather than the direct exploitation of, and constant movement between adjacent zones, the products of each zone move throughout the system via networks of exchange. Criticisms of the verticality model are presented below.

19. The term gharasiri is somewhat difficult to define but the impression I gathered was that it is similar to the vampire figure in western mythology. A gharasiri wanders abroad at night, seizing unsuspecting individuals, and sucking the marrow from their bones. The victim gradually weakens over time and eventually dies. For several months after my arrival in the locality young children would flee when they saw me coming and, disconcertingly, I discovered that some mothers were disciplining their children by threatening them with joven Colin, the gharasiri, if they didn't behave. Thereafter I took the precaution of always carrying a bag of sweets which, magically, caused fear to evaporate and which transformed me, in the eyes of the youngsters, from a malevolent into a more benevolent figure.

Although this anecdote may seem amusing it contains a salutary lesson on being sensitive to cultural symbols. There is a story known by most researchers who have worked in the Cochabamba region regarding a British anthropologist who escaped with his life after the community where he was

conducting fieldwork became convinced that the fellow was a gharasiri. His rather eccentric behaviour and a spate of illness amongst local people were sufficient grounds for a level of suspicion that forced him to rapidly abandon his research in the locality.

CHAPTER TWO

The Cochabamba Region and the Locality of Santa Rosa

I. Introduction

As Chapter One outlined, the central focus of this thesis concerns the process of agrarian transformation, the changing relations of production amongst small rural producers in one highland locality. However, before we are able to embark upon a detailed analysis of the locality of Santa Rosa, it is vital to establish the broader regional background against which to examine micro-level change. This regional contextualisation involves both spatial and historical dimensions, though this must be preceded by clarification of the units of analysis which are employed.

By introducing a socio-spatial entity that is labelled the "Cochabamba region", the analysis is made more complex by the available data which employ politico-administrative units for the boundaries of the two do not necessarily coincide. This disparity between units of analysis demands that the data are carefully used and interpreted, and that the region and the administrative unit (the Department) are not viewed as synonymous. The concept of region is used here as a heuristic device which aims to capture the shifting socio-spatial relationships that result from changing patterns and forms of production (see below). Such a flexible application is unlikely to conform to administrative units, nor to pre-specified notions of space deriving from the study of marketing systems (cf C. Smith 1976). Consequently, care must be taken in distinguishing the various units of analysis which are attached to the place name Cochabamba (department, region, city, valleys).

In Section II which follows, a brief clarification of the concept of region is presented. Section III then describes the physical characteristics of the region, highlighting the ecological diversity and climatic resources which have made Cochabamba such an important centre of agricultural production. The historical importance of the region's agricultural surplus is presented in Section IV which traces the changing organisation of production from the late Inca and early colonial periods up to the 1940s. Section V provides a summary of key economic and demographic data relating to the Department of Cochabamba and its constituent provinces in order to establish its importance within the Bolivian space economy. It then proceeds to disaggregate the region first, into sub-regions, then identifies several "production zones", the principal characteristics of which are outlined. As we shall see, one of the critical distinctions that must be made in the region is with regard to the valleys and serrania (highlands). While each displays quite different characteristics, both are intricately linked through market networks. In the final Section of this chapter the locality of Santa Rosa is introduced and placed within the context of the Morochata zone.

II. The Regional Concept

In discussing the "Cochabamba region" as a socio-spatial entity, it is first necessary to specify the criteria on which the concept of region is based. It is a concept that is not easily or straightforwardly defined, as the term "region" has been employed by widely divergent theoretical traditions in the field of geography. The earliest models suggested that regions were identifiable by a certain spatial homogeneity which created a form of areal differentiation across the earth's surface and led to regional taxonomies. This perspective gave rise to a tradition of regional geography that was strong in observation and description, but was often fraught with dubious ideological implications (Forbes 1984).

The "Quantitative Revolution" in geography during the 1960s swept away much of the qualitative work on regions and replaced it with a mathematically-based regional science. However, as Gore (1984) observes, the important characteristic of this new approach was its greater concern with space than with regions, where regional scientists have avoided the task of definition, being "relieved when they are forced to work with administrative regions on the grounds that policy considerations require it, or that data are not available for any other spatial units" (Gore 1984: 11; quoting from Richardson 1978).

During the 1980s, however, there has been a renewed interest in regions and in the "reconstruction of a theoretically informed regional geography" (Johnston et al. 1986: 394) which has taken several different directions. One of these has been marked out by the work of David Harvey who has conducted a rigorous marxist analysis of the geographical consequences of contemporary capitalism (Harvey 1982, 1985). Harvey's work is pitched at a high level of abstraction and his "regional spaces" are provided with little empirical detail besides the specification of processes (production, reproduction, class struggle, accumulation and culture, amongst others) which combine together to create a totality of productive forces and social relations (Harvey 1985). Harvey's work is of more than passing interest to the present study, however, for its recognition of the importance of regional class alliances. These territorially-based social movements emerge, according to Harvey, to promote and defend an amalgam of class and factional interests under the conditions of increasing regional competition which has resulted from the restructuring of the global economy. While such alliances are inherently unstable, they have nevertheless become an important phenomenon in recent years, both in de-industrialising regions of the Northern hemisphere, and in the popular-democratic struggles of the South. Regional class alliances have played a critical role in the contemporary development of the Bolivian space economy (Calderón and Laserna 1983).

A second and parallel strand in the "new regional geography" on which we can draw in order to develop a working definition of region is provided by the work of Doreen Massey. While primarily concerned with explaining the process of regional restructuring in the United Kingdom, Massey's work is also applicable to contexts in developing economies. In a seminal article which reviews current issues in regionalism, Massey (1978) seeks to identify the mechanisms by which the process of accumulation generates spatial uneven development. Her starting point, then, is with the process of capital accumulation, from which she focuses upon shifts in the spatial division of labour and the creation of spatially uneven development, without any pre-specified regionalisation of that space. This approach thus emphasises the importance of historical process where each new form of production creates its own spatial division of labour. The resulting spatial complexity is described by Massey:

"This new distribution of economic activity, produced by the evolution of a new division of labour, will be overlaid on, and combined with, the pattern produced in previous periods by different forms of spatial division. The combination of successive layers will produce effects which themselves vary over space, contributing to a new form and geographical distribution of inequality in the conditions of production, as a basis for the next round of investment. ... (T)he social and economic structure of any given local area will be a complex result of the combination of that area's succession of roles within the series of wider, national and international, spatial divisions of labour." (1978: 115-116)

Both Massey and Harvey stress the primacy of production and see the ceaseless formation and recreation of regional landscapes as a result of the reproduction and transformation of capitalism. Yet both have also contributed to the recovery of a sense of areal differentiation, a recognition of the uniqueness of place and human activity (Gregory 1989). The transformative abilities of human agency and the significance of social action represents yet another very vital strand in re-establishing a regional geography in which time, as well as space, is a measurable

dimension. Giddens, for example, has argued that regionalisation "should not be understood merely as localisation in space, but as referring to the zoning of time-space in relation to routinised social practices" (Giddens 1985: 272). Giddens' work has ultimately sought to integrate macro and micro-processes, the structural and the social. This has encouraged a significant and exciting shift toward attempts to bridge the gulf between theorising at a global scale on the nature of capitalism and its workings, and local structures which do not respond passively but interact and modify these external forces (Pahl 1985).

Corragio (1983) uses region to refer to "territorial ambits" of social relations, and it exists only with reference to those relations and the agents and elements of production. At one level, then, the concept of region is used as an essentially heuristic category, though at another it operates as a concrete territorial unit. In the latter case the region must then be endowed with certain material characteristics, that are created by climate, topography, resources etc., and these will engage with the dynamic social processes of society to produce the features of production that are the object of analysis.

The region, then, does constitute a concrete territorial configuration but one which is only meaningful in the context of the study of social processes. Such study, however, requires empirical analysis as a result of the complex interaction of social, cultural, political and economic structures that develop historically and provide the region with its particular character. This does not represent a retreat to the exceptionalist view of the region as a unique integration of the physical environment and human occupancy at a specific location on the earth's surface. Rather, it emphasises that regional identity is formed from changing patterns and forms of production and their attendant social relations which give rise to forces of conflict and class struggle.

The work of Long and Roberts (1984) in a study of the development of capitalism in the Central Highlands of Peru, illustrates the value of adopting a historical, production-oriented approach to regional analysis. They argue that:

"The analysis of production draws attention to the impact of the international economy on peripheral regions in a more complex way than does the analysis of exchange and distribution. This focus also raises the question of the extent to which different forms of production (both dominant and subordinate) have a reciprocal effect on each other, leading to regionally specific patterns of social and economic development." (Long and Roberts 1984: 240)

Although the Cochabamba region has never been directly linked into the international economy, its principal characteristics as a major centre of agricultural production and a site for the reproduction of labour power were created through its inter-regional linkages with Potosí which was itself incorporated into world markets early in the Colonial Period (Larson 1980, 1984). It is necessary, therefore, to take into account both the historical context in which regions emerge, and the nature, extent and destination of their external linkages. The variety of production systems which emerged throughout Latin America, first as a result of the early mining-based colonial economy, then three centuries later in response to the demands of the industrialising countries, have given rise to extraordinarily diverse regional economies in the present day which display divergent patterns of development. As we shall see in this Chapter and in the one that follows, the several principal regions of Bolivia also display such diversity in their systems of production, socio-political conditions and in their economic trajectories.

The region is not, however, internally homogeneous. Though our concrete territorial unit may be bound together by a complex matrix of market relations and notional social and cultural identity, spaces within this region will be differentially incorporated into the whole. As we shall discuss later in this Chapter, the Cochabamba region

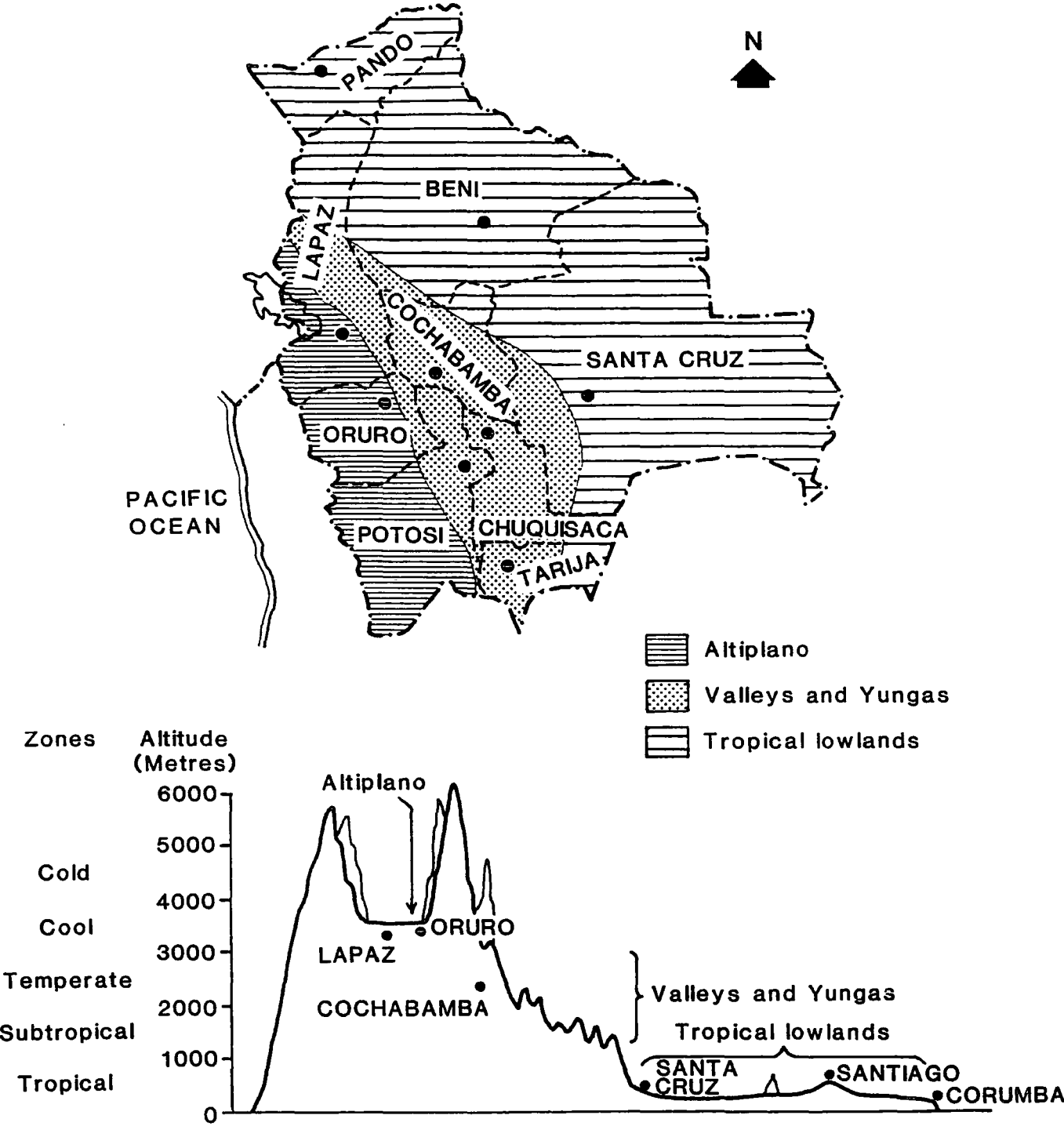
comprises a core area (the central valleys) around which highlands, inter-Andean valleys and a lowland zone form satellite spaces which are articulated to varying degrees with the "core". Indeed, the use of the terms "core" and "satellite" should not be interpreted as representing the exposition of a crude "Frankian" argument; rather, they are used to give some preliminary flavour to the spatial-economic configuration of the region which will be explained later. At this stage it is simply necessary to emphasise the way in which the region is used as a heuristic concept to capture the changing nature of socio-spatial relationships. These will be briefly outlined in broad historical terms following an introduction to the physical structure and ecology of the region.

III. Physical Structure and Ecology

As a physiographically complex environment possessing a considerable altitudinal range within latitudes 10°S and 22°S, Bolivia invites sub-division into distinct physical regions and ecological zones. The first, and most basic, classification identifies three broad regions: the Altiplano, a high inter-Andean plateau with a mean altitude of 3,900 metres; the Valleys, on the eastern flanks of the Eastern Cordillera which range from 2,000 to 3,500 metres; and the llanos, or eastern lowlands, which comprise 70 per cent of the national territory and which are below 1,000 metres above sea level (see Figure 2.1).

Wennergren and Whitaker (1975) suggest that Bolivia can be divided into at least ten "relatively homogeneous ecologic zones", where the Altiplano consists of three zones and the eastern lowlands of five, and where the central and southern Valleys are distinguished from the Yungas of La Paz. However, considerably more sophisticated attempts to sub-divide the country on the basis of ecological criteria have been made. One employs the system for the classification of "Life Zones" (Holdridge 1947).

Figure 2.1: Bolivia in Plan and Profile

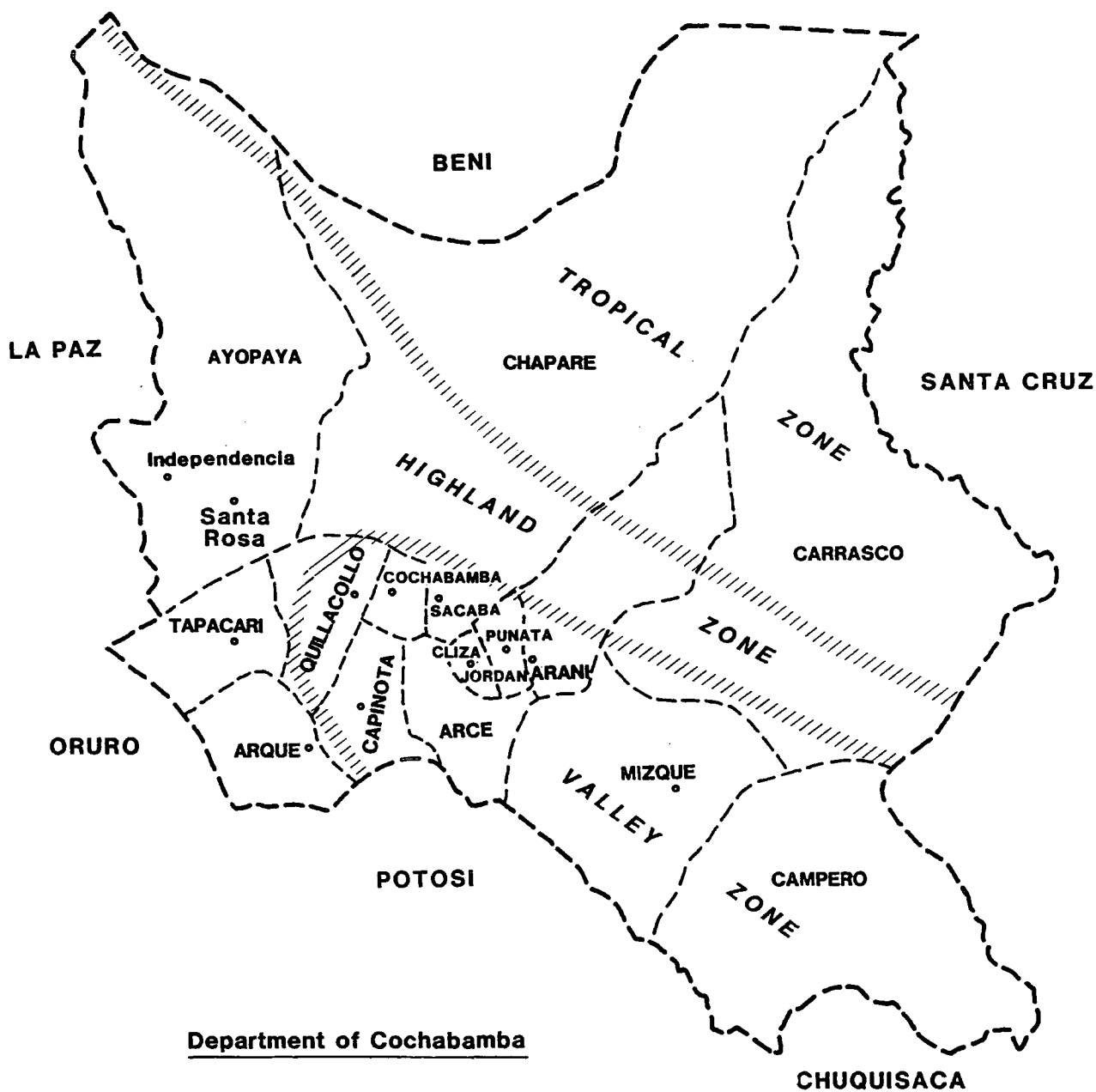


This draws upon a variety of climatic data and vegetational patterns to identify 48 separate life zones for the country overall (Unzueta 1975; see below).

The climatic and ecological diversity of Bolivia is principally determined by the physical structure created by the two axes of the Andean range: the Western Cordillera, which stretches almost unbroken through the length of the sub-continent and runs along the Chilean - Bolivian border, and the Eastern Cordillera. Between them lies the Altiplano, a closed drainage basin with its catchment feeding the Lakes Titicaca and Poopo which are linked by the River Desaguadero. The Eastern Cordillera and its subsidiary spurs determine the watersheds which divide the rest of the country into two major drainage systems; the larger part which drains into the Amazon Basin, and the southern half which drains through the Rivers Paraguay and Pilcomayo into the Platense Basin (ERTS-GEOBOL 1978). The Eastern Cordillera runs in a south-easterly direction from Southern Peru for over 300 kilometres until, at latitude 17°S, it trends eastward, becomes the Cordillera del Tunari, and eventually diminishes in height. This range encloses the Cochabamba Basin from the north-west to the north-east, and takes its name from the peak of Mount Tunari (5,030 metres).

The Cochabamba Basin is composed of three inter-related valleys: the Upper, Lower and Sacaba Valleys surrounded on all sides by highlands, known as serrania (see Figure 2.2). To the north of the Tunari range lie a series of intensely folded and broken antisynclinal ridges and synclinal valleys running in parallel with the Eastern Cordillera. This dislocated geology was formed through the strong tectonic activity which took place during the late tertiary and early quaternary periods (Unzueta 1975). The topography of this region, however, has been strongly emphasised by geomorphological processes, particularly intense fluvial action, which has deepened many of the valleys to more than one thousand metres below the level of

Figure 2.2: Topographic Regions



the surrounding highlands (James 1950). Although fluvial entrenching has resulted in over-steepened slope profiles which are characteristically unstable, the higher ambient temperatures and access to irrigation water create favourable conditions for agricultural production. It is within this physical environment that the locality of Santa Rosa is situated.

Perhaps the most evident physical characteristic of the Cochabamba region is its environmental diversity, the compressed pattern of ecological zonation determined by variations in altitude. Patterns of human occupation and resource use reflect this diversity and highlight an important inter-dependent relationship between the valleys and the surrounding highlands. This interdependence has always had both ecological and social dimensions, and has also served to indicate one aspect of the evolving spatial division of labour within the region. For example, the name Cochabamba is a corruption of the Quechua, "Qochi Pampa", meaning marshy plain, probably an accurate early description of the central valley which was formed by the build-up of alluvial sediment transported from the surrounding highlands. Indeed, within the Lower Valley, peasants have for generations engaged in the practice of diverting silt-laden water onto their fields in order to benefit from the alluvial renewal of top soil which, in some places, has raised the level of the fields two metres above the river (Dorsey 1975b). Elsewhere highland peasants have taken advantage of lowland resources through the simultaneous exploitation of multiple ecological zones in accordance with the model of verticality (Murra 1975; Webster 1971; Harris 1976, 1978; see below).

Though the Cochabamba Valleys are surrounded by serranias, which provide protective shelter from the winds of the Altiplano, besides irrigation water and top soil, the latter are much more than inhospitable highlands. Indeed, the serrania includes a formidable range of environments, from the incised river valleys to the puna

tableland above 3,500 metres covered with little vegetation beyond coarse bunch grass (stipa ichu) suitable only for grazing the Andean camelids. Such valleys contain a multitude of micro-climates that result from variations in altitude and, in combination with aspect and the degree of shelter or exposure, this creates a potentially large range of ecological niches favouring different crop types.

Because of this ecological diversity the region, according to the Holdridge Model, incorporates a number of different life zones. The Cochabamba Valleys, for example, fall within the category known as "subtropical lower montane thorny steppe". This is described as a bioclimate very favourable to human life and health and, despite an inadequate rainfall over the year, is suitable for intensive cultivation and the raising of livestock (Unzueta 1975). Indeed, although annual rainfall in the city of Cochabamba totals 473 millimetres, there is a marked seasonality and a soil moisture deficiency for eight months of the year. According to meteorological figures averaged over a 19 year period, 88 per cent of annual rainfall falls within the months of November to March inclusive (Unzueta 1975). Irrigation is therefore obligatory if crop cultivation is to continue during the dry winter months of May to October though the hydrological configuration of the region poses severe problems to increasing agricultural production.

Frosts can occur during the months of June and July when diurnal temperature changes are most extreme. An analysis of average monthly maximum and minimum temperatures recorded at a meteorological station in Arani in the Upper Cochabamba Valley illustrates these wide daily variations (1). However, as the data indicate, the seasonal variation of mean monthly temperatures is quite small and measures only 6.1° Centigrade in the city of Cochabamba. Despite the swing in diurnal temperatures, the Cochabamba Valleys do not experience the much wider variations characteristic of higher altitudes or the seasonal changes

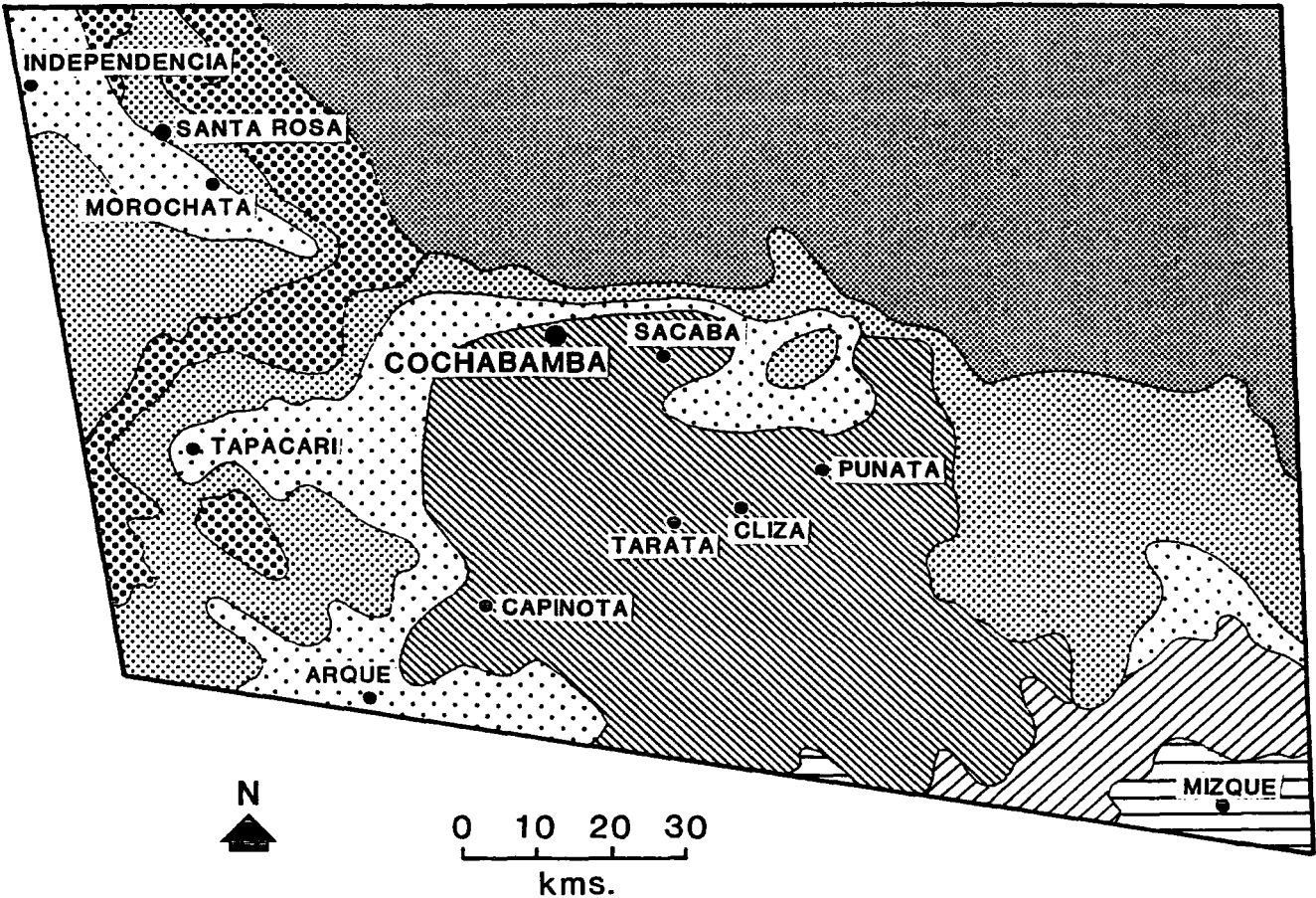
found in more southerly latitudes. Indeed, Troll has drawn comparisons between Cochabamba and Mexico City which are similar **as** regards altitude, latitude, rainfall and seasonal temperature variations (Troll 1968).

As a result of the compressed vertical zonation found in the deeply incised valleys of the serrania, it is possible to identify areas where up to four distinct life zones can occur within a linear distance of less than ten kilometres, and where altitude determines the boundaries between them. Consequently, the mapping project conducted by the Bolivian Ministry of Agriculture and Peasant Affairs (Ministerio de Asuntos Campesinos y Agropecuarios hereafter referred to as MACA) according to the Holdridge system (Unzueta 1975) though a great achievement, can only represent an approximation to the precise climatic and ecological conditions that exist at a local level. The diversity of life zones that fall within the Cochabamba region is indicated in Figure 2.3, while an account of the life zones and specific climatic conditions that prevail in Santa Rosa is left to the final section of this Chapter.

IV. Historical Development

It is with the Incas that the Cochabamba region was first incorporated into wider politico-economic formations, since when it has been pre-eminent as an area of agricultural production. Following the conquest and occupation by the Inca state, the region was ascribed the role as a producer of grains, and even today it still retains a reputation as the "granary of Bolivia", even though changing patterns of production and consumption make this a somewhat misleading description, as we shall later see. The purpose of this section, then, is to highlight the changing forms of production within the region resulting from the shifting patterns of insertion and integration into wider economic systems. The section is divided into three broad historical phases.

Figure 2.3: The Configuration of Life Zones in the Cochabamba Region



-  Subtropical lower montane thorny steppe
-  Subtropical lower montane dry forest
-  Subtropical montane moist forest
-  Subtropical subalpine wet forest
-  Subtropical & lower montane rainforest
-  Temperate dry forest
-  Temperate thorny montane

Source: Adapted from Unzueta (1975)

IV.1 The Inca Period

The Cochabamba Valleys were first incorporated into the Inca state around 1470 as part of its process of territorial expansion and subjugation of different ethnic groups. Once military offensives had resulted in territorial occupation, the Inca state employed a colonization policy known as mitimas to ensure political security and agricultural production. This involved transplanting communities of native subjects and different ethnic groups from other regions of Tawatinsuyu to prevent resistance to Cuzco rule. Wachtel argues that mitimas is an ancient Andean institution that predates Inca usage and was a system that allowed a particular group to secure access to a different ecological zone by sending out settlers to occupy and make available the resources of that environment. The Inca state simply took this institution and extended it as a means of government with both economic and military objectives (Wachtel 1981).

The military and economic importance of the region to the Inca state cannot be underestimated. It was the effective limit of Inca control and acted as a bastion of defence against "la selva salvaje" (the savage jungle); the chain of military fortresses throughout the region are evidence of this. Indeed they were still under attack and being rebuilt only relatively few years before the arrival of the Spanish (Byrne de Caballero 1977). The economic importance of the region was primarily based upon the production of maize, destined for the silos of the state, many of which were located in the Central Cochabamba Valley (ibid.), as well as for the highland communities from whence the mitimas had originated and with which they retained economic and social ties. Indeed, such was the importance of the region to Cuzco rule that the Inca, Huayna Capac, personally visited the region early in the sixteenth century to oversee the redistribution (repartimiento) of lands allocated to the different mitmaq groups (Morales 1977; Wachtel 1981).

In fact, the redistribution of lands was more a reorganisation of the spatial division of labour along ethnic lines. While distributing some of the best land to the Caranga people (who may have originated from near the Pacific coast according to Wachtel op.cit.), earlier groups of mitimas settlers, such as the Chuyes and Cotas, were dispatched to Pocona and Mizque to guard the frontier against the continually hostile Chiriguanos (Byrne de Caballero op.cit.). Nevertheless, some 14,000 people were reputed to have benefitted from the policy of redistribution of land (ibid.). Yet the system of colonization practised by the Inca state, while designed to maximise surpluses and reduce inter-ethnic rivalries and conflicts, was clearly based upon traditional systems of land occupation where groups sought to gain access to a maximum number of ecological levels (Murra 1975). For Cochabamba, prior to its incorporation into Tawatinsuyu, the region served as a "multi-ethnic peripheral space" in which lands were controlled by different groups but whose central nuclei were outside of the region. This may explain why Cochabamba was relatively easily colonised by the Inca state (Laserna 1984).

One example of the archipelago model (Murra op.cit.) of long-distance resource use was the cultivation of coca by the Indians of Sacaca of Northern Potosi in the Yungas of Bandiola, Palmar and Totora (Harris 1976). These are situated just thirty kilometres north and over 3,000 metres below the serrania of the Upper Cochabamba Valley, and not far from the village of Tiraque. Harris notes that these highland Indians still cultivated coca during the Inca period and paid tribute in coca leaf to the Spanish at least up to 1556. But by 1592 the Indians of Chayanta were presenting a complaint that their low-lying lands were being usurped, which provides evidence to believe that by the end of the sixteenth century the Charcas Federation of peasant communities in the southern highlands had lost control over various ecological levels (Harris 1976). Indeed, the process of Conquest was soon followed by a

complete rupture of the traditional pattern of vertical control, and led to a new phase of occupation in the Cochabamba region.

IV.2 The Spanish Conquest and Colonial Period

The unconsolidated nature of Inca control over the Cochabamba region at the time of the Spaniards' arrival in 1539 or 1540, however, was apparent in the rapid disintegration of mitmaq colonies, with peasants fleeing back to their communities in the highlands. This left unoccupied large areas of rich agricultural land in the Cochabamba Valleys, providing the conditions for the appearance of a Spanish landowning elite, initially as encomenderos (Larson 1980).

Following a chaotic early period marked by interests of personal enrichment and internecine conflicts between bands of conquistadores, the new colonial state began to assert its political control, most effectively through the Toledo reforms of the 1570s. Officials passed through the countryside taking stock of resources and resettling the native population into congregaciones or royal villages. Sánchez-Albornoz estimates that there were 161,095 Indians in the southern and central provinces of Bolivia who were placed under royal jurisdiction, of which some 15,500 were segregated into five pueblos reales in Cochabamba (Sánchez-Albornoz 1978). Each settlement was granted usufruct rights to land for which it was required to fulfill a tribute quota, payable in kind and sometimes cash, and corvee labour duties, which involved the rotation of a certain number of households to spend one year or more in the mines of Potosí. This represented the restoration by the Spanish Crown of the ancient Inca institution of mita (Larson 1980).

The development of the colonial mining-based economy centred on Potosí, and its far-reaching repercussions for the agrarian structure of the Cochabamba region, is a subject that has been dealt with in detail by Larson (1980; 1984). The intention here is to briefly summarise the principal features of change in the region during the sixteenth to eighteenth centuries based on Larson's work, and to indicate the background to those elements of production that are characteristic of the region in the present day.

With the rapid growth of Potosí as the major mining centre of the Southern Andes, accounting for a population of 150,000 by the middle of the seventeenth century (Laserna 1984), demand for food staples, clothing and hardware stimulated commercial activity over a wide area. Despite the profound rupture with the past caused by the process of Conquest, the Cochabamba region nevertheless retained its role as a major producer of grains. However, although the native communities and re-settled Indians in royal towns continued to produce and surrender, as tribute, maize for urban consumption, the major change in the Valleys was the appearance of European-owned estates. These haciendas were able to take advantage of the new commercial opportunities by occupying the fertile but sparsely populated land, then virtually enslaving local Indians under the system of yanaconaje. Though without rights to land and bonded to the estate, yanaconas were protected from the mita and other royal exactions, a burden that fell heavily upon those subject to tribute. Thus, the region of Cochabamba became a clear example of an area where servile labour relations on private estates were reinforced by the imperatives of the mining economy (Larson 1980).

With the process of demographic collapse - between 1573 and 1683 Bolivia's censused Indian population fell from 161,095 to 93,331, a decline of 42 per cent, with the number of adult Indian males falling by more than 50 per cent (Sanchez-Albornoz 1978:30) - tribute payment became a

progressively heavier burden for the survivors to bear. The alternative was for peasants to surrender usufruct rights to land in their own communities and thus escape the status of tributario. By 1683 approximately 45 per cent of all Indian males lived outside the royal villages and labour mobility and vagrancy had become a critical problem for the colonial state (Larson op.cit.). By the late seventeenth century the flight of labour was yet another factor contributing to the crisis confronting the Viceroyalty of Peru as it entered a long period of recession. From around 1680 silver production in Potosi went into sharp decline, the transatlantic trade connection was weakened, overland trade in staples diminished, commercial capital dwindled and Lima lost its monopoly over the import-export trade. Naturally, the process of decline and decentralization affecting the colonial state in Peru was reflected within the Cochabamba region.

Two critical issues emerged that brought about a change in the character of the region. First, grain exports from Cochabamba to Potosi declined at the same rate as the level of mining activity and population in this latter city, which numbered just 30,000 residents by the middle of the eighteenth century (Klein 1982). Secondly, the number of landless within the Cochabamba region had grown significantly; about 77 per cent of the 60,000 resident Indians in 1808 were forasteros (outsiders) and had no landholding rights (Larson op.cit.). Many of these emigrants had drifted towards the Cochabamba region where there were more opportunities to sell their labour to landowners. Gradually, however, they began to exercise increasing direct control over agriculture as a majority of the region's grain production became concentrated in the hands of small tenants and sharecroppers.

IV.3 The Rise of an Independent Smallholding Peasantry

The rapid decline in the output of silver from the highland mines of Upper Peru and the steady fall in the population of the principal urban centres from the late eighteenth century resulted in a significant economic downturn in those regions strongly articulated with the mining centres. As Chuquisaca became capable of supplying the reduced quantities of grain required and because of its proximity to the mining centres of Potosí, Cochabamba found its markets rapidly diminishing (Klein 1982). Thus, the region turned toward a subsistence economy as the power of its landowners waned and they reverted to tenancy arrangements as a means of easing their financial predicament. Gradually, estates, which had once been worked by yanacona labour directly for the landlord, became a patchwork of tenancies paying rent in a combination of services, cash and kind. Larson argues that this represented an attempt by landlords to lower costs of production, entailed minimal capital outlay and made them less vulnerable to the vicissitudes of the agricultural cycle and the market (Larson 1984).

While landowners voluntarily relinquished control of production by reverting to rent income they were unwittingly to lose control over the regional grain market which was now supplied by their tenants. Perhaps of more importance is that the active involvement of peasants in commerce now placed the entire edifice of colonial society, based upon ascriptive ethnic status, in jeopardy. Not only did peasants supply the greater proportion of wheat and maize, however, but they engaged in other market activities as artisans and petty traders. This dynamic commercial involvement has led Klein to observe that by the early eighteenth century, Cochabamba had become "the major centre for small-scale, non-community, freehold-style farming and the most important region of minifundia agriculture in Upper Peru" (Klein 1982: 65).

For Larson, however, there was no empirical evidence to suggest that "freehold-style farming" appeared before the late nineteenth or early twentieth century. Though landownership was being fragmented through sales and sub-division before then, she argues that structural constraints prevented the Cochabamba peasantry freeing itself from rent and tribute obligations and acquire small properties (Larson 1980). With the imposition of a colonial head tax from the late eighteenth century, in addition to church tithes and other taxes, there was little opportunity for capital accumulation by the rural population. Indeed, head tax based on ethnic status continued well into the republican period, until it was finally abolished in the 1880's, and provided an average of 37 per cent of total state income between 1827 and 1866 (Larson 1984).

The early years of the nineteenth century were marked by considerable upheaval, loss of life and destruction resulting from the struggle for independence from Spain. Guerrilla armies under the control of criollo elites, but with the support of the Indian peasant masses, controlled large areas of the countryside and established six republiquetas (little republics) while the cities remained in royalist hands. Following a massive campaign by royalist forces in 1816, only one of the six republiquetas survived, and it was totally isolated and neutralized (Klein 1982). This was Ayopaya, the province in which the locality of Santa Rosa is situated (2). By the end of 1825, however, the independent republic of Bolivia was created but it was born and lived the first fifty years of its life as an economically depressed, decapitalized and de-urbanising society (ibid.).

From the late nineteenth century, after almost half a century of political instability and competing struggles for power, the young Bolivian republic finally entered a period of prosperity based once again upon the export of its mineral resources. Though it had lost its coastal territory to Chile in the War of the Pacific (1879-80),

capital investment poured into Bolivia to improve the productivity of mineral extraction and to construct railways, linking the mining centres with the new Chilean ports. Between 1900 and 1930 the volume of tin production increased four-fold and accounted for 21.6 per cent of world output (CERES 1981). Control of the industry was exercised by the "Three Tin Barons" (Patiño, Hochschild and Aramayo), whose interests were represented by a new breed of professional politicians: the new political-economic structure being known as the rosca (Klein 1982; Dunkerley 1984).

The upturn in the economy also stimulated the "second great epoch of hacienda construction" which definitively broke the power of the Indian communities (Klein 1982:152). In Cochabamba there were few Indian communities in number and those ^{were} limited to higher, more inaccessible parts of the region such as in the Provinces of Arque and Tapacari. McBride, drawing upon figures published by the Office of Immigration, Statistics and Geographical Propaganda, noted that there were only some 11,672 Indian contributors to the Land Tax in 1877 in Cochabamba out of a total of 177,840 for the five highland departments of the country (McBride 1921). In Cochabamba, then, hacienda expansion largely took place in the serranía and involved, besides the straight-forward destruction of many remaining native communities, the consolidation of landed properties into economically viable and administratively manageable estates. This was to occur in the case of Santa Rosa and adjacent estates, a topic which will be discussed in Chapter Four.

In the Cochabamba valleys, however, the landed estate during the nineteenth century was facing growing competition from small rural producers who made inroads into the commercial power of landlords. The ability of the peasant household to dispose of its surplus in the market at times of abundance, while surviving occasional harvest failures through reducing consumption and diversifying their activities (whereas landlords might face financial ruin),

allowed them to continue to consolidate and grow within the Cochabamba region. Rural markets, which had developed early in the provincial valley towns, continued to expand throughout the region yet came increasingly under the sway of peasant producers (Dandler 1971). Such competition may have been responsible for the failure of most landowners to improve their rural properties. Blanco sets this alongside the disgrace of national government in the indifference that it had shown to the improvement of the roads, the principal cause, he writes, "for the backwardness of agriculture and industry and of the growing misery of the people" (Blanco 1901: 37).

The arrival of the railways in Bolivia further intensified many of the contradictions and tensions between landowners and peasants. Pearse reports that on the day of the opening of the railway linking Cochabamba with the mining centres in 1914 both independent smallholders and estate peasants had forestalled the landowners and were disposing of their produce to the merchants from Oruro and the mining encampments. This competition came as a severe blow to landowners who, anticipating improved commercial conditions with the arrival of the railway, had borrowed heavily from the banks and were forced to sell off parts of their estate to remain financially solvent (Pearse 1975). Yet the railways also opened up Bolivia to Chilean wheat which was cheaper to purchase on the Altiplano than grain from Cochabamba (Larson 1984). Thus, with the main axis of economic activity centred on the Altiplano, stretching from La Paz to the mining centres of Oruro, Cochabamba was relegated to a peripheral role in the provision of labour power and foodstuffs.

As the region became decoupled from the enclave economies of the Altiplano, two features stand out for attention. First, the relative isolation of Cochabamba which hurt the large landowners, eager to export their grain to the mining centres and La Paz, worked to the advantage of local artisans who were sheltered, to some

extent, from foreign competition especially of textiles. The large number of small-scale units which flourished around the turn of the century suggests that the economic diversification of contemporary households in the central valleys has deep historical roots (Larson 1984). Secondly, as earlier discussion has implied, the Cochabamba region displayed a broad range of land tenure arrangements which existed side-by-side. For example, hacienda estates comprised labour-rent tenants (colonos), sharecroppers (aparceros), land leasing and renting arrangements (arriendo) as well as demesne holdings. Then, beyond the boundaries of the estate, there was the independent plot-owning household (piquero) which grew at the expense of the hacienda and which provided the stiffest commercial competition (Dandler 1971). The hacienda itself took a variety of forms throughout the Cochabamba valleys; varying in size, in the number of tenants and the type of rent required of them, in its degree of commercial orientation and level of capital investment in productive means and so on. The labour-rent or colonato system is a further indication of the variations that existed between estates, and this is discussed in detail in Chapter Four.

The purpose of this description here is simply to indicate the extraordinary variety of tenure forms found in Cochabamba, which created considerable social differentiation within the rural population, and the intense commercial competition between peasants and landowners. Andrew Pearse describes the situation well:

"Thus a situation of great conflict existed in Cochabamba, where peasant could compete with patron for the market, yet at the same time, where servile duties continued to be enforced, where a class of small landowning peasants of mixed ethnic descent had established itself, yet estamental exclusion from participation in the citizens' world continued, where servitude chafed the more since the alternative of smallholding was visible to all. It was from this scene that the strongest revolutionary impulses emerged ... (1975:142).

Though the estamental society comprising two exclusive worlds which Pearse describes was no doubt the general case, in the Cochabamba valleys there was a general blurring of many of the social, economic and cultural differences between peasants and townspeople. Independent smallholders, for example, engaged in a variety of activities besides agriculture which brought them into contact with the petty bourgeois of the ruling estament. The process of mestizaje, or miscegenation, which had developed early and substantially in Cochabamba had, more importantly, given rise to a process of cholofication, a unique cultural hybrid. Valluno cholos from the Cochabamba valleys moved easily between rural and provincial urban environments and were proficiently bilingual in Quechua and Spanish, providing them with the skills to exploit a position as intermediaries especially in post-1952 society.

The Cochabamba region was transformed, once again, by the events surrounding the National Revolution and especially by the Law of Agrarian Reform which was publically announced in the Upper Cochabamba Valley in 1953. Chapter Three describes the national dimensions of the Reform, the regional outcomes and the subsequent process of commoditization. The following section of this Chapter, however, describes the main contemporary features of the Cochabamba region which is critical to an understanding of changes in Santa Rosa.

V. Contemporary Demographic and Economic Structure

This section of the Chapter provides a broad background to the Cochabamba region in which contemporary data on population and settlement, regional economy, forms of production and spatial divisions of labour are presented. The purpose is to provide a thorough context in which to locate subsequent discussion of Santa Rosa, and to indicate the nature of the regional economy into which it has been incorporated. As much of the available secondary data relates to politico-administrative territorial units, these are used initially to create a picture for the Department of Cochabamba before regional boundaries are defined and sub-regional units described.

V.1 A Demographic Profile of the Department of Cochabamba

The Department of Cochabamba is one of nine departments in the Republic of Bolivia. It is the sixth largest in area, covering almost 56,000 square kilometres (5 per cent of the national territory), but is second in terms of population, with over 875,000 inhabitants in 1980, giving it the highest population density in the country at 15.73 persons per square kilometre compared to the national average of 5.1 (INE 1981, 1980). Cochabamba experienced a rate of population growth over the inter-censal period 1950-1976 of 1.79 per cent, which is below the national average of 2.1 per cent and well below the rates of growth recorded in the lowland departments of Santa Cruz, Beni and Pando (INE 1981). The capital of the Department is the city of Cochabamba which, according to estimates for 1980, had 236,500 residents. During the 1970s the city of Cochabamba was displaced from second position in the national urban hierarchy by Santa Cruz de la Sierra, the capital city of the Department of Santa Cruz. This had an estimated population for 1980 totalling 330,000 people, which is still well behind the city of La Paz with 720,000 inhabitants (INE 1980).

Departments in Bolivia largely constitute a system of organising the territory into administrative areas rather than representing units of local government. Most were created soon after the foundation of the Republic and that they have not proved to be the most effective and democratic arrangement in the modern period is witnessed by the rise of broad-based regional movements in the major departmental capitals (3). Each department is headed by a Prefect who is appointed by the President, the Head of State (Rabinovitz and Trueblood 1973). Although his activities are directed by the Ministry of the Interior, the Prefect has wide administrative powers in political, financial and military matters. The next level of administration below departments comprises provinces which are headed by sub-prefects. These individuals are also named by the President, and are responsible to central government through the office of the Prefect. Provinces are, in turn, divided into cantons for which the office of corregidor is responsible. It is symptomatic of the outdated nature of administrative organisation in the country that the post of corregidor was introduced during the Colonial Period and it remains imbued with the spirit of this age (Arze Cuadros 1979).

The Department of Cochabamba is divided into fourteen provinces and these are listed in Table 2.1 together with the area of territory which they cover and their main demographic indicators. As the Table clearly shows, population is highly unevenly distributed across the fourteen provinces. While three of the largely serrania provinces (Arque, Arani and Tapacari) each have population densities in excess of the average for the Department, a fourth (Ayopaya) is very much more sparsely populated, a feature of the Province with which we are most interested and an issue to which we shall return. On the other hand, two of the provinces with even lower densities in 1976 (Carrasco and Chapare) have much of their territory in a zone of colonization (the Chapare) which has experienced considerable immigration during the 1980s.

Table 2.1: The Provinces of the Department of Cochabamba:
Territorial size and demographic indicators

P O P U L A T I O N						
Province	Area	%	N	%	Growth	Density
	(km2)		1976		Rate #	\$
Ayopaya	9,620	17.19	55,944	7.8	1.49	5.82
Arani	2,245	4.04	38,170	5.3	1.42	17.00
Arque	1,400	2.68	29,134	4.0	0.55	19.55
Campero	5,550	9.98	31,787	4.4	1.54	5.73
Capinota	1,495	2.69	23,437	3.3	0.44	15.68
Carrasco	15,045	27.04	46,461	6.4	2.09	3.09
Cercado*	391	0.70	222,067	30.8	3.80	567.95
Chapare	12,445	22.37	57,839	8.0	1.72	4.65
E. Arze	1,254	2.24	28,963	4.0	0.21	23.26
Jordán	305	0.54	25,603	3.6	0.54	83.94
Mizque	2,730	4.91	27,337	3.8	1.57	10.01
Punata	850	1.51	35,238	4.9	-0.18	41.46
Quillacollo	720	1.30	76,541	10.6	1.54	106.31
Tapacari	1,500	2.70	22,431	3.1	0.82	14.95
Dept.	55,631	100.0	720,952	100.0	1.79	12.96

Note:

Growth rate - represents the annual average increase per 100 inhabitants over the intercensal period 1950 - 1976.

\$ Density - expressed as numbers of persons per square kilometre.

* The Province of Cercado comprises the city of Cochabamba plus a densely populated and rather small hinterland

Sources: The demographic data is derived from analyses of the 1976 Census. The Table has been elaborated from data drawn from INE (1980), Blanes and Flores (1982) and Laserna (1984).

Yet besides Cercado, the other central provinces of Quillacollo, Jordan, Punata, and Esteban Arze display high population densities for areas where two-thirds or more of their inhabitants are classified as "rural" (Blanes and Flores 1982). Indeed, throughout the central Cochabamba valleys the high level of population density has resulted in some of the smallest average landholdings anywhere in the country, a feature which is discussed in greater detail in Chapter Three.

The shrinking of the productive base in rural areas of Cochabamba together with processes of uneven development and commoditization, have contributed to a significant movement of rural people both within and beyond the Department. Over the period 1971-1976 over 37,000 people left Cochabamba for other departments of Bolivia, of which more than half went to Santa Cruz. Yet more than 33,000 individuals arrived in Cochabamba over the same period, the largest single group originating from the Department of La Paz (INE 1980). While it is unnecessary for the purposes of this study to discuss in any great detail patterns of migration between Cochabamba and other departments of Bolivia, it is important to underline the considerable spatial mobility that has characterised the Cochabamba region both historically and in the present day. Indeed, in many localities of the Upper Cochabamba Valley, international migration performs an important role in the reproduction of the household, an issue to which we return below. For the moment, however, it is sufficient to note that Cochabamba serves as a nodal point within the dominant pattern of national migration which originates in the Altiplano and southern highlands, and leads to the colonization zones and agro-industrial estates of Santa Cruz (Blanes and Flores 1982).

With regard to patterns of migration between provinces within the Department of Cochabamba then a comparison of the data collected for "lifetime" movements and over the period 1971-1976 clearly shows three main features. First, that the majority of migrants are destined for the city of Cochabamba (Province of Cercado). Second, that migration to the colonization zone of the Chapare has increased in importance (destination: Provinces of Chapare and especially Carrasco). Finally, that the rate of emigration from the provinces is increasing. The data for the period 1971-1976 (where the place of residence is different for these two years) show a particularly stark picture where twelve of the fourteen provinces in Cochabamba have a net outflow, with only Cercado and Carrasco registering gains in population (Blanes and Flores 1982).

One of the consequences of the migration process, then, has been a gradual increase in the proportion of the urban population in the Department. While the number of residents of urban centres of more than 2,000 inhabitants increased by more than one and one half times over the period 1950 to 1976, the rural population has grown by less than thirty per cent during this time. The City of Cochabamba has experienced the most rapid urban growth, almost trebling its population during the period 1950-1976 at an average annual rate of 3.86 per cent. Secondary urban centres, meanwhile, have grown at slower rates. Quillacollo doubled in size over the same period to 19,500 residents by 1976, an average annual rate just under 3 per cent, while the town of Punata exceeded ten thousand residents in 1976, growing at 2.76 per cent per year (INE 1980). An interesting footnote here is that the Province of Punata was the only one in the Department to actually lose population over the inter-censal period 1950-1976. The town of Punata now accounts for 30 per cent of the population of the Province, up from 11 per cent in 1950.

The process of urbanization has been heavily concentrated in four central valley provinces comprising Cercado, Quillacollo, Jordán and Punata. Here, in just 4 per cent of the land area of the Department, these provinces account for 50 per cent of the total population and 92.3 per cent of the urban population living in towns of more than 2,000 inhabitants (Blanes and Flores 1982). These urban centres in the Cochabamba Valleys provide a vital network of markets which sustain a dynamic and extremely intense level of commercial activity in the region. The spatially concentrated and primate urban hierarchy of the Department, together with the behaviour of merchant-intermediaries (which are described in Chapters Three and Four) has created a dendritic system of marketing (C. Smith 1976). The dominance of these valley towns in the provision of goods and services, and the economic influence wielded by merchant-intermediaries has served to undermine the growth and development of centres of population throughout the serranía. Here, one observes the low and even declining levels of urban development as highland centres are bypassed in the commercialization of agricultural goods.

In Ayopaya, for example, the provincial capital of Independencia has experienced a marked decline in population during this century, from 5,585 inhabitants in 1900 (Blanco 1901) to 1,742 in 1950, registering a small increase to 1,966 by 1976 (Laserna 1984). Thus, despite its nominal administrative functions, Independencia has ceased to be a centre of any significance and has long been replaced as the largest centre of population in the province by the mining settlement at Kami. Here, over 5,000 people live clustered together at several different levels upon the side of a mountain, either working in, or providing services for, a large co-operative tungsten mine. However, despite its seventy or more years of existence, Kami is not recognised in politico-administrative terms as constituting an urban centre, a further indication of the outdated and often dubious system for the collection and organisation of socio-economic data.

In concluding this part on the population structure of Cochabamba and also of the Province of Ayopaya, Table 2.3 presents a summary of the principal demographic indicators which show sharp contrasts between the different units of analysis. As we can see, the Province of Ayopaya displays the highest rates of fertility (with women bearing almost twice as many children as their sisters in the City of Cochabamba), infant mortality (which is half as high again as the national average) and crude death rate. All of these figures are higher than that for rural areas as a whole within the Department. The level of life expectancy also makes for horrifying reading. This, then, provides some preliminary background in understanding the material conditions of existence which pertain in Santa Rosa. This issue will be picked up again in Chapter Seven when we examine the reproductive activities of women.

Table 2.2: Distribution of the population according to the size of centres of population, Department of Cochabamba, 1976 Census

	N U M B E R		P E R C E N T A G E	
Size of centres of population	Centre of pop.	Population	Centre of pop.	Population
City of Cochabamba	1	204,684	0.9	28.4
49,999-10,000	2	29,683	1.8	4.1
9,999-2,000	12	37,733	10.5	5.2
Urban sub-total:	15	272,100	13.2	37.7
1,999-1,000	23	30,226	20.2	4.2
999-500	29	19,955	25.4	2.8
Less than 500	47	14,159	41.2	2.0
Dispersed	-	384,512	-	53.3
Rural sub-total:	99	448,852	86.8	62.3
Total:	114	720,952	100.0	100.0

Note: "urban" centres comprise populations greater than 2,000 inhabitants, while those who live in centres of population smaller than 2,000 are classed as "rural".

Source: INE 1980, reorganized by the author

Table 2.3: Key Demographic Indicators for the City and Department of Cochabamba, and for the Province of Ayopaya

	C	O	C	H	A	B	A	M	B	A		A	Y	O	P	A	Y	A
Demographic Indicators	City of Ch'bba			Urban Areas			Rural Areas			Dept. Mean	Province of Ayopaya							
Fertility rate	4.7			5.2			8.0			6.8	8.7							
Crude birth rate	37.4			40.6			52.6			47.2	56.7							
Infant mortality rate	105.7			113.0			197.0			169.0	204.0							
Life expectancy (years)	56.7			54.3			36.4			41.5	35.2							
Crude death rate	12.2			13.5			31.2			24.7	33.9							
Rate of growth	25.2			27.1			21.4			22.5	22.8							

Explanation of terms:

Fertility rate - the average number of children born per woman during her lifetime.

Crude birth rate - number of births per thousand population in a given year.

Infant Mortality rate - the number of deaths of children of less than one year of age per thousand live births.

Life expectancy - the average number of years of life at birth for a given cohort.

Crude death rate - the number of deaths per thousand population in a given year.

Rate of growth of the population in a given year (births-deaths).(1950-1976)

Source: prepared on request by INE from 1976 Census data

V.2 Cochabamba within the Bolivian Space Economy

In the years following the National Revolution successive governments pursued policies of economic diversification designed to overcome Bolivia's structurally dependent position as a mono-exporter of minerals. With the opening-up of the eastern lowlands and major capital investment stimulating rapid economic growth in Santa Cruz (see Chapter Three), the main axis of economic and political power was diverted from the Altiplano. With steady, if unspectacular, improvements in transport infrastructure, Santa Cruz was incorporated into the national economy as a highly dynamic growth pole. The new La Paz - Santa Cruz economic axis, however, was to benefit Cochabamba as a centrally located fulcrum ideally placed to link its highland and lowland neighbours. The movement of vehicles is a good indication of its role as a point of transit, with the total number of departures and arrivals in Cochabamba during 1979 almost double that for either of the other two cities (CERES 1981).

Yet while Cochabamba has played an important integrating role for the Bolivian economy, it has received a relatively small allocation of state financial resources. According to figures assembled by Arze Cuadros (1979), the overall disbursement of funds for the nine departments in 1977 was allocated thus: 43 per cent to Santa Cruz, 28 per cent to La Paz, 7.5 per cent to Cochabamba with proportions of 4.75 per cent and below divided between the remaining six departments. Besides the funds specifically earmarked for provincial and urban development and administration, a third component of the departmental budget comprises an allocation to the regional development corporation. It is this component which shows the most inequitable distribution of state resources. Again, the data for 1977 shows that some 63 per cent of the total regional development corporation budget was allocated to Santa Cruz (CORDECRUZ), while La Paz (CORDEPAZ) received 5.1 per cent, four other

corporations between 6.2 and 4.7 per cent and Cochabamba (CORDECO) 4.5 per cent (Arze Cuadros 1979). It is evident that the allocation of resources to the regional development corporations is determined more by political criteria than by the distribution of natural resources and the potential for encouraging major regional projects (CERES 1981). The distribution of agricultural credit displays even greater regional inequity, and this will be discussed briefly in Chapter Three.

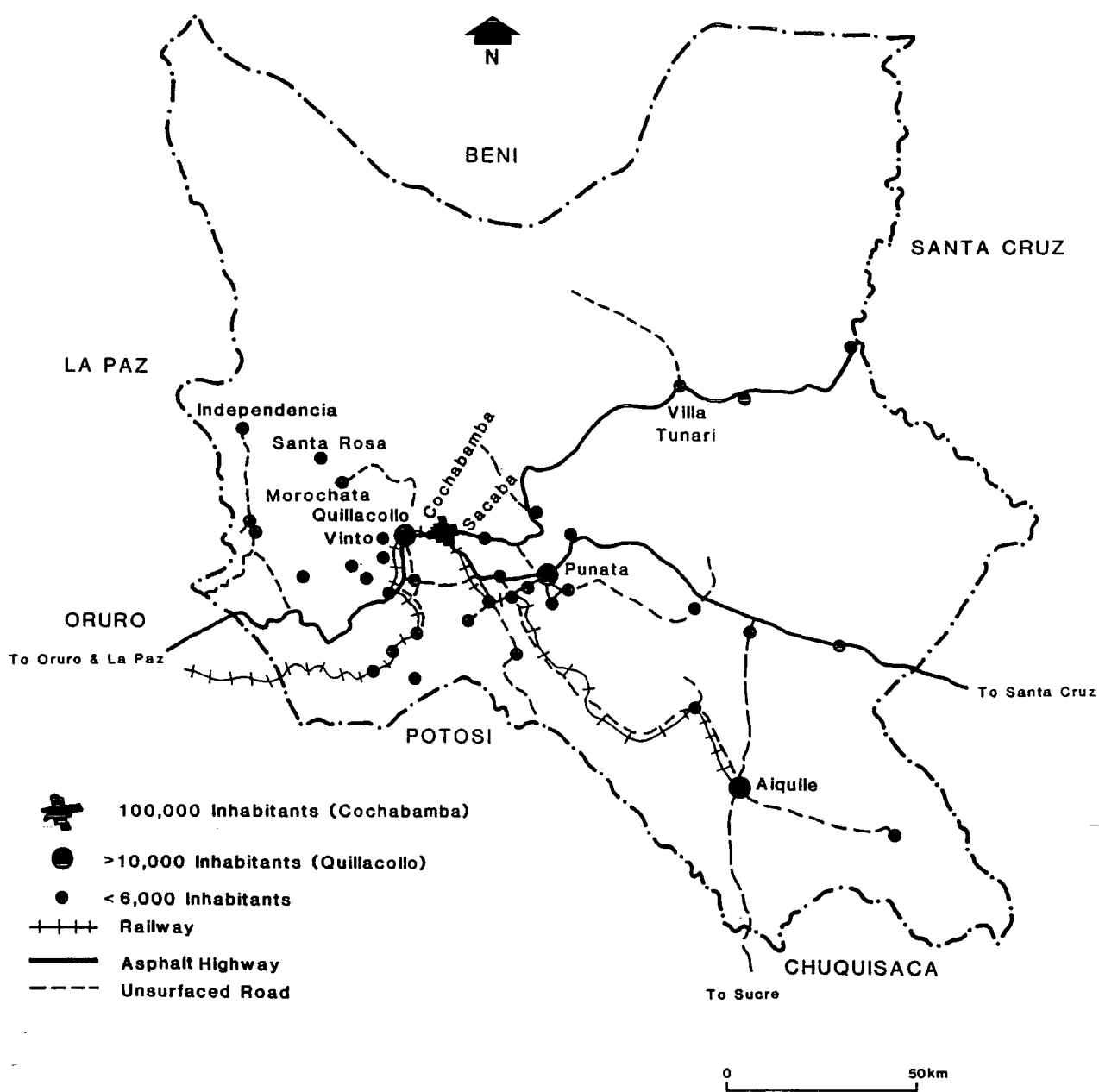
Given this pattern of distribution of state resources it is not surprising that, despite its important integrative functions, Cochabamba has not experienced a substantial improvement or diversification of its productive base. Although the discovery of hydro-carbon resources in the lowlands provided Cochabamba with a refinery complex and an oil pipeline to La Paz and Arica, this has served to underline the narrow and weak manufacturing base of the region, by accounting for half of its gross value of industrial production (Calderón and Rivera 1982). Cochabamba contributes around 20 per cent of the value of the national manufacturing sector, about the same as Santa Cruz, with La Paz accounting for some 40 per cent by value (CERES 1981). The industrial sector within the Cochabamba region is characterised by many of the classic features of structural dualism: a small number of capitalist enterprises account for the greater part of capital investment, absorb a fraction of the industrial labour force and generate a disproportionately large amount of the gross value of industrial production, while a large number of small enterprises display all of the converse features (Calderón and Rivera 1982). Moreover, in terms of sectoral integration, the dependent character of manufacturing in the region is highlighted by the level of industrial inputs, 80 per cent of which are derived from outside Cochabamba, with almost 50 per cent imported from foreign sources. Yet 97.2 per cent of industrial output is destined for the domestic market, of which half is sold within the Cochabamba region (Laserna 1984). Consequently, as one might expect from this

evidently low level of development of capitalist industry, the so-called "informal" sector, comprising a mass of small-scale units, is both large and dynamic.

If industrial activity is so poorly developed, it comes as no surprise to learn that agriculture continues to be the most important sector within the region, contributing over 26 per cent of gross regional product and employing nearly half of the economically active population. Indeed, Cochabamba contributed nearly 23 per cent of gross agricultural product in Bolivia in 1982 from just 6.32 per cent of the land under cultivation (Laserna 1984). In 1980 Cochabamba's share of national output of some of the principal agricultural commodities was as follows: Bananas (96%), Carrots (84%), Onions (56%), Potatoes (30%), Oranges (29%), Tomatoes (28%), Wheat (28%), Rice and Maize (17%) (Laserna ibid.). The sheer variety of these products indicate the important contribution that is made by different ecological sub-regions, or production zones, to the regional economy as a whole.

A final characteristic of the Cochabamba region that requires attention here, and one that is intricately linked to agricultural production, is the sheer scale and dynamic of marketing activities. Although the development of the national and regional market systems since 1953 is discussed in more detail in Chapter Three, it is important to recognise here the human and capital resources that are absorbed by intermediary functions within the hierarchical, regional network of periodic markets. The extraordinary vitality of mercantile activity has exerted an important influence over the urbanization of provincial towns, the transformation of agricultural production and social differentiation in the countryside, and the labour process within the regional economy. This is most evident in the central valleys which are the most densely populated and served by an integrated transport network which link market centres within and beyond the region (see Figure 2.4).

Figure 2.4: Department of Cochabamba: Settlement and Communications



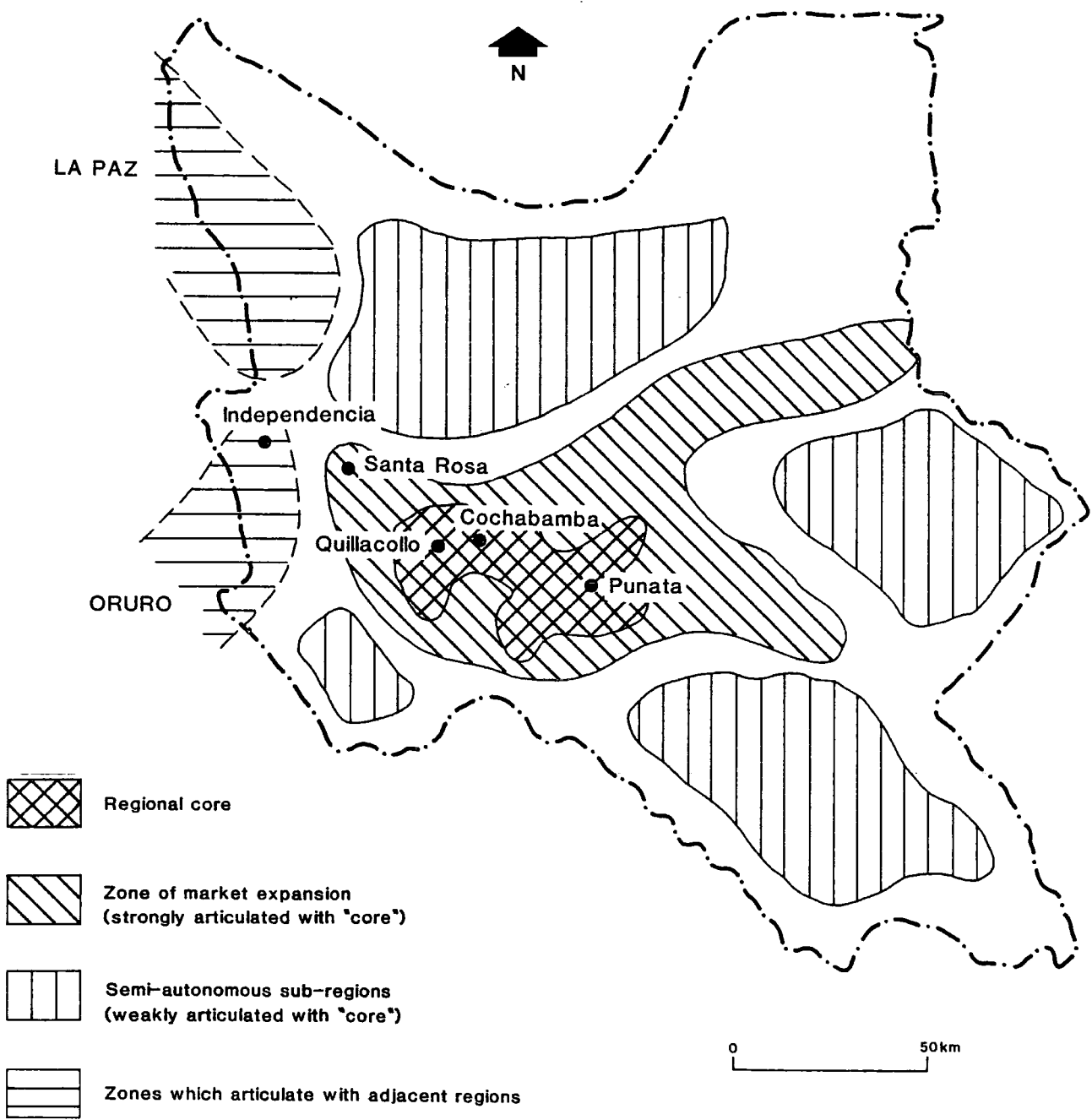
Source: Adapted from Laserna (1984)

These central valleys might be said to constitute a "regional core" which is surrounded by a zone of market expansion. Here, whether serranía, tropical lowlands or temperate valleys, this zone has become strongly articulated to the "core" through the activities of merchant capital. Beyond this zone, however, it is possible to identify sub-regions that are only weakly linked to the "core" where, because of distance or limitations of the resource base, intermediaries play a considerably less important role. Finally, there are the truly peripheral parts of the Department which articulate hardly at all with the region (see Figure 2.5).

V.3 Production Zones in the Cochabamba Region

Now that we have established the broad parameters of the Cochabamba region by describing its general physical structure and ecology, historical development, demographic characteristics and the form of its insertion into the Bolivian space-economy, we are able to disaggregate it into a number of smaller spatial units which we call "production zones". These zones are identified, not because they represent discrete, completely homogeneous units, but rather because they illustrate contrasting sets of economic activities according to the productive base which is available to them. Naturally, each zone displays certain common characteristics regarding the use and tenancy of land, the existence (or deficiency) of infrastructure, and access to and degree of incorporation within the market, which together combine to establish the opportunities for, and limits upon, agricultural and non-agricultural activities. The identification of production zones thus serves to create a complex structural mosaic of social relations and market networks within the region (4).

Figure 2.5: Cochabamba: Articulation of Space



Source: Adapted from Laserna (1984)

Although zones are largely circumscribed on the basis of the particular form of production which is most prevalent, there are, nevertheless, many households within each zone which do not depend so directly upon these forms. Frequently, such households engage in activities outside of their "home" zone, underlining the importance of avoiding a perspective which treats production zones as discrete, self-contained territorial units. Rather, they should be viewed not only as sites of production but also of residence, around which individuals orbit economically pursuing different forms of income generation which may involve considerable spatial mobility. Thus, production zones can be highly economically heterogeneous, with households pursuing a repertoire of activities which are determined by their resource portfolios and choices of available options. Nevertheless, production zones remain useful analytical units for each generally shares common characteristics of ecology, ground rent, farming system, household organisation, infrastructure and access to commodity and labour markets. Indeed, we can say that each production zone can be characterised to a significant degree by the nature and level of development of commodity relations, and it is this which serves to distinguish one zone from another.

Before describing the main characteristics of several production zones, it is important to distinguish such zones from the major sub-regions of Cochabamba, for the two units are not synonymous. While the Cochabamba region can be divided into three major geographical areas - the central valleys, the highlands and the Chapare - production zones are smaller units of analysis displaying a greater degree of social and economic unity. For example, it is possible to identify production zones in the central valleys dedicated to intensive horticulture, dairying, unirrigated arable and other kinds of farming besides a variety of small-scale semi-industrialised activities such as the manufacture of construction materials, brewing and a proliferation of services. Nevertheless, it is useful to make more general

observations regarding the central valleys vis-a-vis one of the other sub-regions. For example, between the central valleys and the highlands there exist sharp differences in forms of agricultural production and levels of economic diversification. As mentioned above, the valleys possess a highly integrated and extremely dynamic network of markets which is completely absent from the serrania. This market system supports a large population of intermediaries engaged in transport, large-scale trading and petty commercial functions. Many of these individuals circulate beyond their own localities in the central valleys, penetrating into the surrounding highland areas in search of agricultural produce and a market for manufactured goods. The activities of these intermediaries has done much to create this zone of "market expansion", shaping local economies in the serranias, bringing about an intensification of commodity relations and their increased integration into the regional economy centred on the central valleys.

A third sub-region which retains its own special character, but which is also strongly articulated with the central valleys, is the Chapare colonization zone. During recent years the "boom" in coca leaf production has led to an increased rate of migration toward the zone, both of temporary labour and of potential colonists who settle on the ever-expanding frontier. Intermediaries from the Cochabamba valleys have been heavily involved in the provision of materials (kerosene, sulphuric acid, toilet paper) for the conversion of coca leaves to coca paste, the purchase of paste, and the supply of basic foodstuffs as agriculture in the Chapare has literally become a coca monoculture (Healy 1986; Flores and Blanes 1984). Some of the principal characteristics of the valleys, highlands and Chapare zone are shown in Table 2.4.

Table 2.4: Characteristics of the Three Major Sub-Regions

HIGHLANDS	CENTRAL VALLEYS	CHAPARE ZONE
1. Production zones		
<u>Serrania</u>	Upper and Lower Valleys	Not specified
2. Land:		
ecologically diverse, steep, narrow valleys (2-4,000 metres); crop specialization & market orientation in some zones, the export of labour elsewhere	About 2,400 metres; flat; Upper relies on seasonal rainfall, Lower on irrigation allowing intensive horticulture.	Tropical lowlands high rainfall; colonization frontier. Extra-household labour from valleys & highlands; farming dominated by coca
3. Diversification:		
incipient; agriculture main source of income & household employment; limited wage labour locally.	High, by men & women; Upper-agriculture a secondary source of income besides labour migration & commerce	Some commerce & high spatial mobility; but coca cycle determines secondary activities.
4. Infrastructure:		
less densely populated than valleys; low urbanization; transport system dominated by elites. Marketing oriented to valleys. Limited health, education & other services.	high population density; good transport network integrates local & regional market centres. Greater provision of services including electricity.	dispersed population; paved road to valley markets crucial for integration, but access roads to colonies poor. Low service provision despite high cash incomes.

Table 2.4: cont.

5. Mobility:

temporary wage labour to urban centres & Chapare by young; some households have land/residence in one or other location. Mobility age more than gender specific.	high incidence of temporary & more permanent migration to colonization zones (S.Cruz & Chapare), urban centres & Buenos Aires. Market activities involve regional, national travel.	colonists are migrants from Cbba & other regions & often travel to home areas; zone has experienced an influx of temporary workers in recent years due to coca boom.

6. Social-cultural:

mostly monolingual quechua speakers treated as inferior by <u>vallunos</u> & <u>vecinos</u>; social differentiation increasing.	mostly bi-lingual <u>valluno</u> population; differentiation based more on access to non-agricultural sources of income than land-holding.	highly heterogeneous population due to diverse origins; relatively young with smaller household size; differentiation acute in older colonies.

Now that the three major sub-regions have been described, we can proceed with briefly identifying some of the production zones to which we previously referred. For reasons of brevity we exclude the Chapare zone and focus instead upon patterns of production in the Lower and Upper Cochabamba Valleys and in the serrania.

1) The Lower Valley

The Lower Valley benefits from an irrigation system that channels water from the Angostura reservoir in the Upper Valley which provides the conditions for year-round cultivation. The main feature of the zone, which stretches from Vinto to Parotani, is its highly labour-intensive horticulture with carrots and onions the principal crops. Plots are small and divided into strips supporting plants

at different stages of growth and, consequently, the possibilities for mechanization are limited. The soils of this zone are very rich and are replenished every year by silts deposited by diverted streams, although salinity and water-logging are increasing. There is a strictly defined division of labour within households of this zone, with men and sons responsible for ploughing, harvesting and the transport of the crop to the river bank, while women and daughters provide much of the labour in planting, weeding, replanting of seedlings, selection of seed, and the washing of the crop in the river in preparation for sale. Women are also exclusively engaged in commercialization, not only of their own crop but also in purchasing larger volumes in the Vinto market for resale in small units.

Economic diversification is generally based around the opportunities presented by the main Cochabamba - La Paz highway which passes through the zone. Small vehicle repair workshops and foodstalls are strung along the road and at key focal points, such as the police checkpoint where all vehicles must present documents, large numbers of women and children hawk food and drink to drivers and passengers. There are also many small processing plants producing plaster and whitewash from the local limestone outcrops. Despite its proximity to the industrial axis running between the city of Cochabamba and Quillacollo, "formal" wage employment is not common amongst households of the zone: self-employment in agriculture and commerce dominates. The market of Vinto remains the most important for transactions in vegetables, with produce sent under contract via rail to the mining centres of the Altiplano as well as to La Paz. Thus it provides a focus of activity for all those women in the zone who deal in large or small quantities of vegetables.

2) The Upper Valley

The Upper Valley extends in a south-easterly direction from the city of Cochabamba and covers a densely populated area including the important market towns of Punata and Cliza, besides many smaller but "urbanizing" settlements. These offer a range of services and a degree of building activity which belies their true size of population, and villages such as Ucureña have expanded rapidly in a ribbon form of development during recent years. The Upper Valley was at the forefront of demands for agrarian reform after 1952 and has benefitted from considerable economic improvement since then, despite also experiencing occasional but serious political conflict (5). Yet the economic prosperity of the Upper Valley in the post-reform period, in an area where all vestiges of the hacienda were eliminated, has not been derived from breakthroughs in agricultural production.

The little permanent irrigation in the valley covering just 1.3 per cent of the area under cultivation (CORDECO 1980), and the extreme subdivision of land, where 62 per cent of households own less than two hectares (Laserna 1984), has relegated agriculture to a secondary economic role. Nevertheless, the agricultural cycle during the rainy season still provides a focus for household labour, with maize and potatoes the principal crops, even if the harvest does not meet the household's annual food needs. Yet despite the few small fields (each generally measures about one-third of one hectare, an arrozada) to which most households have access, there is a relatively high degree of mechanization. In an effort to recoup returns from their high capital investments, tractors and drivers seek work, during the slack season in the Upper Valley, in the rural areas of La Paz and Santa Cruz.

The Upper Valley, then, is marked by an extremely high level of non-agricultural economic diversification, with most households engaging in a range of market-oriented activities. In a study of one locality (Chillijchi), an ex-piqueria or independent settlement beyond the boundaries of

the hacienda, Anderson (1983) documents the role of several major income-generating activities. These include cattle dealing, with livestock purchased in the Beni and the Chaco region of South-East Bolivia, and sold in the local markets of Punata and Cliza; the production and sale of chicha (maize beer), which is exclusively controlled by women and is described in detail (for Santa Rosa) in Chapter Seven; and migration to Buenos Aires, Argentina, in which adult males secure employment in the construction industry for periods, on average, of about one year. Market-based activities, such as the purchase of agricultural produce por mayor and its sale por menor, are firmly controlled by women, who travel every day to a different market in the Upper Valley or to the city of Cochabamba. Thus, the Upper Valley contains a highly spatially and socially mobile population, where households have developed sets of relationships that extend far beyond the locality of residence, which itself provides a platform for sustaining multiple economic roles.

3) The Serrania

In an earlier part of this Chapter it was emphasised that the serrania comprises a diversity of ecological conditions and should be understood as representing more than simply high land. Although the serrania effectively surrounds the Cochabamba valleys, its inhabitants are no more socially and economically homogeneous than their environment. Within this "zone" can be found peasants engaged in mixed arable-livestock production which provides a high proportion of their needs for simple reproduction without recourse to the market, as well as petty commodity producers engaged in a highly specialised and intensive form of crop production. However, both groups of "ideal types" share a great deal in common, particularly in access to services and infrastructure.

The serranía, in general, is marked by a dispersal of economic resources, low and declining levels of urbanization and few and poorly developed markets. The state plays a largely tributary role, with a nominal presence which serves to legitimate networks of local power exercised by intermediaries. This group is dominated by transportistas, independent truck operators, who perform functions and exert an influence well beyond their apparent role of transporting produce to market. These truck operators, whom we shall discuss in more detail in Chapter Four, have built alliances with large local landowners, both ex-hacendados and a newly emerging landowning elite, as well as with vecinos de pueblo, the residents of the larger settlements, who engage in commercial activities which exploit the economically subordinate small producers in multiple ways (Chapter Six will offer evidence to substantiate this statement). Finally, ethnic distinctions serve to reinforce the economic, social and political subordination of the largely monolingual Quechua speakers of the serranía.

The poor infrastructure, extremely rugged terrain, widely dispersed population and the dominant position of the hacienda constrained economic development in the serranía until the increased penetration of merchant capital and the expansion of commodity production followed the implementation of the Agrarian Reform. These developments have transformed much of the serranía over the last two decades or so, encouraging labour-intensive commodity production in areas of high agricultural potential and temporary labour migration from areas lacking in suitable natural resources. This has led to the growing articulation of remote highlands with the regional economy and their incorporation into a specialized, regionally-based social division of labour. As these issues will be described and discussed with relation to Santa Rosa in subsequent chapters, we now provide a brief introduction to the Morochata zone in the final section of this Chapter.



VI. Introducing Santa Rosa

The community of Santa Rosa is located some ten kilometres northwest of the village of Morochata which, as the principal settlement of the zone, should be briefly mentioned first despite the fact that it has been undergoing a long slow process of decline since the Agrarian Reform. Many of the landed elite and estate administrators (mayordomos) once retained residences in Morochata, but these have long been abandoned and the settlement has gradually taken on the appearance of an ageing backwater, as many of the young and economically-active have moved to Quillacollo. Today, Morochata supports a few shops and chicherías (where maize beer is sold) and occasionally roadside vendors appear to sell food to truck passengers travelling between the Lower Valley markets and the communities of the zone. Besides such visible signs of economic activity, some residents of the village have established more discreet but highly lucrative intermediary functions in the surrounding communities, for example by selling chemical fertilisers and other inputs on usurious credit terms, acting as sharecropping partners with capital-poor producers, lending money or bartering goods (6).

However, besides such residents, Morochata has little more to distinguish itself and justify further description. True, it hosts a purpose-built clinic where a doctor and nurse are usually available for consultation, but this facility is rarely used by people from Santa Rosa. Neither does anyone from the locality send their children to Morochata for schooling beyond the level available in Santa Rosa. In effect, despite its status as a higher-order centre offering the widest range of services within the zone, Morochata is largely bypassed by the producers of the zone who secure their needs from the market towns of Cochabamba and Quillacollo at the time of selling their recently-harvested potato crop.

Limited mobility within the zone and a low level of interaction between individuals from different communities undoubtedly derives from the "cellular dispersion of the peasantry into landed estates" described by Pearse (1975), which is discussed further in Chapter Four, as well as the influential role of transportistas and the poor state of the roads. As previously mentioned, access beyond Morochata and towards Santa Rosa is extremely hazardous: the road is frequently blocked by slumping hillsides or washed away by swollen rivers. At Lachiraya the route to Santa Rosa branches off the Independencia-Quillacollo road, which itself is often impassable beyond Yayani, and crosses the River Morochata. For several months during the dry winter period a small flimsy bridge made by local people from branches, stones and earth offers an adequate platform by which to cross the river, but this is washed away with the onset of the seasonal rains each October. So for eight months or so each year people and goods cross the river in a cage suspended some fifteen or twenty metres above the seasonal torrent. The cage, which is hauled manually, is slow, labour-intensive and unsafe, and results in two or three accidental deaths each year. It is, however, the only way by which produce can cross the river and be loaded onto trucks for transport to market (see later photo). While a direct road link once allowed trucks to reach Santa Rosa during the dry season, this has been closed since 1981 as a result of substantial rock avalanches. Thus, after crossing the river, the journey to Santa Rosa takes another hour of stiff walking, though at least two hours if pack horses are being used.

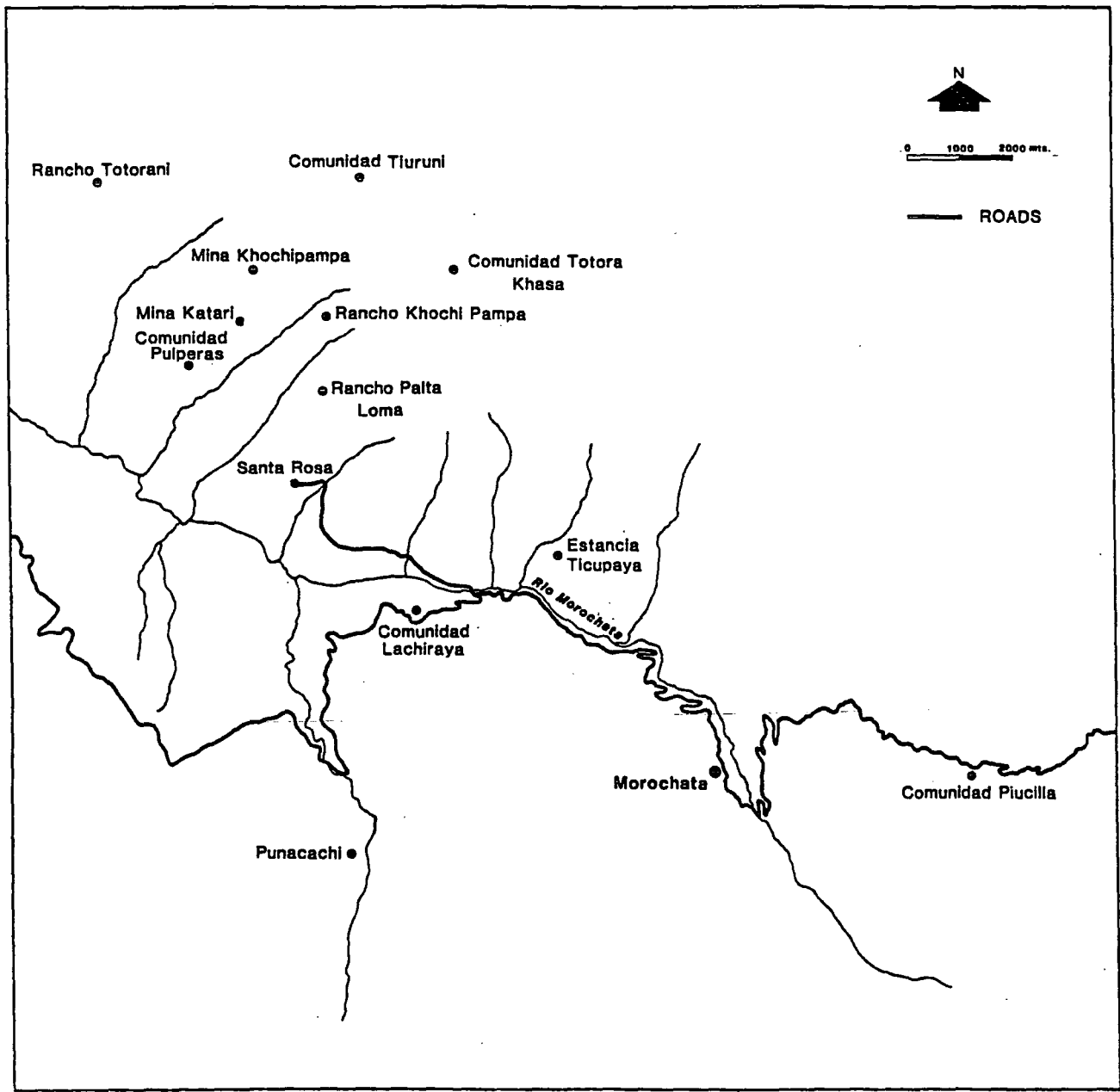
The main settlement of Santa Rosa comprises some thirty-five houses following a ribbon pattern, together with the primary school, teachers' quarters, church and crumbling remains of the old hacienda building which are set around a small plaza. The remaining thirty households of the community are scattered in small clusters above the main settlement. The village possesses three small shops,

one a co-operative established with contributions from every household, and these offer a limited range of food (rice, sugar, oil, fat) and essential household goods (7).

Houses are constructed from mud-brick with either corrugated iron or thatched roofs. There is no piped water; households draw their requirements for cooking, drinking and washing from one of the irrigation ditches or a muddy, polluted spring. The main source of energy is fuelwood; while two or three households possess cooking rings using bottled gas, the difficulties involved in renewing the cylinders are considerable, especially while firewood remains relatively plentiful. Consumer durables appear to be limited (wristwatches, radio-tape recorders are status symbols for young men) and there are few conspicuous signs of differences in individual wealth. Moreover, the locality displays little evidence of collective well-being: there is no health post nor any communal construction besides the school; and as Santa Rosa can usually only be reached on foot, few outsiders (e.g. medical personnel, agricultural extension agents, clergy and so on) bother to visit. Besides a one hour walk to the roadhead, the only other link to the outside world is via a telegraph line, which passes through Santa Rosa on its way from Independencia to Quillacollo. Thus, the locality of almost 300 people is served by a tenuous infrastructure, creating an impression that it is somewhat marginalised from the wider economy and society.

Yet notwithstanding this impression, its modest size and poor appearance, Santa Rosa enjoys the status of canton which gives it some nominal administrative authority over the higher, adjacent communities as far as Tiuruni and Totorani (see Figure 2.6). It is also the focus for the sub-Central within the organisational structure of peasant unions or sindicatos. Each community has its own sindicato, which is the main decision-making forum to which all households subscribe, with the post of dirigente representing the maximum effective authority within each community. Nine

Figure 2.6: The Morochata Zone



separate sindicatos constitute the sub-Central of Santa Rosa, and representatives from this together with those from other sub-Centrales throughout the zone convene at meetings of the Central in Morochata. Thus, formally, there exists a structure whereby communities of the zone are linked together in a way that would enable them to take action in support of their common demands as producers. While there are examples of such action (see Chapter Four), there is little apparent solidarity between households in Santa Rosa where increasing competition and conflicts of interest prevail. This, then, provides some preliminary background on the social organisation of the locality. As the demographic composition and social characteristics of Santa Rosa households are examined in detail in later chapters, with the appendices providing much of the basic data for earlier consultation, it is now appropriate to turn briefly to the physical environment.

In drawing upon the work of Unzueta (1975) discussed earlier, it is possible to identify two life zones that prevail within the locality of Santa Rosa: "sub-tropical lower montane dry forest" and, at higher altitude, "sub-tropical montane moist forest". The descriptions provided for each life zone by Unzueta are extremely detailed, and only the main features are elaborated here in order to establish the environmental context to later discussion of farming systems in Santa Rosa. This detail is drawn exclusively from Unzueta (1975) and its accompanying map.

The climatic characteristics of the life zone "sub-tropical lower montane dry forest" are an average annual rainfall between 500 and 1,000 mm. and a mean biotemperature of between 12°C and 18°C, with frosts occurring during winter. This life zone is found in the inter-Andean valleys between 2,200 and 3,400 metres above sea level, where the frequently steep valley sides are often in an advanced state of erosion and offer little use besides pasture. Soils on the hillsides are generally gravelly and superficial, while those in alluvial areas have good moisture

retention properties although are deficient in nitrogen and phosphorous. According to Unzueta, this life zone has little agro-economic interest for the country due to the limitations imposed by its topography, despite being densely populated, and efforts should be made for the afforestation of the hillsides with plantations of eucalyptus suggested as a means to achieving the recuperation of soils and the protection of watersheds. It is also proposed that the most suitable use of this life zone would be under permanent fruit crops, e.g. apples, pears, peaches and cherries. This is an interesting observation for fruit orchards were of some importance to several haciendas occupying suitable valley-bottom land in the Morochata zone, though have largely been abandoned since the Agrarian Reform in favour of annual crops; disputes over ownership and the difficulties of transportation being the principal factors in their decline.

Higher up the side of the Morochata valley, at an altitude of approximately 3,000 metres, though this varies according to local factors, the life zone "sub-tropical lower montane dry forest" gives way to "sub-tropical montane moist forest". Crudely, and as one might expect, the latter represents a wetter more temperate climate than the first. According to Unzueta, this life zone is one of the most favourable for agriculture and livestock and, for many centuries, has been densely populated. This is particularly the case for the northern Altiplano around Lake Titicaca where the greater part of this life zone is to be found in Bolivia. Indeed, in climatic terms Unzueta employs meteorological data from the station of El Alto, above the city of La Paz, to illustrate the characteristics of this life zone. Here, the mean annual bio-temperature is 8.8°C and rainfall measures 553mm per year. This provides sufficient moisture for cultivation between November and May, with an appreciable surplus in January and February. In June, July and August, however, temperatures are low and severe night frosts limit cultivation during these dry winter months. Nevertheless, there is some variation in

both temperature and rainfall measurements within this life zone in different parts of the country, and undoubtedly El Alto, at an altitude of 4,105 metres above sea level, experiences a more extreme climate than that prevailing even in the higher reaches of Santa Rosa. This example warns against too absolute an application of life zone characteristics from one area to another, especially in a country with inadequate and unreliable climatic data.

This is a difficulty which has prevented a straightforward presentation of climatic data for Santa Rosa. Although daily temperatures were recorded during fieldwork, these cannot be supplemented by reliable rainfall data. While such data is collected in Santa Rosa, the manner by which the readings are taken makes them worthless for the purposes here (8). However, the figure of 780mm discussed in this last footnote for Morochata is probably a useful indication of the level of total annual rainfall in Santa Rosa. Moreover, the form of presentation of the data in this source graphically illustrates the unimodal pattern of rainfall in the zone, where some two-thirds falls in the months of December, January, February and March (Sheriff 1979). Thus, the key to intensive year-round agricultural activity in Santa Rosa is the availability of irrigation water which is collected and channelled from the highest reaches of the locality which, according to the pattern of life zones in the valley, experience greater rainfall than lower altitudes. The importance and control of irrigation will be discussed in Chapter Five. Meanwhile, Figure 2.7 provides the mean monthly maximum and minimum temperatures for Santa Rosa from April 1981 through to March 1982, together with the pattern of annual rainfall for Morochata taken from Sheriff (1979).

Santa Rosa, then, enjoys a varied and benevolent climate suitable for the production of a range of agricultural produce. In practice, however, households of the locality have become engaged in a highly specialised strategy of commodity production based around potato

Figure 2.7(a): Rainfall Data for Morochata

Source: Sheriff (1979)

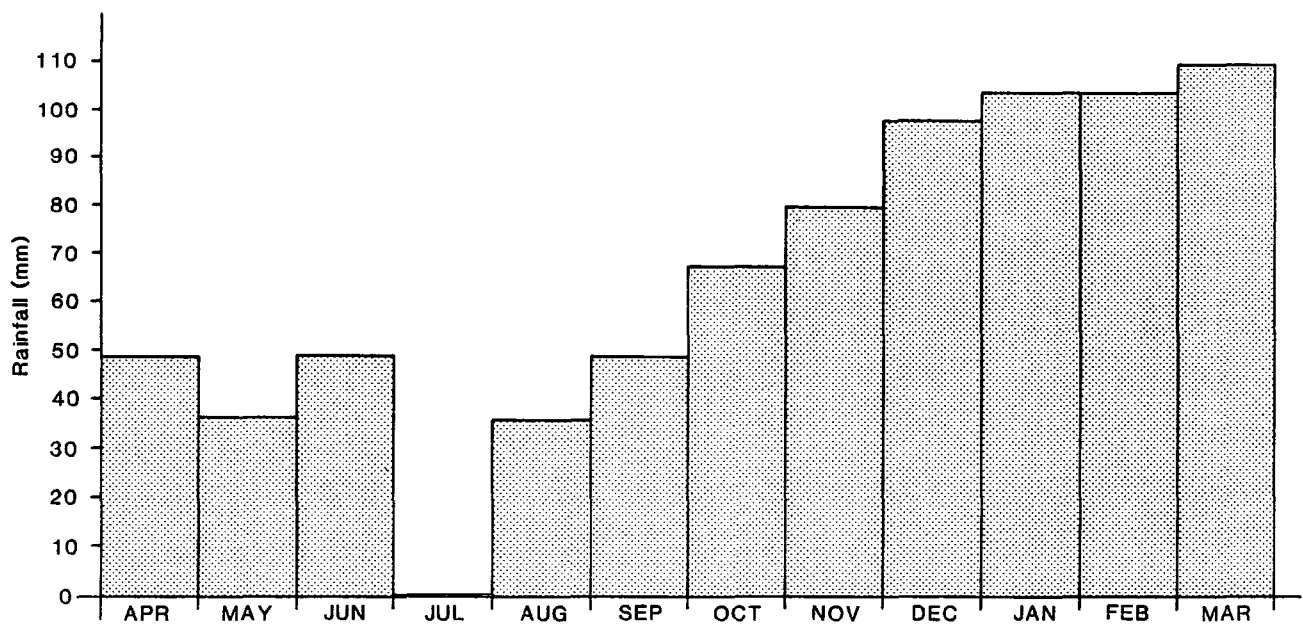
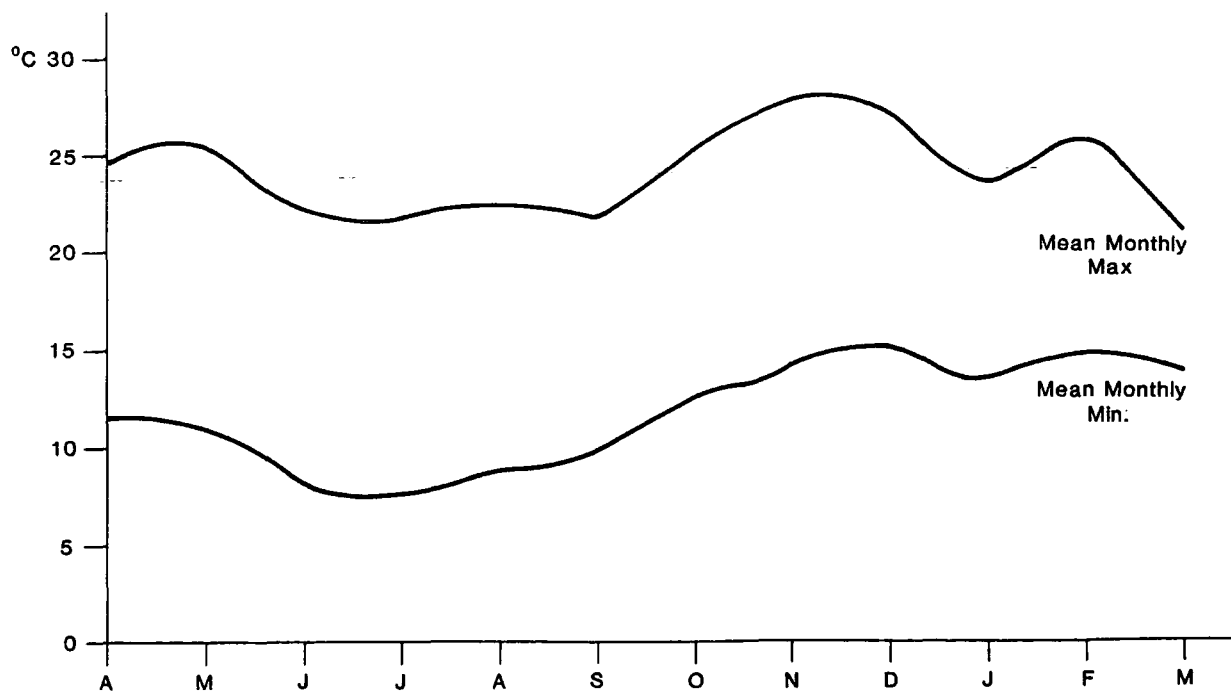


Figure 2.7(b): Temperature Data for Santa Rosa, 1981-82

Source: Field Data



cultivation. The development of this activity must be examined within the context of the Agrarian Reform, which besides providing property titles to land, stimulated the emergence of an intermediary class and created new market opportunities for small producers. Consequently, in the following Chapter, the national dimensions and regional consequences of agrarian reform are established, before Chapter Four examines the specific historical dynamics of the commoditization process in Santa Rosa.

NOTES

1. The monthly maximum, minimum and average temperatures for the Arani station during 1981, together with the arithmetic difference between the maximum and minimum (range) is shown below. All figures are in degrees Centigrade (°C).

Month	Max.	Min.	Range	Average
January	32.2	10.5	21.7	19.0
February	29.2	8.0	21.2	18.4
March	31.0	8.2	22.8	18.4
April	30.3	4.0	26.3	17.9
May	31.6	2.3	29.3	17.5
June	30.5	0.0	30.5	14.5
July	30.7	-2.0	32.7	14.3
August	30.2	2.5	27.7	14.8
September	29.8	2.4	27.4	16.0
October	32.4	6.0	26.4	18.6
November	33.3	8.4	24.9	21.1
December	33.1	9.5	23.6	19.5

Source: Empresa Nacional de Electricidad, Departamento de Hidrometeorología. Data copied by hand from original log.

2. The published diary of a member of the guerrilla unit which operated in Ayopaya under the leadership of General Miguel Lanza provides the first historical reference to Santa Rosa (Santos Vargas 1982). Much of the diary is a record of patriotic thoughts with colourful descriptions of events and skirmishes with royalist forces. It also vividly demonstrates that guerrilla warfare and brutal repression are not recent phenomena, and it sometimes echoes a campaign, conducted with a different and tragic end, 150 years later (Debray 1975; Gott 1973). Though Santa Rosa saw the brutality of the royalists (stringing up and decapitation is described by Santos Vargas), there are also happier references to the locality:

"The 4 of October (1815) the fatherland in retreat left Palca (Independencia) and occupied a point above Santa Rosa, which is on the road that goes to Cochabamba. The enemy entered there and the following day stayed in the village of Palca" (p. 59).

"In Santa Rosa the Commander (of the royalist troops) became very discouraged in that they could not continue forward because the route toward Palca was very dangerous" (p. 175).

"The leader of the expedition, Brigadier Aguilera, led 800 men to Ayopaya. On the night of 5 November 1821 they stopped in Santa Rosa. Three hundred Indians and fifteen armed men prevented

the royalist troops from sleeping that night, and they stole nine horses. The next day they carried on to Palca, followed and harrassed by one thousand Indians ("la indiada") who constantly molested the government troops day and night" (p.313). (Extracts from Santos Vargas 1982).

3. The rise of broad-based, popular movements has its roots in regional inequalities and uneven development as well as in the sense of individual identity that regional societies possess. Regional movements have played a significant role in the structure of power in Bolivia, according to Calderón and Laserna, and they cite agro-industry in Santa Cruz, livestock in the Beni, mining and industrialization in Oruro and La Paz as activities whose interests have been represented by new social forces. These are somewhat different, however, from the democratic and popular regional struggles represented by the Civic Committees which have emerged during the 1980s. Thus, the rise of regionalism and regional struggles may temporarily disguise class conflict, but ultimately creates tension between two different sets of logic: that which seeks an authoritarian and repressive development of dependent capitalism, and that which struggles for an independent and democratic alternative (Calderón and Laserna 1983).

4. Work on production zones in the Cochabamba region was conducted as part of a SSRC-financed comparative research project directed by Norman Long and Jorge Dandler. The present study was affiliated, during the period of fieldwork, with this project. As a result I was able to visit many of the fieldwork locations in each of the production zones in which colleagues were working, as well as discuss with them our respective findings. Unfortunately, the results of this project have not yet been published. Besides the original proposal and Final Report to SSRC, a mimeographed document for limited circulation was produced by the team working in the Cochabamba region (Dandler, Anderson, León, Sage and Torrico 1982). It is drawing upon this document and from personal observation that the following descriptions of production zones are based.

5. The most important events were the "Ch'ampa Guerra", an armed civil conflict between the neighbouring settlements of Cliza and Ucureña which broke out in 1959 over control of the regional peasant movement; and the "Massacre of the Valley" early in 1974 when troops fired upon peasants blockading the main Cochabamba - Santa Cruz highway who were protesting against an economic package designed to cut living standards. According to the Justice and Peace Commission this second incident resulted in some 70 or 80 dead and disappeared. For an analysis of the reasons behind, rather than an account of, the "Ch'ampa Guerra" see Dandler 1984. For details of the "Massacre of the Valley"

see Comision Justicia y Paz (1974), Laneuville (1980), Lavaud (1984).

6. One important Morochata resident, Lucho Coca, who engages in many of these activities is discussed in Chapter Six, where further general details of such mechanisms of control are addressed.

7. On my return to Santa Rosa in 1985, in the midst of a national economic crisis and a rate of inflation that exceeded 8,000 per cent over the year (Dunkerley and Morales 1986, LAB 1987), I discovered that the co-operative had closed and the other two part-time shops had barely any goods to offer. All three enterprises had become severely decapitalized as a result of inflation, but also the difficulties of transporting goods from Lachiraya had earlier reduced the range of products brought in to Santa Rosa.

8. Juan Caballero (see Chapter Eight) receives a small honorarium from the Departmental office of the National Electricity Company to record and report monthly rainfall figures. However, he attends intermittently to the container collecting rainwater; when there is collected rainwater in the vessel, it is measured using a standard wooden school rule upon which the scale is barely visible. This is simply placed on its end into the water and some estimate of quantity is made. The level which is then recorded includes the half centimetre of protective edging on the rule as well as its displacement of the liquid due to density. Thus, the aggregated rainfall for the year from December 1980 to November 1981 of 1,025mm, which is the summation of the readings made by Juan, is not a sufficiently accurate estimation of actual precipitation which fell in Santa Rosa over this period. Unfortunately, rainfall data collected in Morochata are of equally dubious accuracy. From August 1981 to July 1982 a total of 273.5mm of rainfall was recorded by another individual whose method of measurement suggests it may underestimate the true level of precipitation. Sheriff (1979), author of a climatic map of the Bolivian Andean region, presents in diagramatic form the monthly rainfall pattern for Morochata on the basis of data gathered from a number of secondary sources. By summing the sectors representing each month and converting according to the scale provided on the map, an average annual rainfall figure of 780mm is derived. This seems to fall into the range suggested by both life zones discussed in the text. It also accords with my own personal observations both in the Morochata zone and in comparison to other areas of Bolivia for which rainfall data are more reliable.

CHAPTER THREE

Agrarian Reform: Nation and Region

I. The Background to Revolution

The Chaco War with Paraguay (1932-35) is generally taken by scholars of Bolivia to be a turning point in the country's historical development. Ostensibly a conflict over oil resources, the consequences of the war were far more important than its causes. National humiliation at the defeat inflicted by the Paraguayan army triggered a wide spread recognition of the country's reactionary social and political structures; from the young officer class - members of the "Chaco generation" - who seized power in 1936 and participated in the reformist military governments of Toro and Busch, to the peasants who survived the experience as cannon fodder, which resulted in the deaths of thousands from the highlands in the burning wastes of the Chaco. Though the country remained an underdeveloped, mining enclave economy, with over two-thirds of the economically active population engaged in agriculture, the War had created a society with a high degree of social and political mobilization (Dunkerley 1984, Klein 1982, Malloy 1971).

Within the country as a whole, rural organization proceeded most rapidly in the Upper Cochabamba Valley around Cliza where service-tenants formed an agricultural union and, with the help of urban professional people, purchased lands from the estate in order to become independent smallholders. This was followed by the founding of a village school in Ucureña (See Dandler 1967, 1969, 1971). The greatest degree of political mobilization in the country, however, occurred amongst organized labour, led by the miners union, and other popular sectors which began to rally to the ranks of the MNR (Movimiento Nacionalista Revolucionario).

Social mobilization in the countryside was stimulated by the 1945 Indian Congress at which President Villarroel issued a number of decrees prohibiting servile duties and limiting other exactions on the labour of service-tenants. These decrees were largely ignored by landowners who quickly reasserted their control following the brutal overthrow of Villarroel the following year. However the period continued to be marked by forms of peasant resistance, such as sit down strikes ("huelgas de brazos caídos") and complaints to the authorities about the abuses perpetrated by landlords (Antezana and Romero 1973; Dandler 1971). A case study of such mobilization leading to a localised rural rebellion is presented in Chapter Four. Though this rural "unrest" was generally politically unaligned, it nevertheless reinforced the sense of political polarisation within the country and contributed to the convergence of revolutionary forces that was to overthrow the mining and landed oligarchy (the "Rosca").

The seizing of power in April 1952 by the MNR represents one of the great popular insurrections in Latin American history. It has been described in detail and need not detain us here beyond noting that most authors on the subject suggest that peasant participation in the insurrection was minimal (1). However, the consequence of the National Revolution was decisively and irreversibly to transform the oligarchical nature of Bolivian society previously run by the Rosca, a handful of tin barons more closely tied to the world than to the domestic economy. The post-revolutionary state ushered in fundamental social and economic reforms and began to play a leading role in production and investment, gaining direct access to the country's principal source of revenue as a result of nationalization of much of the mining sector (Eckstein 1985; Dunkerley 1984). Bolivia had one of the least developed and least diversified economies in Latin America, with a manufacturing sector of little significance. Mining generated the majority of the country's wealth and foreign

exchange yet, being so outwardly oriented, it stimulated little capital accumulation within the country. One of the major objectives of the new regime, then, was to alter this situation by embarking upon a process of economic diversification.

The immediate consequences of the National Revolution for the peasantry, however, were to create a single unified society by establishing universal suffrage, through the elimination of literacy requirements, and to introduce, the following year, an Agrarian Reform Decree. The nature and impact of the Reform is described below, but here it is useful to provide a brief profile of the state of Bolivian agriculture in 1952.

According to Klein, drawing upon the 1950 census data, 72 per cent of the economically active population were engaged in agriculture and related activities but produced only 33 per cent of the gross national product. The six per cent of landowners who owned 1,000 hectares or more controlled 92 per cent of all cultivated land in the country, but on estates of this size only an average of 1.5 per cent of the land was actually under cultivation. Meanwhile the sixty per cent of farmers who owned five hectares or less occupied just 0.2 per cent of land. Given such a distorted landholding structure, it is perhaps not surprising to learn that the agricultural sector was so unproductive that food imports accounted for almost 20 per cent of total imports in 1950-52, with a good proportion comprising traditional staples such as Andean root crops (Klein 1982:228-229; Dandler et al. 1985).

II. The Struggle for Reform

Though the peasantry did not play a large role in the insurrection of April 1952, their growing involvement in the process of social transformation that began to unfold after the seizure of power ensured the introduction of legislation involving the agrarian sector. It has been noted by observers of the period that the MNR leadership had an ambivalent attitude toward agrarian reform (Kohl 1978; Eckstein 1983). Beyond its use as a rhetorical device, the concept of reform was not seriously considered by the Party either before or immediately after the April insurrection. This is less surprising if one considers the class composition and political orientation of the party, a large section of which was concerned not to endanger the essential basis of property relations in the countryside (Dunkerley 1984).

The National Revolution, however, did not only provide, in top-down fashion, a bundle of new rights to the formerly disenfranchised peasantry, but unleashed a process of political mobilisation in the countryside. Hence the need to make a careful distinction between the insurrectionary seizure of power and the revolutionary process of social change, for the peasantry were very much more active participants in the latter. Indeed, their involvement was critical to the consolidation and legitimation of the new regime (Eckstein 1979). Political mobilisation within the countryside was, however, somewhat uneven, and centred on the Cochabamba Valleys, around the shores of Lake Titicaca and in parts of the Altiplano in the Departments of Oruro and Potosí. Elsewhere, peasants continued to work on their plots, often even fulfilling the time honoured traditions of contributing their labour as payment for usufruct rights, while the newly-established Ministry of Peasant Affairs considered the possibilities for change (Healy 1984; Kohl 1978).

Increasing rural unrest and class violence, however, forced the government to move more quickly on the issue than it might have wished. In the areas mentioned above peasants quickly set about establishing sindicatos (unions), preparing claims for expropriation and, in some cases, executing their own reform through the seizure of land and property. Examples of confrontations between peasants and landowners can be readily located in Kohl (1978), Dunkerley (1984), Pearse (1975) and Dandler (1969). The most comprehensive catalogue of incidents, however, can be found in the less accessible report prepared by Antezana and Romero (1973). They document in minute detail the mobilization of peasants and the formation of sindicatos around the country following the insurrection, as well as the fearful response by provincial authorities, vecinos de pueblo (residents of small rural towns) and landlords who were all agreed that mobilization was the work of communist agitators. While militants aligned with the Partido Obrero Revolucionario (POR, the Revolutionary Worker's Party) and other less influential leftist parties were active in struggling to win control of the leadership of the peasant movement, especially in the areas of high mobilization such as the Cochabamba Valleys and the northern Altiplano, their impact was extremely localised. Nevertheless, the MNR had difficulty in keeping peasant activity in check and was especially concerned that agricultural production should be maintained (Antezana and Romero 1973):

It is important to stress, however, that though violence did occasionally lead to loss of life and certainly loss of property, often through seizure rather than destruction, this was by no means generalized throughout the country. In the Cochabamba Valleys landlords were in many cases forced to retreat to their urban residences as the peasantry understandably vented the accumulated spleen of centuries of oppression through organized invasions of land and seizure of property. As Antezana and Romero recount regarding the period leading up to the promulgation of the Agrarian Reform:

"In this period, the campesinos passed through the stage of seizing lands and occupying the haciendas, to the stage of attacking and occupying the small provincial towns, owing to the fact that the majority of the vecinos were opposed with almost the same intensity as the landlords to changes in the dominant relations of production in the countryside. The vecinos had common cause with the landlords because they believed that with the lands in the hands of the campesinos, they would soon be equal in social status, income and standard of living, removing their dominant position in relation to the latter (Antezana and Romero 1973: 264).

These authors identify four categories of conflict that developed in the countryside following the 1952 insurrection: those between campesinos and landlords; between campesinos themselves; between vecinos and campesinos; and, finally, between campesinos and the Government. These arose in the course of the struggle for control of the regional campesino movements, with the state providing all possible support to those leaders affiliated to the MNR. Those who did not follow the instructions issued by the Government were accused of being "agitators", "traitors" and "communists". One event which illustrates this occurred in Tiquipaya, down valley from Santa Rosa. According to Antezana and Romero, drawing upon newspaper reports dated late August 1953, the peasant leader Sabino Mallcu,

"of 'communist' affiliation, mobilised the campesinos of the region, who were quietly gathering in the harvests, provoking serious incidents, leading a considerable number of Indians, armed with rifles, shotguns, axes and knives, obliging the agricultural workers to terminate their work. The Government ordered the departure of a commission composed of troops in civilian dress. This commission was received by shots from firearms by the followers of Sabino Mallcu. There resulted various deaths, among them Sabino Mallcu, the municipal inspector of Independencia and a rural school teacher (Antezana and Romero 1973: 291-292).

Some authors have placed emphasis upon such events as a generalised explanatory variable for the introduction of reform and its immediate aftermath:

"The effective impetus for agrarian reform came in 1952, however, as diverse and uncoordinated groups of campesinos seized estates, slaughtered livestock, destroyed equipment, evicted owners, ...In numerous cases, capital was consumed or destroyed by peasants after they had evicted their former landlords. The amount of produce actually marketed was also affected as the campesinos gained control over the produce." (Wennergren and Whitaker 1975:40).

The rather sensationalist views of these two agricultural economists in general contrast with the observations and accounts of the period from other authors (Pearse 1975; Kohl 1978; Carter 1971; Clark 1969). While there were undoubtedly occasional excesses of violence and intimidation and while many landlords did lose capital and property, they did not relinquish their status without a fight. Organised in Rural Societies and Federations, they unleashed a propaganda offensive in the urban newspapers; moreover many of the landed elite swelled the ranks of the Bolivian Socialist Falange which made numerous coup attempts against the MNR during the course of the Revolution (Kohl 1978; Dunkerley 1984).

Nevertheless, with a politically insurgent peasantry seizing the initiative in many important rural areas of the country, the government was forced to head off the challenge to the sanctity of property and capitalist social relations in the countryside. On August 2, 1953 before a crowd of 100,000 peasants gathered in the village of Ucureña, near Cochabamba, where some 15 years or so before the first rural sindicato had been formed, President Victor Paz Estenssoro declared the Decree of Agrarian Reform.

III. The Law: Rhetoric and Reality

Drawing upon discussion in Urquidí (1966), Carter (1971) and Heath, Erasmus and Buechler (1969) it is possible to identify six fundamental objectives contained in the Reform.

1) The re-allocation of land

Under the general populist slogan, "The land belongs to he who works it", the Reform aimed to distribute parcels of land to peasants with little or none, providing they worked it, expropriating for this purpose "latifundio" or other land not worked personally by landowners. The categorisation of properties is discussed below.

2) The promotion of the comunidad

To restore to corporate Indian communities lands that were usurped from them, and to cooperate in the modernization of their agriculture while respecting and building upon their collectivist traditions.

3) The abolition of servile duties

Possibly the most successful of the objectives, it aimed to free rural labourers from their conditions as serfs, proscribing gratuitous personal services (e.g. pongueaje and mitanaje) and other obligations. It thus effectively restored the decrees of the Villarroel regime of 1945. In other words the Reform was ensuring in law the development of a capitalist wage-labour system to replace quasi-feudal practices.

4) To stimulate agricultural productivity

Recognising the seriously archaic and stagnant state of the agricultural sector, the Reform aimed to encourage greater levels of productivity and commercialization of produce. This was to be facilitated through capital investment, encouraging co-operativism, providing technical aid and credit facilities. But the low levels of productivity evident today in most sectors of Bolivian

agriculture attest to the lack of encouragement and resources directed towards cooperatives etc.

5) Conservation of natural resources

It is to the credit of the Reform Law that, though drawn up over thirty years ago, it included a basic objective dedicated to environmental conservation, even if this was phrased in terms of the adoption of modern technical and scientific means. However, serious ecological degradation is now widespread and has been exacerbated by the inappropriate use of agricultural technology and there is, ironically, limited official recognition of the problem.

6) The promotion of internal migration

The marked imbalance in the distribution of population at the time of the Reform provided the rationale for a policy designed to encourage the migration of rural people from the Altiplano to the lowlands. There were undoubtedly strong geopolitical and commercial as well as demographic reasons behind the policy of agricultural colonization, but the outcome, especially for the Santa Cruz region, has favoured large-scale agrarian capitalism rather than peasant production.

Ultimately, the objectives of the Reform were to liberate the productive forces and sweep away the vestiges of pre-capitalist social relations that confined the rural population, land and other means of production to low levels of development. By removing the main obstacle to growth, the hacienda and its associated privileges and oppressive social structure, production was expected to increase and the domestic market to expand. However, there was some ambiguity in the identification of those units of production that were to replace the hacienda. Despite the rhetoric little material support was provided to encourage the formation of co-operative or collective units or to assist those established on expropriated land.

The Reform was predicated upon a constitutional foundation that recognised the inviolable nature and social function of private property, and which sought to encourage the ideology of ownership through the consolidation of land and dissemination of property titles. Consequently several types of agrarian property were recognised under the Reform; only the latifundio was deemed unacceptable and subject to full or partial expropriation. The types of agrarian property permitted by the Reform were the peasant smallholding, the small estate, the medium-sized estate, the agricultural enterprise, the indigenous community, and the co-operative (Urquidí 1966). The ceilings, or upper size limits, of landholdings corresponding to each type of property varied according to local conditions, with the Reform recognising a multitude of ecological zones within each major geographical region (see Table 3.1). However, the effective flexibility in the categorisation of property provided the first loopholes through which landowners were often able to escape the consequences of reform.

For example, though classification as a "latifundio" was to generally involve either outright or partial expropriation, this only occurred in a small minority of properties - some 13 per cent of the 11,246 cases considered up to 1970 (de Janvry 1981). Where judgements were favourable to the peasantry (involving expropriation) this reflected the high degree of mobilisation and local political power exercised by peasant syndicates rather than the unambiguous nature of the Reform. For the manner by which the legislation was implemented reflected the balance of class forces in any particular area. For some localities in the Cochabamba Valleys or on the Altiplano, the Reform effectively legalised the de facto seizure and redistribution of land made by peasant syndicates. In the south of the country, however, the Reform made little headway against the monopoly of power held by the landowning elite.

Table 3.1: Landholding Ceilings According to Region
(hectares)

(Range determined by local conditions and crops)

	Altiplano	Valleys	Oriente
Small Property	10-35	3-40	10-80
Medium-Size Property	80-350	24-200	180-600
Agricultural Enterprise	400-800	80-500	400-2,000

Source: de Janvry (1981); Heath (1959); Urquidí (1966)

In his study of two provinces in Southern Chuquisaca, Healy (1984) illustrates the feeble impact of the Reform when faced by a strong and well organised campaign of "counterreform" conducted by local landowners. In 1975, over twenty years after the legislation had been decreed, Healy reports that only 865 out of perhaps 6,000 eligible families in the area had received titles to land. This represents less than 14 per cent of the former combined arrendero and arrimante population who had worked usufruct land upon the estates, and less than 12 per cent of the total potentially eligible under the laws. The eligible population would legally have included the Chiriguano agricultural labourers previously without access to land. Healy attributes the failure of the national agrarian reform movement to its essentially reformist nature, the absence of political leadership and ineffective peasant mobilization which excluded the most exploited group, the Chiriguanos, from syndicate membership (Healy 1984, 1981).

At the same time landowners in Southern Chuquisaca were able to conduct a campaign of "counterreform" which, at a political level, involved seizing, or co-opting, key leadership positions within the MNR and peasant syndicate organisations. The implementation of the Reform was then disrupted using a range of tactics which Healy lists in detail, but amongst the most important were: bribery; under-reporting the size of arable landholdings; over-reporting the number of cattle to gain exemptions; the division of the title for large properties among family members; non-recognition of eligible claims and legitimate rights to land, and so on (Healy 1984; 1981).

The post-reform agrarian structure of Southern Chuquisaca today, then, represents the triumph of "counter-reform" pursued by the landowning elite. Healy reveals that the fifteen wealthiest families in the region own 32 per cent of the land, 40 per cent of the cattle, 33 per cent of citrus trees and control 66 per cent of the Chiriguano labour force held in debt-peonage (1984; 1981). While this represents an extreme illustration of the failure of the Reform to restructure class relations in the countryside, it is by no means exceptional. In those parts of the country where peasant organisation was poorly developed, such as in the Southern Valleys region, the old elite returned to their properties to re-establish control, not only over their old lands but also over labour, re-imposing obligations upon the local peasantry (Clark 1969).

Throughout much of the country landowners were able to extend and diversify their influence into intermediary functions and thus regulate the production and competition of peasant households (Clark 1968). Where peasant syndicates had established a more vigorous form with a leadership closely linked to the party, then a more rapid and effective resolution of demands was forthcoming, such as in the Cochabamba Valleys and the Northern Altiplano, where the old elite were effectively expelled from the countryside (Clark 1969).

Thus, there have been two critical factors related to the Reform, which have determined the relative "success" of attempts to restructure social relations of production in the countryside. The first, then, concerns the level of political mobilisation amongst peasant groups and their ability to enforce a comprehensive implementation of the legislation soon after its appearance on the statute book. The second factor involves the attitude of the state itself and the position on agrarian reform proved extremely flexible over the course of successive governments. Although lipservice continued to be paid to the populist interests and objectives of the Revolution and the benefits of the Reform, policy was subject to different interpretations. Eckstein observes, for example, that the government was less systematic and slower to implement reform in those regions more distant from the national market and political stage, as well as during periods of international financial negotiations (Eckstein 1979). Defining "success" in other terms, however, the Reform was very widely followed by an increase in capitalist wage relations. On medium and large farms, this facilitated the raising of production through increased labour specialisation.

Table 3.2 indicates the distribution of titles by government over the period 1955 to 1974. Note that under the presidency of Hernan Siles Zuazo (1956-60), who occupied a left of centre position within the MNR, the lowest percentage of titles and land over the twenty year period was distributed. This was at a time when the economic stabilization programme of the International Monetary Fund and the United States was being put into practice (Albó 1979; Eckstein 1979). Although it was under the dictatorship of General Hugo Banzer Suarez (1971-78) that the greatest proportion of land was distributed, the figures also indicate a distinct increase in the size of areas covered by titles, and reflects the consolidation of ranches in the eastern lowlands.

Table 3.2: Land Title Distribution by Government 1955-74

Period	Government	% Titles	% Land	Mean area per title (Has)
1955-59	MNR	9.8	4.9	19.1
1960-64	MNR	39.9	27.6	26.4
1965-69	Barrientos*	14.8	21.1	54.3
1970-71	Ovando-Torres*	17.7	14.9	32.2
1972-74	Banzer*	17.8	31.5	67.6
	% Total	100.0	100.0	

* represents military regimes

Source: Albó 1979:42

Perhaps the most important characteristic of the Reform, however, was its effective consolidation of the pattern of de facto landholding that existed before the Revolution. In general, peasant households received titles to their usufruct plots while landowners were given the right to retain the demesne parts of their old estate (Pearse 1975, Clark 1969). Consequently, the Reform served to institutionalise differential access to land, where different types of tenants, as well as households at different stages of their lifecycle, received titles to highly unequal amounts of land (Eckstein 1979). This process will be illustrated with reference to the implementation of the Reform in Santa Rosa in Chapter Four.

According to Eckstein (1979) the government recognised this inequality but did nothing to ameliorate its effects. This was in order to gain the support of the rich peasants who might have done most to undermine the legitimacy of the new regime should there have been a strong egalitarian tendency towards establishing a lower landholding threshold. However, as we have seen, not only was there to be no attempt to equalise access to land amongst peasant beneficiaries but, with the exception of latifundistas and those landowners subject to peasant harassment, there was a clear policy favouring the consolidation of part of the estate in the hands of ex-hacendados. One argument that has been put forward to rationalise this policy was a widespread fear amongst urban sectors that the peasantry were not capable of fulfilling the food needs of the domestic market. We return to this in a moment.

The critical question that must be posed, once it is clear that the Reform simply consolidated the de facto pattern of land holding and effectively institutionalised minifundismo, is what attention was given to the longer-term viability of smallholder agriculture and peasant livelihood? Clearly the MNR gained much popular support from its elimination of rent obligations and in creating a "class" of small property owners. Yet it did little more to stimulate agricultural productivity, providing limited financial and technical support (as we shall see) and made little effort to encourage the development of new social relations based upon new agrarian institutions such as the co-operative or the collective. The romantic notion that a communitarian spirit naturally existed amongst the peasants and was a sufficient pre-condition for establishing co-operativism, without any effort at educational extension or technical and administrative support, ensured the eventual failure of local attempts to establish co-operative units of production (Albó 1979, Kay 1982). In fact the forces unleashed by the Reform were working in quite the opposite direction, individualising and fragmenting production under the process of commoditization.

A more realistic reflection of the thinking behind the Reform is provided by the consolidation of a new class of ex-landowners and rich peasants which would act as the focus of technical innovation and source of employment in the countryside. Through this sector the state may have placed great hopes for improving productivity and maintaining the flow of food to the cities. Yet while this elite were establishing economic control in the countryside, supported by the use of social and political mechanisms, how were the descendants of the ex-colono generation to reproduce themselves ?

Though there were nominally clauses against the subdivision of property provided under the Reform, they could not prevent inheritance patterns, functioning as part of a set of cultural norms, from contributing to the fragmentation of the land base. According to Dandler (1984), after ten years of reform, 87 per cent of households who had received titles to land owned less than five hectares, with almost 9 per cent having less than one hectare. By 1975, 21.7 per cent of households in the Altiplano and valleys had less than one hectare and 61 per cent between one and five hectares (Dandler 1984).

However, these overall figures, though dramatic, disguise considerable variation in access to, and quality of, land within as well as between regions. In areas of high population density, such as in the Cochabamba Valleys, the pressure upon rural land has pushed prices to levels found in central urban locations. According to data gathered by the Misicuni Project, 69 per cent of households in the Cochabamba Valleys have less than one hectare and 88 per cent do not own more than 2 hectares (cited in CORDECO 1980). This fragmentation of land in the traditional areas of high population density was ultimately associated with stimulating migration towards the Oriente, one of the six principal objectives of the Agrarian Reform.

IV. The Rise of the Eastern Lowlands

Although the Agrarian Reform, as a policy tool designed to restructure landholding and the social relations of production, was primarily aimed at property in the Altiplano and Valleys regions, it was ultimately the Oriente which came to benefit most in expanding output and economic growth (Torrico 1982). This was because first, the MNR, then its successor regimes in particular, sought to develop large-scale commercial agriculture as part of a process of economic diversification, and to substitute for imported food stuffs while meeting expanding domestic demand. Substantial resources were provided by the Point IV programme of the United States government, the precursor to USAID, to finance rapid infrastructural development. The period between 1952 and 1958 saw the completion of the first paved highway between Cochabamba and Santa Cruz; the execution of a paved network of roads in and around the city of Santa Cruz; the construction of the railway network linking Santa Cruz with both the Brazilian and Argentinian borders, besides electrification, public works, an agricultural experimental station and funds to support a large agricultural credit scheme (Prudencio 1985; Gill 1987).

The first commodity to "take-off" in the Santa Cruz region was sugar-cane. The early and mid-1950s saw the opening of a number of independent sugar mills and these encouraged an expansion in the land area planted to cane; from 5,800 hectares in 1958 to 24,600 hectares in 1964 when over 93,000 tons of sugar was produced, up from 161 tons in 1946 (Stearman 1985). With the expansion of commercial agriculture growing numbers of migrant labourers were attracted from the highlands and valleys; by 1973 up to 50,000 workers were required for the May - June cotton harvest, while in the mid-1970s 60,000 cane cutters and other personnel were employed during the June to October sugar harvest (Gill 1987). Labourers generally entered the lowland region for periods of less than six months coinciding with the slack season in the agricultural cycle

of their home areas. However, many stayed on, perhaps initially moving from one estate to another in a succession of short-term contracts before settling upon land on the agricultural frontier to farm for themselves.

It was estimated that up to 1973 over 50,000 families had migrated from the highlands in order to establish themselves in 543 separate colonies in twelve different regions of lowland Bolivia (Zeballos Hurtado 1975). While some of these colonies were state directed or semi-directed schemes, the majority represent spontaneous settlements for which the state may have subsequently provided property titles. State-directed colonization schemes were popular in the 1950s and early 1960s but were gradually abandoned due to the extremely high cost of settlement (sometimes in excess of US\$ 2,000 per family) and their high rate of attrition amongst colonists. For example, in 1963 the Inter-American Development Bank financed a programme to settle eight to ten thousand families over a ten year period in three lowland areas (Yapacaní, Alto Beni, and Chimoré). By 1969 expenditure had reached US\$ 9.1 million with only 4,984 families relocated, while abandonment rates averaged over fifty per cent for the Alto Beni and 33 per cent for Yapacaní, though in one year ninety per cent of colonists departed the latter (Henkel 1982; Stearman 1985).

Given this experience, the state turned to semi-directed programmes where access roads, land delimitation, credit and technical advice were provided but colonists were expected to provide adequate resources to see themselves through to their first harvest. Schemes such as San Julian and Chané-Pirai in the colonization crescent of northern Santa Cruz are examples of semi-directed programmes. There are also, in the same region, colonies of foreign settlers, mainly Japanese, Okinawans and Mennonites, who have established highly productive farming systems (Stearman 1985). However, it is spontaneous settlement by families from the Altiplano and Valleys which represent the largest single category of colonists. Three

main areas of colonization have received the majority of rural migrants. These are the Alto-Beni region, the Chapare, and northern Santa Cruz. Each area has developed its own individual character based upon local physical geography, soil capability and agricultural potential, and the social characteristics of its colonists.

In the Alto-Beni region, for example, which lies some 200 kilometres northeast of La Paz, the majority of the colonists originate from communities on the Altiplano with which they have maintained strong ties. Besides the usual small-farm crops of rice, bananas and citrus, the region also produces significant quantities of coffee and cacao (Henkel 1982). The Chapare region, as previously mentioned in Chapter Two, lies to the northeast of the city of Cochabamba and the majority of its colonists are from within the Cochabamba region. It is in this area that the expansion of coca leaf production has been most dramatic, and in recent years this has led to a declining output of many of the "traditional" food crops (Tullis 1987). There is a high degree of mobility between the central Cochabamba valleys and the Chapare, with many temporary labourers attracted to work in the coca processing pits (Healy 1986, Sage 1989). Finally, in the Santa Cruz region, most of the colonization has occurred in an arc stretching from Yapacaní in the northwest to San Julian to the northeast of the city of Santa Cruz. Rice has been the main crop sown by colonists but it has been observed that after generally high yields in the first two years weed infestation overpowers the efforts of household labour to sustain production. This has been described as the "barbecho crisis" (Maxwell 1981). As a result, many colonists have surrendered their lands and migrated to the towns, while others have continued with subsistence-level cultivation supplemented by wage employment on the large capitalist estates in the vicinity. This has led to the emergence of an impoverished wage-earning peasantry which maintains a flexible relationship between subsistence agriculture and wage labour (Gill 1987).

While the Agrarian Reform set in motion a process of labour migration to the frontier, it also served to directly stimulate the development of agrarian capitalism in the eastern lowlands (Eckstein 1983). Generous land grants, averaging 8,000 hectares by the late 1960s, increased sharply in size under the regime of Hugo Banzer (to as much as 50,000 hectares), encouraging the relocation of a commercial bourgeoisie which included members of the pre-revolutionary oligarchy and ex-hacendados (Eckstein 1983, Gill 1987). From the late 1960s the Santa Cruz region experienced an economic boom based, on the one hand, on the exploitation of its hydro-carbon deposits (first as petroleum then later natural gas), and on the other by the expansion of the agro-industrial sector (Ladman 1982). Temporarily high world commodity prices in the early 1970s encouraged a massive expansion in the area under sugar cane, cotton and soya beans. Cotton, for example, experienced more than a five-fold increase in production during the period 1970 to 1974, while output of soya grew by more than ten-times between 1970 and 1976 (Dandler et al. 1985). This dramatic increase was heavily financed by the state through low interest, long-term credit programmes administered by its principal agency the Banco Agrícola de Bolivia (BAB).

Susan Eckstein (1983) conducts an incisive analysis of the lending policies of the BAB and demonstrates the highly inequitable distribution of credit that has favoured the large producers of the lowlands. The 1977 Musgrave Mission, which conducted a study of fiscal reform in Bolivia, also noted the skewed distribution and commented:

"credit has been and continues to be strongly concentrated in the large agricultural enterprises, dedicating a high proportion to livestock, cotton and sugar. During the period 1964-1971, individual peasants only received 3.5% of new loans provided by the BAB, which is the principal source of credit formally dedicated to the sector, given that virtually nothing was received from the private banks. Perhaps one tenth of one per cent of the small producers received loans." (Musgrave 1977, I:353 quoted in Dandler 1984: 124, 126)

Between 1970 and 1975 89 per cent of total agricultural credit was directed to the Oriente; yet over the period 1960 to 1976 a mere 0.8 per cent of credit within the region reached the small producers while over 50 per cent was grabbed by livestock operations and a further 28 per cent by co-operatives comprising medium sized operators (Dandler 1984). The generosity of the state towards agro-industry is best illustrated by the handouts of the Banzer regime to the cotton producers. Between 1971 and 1975 the BAB provided credit of US\$ 59.2 million to the cotton producers association, ADEPA, in order to take advantage of rising world prices for cotton. Of this credit US\$ 40 million remains outstanding and has been written-off by the state (Dandler et al. 1985; Ladman 1982; Bascope 1982). It was the delinquency on the repayment of loans by the large producers that eventually led to the BAB declaring its bankruptcy in 1979 (Eckstein 1983).

In concluding this section, then, we can repeat Eckstein's observations regarding the shifting policy emphasis of post-1952 regimes towards the large agrarian capitalist sector at the expense of the class which contributed to the success of the National Revolution. As she observes,

"..while no post-1952 government has compelled peasants to give up the land they won by revolution, regimes increasingly have used state financial resources to help a group of nascent capitalists strengthen themselves as a class. Since peasants were never as concerned with financing as with landownership, and since their political influence diminished as state credit resources expanded, the state has been even freer in its allocation of capital than in its allocation of land to ignore the rural masses." (Eckstein 1983: 114)

V. The Consequences: Food and Markets

The provisioning of the domestic market in the years directly following the Reform illustrates a rapid structural adjustment to the new circumstances of production and distribution. Enemies of the regime were quick to seize upon shortfalls in food availability in major urban centres, blaming the collapse of the hacienda system which had served them so well. Yet as Clark rightly points out, the temporary effects on agricultural production were a secondary consideration and the necessary cost of creating a new agricultural system (Clark 1968). In breaking the power of the landowners there was a certain level of turmoil in the countryside and demesne lands were sometimes left idle for varying periods. But overall the peasantry quickly resumed its agricultural activities and, unfettered by labour rent obligations, were soon able to achieve higher levels of productivity on their plots. Problems of production occurred as a result of climatic difficulties: Clark (1968) reports that during the years 1956 to 1958 there was less rainfall. But whatever shortfalls in food availability that did occur in urban centres were largely the result of creating an entirely new marketing and distribution system.

Before we examine the development of new market structures in the post-reform period, however, it is necessary to take stock of wider processes of change directly affecting rural producers after 1953. Much of the preceding discussion in this Chapter has concentrated upon the distribution of land under the Reform. This discussion was obviously vital in order to comprehend the spatial and temporal variations in the implementation of the Reform and to recognise that such regional and local diversity established the conditions for the emergence of different forms and units of production, ranging from self-provisioning peasant communities through households engaged in petty commodity production to agrarian capitalist enterprises employing wage labour. Naturally, the

particular outcome was determined by local circumstances: the size of land allocations, degree of peasant mobilization, access to the market, ecology and the potential for intensification, the availability of labour power (household and/or waged), improved technical inputs and capital etc. However, while fully cognizant of regional and local variations, it is possible to assert that, in general, the Reform institutionalised petty commodity production based upon the individual household unit employing household labour to produce goods for the market. Although the primary concern here is with the consequences for agricultural production, many rural households began to participate in a range of small-scale, income-generating activities, besides the sale of labour power (2).

According to Mendelberg (1985) the Agrarian Reform represented more of a rearrangement of time available to the colono than it did a redistribution of land. This led not only to a more intense exploitation of former usufruct holdings resulting in improved yields, but also provided the opportunity to engage in other income-generating activities such as artisan production, petty trading, seasonal migration and occasional wage labour. As we saw in Chapter Two, in areas such as the Cochabamba Valleys, off-farm earnings are frequently of greater importance than the income derived from sales of agricultural produce. While land continues to be cultivated, there is considerable off-farm mobility, including international migration, and an active involvement in the regional market system. Moreover, the growth of polyvalency and market activity has substantially contributed to the process of urbanization. Although restricted opportunities for securing permanent wage employment has limited the process of proletarianization, urban growth has been accompanied by an expansion of "informal sector" activities. Such spatial mobility and off-farm employment have undoubtedly developed as a result of the nature and process of the Agrarian Reform.

The growth of off-farm employment has not, however, resulted in the decline of food output from the small-farmer sector. On the contrary, production of temperate crops in the valleys and highland regions grew at a rate of 4.4 per cent per year between 1950 and 1974-76. Indeed, in the years immediately following the Agrarian Reform the annual average growth rate was even higher at 6.3 per cent over the period 1950 to 1961 (Ortega 1982). As Ortega observes, these growth rates would be considered high for any type of agriculture; under the conditions prevailing in Bolivia they must be considered even better. This is underlined by the increase of 35 per cent in the size of the rural population over the inter-censal period 1950 to 1976 (Blanes and Flores 1982), which has certainly led to the intensification of land use and a growing specialisation of crop production.

For example, over the period 1950 to 1981 the area planted to potato more than doubled while that under maize increased by a factor of three. Other temperate and cold climate crops, however, either showed less of an expansion, as was the case with wheat which increased its area under cultivation by just 26 per cent over the same period or, as for other cereals and tubers, remained as subsidiary crops occupying considerably smaller areas of land (data from Dandler et al. 1985). Increases in the area under cultivation have not been always been matched by increases in yield, though the use of chemical fertiliser has become widely adopted, especially for potato cultivation (Zuvekas 1977; see also Chapter Five). According to a report quoted by Ortega, the adoption of chemical fertilisers, improved seeds and other inputs by Bolivian small farmers is designed not to increase their level of monetary income, but mainly to compensate for the scarcity of land by raising yields and ensuring subsistence (Ortega 1982, quoting Urioste 1975).

This might be a convincing argument if improved technology was readily provided by the state, but it is not: the promotion and delivery of such inputs is controlled by an active intermediary sector which encourages the incorporation of small producers into the market. Thus, a more accurate characterisation of this process would be formulated, not in terms of subsistence but, on the contrary, as an intensification of commodity exchange with small farmers aiming to increase, not reduce, their levels of monetary income.

This can be simply substantiated, for while increased production has allowed for increased on-farm consumption, bringing about an improvement in the nutritional status of rural producers (Clark 1968), the growth of output has also enabled larger volumes of produce to be marketed than hitherto. Though this issue will be addressed again in Chapter Four, we can briefly refer to figures quoted by Ortega that suggest approximately 75 per cent of the maize crop is now sold as opposed to 10 per cent before the Reform, and that sales of potatoes account for 62 per cent of production compared to negligible quantities hitherto (Ortega 1982).

Prior to the Revolution agricultural produce was transported from the estate to the landowners' urban residence by labour-rent colonos under the system of aljiri or cacha. It was an extremely cheap method of distribution as far as the landowner was concerned, using unremunerated labour power, with consumers visiting the house in order to make their purchases. However, its legacy was evident in most parts of the country, with the notable exception of the Cochabamba Region, in that a weak rural market network generated only a fraction of the national demand for food, with peasants bartering small amounts of surplus for essential items. This two-tier market system was eventually radically restructured as a result of the elimination of the old obligations, though there was naturally a period of adjustment involving both crop losses and food shortages as bottlenecks were overcome (Clark 1968).

The ad hoc process by which the new marketing system emerged has been described by Preston (1969) and repeated by Pearse (1975). Briefly, peasants with produce to sell and merchants in trucks looking for produce to buy begin to meet on a regular basis. A periodic market - or rural fair - is formed, and over time this may become the site of a permanent settlement. The appearance of a number of "new towns" on the post revolutionary rural landscape attests to the general validity of the process as described (Barnes 1970, 1971; Preston 1970). However, an idealised description of the exchange of produce between peasants and merchants in a rural locality provides little information about market dynamics (prices, terms of trade, payments in kind or cash, encouragement towards innovation and so on), the origin and characteristics of the "merchants", and the consequences of market participation by "peasants". In short a preoccupation with the point of exchange fails to address the extraordinarily influential role performed by merchant capital in transforming the Bolivian countryside by encouraging the development of commodity relations amongst rural producers.

The creation of a new rural market structure in the years following the Reform is a subject that has received insufficient and inadequately rigorous attention amongst scholars of agrarian society. The system that has emerged has been welcomed in some circles as representing a much-needed modernization of the countryside, encouraging "peasants" to increase production for the market, leaving merchants with the responsibility to collect and transport this produce to urban centres (cf Slater et al. 1969, Wennergren and Whitaker 1975). However, the appearance of a dynamic and rapidly growing sector of intermediaries in the post-reform years is a phenomenon that requires a more critical approach, though this can only be schematically outlined here.

First, it is necessary to emphasise that the appearance of this intermediary - merchant sector has important social as well as economic dimensions. The rural origins of the majority of this sector, often coming from within the community or zone in which they are operating, serve to strengthen economic ties. Their backgrounds, however, are diverse comprising a range of activities and class locations: independent peasants (piqueros), rich peasants (ex-colonos or arrenderos); small landowners and hacendados; as well as existing shopkeepers and petty traders, many of which can be lumped together under the label vecinos de pueblo, an economically and politically dominant group within provincial towns and villages. However, the appearance of any one or more of these groups will have been determined to a large extent by the socio-economic structure existing at the time of the Reform.

In a study of the Cochabamba Region, Ustariz and Mendoza (1982) discuss some of the features characterising this intermediary sector and attempt to explain its proliferation. It is important to remember that in the case of Cochabamba a sizeable group of small producers functioned independently of the haciendas and already had a high level of participation in the rural marketing system. For Ustariz and Mendoza it is this group, amongst other members of the rural elite, which has dedicated itself to the collection and commercialization of peasant produce, a process they term "rescatismo" (Ustariz and Mendoza 1982). The role of this intermediary sector in general, and the independent truck owner-operators in particular, in stimulating the commoditization process in the Morochata zone will be discussed in Chapter Four. It is necessary here, however, to underline the transformation of the market system in the Cochabamba region since the Agrarian Reform in order to establish the importance of the external economic forces that have influenced the emergence of petty commodity production in the countryside.

The highly integrated network of rural markets in the region supports the operations of a substantial number of intermediaries who perform a variety of different functions according to their point of entry into the marketing system, their level of working capital and their area of circulation. For example transportistas and rescatistas operate most effectively at the farm-gate and the most distant and poorly-developed periodic markets in order to make multiple purchases of small quantities of produce at the lowest prices. In the more developed rural markets and regional centres the mayoristas (wholesalers) purchase in larger volume, either from producers themselves or from rescatistas. Long-distance wholesale merchants will then despatch truck loads of produce to other major urban centres of Bolivia, while other mayoristas break down their crop purchases into smaller units for sale to minoristas. This is the final link in the chain of intermediation, with the minoristas (or comerciantes), who are almost exclusively women, retailing directly to consumers.

This extended chain of intermediation absorbs a considerable amount of labour, as well as working capital. It has been estimated that between three and seven different sets of actors, according to the product, intervene to form a commercial chain between the producers and ultimate consumers of agricultural produce in the Cochabamba region (CORDECO 1980). The pinnacle of the regional market hierarchy is represented by La Cancha, the heart of the city of Cochabamba which contains more than 12,500 market stalls and an unknown number of vendedores ambulantes, unlicensed street hawkers (Calderón and Rivera 1982). Below La Cancha in the market hierarchy are sub-regional centres - Punata, Quillacollo, Sacaba and Aiquile - followed by some 57 local markets displaying different levels of development, growth and transition (Laserna 1984).

The regional market system as a whole displays many of the characteristics that conform to the Dendritic-Mercantile model, a tree-like system of market centres oriented to channelling produce out of rural areas in a form conducive to wholesale trade (Appleby 1976). Carol Smith (1976) describes some of the features of this model: the existence of a primate market centre; a mass of petty market traders ("almost more than market commodities"); despite fierce competition between traders, the system displays unfavourable terms of trade to farmers, with prices determined in the major urban centre; and, finally, the inefficient movement of commodities, especially of rural goods to rural consumers, since all goods must flow through the primate centre.

While it is beyond the boundaries of this thesis to examine the spatial form of the market system in the Cochabamba region, such an analysis contributes to an understanding of the structure and organisation of the commercialization and supply of agricultural products in the post-reform period. It also serves to explain the ways in which patterns of production and consumption have been transformed in rural areas by focussing attention upon the activities of merchant intermediaries. These issues will be discussed in slightly more detail in the context of Santa Rosa in the latter part of Chapter Four. Before that, however, it is necessary to establish the manner by which households in the locality experienced a transformation in their social relations of production in their transition from labour-rent tenants to independent petty commodity producers.

NOTES

1. See Dunkerley (1984) for an excellent and possibly definitive account. Several chapters in Malloy and Thorn (eds.) (1971) provide some detail on the Revolution and its aftermath; that by Carter addressing its impact in the countryside of the northern Altiplano. Kohl (1978) evaluates the part played by peasants in the insurrection of 1952 and concludes that it was negligible. Other works on the National Revolution include Alexander (1958), Malloy (1970), Heath, Erasmus and Buechler (1969) and Klein (1982) amongst others.

2. The chapters in the second half of this thesis describe in detail the form and substance of agricultural and non-agricultural commodity production in Santa Rosa, and so these will not be elaborated further here.

CHAPTER FOUR

Agrarian Transition in Santa Rosa

I. Introduction

Chapter Two traced the historical evolution of the Cochabamba region within the Bolivian space¹ economy, and Chapter Three examined the Agrarian Reform at the national and regional levels. This provides the background for the focus of the thesis: the locality of Santa Rosa. The present chapter will now trace the experience of agrarian transition in Santa Rosa; commencing with the formation and evolution of the hacienda, through the implementation of agrarian reform and finally leading to the process of commoditization in the post-reform period.

The chapter begins by briefly reviewing the history of land tenure and agricultural potential in the Morochata zone (Section II) before focussing specifically upon the history of Hacienda Santa Rosa (Section III). The first part of Section III traces the emergence of Santa Rosa as a discrete estate following a process of sub-division and inheritance of land. It then goes on to describe the social relations of production on the Hacienda, before turning to assess the forms and levels of agricultural production prior to the Agrarian Reform. The degree of differentiation under the hacienda system is one of the important findings of the research. Section IV then provides a brief account of the local rebellion in 1947. Reconstructing the history of the event, through personal accounts and political insights, together with an understanding of the forces and relations of production upon the hacienda, provide us with a picture of Santa Rosa in the years preceding the Agrarian Reform.

Section V examines the immediate impact of reform, first for a number of estates within the zone, documenting a general process of land consolidation in favour of the old elite, and then for Santa Rosa. Here, the concern is to examine the pattern of land distribution to ex-colono households, and the emergence of a market in land soon after the implementation of the Reform. Finally, Section VI describes in some detail how the process of commoditization unfolded in the Morochata zone and how this has been the leading feature of change since the reform.

II. The Hacienda Experience in the Morochata Zone

The formation of agrarian properties began in Ayopaya during the colonial period with the establishment of encomiendas, repúblicas de indios and haciendas, though the serranias also contained many corporate peasant communities (Dandler 1971). The main thrust of hacienda expansion, however, occurred from the 1880s when, early in a period of vigorous economic and political change, the "Laws of ex-vinculacion" (meaning to break links with property) under President Melgarejo put corporate community lands up for sale. According to Klein,

"the period from 1880 to 1930 saw Bolivia's second great epoch of hacienda construction. (...) with fraud and force being as common as simple purchase, ... there was a major expansion of haciendas throughout the highlands and the adjacent sub-puna valleys. (...) Only the marginality of the lands (the Indian communities) still retained and the stagnation of the national economy after the 1930s prevented their complete liquidation" (Klein 1982: 152).

Thus, throughout the serrania peasant communities were deprived of their land as this was purchased, often without their knowledge, by the new elite. In Ayopaya, it is clear that the hacienda expanded rapidly throughout the province from the late nineteenth century, though the scale of disruption on corporate communities has not been established. However, as Dandler also observes, while there

are still corporate communities on isolated and marginal lands in the serranias within the Provinces of Tapacari and Arque, there are none in Ayopaya (Dandler 1971:45).

Nevertheless, though property rights were rapidly established by a newly emerging and avaricious landowning elite, a major constraint to hacienda production in the serrania was its sparse population, a feature noted by many travellers and writers. Alcides D'Orbigny, a French explorer who travelled through Ayopaya, wrote in 1830 of the depopulation and agrarian destruction that he found on passing through the Morochata zone on his way from Independencia to Quillacollo. Though this may have been a consequence of the active role the entire province had played during the struggle for independence (Santos Vargas 1984) which had finished only a few years earlier, D'Orbigny also refers to the sickness and fever of the area (D'Orbigny 1830; quoted in Pereira 1982). According to Pereira the zone was subject to constant epidemics, though he specifies only malaria, which caused people to abandon their homes and led to a significant demographic decline (Pereira 1982: 6).

By the turn of the century, in the midst of the process of hacienda expansion in the area, Blanco was writing in similar terms:

"After Mizque, the province (of Ayopaya) is the ~~most depopulated~~ of the ~~Department~~ and also the most rugged. Its miserable cantones, are distant one from another and the paths of communication between them excessively uneven, in spite of the care that they have in their repair. Its climate in general is cold, but there are also areas which are very warm and unhealthy, such as those along the River Santa Rosa." (Blanco 1901: 172).

The theme of depopulation runs alongside that of potential agricultural production for, unhealthy though they may have been, the ecological conditions within the Morochata Valley (the "River Santa Rosa") were also perceived as offering the opportunity for a bountiful and

diverse range of produce, including tubers, grains, and fruits (Blanco 1901). Urquidí, likewise, lists the variety of produce that the province as a whole is capable of yielding but he stresses the importance of grains, and in particular wheat:

"Ayopaya, as a producer of cereals perhaps has no rival in Bolivia, not because modern agricultural methods have been applied with rigorous technique, much to the contrary, the prodigious yield of the ferocious soil is almost the exclusive work of nature combined with meagre personal effort, within an area that does not reach even 55% of that which could be usefully worked; and thus, notwithstanding this proportionality, (the province of Ayopaya) should be considered the granary of Cochabamba and Oruro." (Urquidí 1954:323 original emphasis).

It should be remembered that Urquidí is describing the situation prior to the National Revolution and the Agrarian Reform, when the hacienda system was at its height and when the earlier population scarcity had been rectified by the arrival of peasants from the Cochabamba Valleys in search of land. While the shortage of labour posed a constraint on the attempts of the serranía haciendas to raise the level of productive forces in agriculture, a further obstacle to commercial orientation and market participation was (and remains) the rugged topography and limited transport infrastructure. Blanco decried its absence, arguing that Ayopaya was one of the provinces most favoured by nature yet its lack of roads made development and material progress impossible (Blanco 1901).

It is worth noting that the Republican state has arguably never played a significant role in the province, beyond the deployment of troops to repress peasant uprisings; this neglect invites comparisons with the policies of the Colonial state in the early nineteenth century (1). Thus the largely tributary role of the Province and the nominal presence of the state have served to legitimate networks of local power exercised by the landowning elite. They, in turn, behaved almost like sixteenth-century encomenderos, content with the returns

from an onerous and often brutal labour-rent system in place of the increased profits that might have derived from productive investment.

Structural improvements in the road system began to appear from the mid-1940s, once some of the more far-sighted landowners began to perceive the commercial opportunities available in the Cochabamba Valley markets. This was, however, linked to the improvement in labour availability on the serrania haciendas with the arrival of peasant families ejected from the estates of the Upper Cochabamba Valley. The conditions which brought about this move to eject families from usufruct land were discussed in Chapter Two, but it will be recalled that a major factor was the increasing competition faced by landlords from independent peasant production. Falling prices forced them to resort to leasing and sharecropping arrangements, to reduce the number of service tenants, and to intensify the labour obligations upon those that remained (Smith 1977, Dorsey 1975a, Pearse 1975). This caused large numbers of peasant families to seek their livelihood elsewhere, for example in the mining centres or in the serrania.

In contrast to the central valleys, there were few opportunities within the serrania beyond that of colonato upon an hacienda. However, the colono household moving into Ayopaya, although entering once more into the bondage of labour service, fulfilling a set of labour obligations in return for access to usufruct land, was generally able to cultivate as much land as it required, which was unlike the restricted plots (pegujales) of the central valley estates. As we shall see, this led to incipient differentiation amongst households which was later institutionalised by the Agrarian Reform.

III. The Hacienda Santa Rosa

III.1 Emergence

Although only very limited archival research was undertaken for the present study, in view of the fascinating but poorly documented history of the Province of Ayopaya, it seemed essential at least to consult records of agrarian property rights. These records do yield a picture of the evolution of hacienda control in the Morochata Valley (2). They suggest that the commercially-oriented landed estate developed with particular dynamism from the late nineteenth century, a time when legal decrees provided the opportunity for rural landownership by a mestizo, and largely urban elite. They tell us about rather distant legal conflicts and ownership transfers rather than events in Santa Rosa, but these illuminate the attitudes of the elite to the locality.

Santa Rosa was once part of a large expanse comprising more than ten thousand hectares stretching from the flanks of the Tunari Range for almost twenty kilometres in a north westerly direction. This extensive tract was acquired by Zoilo Claire in the late nineteenth century under a purchasing agreement with the Convent of Santa Teresa in Cochabamba, which also owned the property of Yayani on the opposite side of the valley and which was leased to the Zabalaga family (Dandler 1971). This purchase is also illustrative of the process of hacienda expansion, for many religious organisations which nominally held land bequeathed to them in the past began to realise increased incomes from assets that were rising in value. Zoilo Claire and his wife Peregrina Quiroga de Claire held formal ownership of this land until the former's death early this century, when it then underwent its first sub-division and was distributed among their three children.

In general in Bolivia, inheritance is of the partible bilateral type with all children, male and female, receiving a share of family property, though in practice land (as well as other goods) is distributed in favour of sons over daughters. This was the case in the distribution of Zoilo and Peregrina Claire's land. Julio Guillermo, the only son, received over 6,000 hectares, including the land that was to become the Hacienda of Santa Rosa. One daughter, Mercedes, received approximately 600 hectares in the area known as Yerbabuenani, while another, Margarita, was given 2,400 hectares around Piusilla. However, Margarita and her husband, Peregrino Taborga, sold the estate of San Isidro (as it was known) to Jose Abujder on 15 May 1936 for 222,000 bolivianos (3). Other transactions in the land records illustrate the increasingly commoditized nature of land at this time besides the fragmentation of property through inheritance and family divisions.

One dispute over Yerbabuenani illustrates the degree to which it was not only land which was at stake, but an entire assemblage of means of production that promised to yield a livelihood with little effort or investment. The land held by Mercedes Claire was split between her two paternally unrelated sons, Gabriel and Jose, as part of a protracted and wider division of property including urban sites and houses. The legal process commenced on December 27, 1938 and was finally completed on 18 November 1941, shortly after the death of Mercedes. Gabriel received some 360 hectares of land in a locality known as Compania Pampa bordering Santa Rosa, while Jose was allocated 240 hectares retaining the name of Yerbabuenani. The legal documents detailing the dispute do not only reveal a considerable animosity between the step-brothers, but illustrate the "package" that accompanied the inheritance of land. One paragraph within the legal file reads:

"The partition is effected with all uses, customs, services and waters that the property possesses in the Rivers Tiuni Mayu and Paccha Mayu, the enjoyment of these waters being by weekly turns, starting Gabriel with the first week and the second Jose and thus successively for all the life" (4)

Ironically, Gabriel Claire Quiroga died before the process of division was complete, and Jose Claire Garcia not long afterwards, thus neither derived any personal advantage from their properties which passed into the hands of their wives and descendants.

The division of the lands held by Julio Guillermo Claire, which amounted to almost ten times the amount received by his sister, occurred during 1943 after his death and does not appear to have triggered any major rivalries between siblings. Julio Guillermo had six children, though two sons, Oscar and Alberto, died before the process of partition had begun. This left two surviving sons, Zoilo and Julio, and two daughters, Lucila and Bertha. The division of the property into discrete estates between the four is shown in Table 4.1. It is worthy of note that, though the smallest of the four estates, Santa Rosa has held the status of canton since 1914 (IGM/INE 1981) and appears in the census of 1900 as a vice-canton (5). The locality, therefore, fulfilled an administrative function since before its appearance as a discrete estate.

Moreover, as Table 4.1 shows, despite its relatively smaller land area, its value, for the purpose of calculating land taxes, was second only to the adjacent estate of Pulperas which was almost twice as large. In July 1945 the Hacienda of Santa Rosa was valued at 700,000 bolivianos or US\$ 16,500, and liable to a tax of 50,000 bolivianos (US\$1,178) per year (6). Thus Santa Rosa emerges as one of the most valuable estates in the zone for its size, a result that must derive from its ecologically diverse and productive resources with abundant irrigation as much as from the number of colonos and level of capital investment.

TABLE 4.1: Partition of the Property of Julio Guillermo Claure

Inheritor	Section	Size (Has)	Value# ('000 Bs)	No. of <u>colonos*</u>
Lucila	Santa Rosa	928	700	65
Bertha	Pulperas	1,633	800	78
Zoilo	Totorani	1,823	500	n.d.
Julio	Tiuruni	1,840	500	57

Values appear in the Declarations Register of Rural Land Tax, Departmental Treasury and were calculated during the course of 1945.

* Number of labour-rent households holding usufruct rights at the time of the implementation of the Agrarian Reform.

Source: Agrarian Reform documents and Departmental Treasury records.

Notwithstanding its apparent value and agricultural potential, the Hacienda of Santa Rosa appears to have generated little interest in its owners, Lucila Claure and her husband Wilfredo Zenteno. The couple apparently lived for about a year on the property but an evident preference for urban life, together with ill-health, led them to lease the estate to Lucila's brother, Julio, and leave for Chile (7). Generally representative of many of the landed elite, the Claure family displayed little entrepreneurial interest in their properties beyond the income generated from rents and produce. Besides Lucila and Wilfredo's absence from the country, the remaining Claure proprietors - including Julio who now had control of Santa Rosa as well as Tiuruni - spent little time in the area, generally visiting their estates once or twice a year.

The Claire properties, comprising the four mentioned above as well as Yerbabuenani, were effectively managed by an administrator, Hugo Vargas, who had full responsibility for all production decisions on the estates. His control was exerted through a hierarchy of assistants: mayordomos, who were small property owners from outside the community, and alcaldes de campo, elected by the colonos themselves though responsible for supervising work, maintaining labour discipline and settling disputes. Clearly this hierarchy of control which dovetailed into a social structure established by the colonos was responsible for maintaining the relative stability of the hacienda as a social unit of production based upon servile and exploited labour. However, the integrity of this structure varied according to social and economic circumstances. In the case of Ayopaya, Dandler notes that,

"...there was considerably more hierarchy and ceremony involved with the Indian position on a serrania hacienda... In this respect, the Indian hacienda hierarchy in the serrania resembled that of the Aymara highlands in Bolivia or Quechua highlands in Peru, where the hacienda took over control of corporate communities, imposed mestizo administrators, and to some extent maintained traditional community posts." (Dandler 1971: 47).

Pearse describes the hierarchy of the Andean estate in relation to the physical punishment that was frequently used to maintain discipline, for it was often the jillicata (headman) or alcalde who would apply the whip. Yet, "the violence of the repression seems to have a formal character about it, and to be subject to a mutual understanding" (Pearse 1975: 127).

While most of the Claire family were classic absentee landlords, occasionally performing the role of indulgent patrons on infrequent visits to their estates, an important exception was Juan Chiarela, the husband of Bertha Claire who had inherited the Hacienda of Pulperas. A civil engineer by occupation, Chiarela made a considerable imprint on the area around Santa Rosa by supervising the construction of a bridge over the River Morochata at

Lachiraya some time between 1940 and 1942. This bridge, and the track constructed at the same time, provided direct vehicular access from Santa Rosa to the Lower Cochabamba Valley market towns. Employed by the state as a road engineer, Chiarela was able to construct an outlet for the produce from his own Hacienda of Pulperas using peasant labour power under the system of prestacion vial (8). The bridge, incidentally, was eventually undermined and swept away by the river in 1965 or 1966.

The second significant step made by Juan Chiarela was his attempted purchase of the Hacienda of Santa Rosa from his sister-in-law Lucila. Though her brother, Julio, had been looking after the interests of the estate, there was apparently growing personal animosity between them. With Lucila and her husband displaying so little interest in the affairs of Santa Rosa, and with Juan Chiarela already spending more time in the area than any of his wife's family and making major investments both in improvements to the Hacienda house in Pulperas as well as in production, the transfer of ownership appears a logical step. Perhaps another factor influencing Chiarela's decision to expand the level of his operations in the area was that the rebellion in February 1947, which affected several of the haciendas of the zone, did not disturb any of the Claure properties. An agreement between Lucila and Chiarela over the sale of Santa Rosa was subsequently reached and the legal documents were being prepared when, in April 1952, the "National Revolution" began. This involved widespread rural conflict and led, in 1953, to the promulgation of the Agrarian Reform. Chiarela immediately called off the sale although he represented Lucila's interests in the tribunals held to determine the nature of the reform process in Santa Rosa.

III.2 Social Relations of Production

The central organizing principle of the Andean hacienda was a service-tenure arrangement known throughout much of Bolivia as colonato. An extensive literature examines its similarities with and differences from European feudalism in the serf-like relationship that bonded the colono to the estate, though it is not intended to review this debate here (9). Essentially, in return for the right to work an area of land held in usufruct the colono was obligated to perform a number of days' labour each week on the hacienda's demesne land. There were also levies imposed on produce and productive assets payable in kind. Finally, unconnected with the productive process, the colono household was obliged to perform personal services. These survived four hundred years, from the early colonial period until the decree of President Villaroel in 1945, despite prohibitions on their use on several previous occasions (Pearse 1975).

The precise combination of duties and demands levied upon the colono and his family varied from place to place and reflected the availability of labour, the level of economic demand and the possibilities for raising the level of the productive forces. In a study of nineteen ex-haciendas in the Lower Cochabamba Valley, Smith compared the number of labour-days required of colonos for the right to a standard size plot of land, called a pegujal (10). His study revealed that prior to 1946 (i.e. before the decree of Villaroel limiting to three the number of days each week that could be required under colonato) colonos were required to work an average of 5.2 days per week (ranging from 3 to 6 days). After 1946, the average declined to 4.3 days (Smith 1977). In Smith's Lower Valley haciendas, however, conditions were more conducive to labour exploitation: they occupied some of the richest agricultural land in the country where irrigation allowed double-cropping; they were close to urban markets; and high population densities yielded abundant surplus labour (Smith ibid.).

However, in an environment more comparable to that of Santa Rosa, in the serrania of the Upper Cochabamba Valley, Dorsey found a similar intensity of labour exploitation to that which existed in the Lower Valley. On the Hacienda of Toralapa, colonos were required to work six eight-hour days of unremunerated labour each week. Dorsey explains this apparent disparity thus:

"Basically, the labour obligation was determined by what the market would bear: where it was difficult to attract labour or where the quality of the land was poor, fewer days of work could be required and the amount of land would have to be greater... Just as the number of days of labour called for varied from hacienda to hacienda, even in the same geographical or political area, so also was there a wide variation in the other obligations the colonato system entailed." (Dorsey 1975a: II.14).

Within the Morochata zone there were considerable variations between haciendas not only in the form of labour obligations but also in the nature of the work regime. On some estates, such as that of Yayani, the regime was notoriously brutal, with physical violence inflicted by the mayordomos, administrator and patron on colonos and their families for minor infringements or late arrival to work (11). By comparison the work regime under the Hacienda of Santa Rosa was rather more relaxed, although there were the same range of labour obligations to fulfill. The first of these was to provide three days of unremunerated labour each week in return for the right to work a pegujal or plot of land held in usufruct (12). In adjacent properties the requirement was sometimes greater: in the Hacienda of Yerbabuenani, for example, the owners (members of the Leoni family) required their colonos to work four days each week (13).

The second major obligation of colonos to the hacienda was the fulfilment of personal services focussing upon domestic duties. These went under the name of pongueaje for men and mitanaje for women, and everyone in Santa Rosa over the age of 18 years was required to contribute two weeks of

unremunerated labour each year. In Santa Rosa male "pongos" were responsible for pasturing the oxen, horses and mules of the estate, to clean and serve in the house and be at the owner's beck and call, while women "mit'anis" pastured the sheep, prepared and served food and fulfilled numerous other domestic duties. The system of pongueaje was a source of great resentment amongst colonos and their families and, as previously mentioned, many attempts were made over the years by the state to forbid its use though these were generally ignored. The ex-hacendada of Yerbabuenani described the system in an interview:

"Well, pongueaje was where a campesino entered the house for one week and served the hacienda, and after came another so it was by turn that they had to come weekly. Then the obligation of the "pongo" was to feed the animals, clean the house, run errands, just that, while the other campesinos were doing the agricultural work ... So, this was pongueaje until 1946 when the Revolution (sic) that there was here in La Paz with Gualberto Villaroel; when it finished, the name of pongueaje was dropped. Afterwards came the name of mulero, which was the same thing, only the name was changed, until 1952 when it was the Agrarian Reform of Victor Paz Estenssoro." (14).

Whether pongo or mulero the ultimate purpose was generally the same: two weeks each year at the disposal of the hacienda, performing an unspecialised function which substantially contributed to sustaining the aristocratic pretensions and aspirations of petit-bourgeois landowning families. However, there are cases where hacendados made a more productive use of their pongos, disposing of their labour in the manner of an owner of slaves. One example appears in the Agrarian Reform documents for the property of Parte Libre, close to Santa Rosa, where a pre-Reform leasing agreement included the following clause:

"Equally I promise to send weekly to (the lessor) during the period (of the lease), that is until the First of August 1950, two pongos weekly, under the penalty clause of paying the daily wages that are earned in the city, to be paid immediately. (The lessor) promises for its part to give the pongos house, table and good treatment as customary."

A third obligation which male colonos were required to perform was to transport hacienda produce to the home of the owner in the town, a duty known as cacha in the Cochabamba region. The colono was required to provide pack animals for the purpose and if he had none of his own was forced to borrow them from neighbours. An informant described the system for Santa Rosa:

"The same campesinos (the colonos) had obligations of carrying all that the hacienda produced according to whom it corresponded. The campesinos took the cargo on their own horses to the city or to the road point when the road was coming closer. Sometimes they would be helped by private muleteers, but not often." (15)

Before the road and the arrival of motor vehicles the journey to Quillacollo or Cochabamba was a hard fourteen to eighteen hour hike. Rotating by pairs, the two colonos responsible for cacha duty would each load their horse or mule with a sack of grain or potatoes weighing up to one hundred kilograms and leave the Hacienda before 5 am, reaching the house of the owner late that night. The performance of cacha thus entailed an absence from the estate of two to three days, though a colono would not be allowed to tarry in the town in case he met and spoke to peasants from other haciendas. Though the arrival of the road gradually reduced the amount of time and effort colonos spent performing cacha for the hacienda, it also began to trigger the process of commoditization, as we shall later show.

As we have seen, livestock were of importance to colonos for the fulfilment of duties as well as a stock of wealth and security. Yet the hacienda used these as a source of tax and tribute payments in a number of ways. First, in addition to the livestock of the hacienda, those of the colono households were also pastured, in rotation, upon the demesne land. Until the introduction of chemical fertilisers in the mid-1960s, animal manure was the only means of fertilising the soil, both through deposits left on pasture and applications at the time of planting. In

addition to the compulsory pasturing of their livestock upon demesne land, colonos were required to contribute five costales (sacks) of animal manure per head of oxen each year. This appropriation of animal manure thus became a significant mechanism for maximising hacienda production and a major factor in restricting the production of a surplus by colono households.

A further tax, levied on livestock as payment for grazing rights, was called verbaje, pastoreo or sometimes diezmo. In the Hacienda of Santa Rosa the collection of this tax was made with great ceremony in October or November every year. All the families resident upon the estate brought their livestock to the meadow in the centre of the community where the patron had arranged for two tambores of coca, chicha (maize beer) and cane alcohol to be distributed. In the midst of this somewhat artificial fiesta atmosphere the Hacienda administrator calculated the livestock resources for each household; for every ten sheep the household would be required to hand over one to the estate, and every head of cattle required the later payment of manure (16). The Agrarian Reform Documents reveal that in December 1954, for example, there were 520 sheep belonging to colonos in Santa Rosa, an average of 8 per household. As many owned flocks of less than ten the Hacienda collected a mere 40 sheep - certainly enough to cover the cost of the coca, chicha and alcohol several times over. Thus verbaje represented a valuable source of income to the estate each year. However, unlike some of the neighbouring haciendas (Yayani, Yerbabuenani) the owners of Santa Rosa did not apply the diezmo to the harvested produce of every tenth row cultivated by the colono household.

III.3 Agriculture and Forms of Production

The low level of productivity that characterised the Bolivian hacienda was very much in evidence in the case of Santa Rosa. A series of landlords displayed little interest in agriculture, arguably at least until the arrival of Juan Chiarella, and no capital investment had been forthcoming in order to raise the level of productive forces beyond those applicable to bonded labour, an extremely rustic technology and a highly undeveloped division of labour. On the demesne lands production was performed entirely by colonos employing their own hand implements, simple scratch plough and oxen. Therefore there were almost no skilled, specialised tasks and there was little capital outlay required in order to initiate new rounds of the production process. The administrator was the only waged employee; though potato seed was purchased from Morochata every two years, grains and other tubers were normally sown from seed retained from a previous harvest; and the remaining requirements (manure, labour and transport) were all supplied by colonos.

In appearance, hacienda production was indistinguishable from that taking place on usufruct land, though it had many advantages over colono production. The demesne naturally occupied the choice cultivable land, it had priority access to irrigation and considerably greater investments of labour, particularly at optimal moments in the agricultural cycle. On the other hand, usufruct plots generally suffered from poor soils, with the valuable manure that might have improved their fertility being largely appropriated by the estate. Though a favoured colono could eventually exchange such a plot for better quality land, the demands of labour-rent and servile duties restricted the possibilities for raising productivity through increasing labour inputs. Nevertheless, the area of a pegujal varied considerably, from under half a hectare to over eleven hectares (see below). This uneven distribution of usufruct land is explained by two factors: first, the considerable variation in soil quality and lack of

universal access to irrigation; secondly, there appears to have been no severe constraint against colonos seeking more land providing they had the labour to work it (17).

Hacienda production was mainly directed to the cultivation of grains, perhaps for historical reasons as well as because of the relative scarcity of fertiliser which would have allowed an intensification of potato cultivation. Nevertheless, manure was applied preferentially to the potato crop with subsequent grain crops utilising the residual fertility of the soil. According to the Agrarian Reform Documents for Santa Rosa, the demesne land occupied an area of 39.545 hectares and produced annually approximately the following quantities: two tonnes of potatoes, six tonnes of maize, six tonnes of barley and three tonnes of wheat. The greater proportion of this produce was transported to the city, with a little being retained in the Hacienda, some in the urban residence of the owner and the majority sold in the marketplace.

Unfortunately, there is no documentary record of the total production by colono households, though the Agrarian Reform expediente notes that usufruct land occupied 197.4623 hectares of the estate. Assuming comparable yields on demesne and usufruct land, and interpreting an extrapolation of yields with the detail provided by interviews with ex-colonos, it is possible to construct an informed estimate for total production within the estate (18). The figures shown in column two of Table 4.3 represent a household production profile based upon responses from ex-colonos. Clearly, such "averaged" figures disguise considerable variations in production between households which themselves varied by size and composition. Whatever surplus was generated after meeting consumption needs was bartered by households for essential items, such as kerosene, lard, dried meat, salt and bayeta cloth, through trueque (reciprocal exchange) with travelling merchants (rhanqheras) or other peasants from within or outside the community.

Table 4.2: The Pre-Reform Division of Arable Land in Santa Rosa

	Area of land occupied (ha.)	% of total land	% of occupied arable land
Hacienda	39.545	4.3	15.6
Colonos	197.462	21.5	78.1
Arrenderos	15.739	1.7	6.3
Total	252.746	27.5	100.0
Pasture	568.6287	61.9	

Source: Agrarian Reform documents

Table 4.3: Estimated Pre-Reform Annual Average Crop Production in Santa Rosa

All figures in cargas of 100 kilograms

Crop	Hacienda (demesne only)	<u>Colono</u> Estimated/ household	Total for 62 <u>colono</u> households	Total Prod. (hacienda + <u>colonos</u>)
Potato	20	4	248	268
Maize	60	5	310	370
Wheat	30	1	62	92
Barley	60	1	62	122
Oca	-	1.5	93	93
Lisa	-	1	62	62

Source: Agrarian Reform documents and Field Data

There were, in addition to the 62 colono households that are listed in the Agrarian Reform documents in 1954, three arrendero families who rented a total of 15.739 hectares of land in the lower part of the estate, with rents paid in cash. Because of their relatively autonomous production strategy, they existed outside the functioning of the estate: they were not required to contribute paid or unpaid labour to the Hacienda. The three families were commercially oriented and produced tomatoes, locotos (chilli peppers) and sweet potatoes for sale, with maize and some potatoes for their own use. Between them they also owned eleven head of cattle and nine horses. However, the three arrendero households are not included in the Tables, which deal only with the circumstances and resources of the colonos.

One of the difficulties that arises from juxtaposing production pertaining to the Hacienda as opposed to that of colonos is the implicit suggestion that the latter constitute a homogeneous group derived from their similarly exploited structural position. Whilst all the colono households did indeed share the same obligations towards the estate, some were more easily able to fulfill their duties than others whilst at the same time achieving high levels of production on their pegujales. Retaining control over the labour of adult sons and daughters was, therefore, of critical importance if the household wished to take advantage of increased access to resources upon the estate (Deere 1978). Although there are no data on the relationship between usufruct landholding and family size, the distribution of households according to their access to land is shown in Table 4.4. The distribution of livestock amongst the 62 colono households is shown in Table 4.5 (19).

Table 4.4: The Distribution of Colono Households According to the Size of Pegujal, Santa Rosa 1954

Group	Size Category (Ha.)	Number of Households		% of total usufruct land
		N.	%	
I	<1.5	23	37.1	9.0
II	1.5-2.99	12	19.4	15.3
III	3-5.99	17	27.4	37.3
IV	>6.0	10	16.1	38.4

Source: Agrarian Reform Documents

Table 4.5: The Distribution of Livestock According to the Size Category of Pegujal, Santa Rosa 1954

L I V E S T O C K				
Group	Size Category (hectares)	Cattle	Sheep	Horses
I	<1.5	16 (9%)	46 (9%)	5 (13%)
II	1.5-2.99	37 (22%)	105 (20%)	2 (5%)
III	3-5.99	52 (31%)	179 (34%)	14 (36%)
IV	>6	65 (38%)	190 (37%)	18 (46%)
Total		170 (100%)	520 (100%)	39 (100%)

Source: Agrarian Reform Documents

Tables 4.4 and 4.5 show clear evidence of incipient differentiation amongst colono households in terms of access to productive resources. For example, those with less than 1.5 Has of usufruct land comprised 37 per cent of the households but together held only nine per cent of occupied land, 9 per cent of the cattle and sheep and 13 per cent of the horses. In contrast, the ten households which each controlled over 6 Has together held over 38 per cent of the usufruct land, about the same proportion of sheep and cattle and nearly half of the horses. It is from among the ranks of this group of households that a wealthy and independent group of small producers would emerge after the Reform as we shall later see.

IV. The Peasant Insurrection of 1947

The implementation of the Agrarian Reform was effected in Ayopaya in much the same way as it was in the country as a whole, that is in a selective and inconsistent manner. Haciendas were notionally expropriated for being latifundios. Those few haciendas which were expropriated in Ayopaya had no more of the characteristics of latifundios than those which were not. Rather, they were the haciendas where abuses of colonos were documented and where peasants had developed a higher level of organisation. One such property was that of Yayani, an estate spreading over some 6,000 hectares and with 400 colonos, situated on the opposite side of the valley to Santa Rosa and the focus of a large-scale peasant uprising in early 1947. Dandler and Torrico have described the background to the rebellion as resulting from a conjunction of local and national factors: the persistence of a particularly repressive and brutal colonato regime; the emergence of a militant peasant leadership that sought retribution in the law; and the raising of peasant expectations during the presidency of Gualberto Villarroel (1943 - 1946) which were further heightened by the first National Peasant Congress of 1945, at which the peasant leaders of Yayani were present (Dandler and Torrico 1984).

The events of 1947, which affected several haciendas in the Morochata Zone, are of interest here precisely because they did not involve the participation of the colonos of Santa Rosa, nor did they threaten the interests of any member of the Claure family. An appealing explanation for an uprising that had such selective support would probably place emphasis upon the particular combination of characteristics within a hacienda: the nature of the work regime (which, as already discussed, varied from one estate to another), the severity with which obligations were imposed and punishments inflicted, and the attitude of the landlord.

In the case of Yayani, Carlos Zabalaga, whose family had leased the estate from the Monastery of Santa Teresa for three generations, had acquired the reputation for being a particularly brutal patrón. He was accused in the national newspaper, La Calle on 20 August 1940, of

"committing "continuous exploitation", such as the unpaid work of pongueaje of two weeks, beatings, and the imposition of fines twice the value of the animals that die, and violations of single and married women.." (quoted in Antezana and Romero 1973: 82) (20).

Attempts by the colonos of Yayani to seek redress through the courts were unsuccessful: the legal process, which was initiated in 1940, was formally completed in 1946, but two judges abstained from passing a judgement on the grounds that there was a lack of sufficient proof (Dandler and Torrico op.cit.). The legal process notwithstanding, the organization and mobilization of colonos gathered pace in Yayani and some other haciendas. In Lachiraya a meeting of peasants on 21 May 1946 was confronted by a detachment of troops who shot three dead and injured many more; various peasant leaders were also arrested and sent to prison camps in the jungle; the police presence in the Morochata zone was almost permanent; the authorities were ever more explicitly siding with the landowners (ibid.). Yet these events were occurring under a sympathetic president; with the overthrow and public

lynching of Villarroel on 21 July 1946, the landowners immediately re-imposed the pongueaje which had been prohibited by decree in 1945, and set about repressing peasant organisation and its leadership.

Six months later a rebellion by the peasants of Yayani shook all the haciendas of the zone. According to Zabalaga's chauffeur, who was interviewed by Luis Antezana in 1969, the rebellion was sparked when Zabalaga "arrested" one of his colonos who refused to perform his pongueaje duty, ordered him hung by his feet from a tree, then personally whipped him until he bled. He then rubbed salt in the wounds (Antezana 1982). Dandler and Torrico describe the events that followed:

"A large crowd of campesinos, organized from the four sections of Yayani gathered on the night of 4 February and attacked the hacienda house with dynamite. They found in the hacienda house the son of the patrón, Major Carlos Zabalaga, and Lt.Cnl. Jose Mercado, who were stationed in the hacienda as a consequence of a police order. Attempting to escape, Lt.Cnl. Mercado was killed by blows and Major Zabalaga managed to flee shoeless, together with other people from the hacienda administration. The campesinos looted the hacienda house, carrying away with them some tools, arms and provisions. That same night, they continued to the Hacienda of Lachiraya, where they appealed to the campesinos of this and other haciendas for their support. The following day they went to Parte Libre, Punacachi and ... (others named). They attacked and looted all these haciendas. In Llaajma they killed the owner, Jose Maria Coca. On the third day they continued to the Hacienda Charapaya, near Calchani, bordering the Province of Tapacari. Beginning on the third day, troops and police were mobilised from the city of Cochabamba and Oruro, with the intention of surrounding the rebels from various strategic points, with the help of reconnaissance aircraft... The troops managed to control the rebellion in Ayopaya only after a week, in part because of the difficulties of communication and bad weather." (Dandler and Torrico op.cit.: 179-180).

The uprising was treated so seriously by the government that the reconnaissance flights to which Dandler and Torrico refer were nearly turned into bombing missions. The Minister of Defence at the time, who was also a Cochabamba landowner, issued a statement following a meeting of army chiefs which indicated that "the principal agreement was to order the bombing of the centres of subversion in necessary cases" (quoted by Antezana 1982: 67). In the event the rebels were surrounded by units from the police and army which were eventually able to repress the uprising without aerial bombing.

Meanwhile in Santa Rosa there was absolute tranquillity. Interviews were conducted in 1982, with ex-colonos, an ex-mayordomo, with members of the Claire family, and with a soldier whose unit was stationed in Santa Rosa during the rebellion, regarding the events of 1947. All responded in a similar manner: the uprising was confined to Yayani and a few adjacent haciendas, and there was absolutely no agitation by colonos in Santa Rosa or any of the neighbouring estates owned by the Claire family. A detailed view of events was recounted by the ex-mayordomo in a taped interview:

"The rebellion was in Yayani. I was then working down by the river as a foreman in the construction of the road, and one day passed by Sr Carlos Zabalaga with a Coronel Mercado going towards Yayani. In the night, around 11 or 12, we heard shots and dynamite. They had revolted, the peasants in Yayani. And then, the next day, as customary I was going to my work at 7am when there on the river bank I saw a secretary of Zabalaga trembling, covered with a small sack. "What's the matter?". "The Indians of Yayani have revolted, I escaped, and it appears that they have killed Major Zabalaga", he said to me. So we suspended work and all of us were on alert. A little later we found out that they had killed Cnl. Mercado and that Zabalaga had escaped. Well, Zabalaga had escaped below (to the lower part of the estate) and was hiding in the house of an arrendero, a Desiderio Orellana. This Desiderio Orellana came to tell us, so we went to have a look and there we found Major Zabalaga in the house, in pyjamas, in his underwear, like that he had escaped. His feet were totally destroyed, the soles did not have any flesh, they were pure

blood ... From there we took him to (Lachiraya) and there we gave him over to his father who came to carry him off. Another associate, a Rafito Arce it was, this Rafito Arce, I'm sure of this, at 2 or 3 in the morning grabbed his horse and went off to Quillacollo. There was also something beyond Yayani, and later in Punacachi. No more than these, in Santa Rosa nothing happened." (Interview with Ramiro Valdivieso, recorded 20 April 1982).

At around the same time as these events in Ayopaya there were similar outbreaks of rebellion on haciendas in the Province of Los Andes within the Department of La Paz. President Enrique Hertzog, with all the pomposity that accompanies an office of state that is occupied briefly by turns, in a speech to Congress in 1947 described them as "the gravest indigenous uprisings of our history", which his government had solved, "without spilling a single drop of blood" (quoted in Antezana and Romero 1973: 130). In a country with a proud history of rural resistance to exploitation, whether colonial or republican, and whether by white or mestizo urban-based social groups, the President's remarks are little more than hyperbole: the events of early 1947 simply did not threaten established order beyond relatively narrowly circumscribed areas in remote provinces. However, the uprisings were of importance, not only because they displayed a certain continuity with the great rebellious tradition of the past, but because they also represented a militant peasant involvement in the struggle against the old order, which was eventually to fall with the National Revolution of 1952 (21).

Nevertheless, the extremely localised nature of involvement in the Ayopaya uprising serves to highlight social and economic differences and contrasting levels of political consciousness between estates. In Santa Rosa interviews with ex-colonos indicated a general lack of interest with the events of that time; the cause being attributed to "malos patrones" (bad landlords) - unlike those who owned Santa Rosa who are, at least today,

remembered somewhat sympathetically. A further source of distinction preventing identification with a common struggle is the tendency towards a demeaning dismissal of peasants in neighbouring communities. Time and again, in conversation and in interview, many in Santa Rosa - and not only the well-off - would refer to the inhabitants of adjacent communities as "campesinos" (and by implication indicating that they themselves were not) or simply "ladrones" (thieves), which suggests at least a somewhat introspective view of the world. This, however, is clearly a continuing ideological hangover from the epoch of the estate. Pearse magnificently captures the meaning of this "cellular dispersion of the peasantry into small and controllable landgroups" for political consciousness:

"..(C)losure goes beyond the external aspects of social organisation and in its most important sense refers to a mental and emotional orientation, an exclusive psychic involvement with the particular group and an adhesion to the particular place... The system of manorial estates in the society represents a multi-cellular container in which the peasant could be put to work in permanent dispersion and isolation, prevented from aggregating into a social force with common aims and symbols and appropriate internal structuring." (Pearse 1975: 130).

That such a restricted political consciousness amongst the inhabitants of Santa Rosa persists in the present day can be gauged from the detail provided by the case study material later in this study. For the moment, however, it is sufficient to recount the manner by which the Agrarian Reform was implemented in Santa Rosa to illustrate the argument presented above.

V. Agrarian Reform in the Morochata Zone

The reform of Hacienda Santa Rosa finally took place in 1961, after seven years of legal dispute. The delay in its implementation and the eventual outcome of the reform must be seen in the wider context. In Chapter Three the background and dimensions of the Agrarian Reform was discussed in general terms as well as its overall impact in the Cochabamba region. The purpose of this discussion was not only to highlight the uneven and inconsistent nature of reform, but to argue that the implementation of the Law had to be examined against a broader background of peasant mobilization, the continuity and persistence in power of the old landowning and rural elite, and finally the ambiguous and changing attitude of the post-revolutionary MNR government towards agrarian reform. While the first beneficiaries of the Reform were the most organised peasants of the central valleys of Cochabamba and of La Paz who had agitated for its formulation, elsewhere the process began to slow and shift in favour of the old landowning elite who began to return to their properties to re-establish control (Carter 1971; Erasmus 1969; Eckstein 1979; Kohl 1987). This was certainly the case in the province of Ayopaya.

The purpose of this section, then, is to describe the process and outcome of the Reform for Santa Rosa but to set this within the broader context of the adjudication of estates in the Morochata zone. These local and regional developments will illustrate not only the procedures which worked against the peasantry but the prosperity and choice enjoyed by the old landowning elite as they emerged from Reform.

V.1 The consolidation of landed property

The Reform had arguably quite as much to do with the consolidation of hacienda property as with the distribution of land to peasants. Crudely, this agrarian transition was intended to enable a capitalist transformation of agriculture by consolidating demesne lands and establishing wage relations. For the vast majority of haciendas in the Morochata zone the process of reform was generally slow and cumbersome. In only a few cases did the procedure result in the outright expropriation of the estate, under the classification of latifundio, and these were where abuses of colonos were known because peasants had organized to submit complaints to the authorities, as in Yayani. Elsewhere, peasants were exhorted to organize sindicatos (unions), prepare their case and await the rural brigades.

In Santa Rosa a denuncia de afectacion (claim for appropriation) was lodged on 7 July 1954, a full eleven months after the promulgation of the Reform in Ucureña. The denuncia, as was by no means unusual, initiated a prolonged legal wrangle. Each side presented its case before a tribunal of the rural brigade at a number of audiencias (meetings) where the arguments on both sides were strikingly conciliatory. For example, at the second audiencia, held in the Hacienda House on 13 November 1955, Juan Chiarella, representing Lucila Claure who remained the owner, offered to cede the pegujales occupied by the (now ex-) colonos providing they respected the demesne land of the estate. This offer was accepted by the dirigente (union leader), Mateo Guzman, and immediately ratified as most satisfactory by the assembled peasantry (Agrarian Reform documents for Santa Rosa).

Despite the extraordinary coincidence of views between peasants, recently liberated from labour-service, and their old masters (and mistresses), the legal process rumbled on. Meanwhile the ex-colonos worked their usufruct plots while the demesne lands of the Hacienda, which had temporarily

lain idle, were now gradually coming back into production under a sharecropping arrangement between the landlords and the peasants. Eventually, the final sentence on the Hacienda of Santa Rosa was reached on 21 December 1961. A total of 204 hectares were awarded to 63 peasant households, an increase of less than 7 hectares on that occupied by the pegujales prior to the Reform; the three arrenderos were given 1 hectare each as a token gesture; and Lucila Claure was allocated a total of 55.653 hectares, an increase of 16 hectares or almost 41 per cent on the demesne holding. Details of the distribution of arable land are shown in Table 4.6. In addition, 568 hectares of pasture land were identified by the Reform surveyors and specified for the common use of peasants and Lucila. This was to have later repercussions as we shall show in Chapter Six.

The outcome of the reform process in Santa Rosa was repeated throughout most of the haciendas in the Morochata zone, judging from a selective survey of Reform documents. Indeed, even in cases where peasant syndicates were more militant and fought for the complete expropriation of land because of excessive labour obligations and brutal treatment under the hacienda, the outcome was generally the same. For example, the Hacienda of San Isidro near Piusilla, which was sold by a member of the Claure family in 1937 (see Section III.1 above), covered nearly three and a half thousand hectares at the time of the Reform and was denounced by the peasants as constituting a latifundio and, therefore, under the law subject to total expropriation. The landowners were also accused of committing a "series of abuses" of colonos and as being responsible for falsifying dates in the Land Registry. Once more, however, the outcome favoured the ex-landlords over the peasants, granting the former a total of 174 hectares, or an increase of 91% on the 91 hectares occupied by the demesne before the Reform.

Table 4.6: The Division of Arable Land in Santa Rosa, Pre- and Post-Reform

	Pre-Reform		Post-Reform		%
	(ha.)	% of total	(ha.)	% of total	increase
Hacienda	39.545	15.6%	55.653	21.2%	40.7%
Peasants	197.462	78.1%	204.092	77.7%	3.4%
<u>Arrenderos</u>	15.739	6.3%	3.000	1.1%	

Source: Agrarian Reform documents

Table 4.7: Examples of Reform Allocations to Landowners for Selected Haciendas in the Morochata Valley

(all figures in hectares)

Hacienda:	Pre-Reform demesne	Reform allocation	
		Arable	Pasture
Pulperas	37.1	88.9	102.0
Tiuruni	24.4	50.4	100.0
Compania Pampa	8.7	9.0	n.d.
Ticopaya	23.3	56.3	n.d.
San Isidro	91.0	174.0	n.d.
Parte Libre	30.4	43.5	37.0

Source: Agrarian Reform documents

V.2 Santa Rosa: Privatizing the Peasantry

The offer made in 1955 by Juan Chiarela at the second audencia freely to allow the usufruct plots to become the property of the peasants, a gesture which appeared to be enthusiastically endorsed by the ex-colonos themselves, was unsurprisingly ratified by the Reform process. In the 1957 document pronouncing a judgement in the first instance - to which there was a right of appeal - the logic of providing property rights to the pegujales was outlined:

"The ex-colonos of Santa Rosa, as in all the haciendas of feudal infrastructure in Bolivia, do not have pegujales equal in area and quality; nevertheless, as Article 2 of the Agrarian Reform Law tries to establish, a more equitable distribution of land in the countryside would require a complementary donation alongside the pegujales of the ex-colonos and this would cause excessive parcelization of the land, a measure that is uneconomic and contrary to the interests of those same peasants, because owing to the growth of each family and the extensive system of cultivation employed in the property, with the rotation of long fallow periods from one agricultural season to the next under the custom of aynocas, many parcels have been abandoned for lack of fertility or the erosive movement of land; for these reasons it is more convenient for the peasants that they maintain their pegujales that they formerly possessed, it being more convenient to assign them a parcel for collective cultivation with the purpose of stimulating the socialization of land." (Agrarian Reform document dated 10 July 1957).

How the socialisation of land was to be stimulated by creating a mass of small property owners, each with access to a different quantity and quality of land, was not explained. Neither was there any allocation of a collective arable plot of land beyond the 568 hectares of uncultivable pasture specified in the final Reform adjudication which was to be shared equally between the peasants and the patron. However, there were clearly some ex-colono households which would have been horrified by the prospect of a socialized or collective agriculture. These households had come to occupy significant areas of land under the Hacienda, to which they were now being given the rights of

ownership. Furthermore, their relative prosperity extended to the livestock resources which they had accumulated, and which were indicated in Table 4.5. Although ten colono households occupied 38% of the usufruct land and owned an equivalent proportion of the cattle and sheep and almost half of the horses in the estate, there were many more households poorly endowed with resources in land, livestock and probably labour. If they expected the Agrarian Reform to improve their circumstances, they were surely sorely disappointed.

Table 4.8 provides details for the 63 households which finally received titles to land under the Reform, and excluding the arrenderos. Of these 63 households, 37 received titles to precisely the same amount of land that they held in usufruct; 19 received an additional donation of land along with their pegujales and 7 households actually lost land. The 19 households which received additional land were fairly evenly spread amongst the four landholding categories that are used in Table 4.9: there was no attempt to improve access specifically for land-poor groups. The single largest donation of additional land was an area of 8.6 hectares in three separate parcels which, together with almost 2 hectares of pegujal, made Pablo Solis the largest landowner amongst the ex-colonos, as well as being one of the wealthier owners of livestock with seven head of cattle, a horse and fifteen sheep. The smallest additional donation was 360 square metres made to Casimiro Rojas, increasing his total holding to 1.27 hectares, though Rojas was clearly not as well-off as Solis in terms of livestock: he and his wife owned just four sheep.

It happens that the largest and the smallest gains in land area were both to households with only one surviving female. Solis and his wife, Matiasa, were the parents of Saloma, who was later to form a union with Fransisco Rocha in Household 60; the daughter of Casimiro Rojas was Felicidad who we shall later identify in Household 17. This

Table 4.8: Land Titles Awarded as Compared to the Area held
in Usufruct on Hacienda Santa Rosa

Titles to:	No. of H/holds	Mean change in has.	Final Holdings (ha.)		
			Mean per H/h	Max.	Min.
Same area	37		2.38	8.05	0.023
Larger area	19	+1.19	4.74	10.54	1.22
Smaller area	7	-1.64	2.86	8.28	0.436

Source: Agrarian Reform Documents

Table 4.9: Distribution of Households in Santa Rosa
According to Landholding Categories, Pre- and
Post-Reform

Group	Size Category	PRE-REFORM		POST-REFORM	
		No. of H/holds	% of usufruct land	No. of H/holds	% of titled land
I	<1.5	23	9.0	25	10.2
II	1.5-2.99	12	15.3	9	10.1
III	3-5.99	17	37.3	18	38.4
IV	>6	10	38.4	11	41.3
Total		62	100.0	63	100.0

Source: Agrarian Reform Documents

detail illustrates that there was no demographic explanation for the distribution of land under the Reform. Households receiving titles to more, less or the same area of land as they held in usufruct all included those with children. Thus there was no attempt by the Reform to address the longer-term problems of land scarcity for succeeding generations, problems that were to intensify with the commoditization of land.

V.3 Santa Rosa: Land Consolidation after the Reform

As has been said, one underlying objective of the Reform appears to have been to establish smaller estates which would employ wage labour, thereby enabling the development of the productive forces through the differentiation and skilling of labour. In many areas of Bolivia this failed, and landowners sold their land to the ex-colonos. One set of circumstances which forced landowners to choose this course of action was where they were no longer allowed to return to work the land they had received under the Reform as a result of an antagonistic peasantry. This was the case locally in the Hacienda of San Isidro (see Table 4.7), and such a situation prevailed throughout much of the Upper Cochabamba Valley. Elsewhere, and this was most common in many of the haciendas of the Morochata zone, landowners appeared not to have come to terms with the consequences of the Agrarian Reform. They were resistant to the idea of paying wages to their ex-colonos who once worked for free, and they had neither the resources nor the motivation to capitalise the production process on their consolidated lands (22). Moreover, most appeared unwilling to withstand the relative deprivation of rural life.

Consequently, many owners simply sold off their Reform allocations to those peasants with the resources to buy them, a process that was to occur in Santa Rosa and which is described below. A few landowners struggled to come to terms with the new balance of power in the countryside and

retained their consolidated properties, visiting occasionally to ensure their lands were being properly worked by their ex-colonos under sharecropping agreements, and departing with their share of the harvest. Those landlords who actually stayed to capitalise their estates and employ wage labour were few in number in the Morochata zone. One of these, however, will appear repeatedly in this thesis, and he requires an introduction even though he holds no land in Santa Rosa.

Juan Betancur has come to exert an important influence over present day Santa Rosa, both as a large capitalist landowner and as a major power broker in the area. His ability to accumulate economic and political power was very much a legacy of the Agrarian Reform and a successful illustration of one of its objectives. His father, Jose, assembled the Hacienda of Tiquirpaya through a series of land purchases from small proprietors during the 1920s and 30s, eventually being formally accredited with ownership of the estate in 1937. It amounted to 455 hectares in area, with the demesne occupying a mere five percent and the colonos' pegujales a further twenty percent. The Reform adjudication process was particularly prolonged, with the Betancur family arguing that they had made significant capital investment in the estate (in the form of three irrigation tanks dug by colono labour, a citrus orchard of 28 trees and a large plantation of eucalyptus) and were, therefore, "progressive" landowners. Eventually, after several appeals, the final sentence was announced in 1970 and it allocated to the Betancur family over 56 hectares of arable land, together with an equal share in the 300 hectares of pasture (see Table 4.10). With these resources Juan Betancur has become an important potato producer, employing a small permanent and large temporary labour force - both of which involve households from Santa Rosa - and has performed a significant role in stimulating commoditization in the area, as we shall see.

Table 4.10: The Reform Adjudication in Hacienda Tiquirpaya

	P r e - R e f o r m		P o s t - R e f o r m	
	Area (ha.)	% of total land	Area (ha.)	% of total land
Hacienda	23.32	5%	56.32	12.4%
Peasants	93.81	20%	85.06	18.7%

Source: Agrarian Reform documents

As mentioned above, despite the consolidation of large areas of land under the Reform, many of the landowning families had no interest in returning to develop a more capitalist agriculture in the zone, preferring to sell off their Reform allocations to their ex-colonos. This was the case in Santa Rosa, with Lucila Claure slowly disposing of her land and benefiting from a substantial income over the years. Land sales are discussed in detail in Chapter Six where data is presented to demonstrate that those households already favourably endowed by the Reform were able to accumulate the bulk of available land. The land market in Santa Rosa has been satisfied until recently by the availability of Lucila's allocation, so that at least accumulation could proceed without the dispossession of the poorer households.

VI. The Post-Reform Era

VI.1 Potato and Commodity Relations in the Serranía

Since the Agrarian Reform much of the Cochabamba serranía has been transformed by the widespread expansion and intensification of commodity relations, with rural households incorporated into the regional economy primarily as producers of agricultural products. In stark contrast to their restricted and heavily mediated economic relations under the hacienda regime, households today are sensitive to the dynamics of the regional market. This is evident in many parts of the serranía where the past diversity of crop and livestock farming has increasingly given way to specialised production strategies and especially intensive potato cultivation. Today, there are several important potato producing areas in the Cochabamba region, each with their own unique combination of cropping cycles, potato varieties and marketing systems. Table 4.11 identifies the principal potato production zones in the Cochabamba serranía and the predominant varieties of potato with which they are associated.

It is not necessary to describe the characteristics of each variety beyond noting that all are native tubers with the exception of Holandesa which, as its name suggests, is imported from the Netherlands. It is distributed to small producers by a Bolivian non-governmental organisation (ARADO). The main objective of this project was to reproduce second-generation seed in the "clean" environment of the serranía above the Upper Cochabamba Valley for cultivation in the lowlands of Santa Cruz. The immediate consequences have been to encourage increased reliance upon external technology and expose producers to considerably more risk and vulnerability (both in terms of climate and market prices) than if "native" varieties had been employed. As for these, only Waycha Paceña is of special interest as it is the variety which is exclusively grown in Santa Rosa. We will learn more about this in Chapter Five.

Table 4.11: Potato Production Zones and Predominant Varieties

Production Zone	Predominant Varieties
Morochata	Waycha Paceña (80%), Imilla
Mizque	Runa (80%) Imilla Blanca (20%)
Totora (Prov. Carrasco)	Sani Imilla (94%), Holandesa
Tiraque, Toralapa (Prov. Arani)	Imilla (56%), Runa (15%), Holandesa
Colomi, Melgar (Prov. Chapare)	Imilla Blanca (71%)

Source: Mendoza (1982); Franco Maldonado (1982).

The emergence of such specialised potato production zones as those identified above has been the result of an interaction of factors operating at a variety of levels in the years following the 1952 Revolution. First, the prohibition of labour-rent and other obligations allowed small producers to intensify their efforts on their now legally-titled plots. This, together with the use of animal manure which was no longer handed over to the estate, enabled them to achieve higher levels of productivity than hitherto. Secondly, the increased access to social and economic opportunities, the generalised circulation of money as a medium of exchange, and the growing availability of consumer goods for purchase encouraged greater participation by rural people in the market, both as producers and consumers.

A third and rather more complex factor to untangle was to do with the relative movements of prices in the market for different crops, as well as the changing level of technology with which producers could take advantage of these market signals. In other words there were a bundle of interacting factors deriving from changing consumer demand and alternative sources of supply for traditional products that influenced market prices, while the dramatically increased availability of chemical fertilisers provided the opportunity for producers to intensify production of the most profitable crop. This was certainly potato, not only because it is highly responsive to applications of chemical fertiliser, but also because its chief competitor, wheat, has had a substantial comparative price disadvantage.

According to Hugo et al. (n.d.) in general wheat yields would have to increase eightfold to equal the returns from potatoes. Yet wheat prices have remained depressed, principally as a result of Bolivia's external grain dependency, most clearly manifested in the massive imports of wheat, primarily from the United States, under preferential terms or as donations especially during the 1960s and early 1970s (23). These have effectively eliminated domestic wheat production by the small farmer sector whose output is unattractive to the grain storage and milling interests which prefer to ship in large volumes from the Chilean ports (Dandler et al. 1985).

It is unnecessary to prolong this general discussion of trends in agricultural production following the Agrarian Reform beyond that which is sufficient to substantiate the argument regarding the shift toward potato cultivation. The data prove this quite convincingly (24). Observations in other parts of the Cochabamba serrania provide further support that the shift of orientation amongst small producers was to an increasingly commercialised production of potato. For example, Peinado observed that by 1965-66 in two ex-haciendas in the Upper Valley, potato represented over two-thirds of total crop volume and about 90 per cent

of total crop sales (Peinado 1971). According to Dorsey's study in the Upper Valley, an increase of more than 50 per cent in the area planted to potato between 1950 and 1965 was accompanied by a small rise in per hectare yields (from 10.87 to 11.54 mt/ha) and this he attributes to the use of chemical fertilisers (Dorsey 1975a). Though these figures should be treated with caution, it was only from around the mid-1960s that imports of chemical fertilisers began to rise sharply and their increased availability encouraged adoption.

These shifts in production in other parts of the Cochabamba serrania are mirrored within Santa Rosa. During the agricultural year 1981-82 aggregate production for the 63 households in the locality totalled 280 tonnes of potato of which some 75 per cent (210 tonnes) was sold, with seed and consumption needs accounting for the remaining 25 per cent. These relative proportions, however, should not be assumed to apply to the individual household level, for there are considerable variations in the ability of households to retain food and seed for their own use as we shall later see. Additionally, some thirty tonnes of maize and a mere four tonnes of wheat was produced, further underlining the incomparable importance of potato over other food crops. The operation of the potato farming system is discussed in more detail in Chapter Five.

Thus, a consideration of relative market prices and the availability of "new" productive means (chemical inputs) are both undoubtedly important contributory factors in explaining the conditions for the rise of specialised potato farming in the serrania. However, in order to understand the precise mechanisms by which the intensification of production was brought about in the post-Reform era, it is necessary to examine the particular factors and agents which prevailed in the Morochata zone to set in motion such changes.

VI.2. Transportistas: Commoditization, Intermediation and Subordination

In the earlier part of this Chapter, as well as in Chapter Two, it was argued that the rural population of the serrania experience an economic, social and political subordination to a rural elite. While such subordination can no longer be explained by reference to their status as colonos, there are moments when many small producers appear as powerless as they did before the Agrarian Reform. This is particularly the case for many of the resource-poor households who are reliant upon sources of credit, usually for each round of production and often to carry them through periods preceding harvest-time. However, even some of the better-off express frustration at their powerlessness with regard to one group of actors which have come to exert considerable power over Santa Rosa and most other localities in the zone. These are the transportistas, the independent truck operators, who, through their own syndicate, monopolise the movement of goods and people into and within the area. They, above all, are responsible for stimulating the process of commoditization which has transformed the zone.

In a study of the role of the intermediary sector in the Cochabamba region, Ustariz and Mendoza (1982) examine the market mechanisms by which the small producers of the serrania have been gradually incorporated into the regional economy. Initially, they argue, a traditional system of exchange known as trueque was used to obtain surplus produce from households in return for basic consumption goods such as coca, alcohol, sugar, kerosene etc. However, the terms of exchange within such transactions have been weighted heavily against the producers. While the concept of unequal exchange has many critics and its empirical justification can be methodologically problematic, such as calculating an "economic" return for goods produced by unpaid household labour power, the authors use this concept as the corner stone of their study, providing concrete

evidence as proof of its existence. Unequal exchange in kind at the farm-gate may capture small amounts of surplus produce, but this gradually gives way to producers seeking to escape this monopolistic and exploitative relationship by opting for cash sales (Ustariz and Mendoza 1982).

It is logical to assert that as output begins to rise and the demand for manufactured goods increases, rural markets appear. For the intermediary sector, however, it may be more profitable to ensure that the point of exchange is closer to the point of production than that of consumption in order to better regulate prices through controlling competition. This was most effectively achieved through the changing strategies of the independent truck owner-drivers, who have done most to encourage the development of local, periodic markets throughout the serrania. The rise of markets such as El Puente, Rodeo, P'isqo Mayu amongst others, have successfully served to articulate small producers with the regional economy (Barnes von Marschall and Torrico 1971).

Moreover, transportistas have, where possible, operated as rescatistas in the purchase of produce at the farm-gate or engaging in crop mortgaging, the purchase of a crop before it is harvested. As small producers have sought to establish more economic space and better prices, transportistas have been pushed back to operating in the rural fairs or in the transport of producers and their goods to regional market centres. However, they have continued to squeeze a profit out of producers beyond that generated by fares which, it is argued, are already set at too high a level and are often arbitrarily raised by the truck operators' syndicate.

Ustariz and Mendoza (1982) catalogue a series of mechanisms within the marketing system in the Cochabamba region that work to the detriment of producers and favour intermediaries and market officials. These include a wide variation in the weight of the "standard" unit of measure-

ment for wholesale crop sales, besides a deliberate "cheating" on weights. For example, in the local market of El Puente, a carga of potato is expected to weigh 125 kilogrammes, while in the wholesale potato market (tambo) in the city of Cochabamba one carga weighs 100 kgs. Thus, for every four cargas that the rescatista purchases in El Puente, he sells five cargas in the Cochabamba tambo and this in addition to the substantial profit he makes on each through buying cheap and selling dear.

Such legal, institutionalised mechanisms of profit-making are also accompanied by a battery of underhand practices. The most common, especially in the unregulated informal markets of the serrania, is the under-weighing of producers' crop sales, where perhaps up to 150 kgs of potatoes are required before the "official" El Puente balance registers one carga. Such practices have led many producers to reject farm-gate or local market sales and to demand transportation to the regional market centres of Cochabamba, Quillacollo and Punata. Yet, even here, truck operators look to derive financial advantage beyond the revenue generated by fares by delivering their passengers and cargo to particular wholesale merchants who either operate their own private tambos or circulate in the public ones, or they may offer to purchase the cargo themselves, taking advantage of the producers' ignorance of current prices and their unfamiliarity with the urban milieu (see Chapter Five).

In the post-reform period in the Morochata zone, truck owner-operators have come to occupy a position of economic influence vacated by the hacendados. Where the latter controlled means of production and regulated the output of tenants, this group of intermediaries has facilitated the expansion of production in order to establish control over the circulation of produce. The right to collect cargo (produce) from different parts of the zone is allocated by the truck operators' own syndicate, the Sindicato de Ayopaya based in Quillacollo and affiliated to the

Cochabamba Federation. The strict allocation of routes and communities in which individual transportistas operate reduces the possibility of competition between its members, prevents the erosion of the high level of tariffs which are imposed and, thus, effectively establishes a de facto monopoly over the movement of goods.

This is illustrated by the arbitrary manner in which tariffs are raised by the local syndicate, after recommendations are made by the national confederation, the CSCB (Confederacion Sindical de Choferes de Bolivia) when, for example, the cost of petrol or spare parts is increased by the government. Although small farmers frequently protest at such price rises, the political power of the truck operators at both a local and national level generally results in the government acceding to and normalising these unilaterally imposed increases.

VI.3 Resistance: A Producer-Controlled Transport System

The growing economic stranglehold exerted by truck operators in the Morochata zone during the course of the 1970s, in their dual role as transporters and crop mortgagers, led producers to attempt to establish their own co-operative transport system that would enable them to bypass the private operators. This particular initiative emerged out of a small but growing mobilization of small producers in the serrania, beginning, in August 1976, with the formation of the Association of Potato Producers of the Department of Cochabamba (A.P.P). The purpose of the Association was to defend the economic interests of the small and medium sized producers by demanding better prices for their crop (25). Consequently it was not long before affiliated communities within the Morochata zone began to mobilize against the Sindicato de Transportistas de Ayopaya.

At a meeting in July 1979 with the Governor of the Department of Cochabamba, transport authorities and members of the truck operators federation, seven demands were proposed by representatives of the producers and agreed by the meeting. Besides general points regarding an improvement in the regularity and price of service, one of the demands specified that operators "should not drive in a state of drunkenness" (26).

On 29 September 1979 a ceremony was held in Morochata to launch the Transport and Marketing Committee of Ayopaya (Comité de Transporte y Comercialización) (see photograph). A total of twelve trucks were affiliated to the Committee; seven belonging to groups of associates within five localities, and a further five trucks which were privately owned operating in another four localities. The ultimate objective of the Committee was to eliminate the operations of those truck operators affiliated to the Sindicato de Transportistas and it counted on the widespread support of producers.

However, the aim of establishing a transport system owned and controlled by every member of the community proved overly-idealistic as only the better-off households contributed to the purchase of a truck. Even in Piusilla, the most "progressive" community which played a leading role in the formation of the Committee and which possessed four of the twelve affiliated trucks, the number of associates was limited. In a locality with over two hundred households, fifty had contributed capital to the purchase of three trucks while the fourth was owned by one family. Only in the community of Kiri-Kiri did the number of contributing associates exceed fifty per cent of the total number of households: in this case 109 out of two hundred resident households contributed between 100 and five thousand pesos.

In the case of Santa Rosa, its affiliation to the Committee was made possible by the participation of Juan Betancur (see Section V.3 above). As a large landowner, capitalist farmer and ex-hacendado, Betancur appears an unlikely figure to be involved in a "peasant"-based initiative which challenged the existing social and economic order. Yet with the truck he had purchased in 1979 for 250,000 pesos (US\$ 12,500), he affiliated himself through Santa Rosa to the Committee, much to the disgust of the private truck operators. This strategy illustrates the janus-faced nature of Betancur's behaviour: placing himself on the same side as the small producers and seemingly supportive of the initiative, yet able to divert and undermine the objectives of the Committee. Indeed, it was not long after purchasing the truck that Betancur offered to sell it to Santa Rosa for 350,000 pesos. Clearly the demands of operating the truck individually did not fit easily with his large-scale farming interests.

Miguel Caballero, the young dirigente (leader) of the Santa Rosa sindicato (of whom more in Chapter Eight), went to the Agricultural Bank in Cochabamba with the land titles of fifty households as security for a loan. However, the Bank refused to provide the finance with which the truck might be collectively purchased, so Betancur continued to direct his own transport operations employing young, local men as drivers. He finally sold the truck in late 1980 to a young man, Iriñu, from a community down valley from Santa Rosa, who was said to own ten hectares under coca in the Chapare. This may explain why Iriñu was able to pay US\$ 20,000 in cash for the truck, a sum which Betancur then reputedly used to purchase his agro-chemical retail business in Quillacollo (27).

In the meantime, however, the Committee went into terminal decline. There were many factors contributing to the widespread disillusionment amongst the affiliated members besides the campaign of intimidation conducted by the private operators. One of the most significant factors

was the problem of maintaining the trucks in a roadworthy and mechanically reliable state. Most had been purchased from their enemies, the transportistas and were old and in need of repair. In several cases the cost of servicing and spare parts soon matched the price that was paid for the truck originally (28). There was also little mechanical knowledge locally available, and the drivers of the community-owned trucks lacked experience.

Moreover, many organisational difficulties and disputes arose, for example between the sindicato of the locality, to which all households are affiliated, and the much smaller number of associates who had contributed to the purchase of the truck. Through their financial contributions this small group reinforced their political influence and control within the locality, as well as being able to prioritise the movement of their own cargo to the detriment of others. There were also disputes between communities over the system of departures, for during the occasional slack period it was not profitable for all of the co-operative trucks to make the journey to market.

Meanwhile, the continuing dispute between the independent truck operators and the Committee intensified. In Piusilla, a control point (tranca) had been established early on to restrict free access to the zone by the truck operators. Eventually a violent confrontation developed in October 1979 when a mass mobilisation of local people created a total blockade of the road and confronted the ranks of the transportistas. First the truck operators attacked one of the trucks belonging to Piusilla and beat up the driver, Roman García. Then the women of Piusilla attacked a bus belonging to one of the transportistas and smashed all its windows. The blockade lasted for four days until representatives from the truck operators Federation arrived with troops from the army's Seventh Division based in Cochabamba. Order was restored as the soldiers dispersed the crowd, telling them to return to their fields and leave transport in the hands of the truck operators (29).

During the period of repression following the coup of July 1980, the long-term alliance of the truck operators with the military was strengthened still further (30). While all normal trade union activity was suspended, only the truck operators union, the CSCB (Confederación Sindical de Choferes de Bolivia) was officially recognised. This was because, according to the CSCB, "as a trade union it conducts itself at the margin of all political activity, waging resistance to the red dictatorship" (reported in the La Paz newspaper *El Diario*, 25 August 1980; quoted in Lagos 1981: 38). Under such difficult circumstances the Comité de Transporte y Comercialización simply faded away. Though one or two "community-controlled" trucks still operate, they have had to affiliate to the Cochabamba Federation. Those which were already individually-controlled were able to make the transition to fully-fledged transportistas more easily, especially once they had renounced the Committee and its "conspirators".

Thus, although the attempt to control the operations of the truck operators ultimately failed, it did serve to moderate some of their activities. Nevertheless, although transportistas now carry producers and their cargo to the market towns of Cochabamba and Quillacollo, their interests extend beyond driving. Many invest in sharecropping arrangements with local producers by providing seed in return for a half share of the harvest (see Chapter Six). Truck operating and its associated activities thus remains a profitable career, a statement born out by the fact that there were just ten trucks operating in the Morochata zone in 1967, but more than thirty by the early 1980s (Mendoza 1982).

However, relations between individual truck operators and households in Santa Rosa remain ambivalent. On the one hand everyone complains about their subordination to the truck operators and even the better-off cannot escape an inferior bargaining position unless they have their own means of transport. This grievance was best expressed by

the words of Miguel Caballero, a member of the household with the largest landholding in Santa Rosa, who complained that the truck operators were becoming "millionaires" as a result of the increases in tariffs, while "los campesinos, los productores de papa, son empleados de los transportistas" ("the 'peasants', the producers of potato, are employees of the truckers").

On the other hand, however, various inter-personal ties are used by both sides for their own advantage. For example, a couple may invite a transportista who operates locally to become a padrino de bautizo (godfather) to their youngest child, which establishes relations of compadrazgo between them. Thus, if in the future they should require a loan to help them through a difficult period, their wealthy compadre would be under some obligation to assist them. For the truck operator such ties can legitimise his position and serve to defuse opposition to his activities which, besides transport, may include sharecropping and the direct purchase of produce either at the farm gate or at his own home. Some of these issues will be illustrated during the course of subsequent chapters in which empirical material is presented to substantiate the general argument developed here.

VII. Summary

The subordination of petty commodity producers by merchant and other branches of capital is perfectly illustrated by many of the mechanisms associated with the commercialization of potato. Yet while emphasising the domination exercised by truck operators of the Morochata zone in the sphere of circulation, it is vital to recognise their influence in transforming the production process. While not wishing to explain commoditization in Santa Rosa as being effected exclusively by external agents, the ability of producers to respond to new market situations is

facilitated either by their physical proximity to commercial centres or through the "articulating" role of an interest group representing the market.

Yet while truck operators and other intermediaries provided much of the incentive for an intensification of commodity relations, and the Agrarian Reform established the conditions for raising the level of the productive forces in agriculture, it was ultimately the producers themselves, through their own exertions and with their own aspirations, that has led to a high level of specialised production. This is evidently reflected in the volume and composition of agricultural output, but is also concealed within the social relations that characterise household production in Santa Rosa.

Clearly, many households in the locality have experienced a dramatic transformation in this regard moving, during the course of their life-cycle, from the status of labour-rent tenants to independent producers. It will be necessary, however, to concretely examine, rather than to presume, the degree to which commodity relations have developed within each household. This is one of the objectives for the second half of this thesis. First, however, it is necessary to establish the social relations of production within the potato farming system.

NOTES

1. Troops were garrisoned in Santa Rosa in 1947 and used to quell the peasant uprising in many of the neighbouring estates (see the section later in this Chapter). Following the military coup of 17 July 1980 troops were sent from Cochabamba to Morochata to arrest peasant leaders and at least one person was shot dead (Los Tiempos, Cochabamba, various articles July to September 1980).

2. The most useful and comprehensive records were to be found at the National Institute of Agrarian Reform in La Paz, where expedientes relating to some 25 haciendas in the Morochata zone were examined in detail. These expedientes usually provide details on how the estate was acquired, the labour system which it operated, numbers of livestock and levels of crop production on hacienda land and so on. However, data sets are often incomplete or unreliable thus preventing detailed comparisons between estates. Other valuable documents were discovered at the Departmental Treasury in Cochabamba deriving from the Register of Rural Property (1908 - 1945) compiled from tax declarations. This archive was in a dreadful state, however, with heaps of unsorted documents swarming with mice. All land transactions are recorded at the Department of Derechos Reales, but these are less helpful in establishing the general historical record.

3. At the rate of US\$1 = 40 bolivianos, the rate quoted for 1940 by Malloy and Thorn (1971), the land was sold for around US\$ 5,500.

4. Extracted from a legal document discovered in the Public Notary's office (Notario Publico), Independencia on the transaction and division of goods between the two step-brothers.

5. In the census of 1900 the vice-canton of Santa Rosa was accorded a population of 1,218 people (Blanco 1901).

6. Conversion rate of US\$ 1 = 42.42 bolivianos taken from Malloy and Thorn (1971).

7. Information from interviews with relatives and Ramiro Valdivieso, who worked as an assistant to the administrator of the Hacienda.

8. Prestacion vial is a labour obligation levied by the state on rural adult males to perform a fixed number of days labour on the upkeep of roads in their area. Once the annual obligation has been fulfilled each man is given a slip of paper which must be produced when required by the authorities otherwise a fine may be payable.

9. One item that comes close to a definitive summary of the topic is Kay (1974).

10. According to Smith (1977) the average size of a full pegujal was 1.3 hectares, within a range from 0.3 to 4.5 hectares, on haciendas in the Lower Cochabamba Valley. In Santa Rosa, on the other hand, where there was a greater availability of land, there was no fixed size of pegujal: colono households worked as much land as they were able, given constraints of time and family members.

11. A further discussion of the brutality of the work regime and the cruelty of the landowner in Yayani follows in the section on the peasant insurrection of 1947.

12. Information from interviews with ex-colonos and an ex-mayordomo, Ramiro Valdivieso.

13. Interview with dona Bertha, past landlord of Yerbabuenani.

14. Interview with doña Esther de Claure, widow of Gabriel, and past landlord of Compañía Pampa.

15. Interview with Ramiro Valdivieso

16. Information derived from interviews with ex-colonos and ex-hacendados.

17. Unfortunately it was impossible to determine the size and composition of colono households at the time of the Reform which would have provided data to test for a correlation with usufruct landholding.

18. A rather crude estimation is calculated as follows: as Hacienda production (all crops) totalled 170 cargas on roughly 40 hectares of demesne land, then average yield = 4.25 cargas per hectare. If average usufruct holding is 3.13 ha. per household and average yield 4.25 cargas per ha., then each household produces approximately 13.5 cargas of produce. This figure

is broken down by crop in Table 4.3.

19. Note that the number of households in Tables 4.4 and 4.5 is 62, which is the number recorded in the Agrarian Reform documents in 1954. By 1961, when the final adjudication was decided, 63 households were eligible to receive titles to land and this number is shown in later Tables of land distribution.

20. Documents lodged with the Public Notary's office in Independencia provide a very comprehensive catalogue of the brutality that characterised the estate. They detail individual punishments, violations of women, evictions and the burning of houses carried out by Carlos Zabalaga and his mayordomos on the colonos of Yayani.

21. For an account of the peasant rebellions led by Tupaj Katari in the late eighteenth century see Albó (1984). In the same volume Flores reviews rural uprisings during the first two decades of the twentieth century.

22. An excellent illustration of the mentality of the landowners, and the difficulties which they had in coming to terms with the new situation in the countryside following reform, is captured in the following quotation. It was recorded during an interview with Bertha Claure, the ex-hacendada of Yerbabuenani, conducted in 1981. During the interview she spoke longingly of the old order and when asked how she and her husband were treated by her ex-colonos, responded:

"Well, they treat us ok, if not with the respect of before. I've noticed this, that up until 1976, which was the year we gave them titles (to land) ... they still obeyed us. If I needed them for some small job, or for the potato harvest because I have all the parcels ... I work with a campesino in one parcel, I work with someone else in another and like this I have distributed each one of them (her parcels of land in a sharecropping arrangement) ... I then call them and say "Come here and help me". But that's it, I have never paid them, never. I have not accustomed them to give them money, but I give them food, I give them chicha, which is customary there. But now, since 1976 they try to evade us, try to escape from us, and now do not obey us with respect. At times I have had to get angry and scold them into helping me, that is what happens now. Another thing that I want to say ... when, for example, I leave I need them to send me off from Lachiraya. I say, "One must come with his horse, so-and-so come, to pay me some attention." But there I give them 10 pesos, 20 pesos .. and tell them "I am giving you this

because I want to give you a present", but I don't pay them because I don't have anything with which to pay them. "You are abusers of Yerbabuenani", that is what I tell them each time. "You are expanding (their parcels), robbing me of the land". "Oh, yes, mamay", they say to me, "a tiny piece I am augmenting ...mamay.." that is what the campesino says, that is his argument.

23. The value of wheat grain imports increased from just over US\$ 400,000 in 1961 to US\$ 57 million in 1980. In 1970 donations made up over 70 per cent of the 45 thousand tonnes of wheat that was imported (figures from Hugo et.al. (n.d.)).

24. For example, by 1981 the area under potato was 177 thousand hectares, more than double that for 1950. Meanwhile, the area under wheat had increased by just 26 per cent, while that for all maize, including "hard" maize varieties grown in the lowlands, had tripled its area under cultivation (Dandler et al. 1985).

25. For example, in a pamphlet produced in February 1982, which was circulated clandestinely for the A.P.P. were still a proscribed organisation following the military coup of 1980, figures were presented illustrating the deterioration of income amongst potato producers. A comparison of average prices in 1979 with those which existed in February 1982 showed that increases in the price of potato were well below those for necessary consumption goods and agricultural inputs. For example, while potato had increased by an average of 67 per cent over this period, a "basket" of basic necessities had risen by over 216 per cent, inputs by an average of 223 per cent and transport by 235 per cent. As one quintal (50 kg sack) of chemical fertiliser was now costing, at 1,500 pesos, more than twice the price of one carga (100 kg) of first class potato (700 pesos), the principal demand of the A.P.P. was that the price of one carga of potato should be set at the cost of one quintal of fertiliser. By the end of the period of fieldwork this basic demand was still being expressed and remained unmet.

26. The data for this section is derived from unpublished documents prepared by members of CIPCA (Centro de Investigación y Promoción del Campesinado), a non-governmental organisation which played a supporting role in the formation of the Comité de Transporte y Comercialización (see below). A short summary of the problems encountered in attempting to establish this co-operative transport initiative can be found in Ustariz and Mendoza (1982).

27. This individual, Iriñu, was affiliated to the truck operators syndicate and briefly worked the route from Santa Rosa to the Lower Valley. However, the returns from coca found him spending more time in the Chapare than in the Morochata zone and he did not re-appear during the period of fieldwork after late 1981.

28. For example, Piusilla Number One truck was purchased for 160,000 pesos (paid in installments). Over a period of two years this truck received three major overhauls which cost a total of 180,000 pesos. In the case of Piusilla Number Three truck which cost 170,000 pesos, during the first four months of operation it also received three repair jobs in which over 97,000 pesos were spent on spare parts alone. Even Betancur had to pay out 93,000 pesos on repairs in his first six months as a truck owner. Otherwise the individually-owned and affiliated trucks required less expenditure on repairs than the community-owned vehicles.

29. This brief account derives from the descriptions of events by individuals who were present at the blockade.

30. This had blossomed in 1978 during preparations for the transfer of power from Banzer to his chosen successor as president, Juan Pereda. Negotiations between Banzer's representatives and the confederation of transportistas led to an agreement whereby the truck operators would deliver the campesino vote in the countryside providing that they were given beneficial (i.e. tax-free) terms on the importation of trucks from abroad. This agreement briefly gave rise to the Pacto Campesino - Militar - Transportista in the countryside, with truck operators discriminating against any producer who refused to vote for Pereda. This made little difference as the election in July 1978 was one of the most incompetently fraudulent conducted in Bolivia, with Cochabamba achieving a 102 per cent turn out of registered voters (Dunkerley 1984). In Santa Rosa, incidentally, the ballot box was controlled by Juan Caballero (Household 13) and Juan Betancur, the nearby landowner. Other reliable informants recounted that there were no ballot papers available on the day of the election, although Juan Caballero delivered a box full of cast votes to the office in Cochabamba.

CHAPTER FIVE

Farming in Santa Rosa

I. Introduction

In this Chapter the organisation of agricultural production in Santa Rosa is described in detail, with particular emphasis on the practices associated with potato cultivation. One of the reasons for this is to examine the degree to which the intensification of commodity relations has brought about changes in technology and farming practices. A second line of inquiry is to assess in qualitative terms the labour demands of the farming system, especially its role in influencing gender divisions, besides other aspects of household organisation and mobilisation of labour within and between household units. A third objective is to evaluate the costs of production and returns on investment derived from potatoes. In this respect it is necessary to appreciate the substantial financial outlay required in renewing means of production under the present-day potato farming system, although the specific consequences of limited capital resources for poorer households are discussed in Chapter Six. Thus, the main purpose of this Chapter is to provide much of the necessary baseline detail regarding agricultural production which will support the analysis of subsequent chapters.

This Chapter will consider in depth the interaction of the forces and relations of production in the labour process of potato production in Santa Rosa, and will summarize the labour process in other agricultural activities. Throughout, reference will be made to the physical environment, as any farming system must be seen in the context of local agro-ecological conditions. Only in the light of these is it possible to understand the degree to which commodity production has come to dominate household reproduction.

To delineate the labour process in agricultural production in Santa Rosa, technical considerations and social consequences will be outlined for each stage of the potato production system. This is not to imply that "technical" considerations are given: they are, of course, as socially constructed as the relations of production themselves. It will be necessary to distinguish the types of potato crops, their environmental limits and their growing seasons, before describing in detail the various stages of the production and marketing process. Marketing will be discussed here to illustrate once again how essential are technical considerations (the carrying capacity of a horse, the hazards of the truck route) to the production and reproduction of social relations. An attempt will be made to evaluate the costs of and returns to potato production, and the ecology of recent intensification in potato will be examined. Finally, the labour process in other crops, principally maize, will be summarized. There is also a brief illustration of the persistence of non-monetary exchange mechanisms through a short description of a long-distance trading arrangement.

II. The Potato Farming System

II.1 Temporal Potato

It is necessary, first of all, to identify and distinguish between the two types of potato crops grown in Santa Rosa. Mishka, commonly known as early potato, is cultivated at lower altitudes during the dry winter months (April to November) when irrigation is required, but the extra work involved is more than offset by the higher prices of new potato harvested in the spring and early summer. Mishka potato is the more highly commercialised and it is this crop which dominates in Santa Rosa. In contrast, in the higher, unirrigated lands the temporal, or late potato crop, is sown to take advantage of seasonal rainfall (November to March). Table 5.1 provides the sequence of planting and harvesting times for both mishka and temporal potato: Figure 5.1 presents similar information in diagramatic form. The temporal crop is the less important, but will be considered first in order to emphasise the distinctions between the two.

The temporal crop is known in Quechua by the terms Jatun Tarpuy (literally the large harvest or big crop) or Wata Papa (potato of the year) illustrating its importance as an annual crop upon which the household depended for at least part of its subsistence needs. Forming one component of a diversified agro-pastoral system, the temporal crop is sown in highland chacras (land plots) which are subject to lengthy fallowing and limited crop rotation. These plots often contain a variety of potato types and are grown together with the other high Andean tubers, oca (Oxalis tuberosa) and papalisa (Ullucus tuberosum). Prior to sowing a temporal crop, the plot may receive an application of animal manure to improve fertility, but is rarely treated with either chemical fertilisers or phyto-sanitary products. This is partly because temporal potato is cultivated in a relatively "clean", high altitude

environment which is largely free of the more common pests and disease found at lower altitude (e.g. late blight and tuberworm moths) which are inhibited by the cool climate (sub-zero night time temperatures). These environmental conditions provide the higher altitude areas with the possibility of supplying "clean" potato tubers for use as mishka seed (1) in the lower zones, besides acting as repositories of potato germplasm through traditional practices maintaining genetic diversity (Brush 1980, Brush et al. 1981). It might also be thought that a potentially symbiotic relationship between potato producers at different altitudes could exist, although this has changed as a result of the intensification of commodity relations.

In some highland communities within the Morochata zone the production of temporal potato has gradually become more commercialised in response to the demand for seed amongst mishka producers in the inter-montane valleys. Some of the communities (known as estancias) above Morochata, such as Wila Khollpa, Patamorochata and Iglesiasani, have developed important reputations as producers of Waycha Pacena (Solanum stenotomum subsp. stenotomum) potato seed, with purchasers coming from as far away as the Upper Cochabamba Valley. The growing demand for potato seed of the Waycha variety from these communities is proven, first, by the price, which is consistently above that for first class mishka ware potatoes (2), and secondly, by the behaviour of seed producers. In preference to selling their crop for cash in the Morochata market, some seed producers now only invest it in sharecropping arrangements with mishka producers. In Chapter Six there is a discussion of the sharecropping system within a wider examination of the need to procure seed.

II.2 Mishka Potato

So far, the general characteristics of, and distinctions between, the mishka and temporal potato crops have been identified with regard to their being irrigated or rainfed, cultivated at lower or higher altitude, and with more or less commercial orientation, respectively. As the English terminology suggests, with notions of "early" and "late" crops, there is a degree of complementarity in their agricultural calendars, with only relatively short periods of overlap. This theoretically allows households to engage in the production of both crops without creating excessive demands upon labour. In practice, however, access to land at both higher and lower altitudes is not always possible, nor necessarily pursued. As mentioned in the preceding chapter, in contrast to an idealised Andean strategy of households seeking to disperse their resources in land in order to take advantage of ecological diversity, the tendency since the Agrarian Reform has been to consolidate and, where possible, expand around their holdings. Although a number of households in Santa Rosa referred to the intention of cultivating chacras in common land within the highest reaches of the locality, few appeared to have the labour resources or the motivation to actually do so during 1981-82, and those that did so planted only small quantities of seed (less than 100kg) for a temporal crop.

Because of the variations in ecological conditions due to altitude it is possible to identify a consecutive series of cropping cycles for mishka potato, each associated with different planting times and growing seasons at different altitudinal levels. These are outlined in consecutive order, in the same way by which they are known locally, i.e. First Mishka, Second Mishka etc., commencing from the lowest part of the community and moving up the hillside. The significance of the planting dates is explained below.

TABLE 5.1: The Calendar for Mishka and Temporal Potato, Santa Rosa.

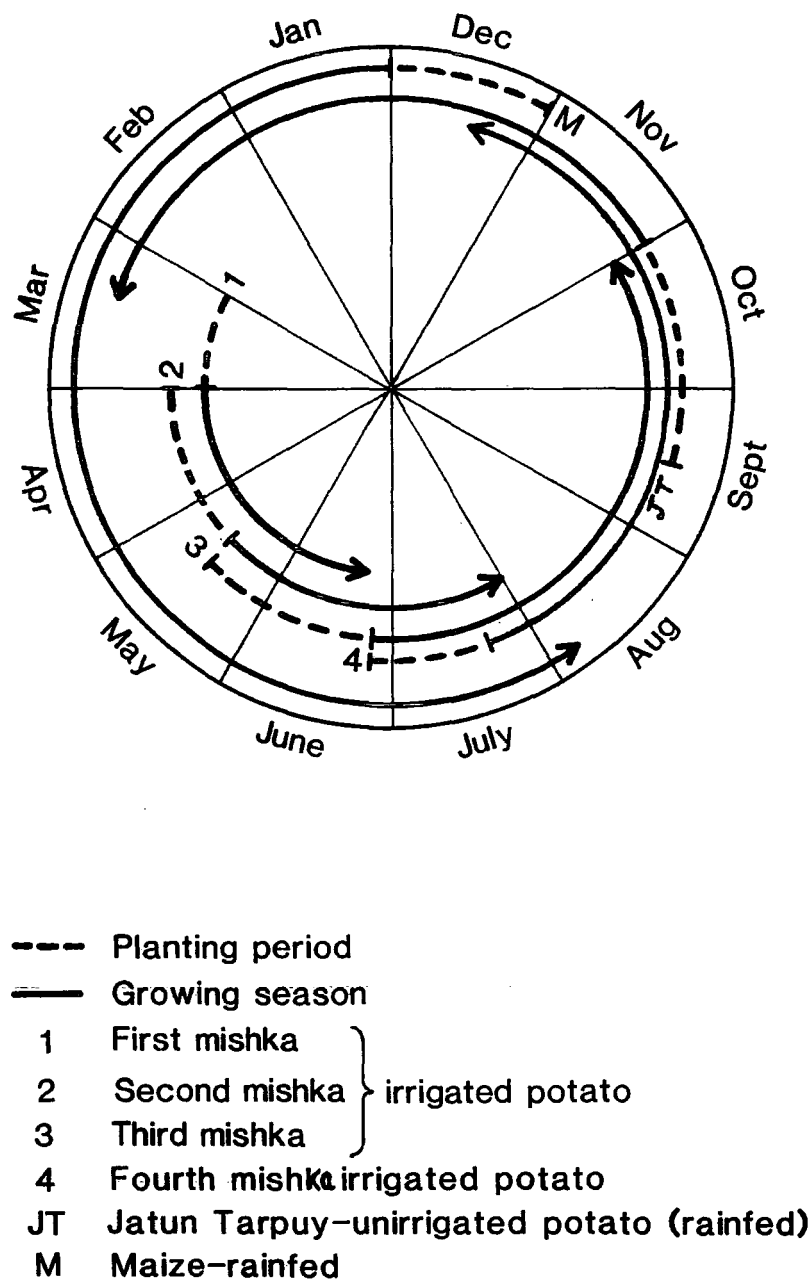
CROP	PLANTING TIMES	HARVESTING MONTHS	ALTITUDE
First mishka	Early March to early April	Late May, June to early July	2,300m- 2,450m
Second mishka	Early April to 15th May	July, August	To 2,600m
Third mishka	16th May to 24th June	Late August to October	To 2,750m
Fourth mishka	25th June to 20th July	November to early January	To 3,000m
Jatun Tarpuy	14th September to early December	March, April, May	>3,300m

Note: For the significance of specific dates see text.

Source: Field Data

As Table 5.1 indicates, there is the potential for year-round planting of potatoes in Santa Rosa. While the dates denoting the planting limit of each mishka crop are no longer seen as fixed, they do nevertheless provide operating targets around which household activities are organised. Naturally, practical constraints might delay the planting of the first mishka crop in a parcel of land normally sown in March. For example, a frequent hazard at this time of the year is that prolonged rains make soil preparation difficult, but the household will simply endeavour to plant as soon as conditions improve. The recognition of micro-ecological variations means that households allocate an individual plot of land to an appropriate mishka, in terms of planting dates, largely on the basis of its altitude but with due consideration for soil characteristics (fertility, drainage) and for accessibility to irrigation water. In essence, then, this means that the lowest lying land is planted in early autumn, with subsequent mishka crops being planted through

Figure 5.1: Agricultural Calendar for Santa Rosa



the winter months on successively higher plots. As mean temperatures fall with increasing altitude, growing seasons are therefore prolonged at higher levels.

The significance of the calendar in these rural lives is, of course, multidimensional. For instance, the specific dates marking the end of the second and third mishkas are saints' days, fixed by the Church. The first, 15th May, is the feast of San Isidro, el labrador (St. Isidore, the farmer) who is widely venerated, in the Spanish-speaking world, as the patron of peasants. Gade (1975) describes the agricultural significance of this fiesta in the Vilcanota Valley, where it coincides with the harvest period though the associations are Old World: "wheat, oxen, the plough". In Santa Rosa the same associations are evident although the festival marks the end of the second mishka planting period. In the higher reaches of the community, a field ceremony takes place on communal land in which the principal activity is the ritual ploughing of the soil, with women following the yunta broadcasting grain, mostly maize. The sowing of seed is symbolic, but greatly surpassed in significance by the attention given to oxen. Every household which has one takes it to the site of the ceremony, though none takes more than a pair (yunta) for use in the ploughing. Though a symbol, in the Old World, of gratitude for the harvest, the prime motivation for the festival of San Isidro in Santa Rosa appears largely associated with fertility and renewal.

The feast day of San Juan (St. John) marks the end of the third mishka planting period on the 24th June, though it is not otherwise associated with agriculture. Nevertheless, a feature of this fiesta of possible interest here is the practice of making bonfires. While this facilitates the disposal of barbecho (weeds and natural vegetation) cleared from land prepared for planting, the most interesting coincidence is the creation of much smoke at mid-winter, a time of high probability of frost. This is only a speculative interpretation of a link between the occurrence of a

natural phenomenon and a cultural practice never actually explained as a deliberate risk minimizing strategy. However, at a time when young potato plants are most vulnerable the persistence of the smoke clinging to the hillsides for several days following the fiesta provides grounds for the suspicion that the practice may be of greater practical value than might initially appear.

II.3 Fallowing

A basic point that must first be made for the farming system to be described here is that a potato crop **always** breaks the fallowing of land. The length of time that a parcel of land has been lying fallow will vary greatly depending upon a number of factors. For example: the amount of land to which a household has access and whether it can afford to leave some out of production; the location of the parcel, since those adjacent or close to the place of residence are more intensively cultivated than those further away; the capability of the soil to sustain intensive cultivation, in particular its characteristics after the last cycle of production (residual fertility, soil structure, quality of regrowth, signs of erosion and so on). However, the malleable nature of fallowing is most apparent under the process of commoditization when flexibility of choice and timing is rendered hostage to force of circumstance. In other words a recognition of the need to leave land to regenerate earlier levels of fertility may be constrained by the necessity to maximise production under the circumstances of the "simple reproduction squeeze" (Bernstein 1979). Unable to raise yields, households reduce the period that land is under fallow, with a tendency to prolong cultivation by extending the cropping cycle, with neither adequate fertilization practices nor crop rotation. Fallowing increasingly appears to have become the final response to declining crop yields. Land preparation, then, is determined by these considerations and the amount of labour involved will generally vary directly according to the length of fallow (3).

II.4 Land Preparation

Operations commence, from two to four weeks before planting, with the clearing of barbecho, the natural regrowth. If left uncultivated for less than, say, two years, then the clearing of the barbecho is a relatively simple operation in cutting back the taller standing weeds and proceeding directly to ploughing. There is no use of a sickle, rather a smaller, knife-length, curved blade with a serrated edge called an hoz, is used to cut the stalks grasped with the free hand. This is an inefficient operation, though not particularly demanding and may be performed by women, and even children down to the age of seven or eight, while an adult male ploughs in another part of the field. Early colonizing plants that dominate a short fallow regrowth are challanka, a spiny broadleaved thistle; muni; sunchu; and hyac pichana. This latter weed is cut and used to sweep floors free of fleas. Later shrubs are dominated by kini, which possesses particularly ferocious thorns and extensive roots.

For land left in fallow for longer periods, the clearing of barbecho becomes a heavier and more difficult task, with the work performed exclusively by adult males. If assistance is sought, then, for poorer households, it is usually amongst kin or close friends on the basis of a loose reciprocal exchange of a day's labour (ayni). On the other hand richer households may either pay wages (jornal) or use a bonded form of ayni, an arrangement which will be discussed in detail in Chapter Six. Clearing the woodier thorny shrubs is done by machete, with a pick used to extract the thicker roots. The vegetation is collected together and burnt in bonfires which is simply the most effective method of disposal; it is not seen as contributing a source of soil nutrients through the dispersal of the resulting ash around the parcel.

Before the preparatory ploughing can commence, and unless the soil retains sufficient moisture from recent rainfall, the land is given its first thorough irrigation. This prevents the plough simply skimming through the dry, friable soil without adequately turning over the sods; it also aids aeration (4). For the second and subsequent mishkas, irrigation of the parcel is usually necessary. This requires the clearance and rehabilitation of the water channels blocked by the debris accumulated over the fallow period. Another supplementary task at this stage may be to construct a new plough, or at least to replace the shaft (timon) that links the plough with the yoke (yugu). Besides the metal tip (espeja) which is purchased, the wood used in the construction of a plough is formed from timber felled in the highest parts of the community's land (5).

Once the excess barbecho has been cut, the first ploughing commences with a rayada, a ploughing which carefully follows the contours of the land in the way the planted furrows will do. Subsequent ploughing operations are called cruzadas and there may be up to three of these, cutting across the land contours at different angles to ensure a thorough turning of the soil and reduce the overturned clods in preparation for pick work. Known as q'orpear, this stage of soil preparation is without doubt the most exhausting and least rewarding task associated with potato cultivation. In ergonomic terms, the task involves the swinging of a pick with back bent, slowly progressing across the ground breaking-up the clods of earth, removing the larger rocks and gathering together roots, weeds and clumps of grass for collection and burning. The object of this labour intensive activity is to create optimum conditions for the development of the young potato plants, especially in giving them an advantage over competing weeds. However, precisely because of its demands upon labour, not every household is able to give it the same priority.

Amongst many of the poorer households who do not own oxen, for example, the renting of a yunta for both preparation and planting operations requires payment, most commonly in labour, through the "reciprocal" exchange of an equal number of days of human labour as that involving the hire of a yunta. This means that the household's own on-farm activities may be skimmed in order to secure access to production inputs. This is most noticeable during the early stages of the production cycle, where soil preparation amongst the poorer households is often perfunctory, consisting of minimum ploughing with rented oxen. For the richer households, on the other hand, labour can be mobilised for the task of q'orpear through the renting of oxen or horses, and through the use of credit mechanisms designed to encourage the bilateral "bonding" of poorer households, an issue which is discussed in Chapter Six. The arduous nature of q'orpear and its marginal returns to labour ensures that the better-off households seek to employ labour beyond the ranks of their own members who, in turn, can pursue more remunerative or immediately productive activities.

While the stage of soil preparation involves the greatest drudgery of human labour, it also represents the most flexibility of choice within the potato production cycle. In other words, beyond the minimal level of preparation that is required to permit the planting of potato seed, there is no compulsion to provide further investments of labour yielding only marginal returns. Thus, for households where labour is in short supply, soil preparation may be skimmed, and kin and non-kin are, in preference, mobilised for the subsequent, more important tasks of planting and, eventually, harvesting. Decisions regarding the mobilisation of family members and social networks must be taken by each household, then, on the basis of its own human resources, and by calculating the opportunity cost of labour within economic constraints and perceived advantage.

For example, the opportunity cost of using a household member in soil preparation is high if he (no women perform q'orpear or ploughing activities) can pursue a more lucrative alternative. This is especially attractive if the household is able to substitute replacement labour at low cost; this makes forms of "bonding" between households (based upon unequal access to means of production and the opportunities for one unit to provide inputs and credit to the other) especially important, and the subject for further examination. It is also necessary to recognise the persistence of such "traditional" terms as ayni and mink'a, though their use by the well-off sharply deviates from conventional interpretations, as we shall later see.

II.5 Planting

The operation of planting a parcel of land with potato is a significant logistical exercise, involving the mobilisation of sufficient labour, the procurement of livestock and the transport of seed and chemical fertiliser. It represents a highlight of the year and a focus of activity involving all household members, from children to grandparents, as well as extra-household labour. The contractual arrangements involving this latter group vary, according to the different kinds of networks which are mobilised; for example, kinship, compadrazgo, friendship or just residential proximity. Between poorer households non-waged arrangements under the ayni system of reciprocal labour exchange are most common, while amongst the better-off wage labour or its disguised form is more important (see Chapter Six for data and a discussion of this issue).

One of the more "traditional" arrangements that persist involves women's participation in the planting operation. Where women from outside the household are employed, due to the absence or non-involvement of female family members, they may sometimes be contracted under an arrangement known as papa tarpuja. Here an older woman,

usually a widow, promises to provide both a day of planting and a day of harvesting work foregoing a cash wage to receive the harvested crop of one furrow (surco) of potatoes. This arrangement may continue partly because it is believed it helps to contribute to the maintenance of women-headed households for it is older women with children - rather than the young and single - who are involved.

This raises an appropriate opportunity to specifically address the involvement of women in a potato production process which conforms to the model of a "male farming system". According to Boserup's simple two-fold classification, agricultural production in Santa Rosa would fall into this category because of the prevalence of plough technology, private property in land and the dominance of male labour in field tasks (Boserup 1970). However, there are limitations to applying such a generalised label based upon some simple sexual division of labour.

First, because women's participation varies according to landholding strata, family life cycle and household composition - especially the availability of male labour. Secondly, I concur with the argument of Deere and Leon (1982) that agricultural production encompasses more than the performance of field tasks and involves various "reproductive" activities that establish the conditions for the daily maintenance of the household. Thirdly, there are multiple questions deriving from the nature of gender relations within the household that concern the distribution of power, decision-making responsibilities and control over resources. Many of these issues are pursued in some detail in Chapter Seven. The primary concern here, however, is with the specific techniques and arrangements associated with potato production.

While rejecting the notion of a "male farming system", it must nevertheless be recognised that there is a clearly defined sexual division of labour in agriculture in Santa Rosa and the existence of gender-specific tasks. One area,

for example, from which women are rigidly excluded is ploughing. This is justified by men at one level by women's apparent lack of strength, but at another by reference to unpleasant mythical consequences should they attempt to do so (the breaking of the plough stock, for example, which is a sign of bad fortune). Yet while ploughing is the major male-defining task in agriculture, circumstances in Santa Rosa support Radcliffe's observation from a village in Southern Peru that not all men can plough, and many rely upon a few skilled practioners to perform the task (Radcliffe 1986; also Bourque and Warren 1981).

The sowing of the potato seed (i.e. the tuber that will propagate the plant) is assigned on similar grounds of the sexual supernatural, this time to women with all the symbolic associations with fertility. Note that only the relics of a "traditional Andean" planting ritual survive in Santa Rosa today; a ceremony observed only once on at least thirty planting occasions involves an offering to Pachamama, the earth goddess, of a mesa which is placed upon the ground and burnt (6). Thus the hangovers from the past are partly reflected in the justification of roles which, ideally, are ascribed to participants by sex. However, this does not prevent males substituting for women when necessary in order to plant the potato seed. As Radcliffe (1986) observes, the effect of the sexual division of labour is that men can substitute for women and, consequently, carry out all stages of the agricultural cycle, while women are sanctioned to rely upon men for particular tasks (e.g. ploughing), even when female-headed households attempt independently to raise a potato crop. Thus, women's access to agricultural resources is almost always mediated by men, and arguably results from a shift in the balance of gender relations accompanying commoditization (Bourque and Warren 1981).

Tubers used as seed potatoes are now increasingly acquired from beyond the boundaries of Santa Rosa. Although households may once have stored a greater part of their seed requirements from the previous year's harvest, today problems associated with the intensification of production ensures that most seed stock is replenished annually. Some of the agronomic factors involved in this development are explained later in this chapter; the social and economic consequences of frequent seed replacement for poorer households are addressed in Chapter Six. It should be noted here, however, that tubers suitable for use as seed potatoes cannot simply be reproduced from a previous mishka crop, which is vulnerable to infestation and disease.

Suitable seed potato is generally of the size known as murmu, with each tuber weighing between 40 and 60 grammes (7). It is common for many of the poorer households to plant a small plot of land with ch'ili murmu, the fourth class of tuber weighing between 20 and 40 grammes. This would be to produce potato purely for domestic consumption as yields, both in terms of quantity and quality, are low from such small seed. For a commercial mishka crop, however, more care is taken with the selection of the seed. After purchase and just prior to planting, women will inspect the tubers individually, removing sprouts (which, it is believed, will cause the seed to rot if left untouched) and slicing the larger murmu in half. The cutting of seed deserves comment for it suggests that it is designed to conserve stocks (i.e. make the seed "go further"), though producers believe that one half of a murmu-sized tuber produces more than an undivided smaller seed.

In his study of the Vilcanota Valley, Gade states that whilst planting a large tuber yields a larger harvest, peasants prefer to plant small tubers to conserve food; fear of theft of the planted tuber also being a motivating source of caution in some localities (Gade 1975:41). According to potato agronomists, Beukema and van der Zaag (1979), the planting of a whole seed is usually found to

give better yields as it has a greater skin surface and thus is able to produce more stems than a cut seed of equal weight. Another problem arising from cutting may be the transmission of several kinds of disease with the knife, a distinct possibility where seed disinfection is never practised. Despite this, cutting makes limited amounts of seed go further and, it may be conjectured, has resulted in the poorest households planting tubers with a declining mean diameter.

The transport of seed and chemical fertiliser to the site of planting may be a complicated logistical exercise depending upon its distance from the village and the size of the area to be planted. The seed, in 100 kg sacks (a carga), and fertiliser, in 50 kg sacks (a quintal), are carried by horse or mule during the day before and on the morning that planting operations commence. The importance of access to equine power cannot be underestimated for the movement of more than a carga of seed over a distance of more than one hundred metres is seen as impossible without an animal. If it does not have a horse or mule of its own a household must either hire one (or more) for cash (by the day or by the round trip between house and field) or in return provide labour for an equivalent number of days. The owner of the animal will ensure that it is not doing the work of two, for there is a general consensus about the number of return trips a loaded animal can make between the village and the fields which lie both below and above it. An elder male within the household takes the responsibility for collecting and returning the animal to its owner. He will ensure that, at the end of the day, the animal is in a good state for, if it is sweating heavily, or has not been fed and watered, future access to it may be jeopardized. Clearly, in relation to the distance of fields, the nature of the terrain and the loads to be carried, equine power in Santa Rosa is a critical factor of production (8).

The planting operation can now be described by considering the individual tasks and responsibilities which must be performed within the overall process. The sokador or yuntero who drives the oxen opens up the furrow while carefully following the contours of the land. This task is usually performed by the male head or elder son if the household possesses its own yunta or, if rented, the owner or a hired labourer may be used. In Santa Rosa no more than one yunta is employed during the operation, though elsewhere in the zone larger landowners may use two or three yokes of oxen simultaneously during planting. Immediately following behind the yunta is the task of chujchukiruy, an activity performed by male members of the household (down to the age of twelve and even ten years) and the most frequent task of hired labour. It involves deepening the furrow made by the plough with the use of picks (chujchukas). Numbers involved vary from two to four or five persons, depending upon the width of the field and the amount of labour available. Besides moving quickly in order to deepen the furrow by scooping out loose soil, they also extend the furrows to the very edge of the field, where the plough is unable to reach because of the turning space required by the oxen. They must ensure that on the return ploughing the tuber-bearing furrow is thoroughly covered over by soil.

Following behind the males with picks are the muju t'akana, women who walk along the furrow dropping a tuber directly in front of one foot and stepping upon it with the other. In this way the potato seed is spaced from six to nine inches apart, although if they are small then sometimes two or even three tubers are dropped together, contradicting the conservationist rationale of cutting the seed. The tubers are carried in a cloth slung around the shoulders (a llijlla or awayo) and this is replenished every five to ten rows. Usually at least two women work as seeders, and if they are not members of the household will be kin or neighbours who are either paid in cash or in kind under the arrangement of papa tarpuja (see above).

Following the seeders comes the least arduous task of the planting operation: aboniana, the sprinkling of chemical fertiliser granules along the furrow. This is a task which is frequently given to children, male and female above the age of eight. Occasionally one adult will run the length of the furrow if the planting operation is being performed with a skeleton labour force. The importance attached to chemical fertiliser is discussed later in the chapter, yet despite its indispensable and almost fetishistic association with the planting of potato, it is generally applied in a manner reflecting the quantity available for use rather than with respect to levels of soil fertility. Consequently, rates of application vary widely, though by weight a general ratio with potato seed is 1:3 to 1:6 or 1:7. A breakdown of quantities and costs of inputs appears later in the chapter.

This fairly elaborate division of labour by task is not, however, necessarily as rigid as the description might suggest, due to the problems of mobilising sufficient labour to fulfill each role. Some individuals may end up doing two jobs or help with the fetching and carrying involved; this leads to the disruption of the operation and causes people to suspend their task while others finish theirs. Sometimes planting operations are suspended, during normal working hours, for lack of one or other principal inputs, but this illustrates either a level of disorganisation of the household or a scarcity of resources. Generally the intention is to occupy the entire planting day, though at a relaxed pace, with frequent intervals to chew coca which, along with food, is supplied by the employing household.

II.6 Tending

During growth, potato plants receive periodic attention to provide suitable conditions for their productive development. The most important requirement for mishka potato is the provision of irrigation water to maintain soil moisture, followed by practices of ridging and weeding, and often some phyto-sanitary treatment. The crop receives its first attention approximately four weeks after planting, when some delicate pick work loosens the soil around the newly emerging plants and establishes katos every four or five rows; these are channels for the irrigation water. Such tending practices are usually always performed with a pick, or sometimes a mattock with a broad blade, which makes the task more strenuous and back-bending than it need be. Shortly after, the crop receives its first of the five, six or seven irrigations which are required, depending upon the mishka cycle.

The system of access to irrigation water in Santa Rosa is simply a "free-for-all". Unlike other agricultural communities in the zone that adhere to a mita, a rotational system following a universally known list of "turns", in Santa Rosa individuals may arbitrarily decide to divert the water of one of the two streams that feed the community to irrigate their fields. This results in a great deal of wasted time as individuals in the higher lands intercept, and consequently disrupt, water supplies to those below. For example, a frequent occurrence is for someone who has just begun to irrigate a potato crop in the lower part of the community to find the supply of water is interrupted, requiring a climb, possibly up as far as Palta Loma, in order to restore the flow. Consequently many households with lower land irrigate by night when there is little competition for water with those above (9).

The practice of ridging-up of the soil has been carried, together with the potato, throughout the world. Yet here, in its region of origin, the practice is not solely confined to the cultivation of tubers. Generally known in Spanish by the term aporque, in Quechua the ridging of potatoes is called kunkay and of maize jallmay. The work is done by pick or mattock (azodon) and besides building up the soil around the base of the plant, protecting the developing tubers from breaking through the soil surface, it removes competing weeds and establishes the channels for irrigation water to thoroughly soak around the roots of each plant. In Santa Rosa, unlike some areas in the Cochabamba region, a yunta is never used to deepen the furrows between rows of potatoes; the process of ridging is done entirely by hand. Most of the tending practices are again done by men, though women will participate in the process of irrigation, which is in contrast to Radcliffe's observation from Southern Peru where it is believed that contact with water threatens women's fertility (Radcliffe 1986). In Santa Rosa they will often secure and retain a supply of water while their partner delivers it to the plants. However, ridging work is generally performed by men, and a potato crop will receive two or possibly three aporques, although sometimes only one is managed.

Finally, the application of phyto-sanitary chemicals to potato crops is marked by such individual idiosyncrasy regarding frequency, timing, products and methods that a more detailed discussion of the practice is deserving later in the chapter. While the difficulties associated with pest and disease are serious, the means of combatting them are a greater cause of concern. A crop may receive two, three or even four applications of a chemical "cocktail", usually to combat the effects of late blight (Phytophthora infestans), the single most important threat to the potato crop. Though there are effective phyto-sanitary products available to combat this fungal disease, unsuitable alternatives are frequently purchased and mixed together. While the spraying

of crops occupies no more than a few man-days per year-and, again, it is a task performed exclusively by men - the use of such products can have longer term effects, as we shall see.

II.7 Harvesting

Two weeks before the actual harvest commences, the haulm or foliage, of the potato plant is cut back with a serrated knife (hoz). Haulm destruction is common practice in potato production for it has the effect of accelerating maturation, thus hardening and thickening the skins of the tubers, and of reducing damage during their lifting (Beukema and van der Zaag 1979). The harvest then generally begins after ten days or so have passed, though sometimes in anticipation of higher market prices a household may be eager to start barely a week later.

In the same way as the planting operation is a focus of household activity so with the harvest - and with something of a sense of relief. Extra-household labour is generally required and mobilised along much the same lines as before: poorer households use networks of kin, compadrazgo and friendship while the better-off households draw upon dependent workers through disguised wage forms. Where payment is made, however, it is commonly in kind, with the 'standard' remuneration una cuarta (a quarter). This is supposed to measure around one arroba (12 kgs) of potatoes, but in practice weights can vary widely. The imprecision of local units of measurement, as well as a somewhat naive faith in their accurate use by rich households, is probably no more clearly demonstrated than when they constitute units of payment for labour. For example, an "arroba" of potatoes received by an informant after a day spent harvesting for a wealthy household (Number 9) was weighed at slightly over 7.5 kgs, much to the informant's surprise. Elsewhere a predominance of smaller tubers - when payment is generally believed to

comprise a mix of sizes reflecting the harvest - was noted, especially involving the Caballero household (Number 13). This serves as a further illustration of the ways in which the land-rich hijack "traditional" arrangements, designed to redistribute surplus product and ensure the survival of the poor, in order to exploit hired labour.

With the exception of the smallest and very largest fields, the potato harvesting operation usually involves no more than six males using picks to lift and collect the tubers and a few women to sort them into size classes. The field is harvested in sections, with the men working uphill and across the rows, turning the soil with the pick, then collecting and throwing the tubers forward into a pile. When this is reached, after some 15 rows, they move down and across and work up again. Meanwhile, two or three women begin to sort the pile of potatoes by size, forming another heap of damaged potatoes affected by rot (jullusqa), infestation or split by the pick in their lifting. The classification of potatoes according to size, each with its name, approximate weight limits and mean diameter for each class, is shown in Table 5.2.

Once each of the piles of harvested potatoes have been sorted by the women into five or six different heaps, these are collected from all corners of the field and loaded into sacks (qangochos). From here the different classes of potatoes are routed to divergent destinations. The chapara and golqe potatoes are almost certain to be transported directly to the road-head irrespective of season and, if an early mishka crop, the murmu and ch'ili murmu will go too. Usually only the smallest potatoes are retained for domestic consumption, while almost all of the first two classes are certain to be sold (10). Few potatoes are wasted, even those affected by rot or infestation are used by the household after processing (e.g. cutting the rotten tubers into slices to dry, then cooking them in the usual manner). The priority, however, is to maximise sales and considerable effort is expended in delivering the potatoes to market.

TABLE 5.2: Size Categories of Potatoes (variety Waycha Pacena)

CATEGORY	WEIGHT (grs)	DIAMETER (mms)
Chapara	80	65
Qolqe	60 - 80	55
Murmu	40 - 60	45
Ch'illi murmu	20 - 40	35
Ch'illi or t'una	<20	25

Source: Field Data

II.8 Delivery to Market

When the track to Santa Rosa was passable, cargo could be collected by truck from the village, so that the harvested potatoes were simply carried back to the house to await collection. At other times, however, when direct access to Santa Rosa has been broken by soil slumping and subsidence making the track impassable, produce has to be transported by horse to Lachiraya, or the nearest roadhead when even the latter has been cut-off. The enormous difficulties of maintaining vehicular access in the area makes equine power indispensable to commodity production. In moving the harvested potatoes either to house or roadhead, horses are contracted in the same manner as at the time of planting and represent, for those households without them, another significant cost and another mechanism by which their autonomy is undermined. Yet even with their own beasts, the operation of moving almost an entire potato crop to Lachiraya, if not beyond, is a substantial task.

A horse or mule can carry one carga (100 kg sack) and one person is required to lead each beast when sections of the track are hazardous and precipitous. The round-trip to Lachiraya takes up to three hours, including the loading and unloading of the animals, but excluding the movement of the cargo across the river by cage (11). Thus, only up to three round-trips can possibly be made in one day and up to a week or more of human and animal labour may be spent moving cargo to a point where it can be loaded onto trucks.

Once they have made a considerable sacrifice to deliver their crop to the roadhead for collection, producers are then placed in an unfavourable position vis a vis the transportistas, the truck owner-operators, whose monopoly control over the transport of goods between the zone and the Lower Valley markets was described in Chapter Four. From August through to December there is almost a daily departure of one or more trucks carrying potato produced in Santa Rosa, and each truck may be filled with the produce of just one household or, more usually, the combined surpluses of several. The size of the loads varies according to the condition of the road, steepness of gradients to be traversed and state of repair of the truck, but between seventy and eighty cargas is an average load. Yet besides being filled to the gunnels with sacks of potatoes, some twenty or more people (including children) accompany the cargo, and on such a hazardous journey it is no wonder that frequently there are accidents involving loss of life and serious injury.

For example, on Friday 14 May 1982 Rigoberto Jimenez, a truck operator and resident of Santa Rosa (Household 9) was returning from Quillacollo. Alongside him in the cabin were his wife and a young child; in the back twelve people from different communities in the zone. As the truck came to a tight bend high above the village of Morochata it left the road and plunged four hundred metres. There were no survivors. There can be few transportistas working the zone who have not had experience of a serious accident. One

informant, Amadeo, who worked as a driver for another operator before acquiring his own truck, injured his back in 1975 when the vehicle he was driving overturned: seven people were killed. It is no wonder that between Morochata and Quillacollo the roadside is littered with small crosses, at points where overloaded trucks have attempted to negotiate dangerous curves on precipitous sections under the control of drivers who prepare for the journey by drinking several bottles of beer or tutumas (gourds) of chicha (maize beer).

The journey to market is not only hazardous but long and arduous. Notwithstanding the possibility of accident, there is a likelihood that passengers will experience delays as a result of mechanical breakdowns, punctures and road repairs. On one occasion in September 1981 a truck carrying producers and their cargo from Santa Rosa took three days to reach Quillacollo, which meant that some twenty to thirty men, women and children were forced to spend two nights sleeping in the open air on top of sacks of potatoes without sufficient food or drink. Even the relatively uneventful trips can be cold, wet and tiring. Usually trucks depart from Lachiraya in the late afternoon and if all goes well arrive in Quillacollo in the early hours of the morning.

The first stop is at the transportista's home and here it is common for the driver's wife to appear and attempt to purchase the entire truck load of potatoes. She will argue that the price in the market that day was 550 pesos per carga, which she is offering now despite the fact that tomorrow it will undoubtedly be lower because of oversupply. The pressure upon producers to sell is considerable: it is late, they are tired, they have no idea what the prices are until they reach the market, and they are in many ways dependent upon the transportista while they are in town. If they resist the offers for potato - but may sell a sheep or eggs as a conciliatory gesture - they will continue in the truck to the central potato market in

Cochabamba (the Tambo). After selling their cargo the next morning, most producers return to the transportista's home, where they will spend a second night sleeping in the garage, before returning to Santa Rosa on the third day, together with the purchases bought with the proceeds of sales.

The subordination of small producers by representatives of merchant capital is perfectly illustrated by many of the mechanisms associated with the commercialization of potato, and these have provided at least a partial focus for studies published elsewhere (Ustariz and Mendoza 1982; Jones 1980; CIPCA et.al. 1979). It is beyond the parameters of the thesis overall, and this chapter in particular, to describe the activities of wholesale potato merchants or to elaborate upon the operation of the local market. It is sufficient to note that producers are vulnerable to price fixing between merchants as well as the manipulation of weights and measures (Ustariz and Mendoza 1982; see also Chapter Four). Given the intense commercial activity and large crowd concentrated in the tambo, producers fresh from the countryside are often overwhelmed by the "street-wise" intermediaries and are placed in a weak bargaining position for improved prices. Once these have been agreed, with prices varying for each size class of potato (i.e. chapara, golge etc.), each sack is placed on the official scales to ensure that it constitutes a carga, and then it is taken away by the merchant. It is the producer, however, who pays the alcabala tax to the alcaldia (the city authorities) for every sack of potato that is weighed on the scales, a tax which in October 1981 was eight pesos per carga.

II.9 Costs and Returns

In concluding this section on the stages and practices associated with the potato farming system, it seems appropriate to attempt a financial evaluation of the costs of, and returns to, production. It should be emphasised that there can be considerable diversity in the quantity of labour invested in the production process, particularly in the earlier stages of soil preparation, as well as a substantial range in final yields. Labour inputs will vary according to household composition, the degree of involvement by its members in off-farm activities and the availability and cost of non-household "substitute" labour. Potato yields, on the other hand, will be determined by such factors as the quality of seed, levels of soil fertility and the timing and efficacy of such practices as irrigation and fumigation, as well as the prevailing environmental conditions including the occurrence of "natural" hazards, for example frost, hail and pests. Consequently, it is not only difficult but can be misleading to cite "average" yields when these may disguise differences of production strategy (including control over the decision-making process, i.e. dominant or subordinate) besides the quality and quantity of productive resources and the outcome under the given environmental regime.

During a two-week period in late-October / early-November 1981, sampling was conducted in four parcels of land that were each owned by different households and in each of which a potato crop was being harvested. Depending upon the size of field, either two or three ten square metre plots were marked out and the tubers from each were classified and weighed. This exercise revealed a considerable range in yields between parcels but also, to some extent, within them. Yet more significantly still was the variety in the composition of the tubers produced by each plot, that is in terms of size classes and quality.

These figures indicate that although there is considerable variation in potato yields in Santa Rosa, they compare favourably with potato production zones elsewhere (12). The example of Parcel 1, however, gives a somewhat high and misleading impression, for in calculating the yield per hectare from the mean gives a figure of 25.8 tonnes/ha, close to the levels found amongst the most technologically advanced food-producing nations (Horton 1978). While such yields are unrealistic given the level of technology and the quality of seed, it does nonetheless indicate the possibilities for improvement under favourable, if not optimum, conditions. In this case the parcel of land was being cultivated for the first time in many years, a generous quantity of chemical fertiliser had been applied at planting (13) and there was little problem with late blight, although some fifteen per cent of production suffered from infestation, resulting from potato tuberworm (Phthorimaea operculella). The main feature of this crop, however, besides its overall yield, was its composition according to the size categories of potato.

Table 5.3: Composition of sample plots by class of tuber.
All figures, besides percentages, in kilogrammes

Parcel 1: Lower-middle altitude; sharecropped production

Class	I	II	III	Mean
<u>Chapara</u>	1.5 (6%)	6.0 (20%)	5.5 (24%)	4.3 (17%)
<u>Qolqe</u>	12.0 (49%)	13.5 (45%)	9.0 (39%)	11.5 (45%)
<u>Murmu</u>	6.0 (24%)	4.5 (15%)	6.0 (26%)	5.5 (21%)
<u>T'una</u>	1.5 (6%)	-	0.5 (2%)	0.6 (2%)
Unfit	3.5 (14%)	6.0 (20%)	2.0 (9%)	3.8 (15%)
Total	24.5	30.0	23.0	25.8

Parcel 2: Middle altitude; independent production

Class	I	II	III	Mean
<u>Chapara</u>	1.0 (8%)	1.4 (20%)	2.8 (24.5%)	1.7 (17%)
<u>Qolqe</u>	4.0 (32%)	1.5 (22%)	4.6 (40.5%)	3.4 (33%)
<u>Murmu</u>	5.0 (40%)	2.4 (35%)	2.0 (17.5%)	3.1 (30%)
<u>T'una</u>	2.5 (20%)	1.6 (23%)	2.0 (17.5%)	2.0 (20%)
Unfit	-	-	-	-
Total	12.5	6.9	11.4	10.3

Parcel 3: Middle altitude; sharecropped production

Class	I	II	Mean
<u>Qolqe*</u>	6.7 (38%)	6.1 (38%)	6.4 (38%)
<u>Murmu</u>	3.5 (20%)	5.0 (31%)	4.3 (25%)
<u>T'una</u>	2.0 (11%)	2.8 (18%)	2.3 (14%)
Unfit	5.6 (31%)	2.0 (13%)	3.8 (23%)
Total	17.8	15.9	16.9

Parcel 4: Lowest altitude; independent production

Class	I	II	Mean
<u>Qolqe*</u>	2.1 (26%)	3.0 (31%)	2.6 (30%)
<u>Murmu</u>	2.2 (27.5%)	2.6 (27%)	2.4 (27%)
<u>T'una</u>	3.7 (46.5%)	3.5 (36%)	3.6 (41%)
Unfit	-	0.5 (6%)	0.25(2%)
Total	8.0	9.6	8.8

Unfit means unsuitable for sale; used for domestic consumption.

* Negligible quantities of Chapara size potatoes produced

Source: Field Data

After variety and freshness, the market price of potato is determined according to its size (14), thus there is an obvious desire amongst producers for larger tubers. In the case of Parcel One, some 62 per cent of the crop comprised chapara and golqe classes. Compare this with Parcel Four, where only 30 per cent of the crop, according to the mean of the two sample plots, comprised Class II potato while over two-fifths was made up of the smallest, least valuable tubers. There is no doubt that the poor yield in this parcel of land was a result of a combination of factors including its recent cropping history (intensively cultivated over several successive years) and location. The latter is important, for it lies in the lowest part of the community where temperatures are noticeably higher and the soil surface can be baked to a crust, especially under gravity irrigation. It was noticeable that under such high temperatures the potato roots had produced an enormous quantity of tiny tubers but very few of which had grown to a sufficiently profitable size. This is a phenomenon known as chain tuberization or secondary tuber formation which results from high soil temperatures (Beukema and van der Zaag 1979). Thus, it is important to recognise that notions of "average yield" tell only part of the story: the yields in Parcel 3 were reasonable, but included an unprofitably high proportion of damaged and infected tubers (in this case resulting from late blight). It would, therefore, be misleading to extrapolate per hectare yields from the aggregated sum found in these ten square metre sample plots.

Given this warning, we can now provide a summary of the costs and returns to production based upon a review of the three year cropping records for some seventy separate fields given by selected households in Santa Rosa. All the prices used here were those most frequently recorded during the last quarter of 1981. Given the diversity of circumstances and the, inevitably, incomplete or mistaken responses, the summary costs and yields are based upon an ideal-typical "model parcel" rather than statistical averages.

The parcel measures 0.45 hectares in area, which is larger than many fields in Santa Rosa but nonetheless provides a more truthful reflection of actual costs than making calculations based on one hectare. While costs and profit per hectare facilitate comparison between areas, they severely distort the true picture comprising a mass of small plots which suffer from diseconomies of scale. For example, a field half the size of another has three quarters of its circumference, thus proportionately more time is lost extending furrows to the field boundaries where there is insufficient turning space for oxen, as well as suffering from greater problems with bush encroachment. It is also noticeable that the rhythm of work is more relaxed in a smaller field where tasks are completed sooner. Thus, the outline of costs and returns presented below is felt to provide an indication rather than a precise and definitive statement of those in Santa Rosa.

It must be emphasised that Table 5.4 provides only a schematic outline of production costs and has drawn a fairly tight boundary around a consideration of field tasks. For example, the cost of coca and food consumed during the performance of productive activities, which constitute part of the wages paid to hired labour, are excluded as is a valuation of the labour-time of women involved in food preparation and delivery. The assessment of labour inputs at each stage of the production process could vary slightly according to household circumstances, but are believed to reflect optimum levels. In practice, of course, the labour of household members is not costed and more real time than that suggested here is spent in farming duties, e.g. assessing the crop state, evaluating the need for certain kinds of intervention (irrigation, fumigation, ridging), cleaning out the irrigation ditch, repairing tools and so on.

Table 5.4: Potato Production Costs and Returns

Costs of Production

Preparation

<u>Yunta</u>	6 days @ 50 pesos/day	300	
Labour <u>yuntero</u>	6 days @ 30 pesos/day	180	
<u>q'orpear</u>	7 days @ 30 pesos/day	210	
			690

Planting

Potato seed	5 <u>cargas</u> @ 500 pesos	2,500	
Chemical fertiliser	3 <u>quintales</u> @ 650 pesos	1,950	
Labour for 2 days:	3 women @ 20 pesos/day	120	
	6 men @ 30 pesos/day	360	
<u>Yunta</u>	@ 50 pesos/day	100	
Horses	3 @ 30 pesos/day	90	
			5,120

Tending

Labour: 2 <u>aporques</u>	@ 30 pesos	60	
3 irrigations		90	
2 fumigations		60	
Fungicide/pesticide		300	
			510

Harvesting

Labour for 2 days:	4 men @ 30 pesos/day	240	
	2 women @ 20 pesos/day	80	
Labour and horses to move crop from field to house			
	10 horse-days @ 30 pesos	300	
	6 man-days @ 30 pesos	180	
			800

Table 5.4: cont.

Transport and Marketing

35 cargas produced of which 30 cargas to be sold

Truck tariff: 30 <u>cargas</u> @ 45 pesos	1350
<u>Alcabala</u> (Municipal tax) @ 8 pesos/ <u>carga</u>	240
	1,590

Total Production Costs	7,120 pesos

Total Costs of Production and Marketing	8,710 pesos

Returns from sales

35 cargas sold of which:

4 x <u>Chapara</u> @ 600 pesos	2,400
12 x <u>Qolqe</u> @ 550 pesos	6,600
9 x <u>Murmu</u> @ 400 pesos	3,600
5 x <u>T'una</u> @ 270 pesos	1,350

Gross income	13,950

Net income	5,240

Much time is also required to mobilise labour and animal power for the peak activities such as planting and harvesting, besides that spent making purchases of seed and fertiliser. Thus the total amount of labour directly and indirectly involved in potato production may in practice be double that suggested by the figures in Table 5.4.

To conclude this section, then, we can briefly evaluate the proportional costs of labour and inputs. First, based upon total production costs (i.e. excluding marketing and transport costs) of 7,120 pesos, human labour and animal power comprise one-third and technical inputs (seed, chemical fertiliser and pesticides) two-thirds. This disparity can increase further should chemical fertiliser be acquired on credit from a merchant in Morochata, a common solution to the problem of capital scarcity. During the period in question, when fertiliser was available for 650 pesos per quintal in cash, the credit price was 900 pesos/qq., payable immediately after the crop had been sold. If fertiliser is indeed acquired on credit, the total cost of inputs rises to 5,500 pesos and the net return falls to 4,490 pesos from 5,240 pesos. Given that this margin of profit barely covers the replacement cost of seed and fertiliser, it is not surprising that not only are many producers forced to seek credit for chemical fertiliser, but also are increasingly squeezed into entering sharecropping contracts to secure potato seed. This issue is addressed in Chapter Six.

III Potatoes: Technology and Intensification

In this section some of the important technical consequences of the potato production system which predominate in Santa Rosa are addressed, particularly the procedures and techniques adopted to deal with difficulties arising out of intensification. These techniques illustrate the degree to which commoditization has developed and the way in which a process of "scientification" has come to displace "indigenous" practices based upon local knowledge.

III.1 Diseases and Pests

(i) Late Blight

In terms of its incidence and the extent to which it is able to inflict serious economic damage on potato crops throughout the Morochata zone, the single most important disease is late blight (Phytophthora infestans). This is the same fungal infection that was responsible for the Irish Famine of 1845-7 (Salaman 1945). It is favoured by high humidity (Relative Humidity above 90%) and moderate temperatures (daily mean of between 15-18°C), which are precisely the conditions that are prevalent in much of Santa Rosa from September onwards. Consequently, late blight presents a major threat to the commercial mishka crop though it is much less of a hazard to the temporal crop as its development is inhibited by the lower night time temperatures at higher altitudes. Late blight can be combated, like other diseases, either through preventative measures or curative responses, though there are serious constraints on the ability of households to pursue either option.

In terms of prevention, earlier planting is perhaps the most straightforward measure, ensuring that the crop is harvested before the onset of seasonal rains when conditions favour blight. The first mishka, planted in March and

April in the lowest part of the community, escapes late blight but is subject to other problems associated with the high temperatures of this zone (15). The third and fourth mishka crops occupying the intermediate ecological levels are the most vulnerable to late blight as they begin to mature in a period of warmer springtime temperatures and seasonal showers. Under such conditions the proliferation and diffusion of the fungal spores is rapid across contiguous fields, all of which may be planted with potato, if at slightly different stages of growth. Within a couple of days the appearance of a standing crop can change from one of relative health to that of shrivelled plants with burnt and browning leaves. The tubers may be lifted early in an attempt to save part of the crop for domestic use, but even those blackened and affected by rot (jullu) are sliced, dried in the sun and cooked for consumption. This is small compensation, however, for the financial damage inflicted by the "t'ojtu".

The only other preventative measure which would conceivably reduce the effects of late blight is for producers to use Phytophthora-resistant varieties of seed. While a severely financially-constrained potato breeding programme does exist at the Toralapa Experimental Station located in the serannia beyond the Upper Cochabamba Valley, extension work is so poorly developed that the dissemination of new varieties is unlikely even if they were available. The absence of the agricultural extension service from the Morochata zone (16) is no more clearly illustrated than by the curative, or phyto-sanitary, measures taken by producers to reduce the effects of late blight and other diseases and pests. Tests conducted at Toralapa on the efficacy of different commercial fungicides against late blight have shown that a combined mixture of Ridomil and Polyram provided the most effective control resulting in higher yields (Hoopes and Sage 1982). However, the application of a variety of agro-chemicals in Santa Rosa owes little to official technical recommendations or even, frequently, to the specific problems encountered in

the fields. Indeed, not only are the chemicals used to treat infected crops usually inappropriate, but the manner by which they are applied is both haphazard and dangerous. This is discussed below.

ii) Other diseases and pests

Beside late blight, other diseases appear to be of secondary importance in Santa Rosa according to personal observations and discussion with producers and technicians. In general, producers seem unable to attribute poor yields or infected tubers to causes other than t'ojtu (late blight), poor seed or overworked land ("la tierra ya no da"). Yet remedial action for the following planting season is rarely pursued. While an assessment of their overall importance was not possible, evidence of early blight (Alternaria solani) in the lower zone subject to high temperatures, and nematodes - probably the false root nematode (Nacobbus aberrans) which reduces tuber size - were found. Other diseases may well be present.

In the case of pests, a lack of entomological resources prevented a thorough identification of the insect population or assessment of its impact. However, a sex pheromone trap was borrowed and placed in a field containing a potato crop, approximately two months into its growing season, in order to monitor the tuber moth population. On the first night of a one week experiment during late September three male tubermoths (Phthorimaea operculella) were trapped, with no other success during the rest of the week possibly due to weather conditions (high winds and occasional showers). Infestation of the crop by the larvae of potato tubermoths (tikuna) was discovered and samples were collected for identification by an entomologist. Overall such infestation appeared to be limited, and largely confined to a few of the smaller parcels which were often not fumigated, possibly because the crop was destined for domestic consumption.

The only other insect pest that was positively confirmed as present was the flea beetle (Epitrix sp.). Its larvae (called k'aspikuru locally) causes lines to appear on the "face" of the potato, caused by shallow mining just beneath the skin of the tuber: this reduces the commercial value of the crop. As in the case of micro-organisms, there may be other potato predatory insect pests in Santa Rosa which went unidentified. However, the principal threat to potato crops is undoubtedly from late blight. While the uncontrolled spraying of chemical pesticides at least serves to inhibit the build up of economically significant pest populations, it is likely to reduce beneficial predators and promote resistance to pesticide (17), besides being hazardous to human health.

III.2 Chemical Fetishism: The use and abuse of pesticides

It is intended to present here only a brief description of the acquisition and use of agro-chemical "pesticides" (18) in Santa Rosa in order to illustrate a further dimension of commodity relations; a more general discussion of pesticide use by small producers in the Third World can be found elsewhere (19). The crop focus also remains firmly on potato: maize, for example, receives no chemical applications. Producers either purchase pesticide products from suppliers in Quillacollo, or sometimes acquire small quantities from the local landowner, Juan Betancur, who also has an agro-chemical business of his own located there. The suppliers appear to be unfamiliar with the specific problems encountered in the fields and are more interested in selling the products with higher profit margins than those recommended by agricultural technicians. However, the principal limitation in their purchase is simply one of cost.

For example, despite its effectiveness in controlling late blight, the use of Ridomil was not discovered in Santa Rosa. Besides being unaware that it was recommended by the extension service, most informants conveyed an unwillingness to purchase a product that was so much more expensive than less effective alternatives. For example, in August 1981 a one kilo bag of Ridomil cost 840 pesos whilst a kilo of Polyram cost 160 pesos and of Cobox 140 pesos. However, if one carefully reads the instructions and calculates the strengths to which each product must be diluted suitable for application, measure for measure Ridomil is able to cover up to five times the area of the other two.

It is revealing to list those agro-chemicals most frequently employed in Santa Rosa, together with a brief indication of their origin and toxicity. The latter is determined on the basis of the amount of pesticide entering the body of laboratory animals through the oral or dermal route and are expressed as LD50 values. This is the dose which results in the death of 50% of test animals, expressed in milligrams of the chemical per kilo of body weight (Bull 1982).

"Perfekthion": manufactured by BASF in West Germany; the chemical compound is dimethoate. It is a broad spectrum systemic insecticide with acute oral and dermal LD50 values of 320-380 mg/kg and 650 mg/kg respectively. It is the most widely used chemical product in Santa Rosa, irrespective of the pest problems encountered, and frequently comprises one of the ingredients of a chemical "cocktail".

"Polyram Combi": (BASF) comprises a mild dithiocarbamate which acts as a fungicide. The recommendation of Toralapa is that Polyram should be used in combination with Ridomil for maximum effect against late blight. Its oral LD50 value is greater than 10,000 mg/kg, in other words it has a relatively low toxicity.

"Cobox": (BASF) is a basic cupric chloride which has fungicidal properties, though its effectiveness is not known.

"Nitrofoska foliar": (BASF) is a mid-season spray fertiliser which stimulates foliage and plant growth. NPK composition 15-11-15.

"Methyl Parathion": (Hoechst, Colombia) is an extremely toxic insecticide used against leaf eaters and stem borers. Not as widely used as "Perfekthion", but when it is then with the same careless abandon. It has an acute oral LD50 value of 9-25 mg/kg, and a dermal value of 300-400 mg/kg. According to guidelines issued by the World Health Organisation, this is an "extremely hazardous" chemical.

"Temik": (Union Carbide, otherwise known as "Aldicarb") is a systemic insecticide and nematocide with only limited use in Santa Rosa. This is fortunate for it is extremely dangerous, requiring very careful handling and storage procedures. There are strict regulations regarding its use in the UK and United States. Its acute oral LD50 value is 0.9 mg/kg.

For anyone with some appreciation of the toxicity of many of the agro-chemicals employed in Santa Rosa, it is horrifying to learn of the manner in which they are generally applied. There are less than half a dozen backpack fumigators in the community, and most use the "bicycle pump action" spray which feeds, through a short length of tubing, from a bucket or tin filled with the dissolved chemical(s). The operation may then involve two people, one carrying the container (usually a 20 litre cane alcohol tin) and the other spraying. Because the operation is generally only done once or twice during the growing season most households have sufficient male labour to do it themselves, with a child over ten able to carry and refill the container. However, it was noted that some of the land-rich households which did not own backpack fumigator units tended to employ labour for this operation, though it was then done by one person instead of two. In this case the 20 litre, open top container was strapped onto the operator's back with rope enabling him to move freely down the rows using both hands to spray the crop. Unfortunately, however, when the container is full the liquid spills out over the

operator, soaking his shirt and into his skin, in addition to the inhalation of the chemical spray. On other occasions amongst the poorer households unable to secure the loan of an applicator, the chemical mixture was observed to be spread by hand, splashing the diluted pesticide over the plants.

It is difficult to assess the consequences of such practices on health. They appear deleterious; for instance the operator is often to be found retching and coughing whilst spraying. General precautions associated with safe pesticide use - such as wearing overalls, masks, gloves, boots and washing the body and hair after work - are, perhaps unsurprisingly, not considered due to a lack of awareness about the dangers involved. Incidences of death from poisoning are not uncommon, though there are more stories of death from deliberate ingestion (suicides) than from accidental intoxication. As post mortems are unheard of, and death may be frequently attributed to superstitious or mystical explanations, it was impossible to assess the scale of the problem. For example Cornelio, a young man from Tiquirpaya, died after fumigating a crop of potatoes on February 3rd 1982. He had been working for Juan Betancur, the local landowner, as a peon. When asked to reveal the brand of chemicals used in the operation, Betancur denied that this could have been the cause, attributed the death to a "natural" heart attack, and refused to discuss the products involved.

The widespread adoption of agro-chemical products is an excellent illustration, not only of the degree to which the farming system in Santa Rosa has been commoditized, but the way in which capitalist technology amongst small producers is fetishised. Although writing in the context of farming operations in the older industrialised countries, van der Ploeg's notion of "scientification" is helpful here although I use it in a slightly different sense to its original meaning (van der Ploeg 1986). I concur with van der Ploeg's general argument that the process of scientifi-

cation becomes intertwined with the commoditization process itself, and that ultimately both may serve to create structures whereby capital is able to gain more direct control over the labour process in agriculture. However, concern for the ways in which Italian family farms become incorporated to sets of technico-administrative relations that tie them to agribusiness interests and state agencies is of a different order to concerns in the context of Santa Rosa. There are three essential points that need to be made about the process of scientification in this regard.

First, that the small producers here also perform the role of consumers of the products of chemical conglomerates based in Europe or the United States, particularly of those products for which there is increasingly strict environmental controls over use in the country of origin, and which serves to extend the circuits of industrial capital into the farthest reaches of the periphery. Second, that the process of scientification in Santa Rosa literally takes place in a technico-administrative vacuum in comparison to the context in which the "industrialized farm" has developed; specifically, in North West Europe and North America where the state has legislated safeguards and controls over the use of agro-chemical products. The third and final point is, in many ways, the most important for it poses concerns regarding the technical trajectory of the farming system in Santa Rosa.

The contemporary pattern of intensive potato production has developed as a result of, and is currently being supported by, an exogenous technology. Besides involving an energy subsidy provided by agro-chemicals, the consequences of scientification have effectively served to downgrade and eliminate indigenous agricultural management techniques. These generally include a repertoire of practices designed to inhibit the spread and effects of crop pests and micro-organisms, and are usually bracketed together under the label of Integrated Pest Management. It is significant that in many individual and group discussions with producers,

the single most common response to "infestation scenarios" was to spray pesticides. This point is further underlined in the following section dealing with soil fertility.

III.3 Fertilizer and Soils: A Sustainable Agriculture?

As one might expect, given the reliance upon phyto-sanitary products, chemical fertilizers are widely available and heavily employed in Santa Rosa. The use of animal manure (estericol) is now effectively restricted to the higher areas where livestock plays a greater role in the household economy and where temporal potato predominates. At lower altitudes, few households appear to have either sufficient numbers of livestock (especially sheep) or the incentive to make the active manuring of fields worth while, that is to dig out the accumulated contents of a corral and distribute it across the soil, although a "passive" manuring occurs during pasturing. This is one of the clearest examples of change in methods of production since the Agrarian Reform and results from the widespread availability of chemical fertilisers since the early 1960's. This is substantiated, in the wider context, by the observations found in earlier studies which drew attention to the early adoption of chemical fertilisers by small potato producers in the post-Reform period (Russel et.al. 1970; Dorsey 1975a; Camacho Saa 1970; Peinado 1971).

Peinado's survey, for example, conducted in the Upper Cochabamba Valley during the agricultural year 1965-66, discovered very high rates of chemical fertiliser use in two out of three study communities (100% and 94% of sampled households) although organic fertilisers were also still very much in use (Peinado 1971). Dorsey's study of ex-hacienda Toralapa, also in the Upper Cochabamba Valley, found widespread exchange of animal manure, from households at higher altitudes to those at lower elevations. This served to reduce the quantities of chemical fertiliser that were being applied to fields, to below the optimum levels

computed in the author's multiple regression models (Dorsey 1975a). According to Russel et.al. (1970) a full 90% of chemical fertilisers sold in Bolivia in 1968 were used on potato, though the authors recommended increased applications to raise yields. All of these studies are united by an enthusiasm for the display of technical modernisation shown by small potato producers and are imbued with a strong belief that the increased use of chemical fertilizer would bring about further progress. As Dorsey wrote:

"(C)onsiderable increases in fertilizer use can be expected in the next few years even if no significant extension effort is made to increase demand for this product. (T)his change demonstrates how receptive small farmers ... are to technological improvements, since the high retail price of fertilizer in Bolivia (35 to 49 US cents per kilogram of nitrogen compared to 29 US cents in Mexico) makes the cost-benefit ratio for fertilizer use less favourable than in many other developing countries (Dorsey 1975b: IV.49).

Interestingly, in Dorsey's study of two communities in the Lower Cochabamba Valley, from which the above quotation is drawn, he observed an initial decline in the use of organic fertilisers in one of the localities. Notwithstanding its comparatively high price (20), the increased availability and relative ease of application of chemical fertiliser appears to have gradually squeezed the deployment of organic materials. Unfortunately, insufficient data do not permit a straightforward resolution of this proposition; besides, the relationship between organic and chemical fertilisers is more complicated than that suggested by cost-benefit calculations. For example, the continued importance of livestock within the domestic economy in one potato-producing zone may contrast sharply with the strategies and experiences of another. Thus, it remains necessary to develop locality-specific reconstructions of the kinds of fertilisation practices associated with local cropping systems.

In the case of Santa Rosa we have already described the low and declining importance of animal manure and the increased reliance upon chemical fertilisers. However, these are applied in quantities unrelated to the existing fertility and requirements of the soil, or to the recommendations of potato agronomists, due to the lack of information and technical support. It is widely recognised by agricultural scientists in Bolivia that general levels of soil fertility are low, with a particular deficiency of phosphorous and nitrogen; some areas have been identified where potassium is also a limiting factor in potato production (Hoopes and Sage 1982). Yet the recommendation of the Toralapa Agricultural Experimental Station for fertilization of potato is 80-120-0 (i.e 80 kgs of Nitrogen, 120 kgs of Phosphorous and 0 Potassium per hectare). It may be that, on the whole, producers in Santa Rosa are close to meeting these recommendations through the application of four to five quintales (of 50 kgs) of 20-20-0 per hectare. However, while an analysis of the elemental and mineral composition of soils in Santa Rosa is, unfortunately, beyond this thesis, some observations regarding its organic structure are necessary here, particularly in the light of the following quotation:

"Of all field crops the potato has the highest response to farmyard manure. Although the major and minor elements that are brought to the field contribute to soil fertility, the soil improving effect of organic matter is often considered to be of major importance. The humus improves the soil structure of heavy soils, while in light soils moisture retaining properties are improved (Beukema and van der Zaag 1979: 95).

The growing substitution of chemical fertilisers for organic manures appears to be resulting in increasingly impoverished soils in Santa Rosa. As impoverishment is a process rather than a static state, it might be thought that the observations and perceptions of local producers would be a better gauge than the laboratory analysis of soil samples. However, there were few shared cognitive values between an environmentally-conscious outsider and local producers whose priorities were weighted towards

simple reproduction or accumulation depending upon their relative access to land. Both rich and poor households were engaged in the intensification of production using the same technology and similar cropping patterns. This involved the reduction of fallow periods and a squeezing of residual soil fertility through following-on a crop of potatoes with one or two crops of maize. In many cases, fallowing has become the final response to declining yields after an extended potatoes - maize cropping sequence. At this point soils display many signs of acute impoverishment. These include poor structure, a conspicuous lack of organic matter, an inability to retain moisture, surface cracking, the development of gulleying and so on.

Once soils which display many of these features are left fallow it is noticeable how poor is the quality of natural vegetative regrowth. Noxious weed and pseudo-xerophytic plant species emerge and dominate upon which domestic livestock are unable to graze and so contribute to the regeneration of soil fertility. Common thorny shrubs restrict colonization by grasses and other plants which provide protective surface cover. When the heavy seasonal rains commence in December top soil is washed away through sheet wash, sediment transportation and gully formation. Exposed soils on medium to steep slopes are subject to soil creep and slumping. In such a young and geomorphologically unstable environment subject to heavy seasonal rains, exposed and disturbed soils are prone to significant slippage and avalanche. In the Morochata zone there have been major hillside collapses resulting in serious damage and loss of life. For example, in March 1984 the community of Jatun Cienega, near the town of Morochata, was completely destroyed by an avalanche of soil, rock and water, which killed over forty people and swept away their houses, fields and livestock (Dandler and Sage 1985). Although such tragedies have not occurred in Santa Rosa, there have been several cases during recent years of slumping hillsides invading and covering over cultivated areas and of parcels adjacent to streams being undermined

and washed away, besides the constant loss of topsoil through the processes of erosion described above.

It would appear from this scenario that producers in Santa Rosa are systematically engaged in extracting from the soil more than is sustainably available in the form of chemical nutrients and physical (mechanical) properties. While soils may retain a balance in levels of N, P and K through applications of chemical fertiliser, they lose other vital elements and physical properties under the demands made by cultivation and the local ecology (specifically climate and slope). Evidence in support of the allegation that producers in Santa Rosa engage in inadequate levels of fertilisation is provided by data drawn from Vargas (1982). Using raw data generated by the study of potato producers in six different zones of the Cochabamba region (CIPCA et.al. 1979), Vargas produces tables to show that in the Morochata zone, households fertilize well below the levels found elsewhere. For example, with regard to the use of animal manure, households in the Morochata zone use well below half the regional average per hectare of potato (27 as against 64 gostales, with Colomi and Tiraque amongst the highest). The pattern is less marked in the use of chemical fertilisers though, again, the Morochata zone falls below the regional average in using just 2.9 quintales per hectare of potato as against a mean of 3.3 qqs per ha, with Pocona emerging as the highest user at 10.0 qqs per ha. (Vargas 1982: 96).

IV. Maize and Other Crops

The demands of the potato farming system severely constrain production of other food crops in Santa Rosa, although maize retains some importance as it fits well into the agricultural cycle. In contrast to maize and its reputed historical importance in the Province of Ayopaya (cf. Chapter Four), the level of wheat production in Santa Rosa is now of little significance, amounting to less than four tonnes during the agricultural year 1981-82. While 24 households declared some wheat production in that year, with an average output of 150 kgs, only one household actually sold wheat in the market (just 200 kgs), making this a purely "subsistence" crop. Moreover, while barley also had some importance under the hacienda regime, especially on demesne land, it too is now a residual crop; just 500 kgs were produced in 1981-82 and this mostly fed to horses. In the higher, unirrigated lands of Santa Rosa there is some production of oca and papalisa, the Andean tubers, but again total output is of a relatively minor order, just 24 cargas and 4.5 cargas respectively. Finally, vegetable production on garden plots is almost totally absent in Santa Rosa - which provides a further illustration of the degree to which commodity relations have developed in the locality - and households generally rely on the market for the satisfaction of such food needs. For these reasons, this section of the Chapter is exclusively concerned with examining the role of maize, not only in meeting household consumption requirements, but also in sustaining the vestiges of pre-capitalist relations of exchange in Santa Rosa.

Grown in rotation with potato, maize utilises the residual fertility provided by chemicals at the time of sowing the main potato crop, is adequately watered by seasonal rains and makes minimal demands upon labour. Maize constitutes a major component of the diet in Santa Rosa and is principally consumed as mot'i (boiled kernels), lawa (a thick gruel also containing potato and flavouring), chicha

(maize beer), tostado (toasted kernals) and choclo (corn on the cob). An occasional treat in April/May is the preparation of humintas, where fresh maize kernals are ground, formed into the size of Indian samosas and baked in maize leaves. Given its important use-value as the backbone of household consumption, it may therefore be understandable that maize retains a close association with pre-capitalist relations of exchange. This is nevertheless in sharp contrast with the commoditised nature of potato production and thus deserves detailed attention.

With the onset of the seasonal rains from late November, the majority of those parcels of land which had supported a mishka potato crop earlier in the year are sown with maize. The seed is almost always that produced by the previous year's harvest, no chemical or organic fertilisers are provided and there is usually no need for soil preparation. The sowing operation is performed in a more functional, less ceremonial fashion than the planting of potato, though the basic gender division of labour remains. While an adult male ploughs, a wife or elder daughter sows the seed in the furrow, with one or two sons providing the necessary pick work to ensure the seed-bearing furrow is adequately covered and extends to the field boundary. The performance of subsequent field tasks during the maize growing cycle are, however, less rigidly defined by gender and, besides, are considerably lighter in terms of labour inputs than those associated with potato.

Some four to six weeks after sowing, the rapidly developing maize plants are given the first, and sometimes the only, ridging (jallmay) of soil around their roots. This serves to reduce competing weeds, improve drainage and strengthen the plants' ability to withstand the strong afternoon winds during autumn. As the seasonal rains continue into April there is no need for irrigation and, overall, the crop receives very little attention during its growing cycle. In May some fresh ears of maize are taken from the plants and eaten as "corn-on-the-cob" or prepared

as humintas, and the challa (the maize stalk) uprooted, stripped of outer leaves, and chewed for its sweet sap-much like sugar cane. However, the vast majority of the crop remains untouched until July or August, by which time both the ears and stalks are tinder dry. The two metre high plants are then cut close to the ground with an hoz and stacked ready for the removal of the ears from the stalk. This is then done with the use of a small stick (tipina) to strip through the outer leaves and detach the exposed ears, which are collected together and carried back to the house. The dry challa is then fed to livestock, especially oxen, which are being worked hard during the preparation and planting of the concurrent mishka potato crop.

The performance of field tasks around the cultivation of maize are not only determined by the demands of the potato cycle, but often appeared to be neglected even when there were no other pressures upon labour. The overall impression that was acquired during discussion with producers is that maize is expected to yield sufficient for household needs, irrespective of the investment of labour. In other words, maize is seen as a "bonus" crop which provides a further reward for the hard work invested in the preceding mishka potato crop. This proposition can be underlined in several ways. First, the poor quality of the seed, which is recycled year after year, has given rise to some interesting genetic hybrids resulting from cross fertilisation. Secondly, pests and fungal infections extract a heavy toll from the crop but these have not elicited any serious curative or preventative response from producers. Thirdly, the uncommercialised nature of exchanges in which maize is bartered away at rates well below its market value. Let us examine each of these briefly in turn.

To examine a store of maize ears in many households in Santa Rosa is to view a variety of types and colours, with many ears displaying kernals in a variety of shades. Each ear can be categorised according to an extensive typology

determined by colour, kernal size, taste and the use for which it is most suitable. Amongst the most common are the following:

Amarillo - the single most common type, though unlike the genetically-improved high yielding varieties elsewhere, often displays kernals striped with red. Suitable for most purposes.

Ch'ejchi - large, grey-speckled kernals used for tostado and mot'i.

Kulli - dark purple kernals used for chicha and api (a hot gruel drink), but not for eating.

Ch'uspillo - a burnt orange appearance used for tostado and chicha but not suitable for mot'i and lawa.

T'una Wilkapayro - yellow and grey kernals suitable for most uses.

Blanco - large white kernals that are best for mot'i especially when peeled of their outer skin (pelado) and served with chicharron (fried pork).

There are many more varieties in addition to those listed here, as well as the genetic oddities which are occasionally found, for example where a number of small separate ears have developed upon the same stem. Thus, although the genetic diversity may act as a risk-minimising strategy, ensuring that at least some varieties will produce in the event of unfavourable weather or prevalence of disease, it is clear that the constant re-use of the seed stock contributes to yields well below those which might be achieved.

With respect to pests and disease, one of the principal enemies of producers are the flocks of small green parrots which fly through the valley and feed on both the upper-most flowering part of the maize plant and on its succulent ears. According to producers, the effect of parrots eating the top flowering part of the stalk is to inhibit the development of the ears on which the kernals do not properly form. There are also problems with insect and fungus damage, though types of pest and disease were not

identified. During the harvest of one parcel of land, 216 ears of maize were inspected and divided into four groups in order to assess the degree of damage inflicted by the different kinds of infestation. There were 106 that appeared unaffected by pests or any other kind of damage (49% of the total); 13 had been partly eaten by parrots (6%); 48 displayed insect and fungus damage (22%); and 49 were poorly developed (23%). This represents a high rate of loss, first, at the household level and, secondly, for the community as a whole, for this particular "sample" was by no means unrepresentative according to other observations.

The third, and final, issue which requires attention is the persistence of pre-capitalist relations of exchange which, if not entirely confined to maize, certainly find in this product their most significant expression. This, it must be remembered, within a locality where the social relations of production and the labour process are structured and defined by the demands of the potato cycle, and where the level of commodity relations have been raised by the area's insertion into the regional economy as a major producer of tubers. Why does such an apparent anomaly persist in relation to maize when many other aspects of social life have been gradually commoditized?

Formulating an explanation to this question would undoubtedly require a historical analysis. One possible approach would be to trace the relative importance of maize and potato under the hacienda regime and seek at least a partial explanation in cultural factors. In Chapter Four, it will be remembered, it was shown that, on the basis of assembled historical evidence, grain production exceeded the output of potato on Hacienda Santa Rosa, with limited surpluses generated by colono households exchanged with travelling merchants for other necessary consumption goods. Clearly, therefore, contemporary patterns of exchange are simply the vestiges of past practices, a lingering cultural relic.

A second historical, but spatially broader, perspective would note that as the locality became incorporated into the regional economy in the post-reform era under the conditions of relative market prices, potato emerged as the single most profitable commodity and the focus for intensification. This has contributed to the development of a spatial division of labour within the Cochabamba region in which the serranía has become the principal source of potato and other tubers, while the central valleys have become the main producers of grain, especially maize. Thus, although maize has remained an important crop in Santa Rosa by providing a significant proportion of household food consumption, the dynamics of external demand encouraging increased production and commercialization have been lacking.

The general difficulty of assembling reliable data on production and sales in Santa Rosa was further increased in the case of maize owing to the significant level of exchange between households as well as with outsiders. Because of its use in brewing chicha, those households which engaged in regular chicha production sought to acquire maize locally in exchange for other goods often purchased in the central valley markets. Small quantities of maize thus regularly changed hands, though these non-monetary transactions were often overlooked by the households involved.

Given this warning, it was estimated that a total of 306 pesadas (30.6 tonnes) of maize was produced in Santa Rosa during the agricultural year 1981-82. Of this, 162 pesadas, or 53 per cent of the total, was retained by the household for its own consumption, including a small proportion used as seed. Of the remainder it is estimated that 74 pesadas (24 per cent of total production) was sold, a minimum of 40 pesadas (13 per cent) exchanged, and 32 pesadas (10 per cent) was used for the production of chicha. Although these figures indicate that a full quarter of the total output of maize was sold and therefore, it

might be argued, disproves the assertion made above regarding the persistence of pre-capitalist relations, it should be noted that the bulk of this maize directed to the market was sold by just a handful of the richer households. For example, Household 13 sold a minimum of 20 pesadas in the Quillacollo market and rejected any idea of non-monetary exchange.

The majority of the less well-off households, however, seem to be more favourably disposed to exchanging small quantities of maize in trueque and this has attracted outsiders to Santa Rosa, some of whom travel long distances. There are several types of personnel with whom the households of Santa Rosa exchange maize, in return for which they receive different kinds of goods. The first group comprises intermediaries from the Cochabamba Valleys, mostly women, whose objective is to acquire maize as cheaply as possible, either for use in their own chicha operations, or to sell directly in the market. They bring with them basic consumption goods, such as soap, matches, rice, sugar and coca leaves as well as larger household items, e.g. water containers and laundry washing trays. These comerciantes from the valleys are motivated only by maximising their profit margins and, consequently, rates of exchange do not benefit households in Santa Rosa.

More equitable and horizontal trading relations, however, exist with two similar but distinct groups of individuals who seek maize primarily for consumption needs more than for profit. The first group comprises people from the highland estancias within the Province of Ayopaya. They arrive with their herds of llamas carrying wool, animal fat, dried llama meat and the high Andean tubers oca and papalisa for exchange with maize. However, this group accounts for a relatively small proportion of the maize which is exchanged in Santa Rosa. A second group of "highlanders" are of more importance and originate from beyond the boundaries of the Cochabamba region, largely from Altiplano communities within the Department of Oruro which

are located at altitudes above the maize growing limit. In order to secure sufficient maize to sustain their household over the year, this group engages in a wide variety of activities some of which are worthy of a brief description here.

From the middle of July small groups of individuals-pairs of young men, young married couples, sometimes entire families with children - arrive in Santa Rosa and other localities in the zone. For the majority this is an annual trip which they have made for several years, and so they have already established good relations with one or two households in Santa Rosa which are prepared to offer them shelter. Once they have arrived they quickly set to work, for the objective is to acquire as much maize as possible in the time available before the onset of the rainy season and the recommencement of the agricultural cycle in their home communities. Their search for trading partners takes them well beyond the boundaries of Santa Rosa and into those surrounding highland localities where maize can still be grown, yet many first need to produce goods for exchange.

For example, in late July 1981 a family of adults and younger children arrived in Santa Rosa loaded with clay which they had brought from their community on the Altiplano. They first dug a pit and gathered a large pile of fuelwood, then the adults began to fashion pots of various sizes, which were then fired in the pit. The pots were then carried around Santa Rosa and its adjacent communities and exchanged for maize, the rate determined by the number of ears which would fit inside the pot. Meanwhile, two young men arrived from the community of San Antonio de Mujlli which is located at over 4,000 metres above sea level close to the border between the Departments of Oruro and Cochabamba. Their particular speciality is to weave bayeta, a thick cloth made of handspun sheep's wool. Intriguingly, they do not travel to Santa Rosa with lengths of bayeta already woven, but set up simple looms in an

unoccupied covered area (a lean-to shelter in this case) and begin weaving to order. According to Leonardo, one of the young men, they exchanged ten metres of bayeta for one pesada (100 kgs) of maize kernals and were each able to weave fifteen metres per week. However, although two to three weeks of hard weaving yielded sufficient bayeta to satisfy local demand, Leonardo and his friend stayed on in Santa Rosa for almost two months having been offered a contract by Household 58 to make adobe bricks in preparation for the building of a new home. Thus, both men returned home with several sacks of maize as well as cash from wage labour, which is untypical of this kind of trading trip.

A third, and final, example of long distance trade concerns a young couple from a community 120 kilometres south of Oruro. Bernaldino had previously worked as a wage labourer in the city of Cochabamba and in the Chapare, but was now procuring maize in non-monetary exchange. His trading goods were "medicinas del campo", herbs and other natural exotic substances used in curing illness and made as offerings to the catholic saints and the pre-catholic spirits, such as Pachamama. Bernaldino was reluctant to call himself an "aysiri", a natural healer of which there is a tradition in the Andes, but said he knew about the use of herbs and plants although he had only purchased them in the city of Oruro. He carried a wide variety of substances with him as he travelled around the area, exchanging small packets for ears of maize, the number of ears depending upon his clients, he said, but the average was around thirty. He was obviously very successful, for while he spent his day in moving from one household to another, his wife was fully occupied peeling the kernals from the cob to reduce the bulk of their cargo. Indeed, this is an activity which keeps all of the travelling traders busy during the hours of darkness, in order that they can return home with fewer sacks of kernals and thus reduce their transport costs. In Bernaldino's case, he and his wife left Santa Rosa with six or seven pesadas of maize, more than the average long-distance trader is normally able to acquire.

Maize produced in Santa Rosa, then, enters a number of circuits of exchange as use-value besides its circulation and transformation into commodity form. It provides an important food staple for households locally, provides the currency for sustaining socially-valuable long-distance trading links, and offers an opportunity for generating significant cash income when turned into malt for the brewing of chicha, an activity which is described in Chapter Seven. Although the land-rich households are primarily concerned with maximising post-harvest crop sales as part of a strategy of capital accumulation, the less well-to-do appear, by their behaviour with respect to maize, to be offering some resistance to commoditization. However, such patterns of exchange cannot prevent the process of differentiation from unfolding within the locality, and this is a topic to which we turn in Chapter Six.

V. Conclusion

This Chapter has focussed primarily upon the technical aspects of the potato farming system and has attempted to draw out the interaction between the forces and relations of production. It has illustrated the degree to which the intensification of commodity relations has effected changes in the level of technology and farming practices, and created the conditions for a highly specialised system of agricultural production. However, the Chapter has also begun to raise a number of important questions concerning the sustainability of the current farming system found in Santa Rosa, a system which has become heavily dependent upon expensive, exogenous high-energy inputs. Inevitably, the bottom-line is whether local environmental resources can sustain current levels of extraction of soil fertility, a question that can only be answered in the longer-term after further fieldwork. More immediate questions, however, concern the economics of the current farming system: can producers themselves sustain the cost of such a technology

given market prices for their products? Does the adoption of this technology exacerbate processes of differentiation between producers? To what degree are the processes of commoditization and scientification inseparable and how far does the adoption of new technology undermine the viability of the smaller producers? In Chapter Six we examine the distribution of means of production and assess the degree to which commoditization contributes to increasing inequality amongst Santa Rosa households.

NOTES

1. Potato crops are vegetatively propagated through the planting of whole or cut tubers. Although true, or botanical, potato seed (TPS) is being investigated by, amongst others, the International Potato Centre as an alternative to traditional propagation methods, it is tuber seed rather than botanical seed which is discussed throughout.

2. The term "ware" potato is used to describe potato produced for consumption as against tubers that will be used for seed in the subsequent planting season. The term is widely used in the reports published by the International Potato Centre, Lima, Peru.

3. Fertilization practices, and their consequences, are discussed in Section III of this Chapter.

4. If there is a problem with the design of the Mediterranean scratch plough it is that the share is narrow and does not easily lift and turn the soil - as of course its name would suggest. This problem is only really apparent at the stage of soil preparation, however.

5. The timber used for all parts of the plough must, by necessity, be strong and durable. For the timones trunks are carefully selected from amongst the species known as chachakoma which has a slightly twisted shape found in the timon. The selection and cutting of the timber is a focus of considerable male interest, individual light-hearted competition and group bonding. Women's exclusion from ploughing, which is discussed in more detail below, is firmly reinforced at this stage of plough construction.

6. A mesa is an offering to the spirits which consists of a mixture of aromatic substances (wiraq'oa, a mixture of fat and herbs used in healing, incense, coca leaves and so on) which is wrapped in paper and purchased from stalls in the Lower Valley markets. The ceremony is known as a sahumerio, and along with burning the mesa, coca leaves are chewed and q'oyunas smoked while the spirit of Pachamama is invoked.

7. The classification of potatoes by sizes is discussed later in the chapter.

8. The distribution of productive livestock is examined in relation to the differentiation process in Chapter Six.

9. In 1985 the community eventually organised to improve the supply of water throughout the year and to rationalise the system of distribution. First, two large irrigation tanks were dug high above the village to help regulate the flow; then a system of request and allocation was introduced. Here, individuals who wished to irrigate one of their parcels of land had to seek the right in advance and would be allocated a date and time. While this represented a distinct improvement on the haphazard arrangements which existed beforehand, it was significant that this new allocatory system was being managed by Miguel Caballero, the youngest son of the household with the largest landholding in the community and an influential figure in his own right. It is surely not coincidental that much of the Caballero land is situated in the lowest reaches of the community and therefore was most prone to disruption of its irrigation water. The role of the Caballero household is examined in a case study in Chapter Eight.

10. See below for an indication of the relative proportions of each class of potato within the overall harvest.

11. The difficulties of access into Santa Rosa were outlined more fully in Chapter Two, and here there is a description of the cage which provides the means of crossing the River Morochata during five months of the year. The cage is suspended some fifteen or twenty metres above the river and once occupied by up to four people or two cargas of potato it is hauled from one side of the river to the other. It is a slow, labour-intensive, unsafe but only way of moving produce across the river from October through to May or June.

12. For example, Erasmus (1969) provides estimates for Chuquisaca that range from three to twelve tonnes per hectare; Jones (1980) suggests figures of 5.68 to 12.5 tonnes per hectare for Pocona in the Upper Cochabamba Valley; the Ministry of Agriculture (various documents) commonly cite figures around 7 tonnes per hectare in the Cochabamba region; and finally, in the report prepared by CIPCA et.al (1979) that deals specifically with potato production in the region, yields of between 5.3 and 6.5 tonnes per hectare are recorded. None of these estimates are statistically convincing.

13. 150 kgs of "Nitrofos" (20-20-0) to 400 kgs of potato seed.

14. For example in November 1981 one carga of chapara could fetch 650 pesos while the same quantity of t'una exchanged hands at 270 pesos or less.

15. These include poor tuber development (illustrated by the example of Parcel 4 discussed in Section II.9), early blight (Alternaria solani) and a greater incidence of insect pests. However, individually none of these were seen to cause as much devastation in Santa Rosa as late blight.

16. The extension agent responsible for the Morochata zone had never, according to informants, entered Santa Rosa; indeed, he spent little time in the area. Instead he dedicated himself to running a commercial agro-chemical outlet in Quillacollo, visiting the zone only occasionally to supply customers with products from his store.

17. During an interview with Gerardo Caero, an agronomist at the Toralapa Experimental Station, he described visiting a small potato producer in the Upper Cochabamba Valley. The producer showed him a container filled with a chemical concentrate which he had been using for years and in which a large number of aphids, recently picked off a standing crop, appeared to be swimming contentedly.

18. The term "pesticides" is conventionally used to cover a wide range of agro-chemicals including insecticides, fungicides, herbicides and disinfectants.

19. See, for example, the excellent summary by Bull (1982); also Wier and Schapiro (1981). Thrupp (1988) provides an interesting comparison of pest-control policies in Nicaragua and Costa Rica.

20. For example, over the three years 1975 to 1977 the price in Bolivia of a tonne of nitrogen fertiliser (urea 46%) was US\$ 1,202, US\$ 989, and US\$ 978 respectively, while the average annual price (FOB) for Latin America was, in the same years, US\$ 425, US\$ 220, and US\$ 240 respectively. The same pattern is found for phosphorous fertiliser (phosphate of ammonia, 18-46-0) which, in 1975 cost US\$ 731.80 and in 1977 US\$ 584.60 in Bolivia, while for Latin America FOB average prices were US\$ 315 and US\$ 210 in the same years (CEPAL 1982).

CHAPTER SIX

Access to the Means of Agricultural Production in Santa Rosa

I. Introduction

In Chapter Four it was shown that the distribution of titles to land under the Agrarian Reform consolidated the pattern of usufruct holdings and thus institutionalized unequal access to the principal factor of production. Prior, therefore, to the intensification of commodity relations outlined in Chapters Four and Five, households in Santa Rosa were already stratified according to their access to productive resources. Nevertheless, given the general availability of land locally, much of it irrigated, and the wider technical, social and economic changes which encouraged the intensification of production, the majority of households were able to participate as direct producers. In other words it was not only those households well-endowed under the Reform which engaged in production of the market-oriented mishka (early) potato crop, though as we have seen in Chapter Five, they were undoubtedly able to benefit from the greater scale of their operations. The critical question that needs to be posed now, however, is: Has the process of commoditisation and agricultural specialisation contributed to increasing inequality amongst Santa Rosa households? The purpose of this present chapter is to provide an analysis of data that will contribute to resolving this question.

The basis for understanding a dynamic process of divergence between households is to evaluate their control of productive resources within the model of social differentiation, as opposed to some static conception of stratification based on differences in wealth. This approach derives from Lenin's analysis of the Russian peasantry in the late nineteenth century, in which he used rural census material (Zemstvo statistics) to highlight the

unequal distribution of means of production and illustrate the impact of capitalist development in the countryside (Lenin 1960). Lenin's objective was to prove that the Russian peasantry was not only differentiating, but was being completely dissolved and replaced by new types of rural inhabitants, chiefly a petty bourgeoisie and a proletariat. In Chapter One it was explained that this original "forward projection" of the differentiation process into two opposing classes was not helpful to an understanding of the social relations between petty commodity enterprises. However, the methodology employed by Lenin can be usefully adapted in order to assess the degree of differentiation amongst households in Santa Rosa. Consequently, sections of this chapter are devoted to examining the distribution of, and control over, land, labour, livestock and other means of production central to agricultural commodity production.

Whereas Lenin gave only passing attention to household size and composition, Chayanov made such characteristics central to his model of demographic differentiation which emphasised how valuable is an understanding of the life cycle of the household (Kerblay 1971). Thus, although a materialist analysis of differentiation - according to the distribution of means of production - is of primary importance to the chapter, there are cases where "mature", land-rich households appear to support a Chayanovian interpretation. Though often viewed as diametrically opposed models (Lehmann 1982), an attempt to link the concepts of social and demographic differentiation within a complementary framework has been developed by Deere and de Janvry (1981).

Within a typology of patterns, Deere and de Janvry identify a process of social differentiation which occurs between generations, which they term "generational class transition". This is both an obvious yet valuable interpretation of rural realities where land is unlikely to be a freely available resource as suggested by Chayanov's model.

As Deere and de Janvry explain:

"Whether a young household begins with a small patch of land or with a medium- or large-size farm probably corresponds to the class position of the parents and the socially determined pattern of inheritance. (W)hile a particular household may successfully struggle to defend its class position as, say, middle peasant and thus complete its life cycle in that category, most children that this household procreates and expels are likely to initiate their own life cycles in other social categories, especially as semiproletarians and landless peasants in conditions of land scarcity." (1981: 341).

This can be illustrated empirically in Santa Rosa since the Agrarian Reform consolidated the private ownership of land. Whereas under the Hacienda a new domestic unit formed by a young couple would seek usufruct rights to land on which to produce use-values in return for labour services, today the new domestic unit relies upon inheritance, financial support and possibly wage labour to buy or lease-in extra land on which to produce commodities for social reproduction. In other words, not only is there an acute problem of land scarcity amongst the younger households as a result of fragmented inheritance patterns, but that land itself has become a commodity which has been placed at the disposal of a relatively small number of richer households. Consequently, the pattern of landholding has become the most useful parameter by which to measure social differentiation within and between generations. The first section in this Chapter conducts a detailed breakdown of landholding in Santa Rosa, examining acquisition and transfers according to landholding categories. Illustrative case material provides examples of strategies of land accumulation, introducing a more qualitative appreciation of its changing role within the specific circumstances faced by individual households.

Landholding categories also provide an appropriate framework through which to examine the distribution of other means of production associated with agriculture. The second section of the chapter explores the demographic dimension, conducting an analysis of household composition

and the calculation of labour strength. The purpose is to identify the labour-surplus and labour-deficit households by relating their units of labour strength, calculated by use of an index, to their landholdings. This then provides a context in which to examine the movement of labour between households, focussing especially upon the mechanisms that are employed by the land-rich to procure a supply of cheap, dependent labour for their expanded operations.

Beyond land and labour there remain other means of production which are essential to the production process: animal power, in the form of oxen for ploughing and horses and mules for the transport of heavy loads; and the inputs that mark the commencement of the cropping cycle - potato seed and chemical fertiliser. These two major elements of production are addressed in subsequent sections of the chapter, and are again cross-tabulated with the pattern of landholding to assess the degree of differentiation. The chapter then proceeds to bring many of these elements together within an examination of the system of share-cropping which is extensively practiced in Santa Rosa. In contrast to much of the literature which emphasises the mutually profitable, cost-sharing, risk-minimizing nature of share tenancy, the chapter illustrates how unequal access to means of production and the process of differentiation may be exacerbated by crop-sharing arrangements.

II. Land

It is arguably a truism that for the majority of households in Santa Rosa land is perceived as central to their survival. In an area where there appears to be limited opportunities to engage in remunerative activities outside agriculture - in contrast, say, to the central Cochabamba Valleys where land scarcity has led to a high degree of market-oriented non-agricultural economic diversification - land is generally the starting point for social reproduction. This might appear anomalous in a situation where commodity relations dominate and capital is able to penetrate the cycle of production, thus rendering the formal ownership of land no longer a necessary prerequisite to accumulation. The discussion regarding sharecropping will make this point quite evident. However, whether it is attributed to the relics of a "peasant consciousness" or not, land proves to be of central importance to every household. Yet each has its own perception of the role land is to play within the development of the household economy - to provide use values, to satisfy the needs of simple reproduction through the market, or as the basis of an accumulative drive. Examples of each of these contrasting strategies will emerge as the analysis develops. It is argued here that the predilection of individual households to follow one or other of these strategies, as well as their ability to attain their associated goals, will depend upon the amount of land that the household has at its disposal.

II.1 Ownership

Appendix 1 lists the total land available for production for each of the 63 households interviewed in mid-1982. Here can be found the base-line data regarding the origin of the land held by each household. In the "Endowment" column is listed land received by that household under the Agrarian Reform for which legal titles are held by a surviving ex-colono. "Inheritance" denotes the amount of

land either received from a parent or relation or, where it appears prefixed by a minus sign, land that has been passed on to a son or daughter as anticipatory inheritance. "Purchased" land indicates that which has been acquired through the market. Finally, "leased" land indicates that which, during the agricultural year, was in temporary ownership largely through the anticretico arrangement (discussed below). All negative figures indicate land that has been released by the household in a form appropriate to the column in which they appear: as anticipatory inheritance, sale or leasing out.

As Appendix 1 indicates, there is a considerable variation, amongst the 63 households, in the amount of land available for production, with totals ranging from zero to almost thirteen hectares. It should be emphasised that the column "Total Land" does not represent de jure ownership but rather de facto possession. For example, don Angel of Household 11 bought a parcel of land, measuring less than half a hectare, from an ex-colono who moved away over 20 years ago. As Angel has no other land on which to support his wife and eight children (he arrived in Santa Rosa after the Agrarian Reform), he works in construction in Quillacollo while the land is leased to his wife's nephew in Household 14. Although Angel retains formal ownership, effective control of the land for the purpose of production lies with Household 14, and this is the primary focus of concern here. However, not all of the land which appears in the "total" column is necessarily under production (a feature of households with inadequate labour power), nor does it include other categories of land to which a household has rights of access. For example, there are a few individuals who have come to Santa Rosa to form a new domestic unit but may retain a little land received as inheritance in their place of origin. In most cases, the difficulties of working land at a distance forces them into sharecropping with a relation who remains locally resident. Such land is not incorporated in the column of total holdings.

A household may also retain ownership of land which is no longer productive. The problems of soil exhaustion, erosion and landslides, which are such a serious problem throughout the zone and which are discussed elsewhere, can have serious consequences for land-poor households. A dramatic illustration is provided by the experience of Household 30, which received titles to 4.02 hectares of land under the Agrarian Reform. A few years ago a field measuring 1.265 hectares collapsed into the river Gollpa Mayu after a period of torrential rain. This reduced the amount of productive land controlled by the household by one third, though fortunately it still retained sufficient upon which to survive. Household 13, with the largest landholding in Santa Rosa, has also effectively lost one parcel of land, albeit considerably smaller at just over one eighth of a hectare, resulting from sheetwash erosion and, probably, earlier over-cultivation.

The sum total of land available for production in 1982 was, therefore, slightly less than that distributed to ex-colonos in 1961; that is 199.84 hectares as against 204.1 hectares. However, despite their close coincidence, the figures do not include that land purchased from the owner of the Hacienda who, as has already been said, sold off bit by bit the 55 hectares granted her under the Reform. The apparent disparity between the Agrarian Reform distribution of 260 hectares and the amount of land under production amongst the 63 households in 1982 can, nevertheless, be accounted for by several factors.

First, there is the land permanently lost to production due to environmental processes, of soil erosion and landslips, that may have affected some thirty hectares in total. Secondly, some land has been purchased by individuals who now live outside Santa Rosa, the most important of whom are worthy of mention. For example, an elderly woman who lives in Cochabamba and whose links with the locality are obscure, owns five hectares of prime ex-Hacienda land that has not been cultivated for years. A second is

Guillermo Caballero, eldest son of Isaac and Rosa of Household 13, who lives in Compania Pampa has acquired the following: 3.75 hectares of ex-Hacienda land, five hectares bought from an ex-colono (who has long since disappeared), and seven hectares leased from Household 33, a total of 15.75 hectares. This second factor, then, the purchase of land by people who live outside the boundaries of Santa Rosa and who have not been included in the census, together account for a further twenty-five hectares. Finally, there is the inevitable problem of under-enumeration of holdings, but this appears to be a much lesser contributory factor in the apparent disparity between the Agrarian Reform allocations and land available for production in 1982.

Appendix 1, then, provides the necessary basic landholding data for each of the 63 households in Santa Rosa in 1982. Henceforth each household will be allocated to one of four discrete categories labelled Groups I to IV on the basis of its de facto holding. The size limits and number of households falling within each of the Groups are shown in Table 6.1, together with a summation of the individual holdings, a percentage of the total productive land occupied by each Group and its mean landholding. Table 6.2 uses the same size categories to classify the ex-colono households that received titles to land in December 1961, which together with the percentage of land occupied by each Group are compared with the figures for 1982. Overall, there is no really significant change either in the number of households within each Group nor in their relative access to land over the period 1961 - 1982 (1). Though the combined number of Group I and II households has increased from 34 to 40, the combined mean landholding has also slightly increased from 1.22 to 1.4 hectares. On the other hand, the combined number of households within Groups III and IV has fallen from 29 to 23, and their mean landholding has also increased from 5.63 to 6.26 hectares. However, such calculations do not reveal patterns of continuity or fragmentation in landholdings of households over the period.

Table 6.1: The Distribution of Land amongst Households
According to Landholding Categories, Santa Rosa
(1982)

Group	Size Category (Has)	No. of House- holds	Sum of holdings by group (Has.)	Group land as % of total land	Mean landhldg/ Hsehold (Has.)
I	<1.49	26	25.34	12.68	0.975
II	1.5-2.99	14	30.60	15.31	2.186
III	3-5.99	13	53.34	26.69	4.103
IV	>6.0	10	90.56	45.32	9.056
TOTAL		63	199.84	100.00	3.170

Table 6.2: Change in the Composition of Landholding
Categories, Santa Rosa, 1961 and 1982.

Group	Size Catgry	1	9	6	1	1	9	8	2
		No. of H/Holds	% of total land	No. of H/Holds	% of total land	No. of H/Holds	% of total land	No. of H/Holds	% of total land
I	<1.49	25	10.00	26	12.68				
II	1.5-2.99	9	10.00	14	15.31				
III	3-5.99	18	38.00	13	26.69				
IV	>6.0	11	42.00	10	45.32				
TOTAL		63	100.00	63	100.00				

X =1.96
D=0.095

Source: Field Data

Table 6.3: A Characterisation of the 63 Households with
Regard to Inheritance of Land

Households not headed by <u>ex-colonos</u>				
Group	H/Holds headed by ex-colonos	H/Holds with only inherited land	H/Holds with inheritance + other land	H/Holds without inherited land
I	7	15	2	2
II	2	5	6	1
III	2	4	6	1
IV	6	1	3	0
TOTAL	17	25	17	4

Source: Field Data

Although case-studies in a later section will illustrate the particular circumstances through which selected households acquired land, at this stage it is useful to categorise all 63 according to very general criteria regarding the origin of their holdings. An attempt was made to distinguish those households containing a surviving ex-colono who received land under the Reform, from those new units formed since 1961 which have acquired at least part of their holdings through inheritance. Due to the tremendous diversity of circumstances and the varying weight of land from different sources classification has been difficult and somewhat arbitrary.

In the case of surviving widows of ex-colonos, for example, these have been categorised as receiving inheritance; only two widows have acquired additional land, and both retain the labour of an adult son to work it. The remaining eight women-headed households survive exclusively on land received under the Reform and for several the proceeds from land sales and leasing exceed that derived

from production. In the case of those households headed by ex-colonos, three of the seven in Group I have passed land on to sons or daughters in anticipatory inheritance, reducing their own holdings to a minimum for survival. Meanwhile only one of the six in Group IV has released land in this way, yet all have made further acquisitions since 1961. The prosperity of such households is based upon retaining the labour of adult sons and daughters who continue to reside in and work for their ageing father. This is a topic to be discussed in more detail in the section on labour.

II.2 Sales and Leasing

The acquisition of extra land by households principally takes the form of outright purchase or leasing over a period of one or more years. The incorporation of new, previously uncultivated land into production is limited by the nature of the terrain, and there is little to repay the effort required in clearing it. Land which is not formally under either household or community control is characterised by such steepness of slopes and poor quality soils that suggest it would support a crop for at best a couple of years, before severe erosion occurred. Consequently, few households have attempted such an exercise, and this little more than a slight expansion around existing parcels. Household 17, however, had increased its holdings by 26 per cent through clearing extra land in two locations below the main settlement. One of these was a steep, thickly wooded gulley beside a stream which, when visited in April 1982 when it had a standing crop of maize following a single crop of potato, was marked by cracks and subsidence, indicating imminent decline and abandonment.

Another, somewhat less tangible yet underlying explanation preventing the occupation of unused land, concerns the pervasive respect for the concept of private property and particularly the patterns of ownership that

existed hitherto. In Chapter Four it was noted that in Santa Rosa there was a distinct lack of militancy amongst colonos before and at the time of the Agrarian Reform. Even today there is less belief in the authority of the sindicato, the community's participative decision-making body, than in the legal power of the Claure Family to grant rights to land. This appears somewhat anachronistic thirty years after the promulgation of the Agrarian Reform, and twenty years after ex-colonos received legal titles to land. However, two plausible and related explanations might be advanced. First, the continuation of local power structures controlled by a commercial and landed elite, who have been accorded a legitimacy through the absence of formal state authority, exerts a conservative influence throughout the zone. Secondly, and more specifically, the continued legal involvement of the Claure Family in the community through the sale of its land allocated to it under the Reform. The bulk of this land has largely served to benefit a relatively small number of favoured ex-colonos (see below) who, in turn, exert a disproportionate influence within the sindicato. One example will illustrate and substantiate this argument.

By mid-1982 most of the 55 hectares of arable land allocated to the landlords under the Reform had been sold, and negotiations were, surprisingly, initiated for the purchase by the community of exclusive rights to common pasture land. Under the sentence reached by the Reform, 568 hectares of land were to be available for the common use of ex-colonos and the ex-landlords. Though livestock belonging to the latter had long since ceased to graze within the community, the landlords apparently still retained the right to sell their share of this pasture land. This principle was accepted without question by the sindicato when a representative from the regional peasants federation visited Santa Rosa to resolve this and other land disputes. The representative was himself an ex-landlord in the Morochata zone, who had sold off his own allocation to his own previously-bonded colonos (2). Now he ostensibly

represented the interests of rural small producers as a functionary of the Federation, yet appeared to be working to achieve the best possible remuneration for the old landlord class.

The price for the community to buy out the Claure Family's rights to the pasture land was fixed at 65,000 pesos or approximately US\$ 1,500 at official exchange rates. However, the land was not to be purchased and held collectively, nor was it to be distributed according to need, for example amongst the younger generation. Rather, it was intended to allocate the land according to the size of financial contributions made, and this would clearly benefit the already land-rich. Indeed, it was clearly a transaction that would herald a greater degree of inequality in landholdings in the future once all available communal land had been privatised.

That land which had been acquired through the formal process of purchase, involving the exchange of titles and registration with the office of Derechos Reales in Cochabamba up to mid-1980, is shown for each of the landholding categories in Table 6.4. Most of the land purchased derives from the sale of the ex-landlord's allocation, though that purchased by households not resident within the boundaries of Santa Rosa is excluded. The four households which have sold land together account for less than ten per cent of total land sales. Three of these households, falling in Groups I and II, comprise widows, one of whom (Household 16) has young children, while the others are elderly and live alone. The sale of land by the Group III household is unusual, but was purchased by close kin in a domestic unit without inheritance (Household 53), and where the strength of sanguineal ties superseded the logic of property accumulation.

The Table shows that nine of the ten Group IV households, with holdings in excess of 6 hectares, have together purchased over 33 hectares of land, accounting for 66 per cent of total sales and producing an average of 3.75 hectares per household. The mean acquisition through purchase for Groups III, II and I are 1.58, 1.06 and 0.43 hectares respectively. To the total amount of 50.93 hectares shown in the Table, can be added purchases by the non-residents previously mentioned, to produce a grand total of 59.68 hectares. If we subtract the 5.3 hectares of land sold by the four households, the resulting figure of 54.38 hectares represents the amount sold by the Claire Family of their 55.6530 allocation under the Reform. Thus, with the one hectare difference representing a possible, and acceptable, margin of error, the sale of the Claire's arable land would appear complete and provides another dimension to negotiations over the transfer of the pasture land discussed above. Moreover, for the process of land accumulation to continue amongst a handful of richer households, the privatisation of communal resources is necessary before the possible expropriation of the land-poor.

Meanwhile, for the Claire Family, the sale of rights to the pasture land represents the last possible source of income from Santa Rosa. Several generations of Claires have been, at the least, partly supported by the income derived from the Family's control of land; either as landlords, benefitting from production by unwaged labour, then, since the Reform, from its disposal as an asset valorized by the process of commoditization, a development with which they have no direct association. The changing value of the peso, through inflation and devaluation, makes the calculation of revenue derived from land sales a difficult exercise. However, if we say that the average price of land was US\$ 200 per hectare (it exchanged hands at over US\$ 250 per hectare in 1980 and 1981), then the sale of its assets consolidated by the Reform raised over US\$ 10,000 for the Claire Family between 1962 and 1981.

Table 6.4: The Distribution of Land Purchases and Sales
by Landholding Groups

GROUP	LAND PURCHASED			LAND SOLD	
	No. of H/Holds	Amount (Ha)	% of Total	No. of H/Holds	Amount (Ha)
I	2	0.86	1.69	2	1.03
II	5	5.30	10.41	1	3.50
III	7	11.03	21.65	1	0.77
IV	9	33.74	66.25	0	0.00
TOTAL	23	50.93	100.00	4	5.30

Source: Field Data

The leasing of land in Santa Rosa is less clearly defined in terms of accumulation by the richer households, but rather reflects the circumstances of the poor. The arrangement of land leasing goes under the name anticretico which describes a system whereby a sum of money is loaned, usually for a specified period, with a plot of land changing hands as surety. The plot is worked by the money-lending household until such time that the loan of cash is returned in full. Those households with limited financial resources may be forced to lease a plot of land in order to raise a sum of money for an unscheduled event: the cost of medical treatment being the most common reason. For example, doña Julia, a widow who is discussed within the case studies of Chapter Seven and who is head of Household 17, leased a total of 2.13 hectares, in three separate transactions, in order to pay for a course of treatment for her eldest daughter who, nevertheless, died. One of the largest individual parcels of land went to Household 4 for 1,500 pesos (US\$ 60), a sum which has to be raised and

returned in full before Julia can recover her land. Unsurprisingly, land that is leased out at times of distress is frequently never retrieved as households struggle to meet their needs from what is left, and saving the extra sum becomes even harder.

Table 6.5 displays the distribution of households, according to the landholding categories, involved in the leasing of land. The first point to be made is that the apparent disparity in the totals for leased land is once again accounted for through the involvement of Guillermo Caballero, a non-resident actor in Santa Rosa who was mentioned above. He has leased seven hectares of land from Household 33, which is a rather pitiful case as the nominal head, Justino, is an alcoholic. The latter has leased over almost his entire inheritance to Guillermo and, on what remains, is barely able to provide for his family. This seven hectares, then, bridges the gap between the leased-in and leased-out totals.

Of the other households which lease out land, with the exception of Household 19 in Group III, they comprise the three widowed women who have also sold land, two composed of single men and another where the senior male is engaged exclusively in urban wage labour (Household 11). For those that have leased in land, there are insufficient cases to suggest a pattern of acquisition by the rich, though two Group IV households, particularly Household 4, have taken advantage of the opportunity to increase their holdings whilst at the same time "helping" their poorer neighbours in their time of need. As we shall see in the subsequent section on labour, arrangements between land-poor households, especially those linked by kin or compadrazgo (fictive kin) relations, are often designed for mutual benefit and may be tied into a host of other pre-capitalist relations of exchange. Consequently, the acquisition of small amounts of leased land by households in Groups I and II may not always involve the formality of the conventional anticretico.

Table 6.5: Land Leasing by Landholding Groups

GROUP	LEASED IN		LEASED OUT	
	No. of H/Holds	Amount (Ha)	No. of H/Holds	Amount (Ha)
I	3	1.31	6	12.24
II	3	2.56	2	4.35
III	2	0.80	1	0.33
IV	2	5.47	0	0.00
TOTAL	10	10.14	9	16.92

Source: Field Data

Land leasing, then, is less clearly defined in terms of a process of accumulation by richer households than by circumstances confronting the resource-poor. Although, formally, it involves the exchange of a parcel of land as surety for the loan of a sum of money for a specified period, the arrangement of anticretico should be viewed as part of a more complex set of relations between two households. Confronted by circumstances of poverty and insecurity poor households, particularly those characterised by inadequate labour power (e.g. aged couples, widows, even single men), may actively foster close personal ties with richer neighbours upon whom they can call at times of need and distress. Such relations may involve the movement of land and labour from poor to rich, while loan of means of production (principally oxen) and provision of inputs (e.g. seed potato under sharecropping agreements) move from rich to poor. Such relations are explored further in the following section on labour when forms of "bonding" between rich and poor households are described. To conclude here, however, it is suggested that the apparent formalism of leasing under the term "anticretico" is treated as part of a more complex set of social relations than as an isolated mechanism of land concentration.

III. Labour

Following a consideration of the distribution of the principal element of production amongst all the households in Santa Rosa, it is now necessary to examine the labour resources available for each to exploit this land productively. This requires disaggregating household composition and assessing its strength in terms of labour power available to engage in the dominant form of commodity production in the area - the cultivation of potato. Appendix Two provides the base-line data on the demographic composition of each of the 63 households in Santa Rosa, together with the number of units of labour strength (see below).

It is emphasised once again that there is a clearly defined division of labour within agriculture, with tasks strongly demarcated according to age and gender. Though the labour market in Santa Rosa is largely dominated by men, women may be contracted from outside the household for planting and harvesting work and are generally paid in kind. Yet the production process relies upon both a direct and indirect contribution by women. For example, the daily reproduction of the household is usually assured by women performing a range of domestic tasks, besides other remunerative activities, which establish the conditions for labour to pursue agricultural work. The variety of tasks and roles performed by women are discussed in detail in Chapter Seven.

Consequently, a consideration of household labour resources places equal value on that of men and women. The objective is to assess surpluses and deficits of labour and to identify its movement both within Santa Rosa, for example between landholding categories, and to the outside as cheap semi-proletarian labour retaining a partial subsistence base within the community. Thus, there are two questions that arise from tracing the movement of labour between households. The first is to identify the mechanisms

through which the land-rich households assure themselves of a cheap, reliable source of labour. The second is to assess the scale and importance of wage labour both to those who own the means of production and to those who have labour power. These will be necessary elements in an evaluation of the degree to which social differentiation has developed in Santa Rosa.

The first step in such an exercise is to breakdown household membership by age and sex. In Table 6.6 this is shown according to adult/child, male/female distinctions and distributed between the four landholding categories. The distinction between adult and child is taken here to be the age of fifteen years, a point where a boy can generally begin to earn a man's daily wage in agricultural work (jornal). However, there is no marked "rite of passage" at this point, and the size of the wage might reflect different perceptions of a youth's maturity and strength, indicating the arbitrary nature of selecting one point between 14 and 17 years of age across the population. But apart from the very few engaged in college education in the city, children never continue at school beyond the age of fifteen, thus they become fully incorporated into the labour force of the household.

Below the aggregate number of individuals falling within each category in Table 6.6, four arithmetic means for each landholding category have been calculated. Taken together these figures suggest the dominant demographic characteristics of households within each of the four landholding Groups. There is a clear trend, for example, towards larger numbers of adults amongst land-rich households, and more children per household amongst the land-poor. At this level of generality it might be proposed that this pattern of household composition, together with landholding size, illustrates features of Chayanov's family life cycle, underscoring the notion of demographic differentiation. The worker - dependent ratio, provides further support for this model.

Table 6.6: Household Composition by Landholding Categories

	I	II	III	IV
No. of cases	26	14	13	10
No. of adult males	28	18	16	29
No. of adult females	27	19	24	17
No. of male children (<15yrs)	23	13	9	4
No. of female children (<15yrs)	26	13	9	10
Mean adult males	1.08	1.29	1.23	2.90
Mean adults (m+f)	2.12	2.64	3.08	4.60
Mean children (m+f)	1.88	1.86	1.38	1.40
Mean family size	4.00	4.50	4.46	6.00
No. of adults/child (worker/dependent ratio)	1.12	1.42	2.22	3.29

Table 6.7: Household Structure by Landholding Categories

	I	II	III	IV	Total
No. of households	26	14	13	10	63
"Nuclear"	10	9	8	3	30
"Extended"	3	1	4	7	15
Other:					
Woman-headed	7	3	-	-	10
Single man	3	1	-	-	4
Aged couple	3	-	1	-	4
Total	13	4	1	0	18

Note:

A "nuclear" household comprises parents and children and possibly an aged relative.

An "extended" household denotes three generations living together where the most senior member(s) retain a high degree of control over decision-making.

It is indeed the case that many of the households in Group II comprise nuclear families with young children, working largely upon inherited land. However, the conventional nuclear stereotypical family does not even account for fifty percent of the twenty-six households in Group I, as the data in Table 6.7 show. Rather there are a variety of family arrangements that reflect difficult personal circumstances in which many of the poor are trapped, and underlines the point made by Deere (1978) that the household as a unit of production and reproduction is distinctly unstable. Indeed, one need not only count the number of abandoned or separated female headed households to argue that there appears to be a high degree of fragmentation of domestic units caused by spouse and child mobility and mortality. Joan Vincent (1978) uses the term "rump peasantry" to describe those households headed by women, or comprising aged couples whose children have migrated. They are characterised above all by inadequate labour power and the leasing out of the little land within their possession. Amongst the twenty-six households of Group I there are seven headed by women, two containing single men abandoned by their wives and children and one elderly widower. There are also three aged couples and a general sense of instability about the remainder as mothers, sons, fathers and daughters individually retain a high degree of spatial mobility in search of improved personal livelihood prospects.

At the other end of the landholding spectrum, however, seven of the ten Group IV households conform to the extended model, where adult sons and daughters provide a labour force capable of farming large and expanded holdings. Six of the ten households contain an ageing "patriarchal figure", an ex-colono, whose survival has not only prevented the division of land between heirs, but in many cases the departure of offspring to form new households of their own by refusing to provide an anticipatory inheritance. This differs from the conventional model of the extended household where adult married sons (and

possibly, but less commonly, daughters) with their own offspring remain in the parental compound. Of the six households headed by a "patriarchal figure", three conform to this latter model while three others illustrate the failure of adult children to escape parental authoritarianism for fear of losing their rightful inheritance. The household with the largest holding in land (Household 13) exemplifies this pattern, where a couple in their late seventies' retain the labour of four sons and a daughter, whose ages range from 58 to 29 years, and between whom there is significant animosity (3).

However, while such descriptions provide a qualitative insight into the way in which different households attempt to control the labour of family members, the primary objective here is to establish the quantitative contrasts in the labour strength of households in the four landholding categories. Notwithstanding its value as a guide to household composition, Table 6.6 makes the direct comparison of household labour strength rather difficult. In order to establish a straightforward comparative framework it is necessary to construct an index of labour strength weighted according to the age of household members. Such a methodology was used by Chayanov to calculate the consumer - worker ratio in support of his theory of demographic differentiation. However, Chayanov assumed that the labour of an adult woman was only 0.8 of that of a man, while children between the age of fourteen and nineteen years were assigned values of 0.8 for boys and 0.6 for girls (Kerblay 1971). A differential index between male and female labour is rejected by Deere and de Janvry (1981) and it is appropriate that equivalence is assumed here within a wider definition of agricultural production.

Although the potato production system, the main focus of the current analysis, falls into the category of "male farming system" due to the operation of plough technology under male control, it is erroneous to restrict the definition of productive activities purely to involvement

in field tasks. Although the bulk of these, together with the elaboration of tools and the procurement of inputs, are largely in the hands of men, women's role in household reproduction is critical, and it is within this wider context that commodity production must be placed. Thus, though women make a lesser but still significant direct contribution to the potato production cycle through their involvement at the critical stages of planting and harvesting, their other responsibilities are such as to maintain the conditions of reproduction within the household (Deere and Leon de Leal 1982). These are discussed in Chapter Seven and further elaboration is unnecessary here. For the exercise of calculating household labour strength, however, we concur with Deere and de Janvry (1981) and assume an equivalence between adult male and female labour.

More problematic, however, is the weight that should be accorded to the labour of children and elderly people, for both make important contributions to meeting the demands of household reproduction. Children, for example, are frequently responsible for pasturing livestock, collecting firewood and water, and looking after younger siblings, thus freeing the mother to engage in other activities outside the home. However, attendance at the village school somewhat limits the amount of time children are available to perform such duties and this, together with the difficulty of estimating their labour-saving value to the household, suggests a simple, if arbitrary, weighting is adequate for the requirements here. Consequently, children between the ages of twelve and fourteen are accorded a labour weight index of 0.5, whilst those below twelve years of age are not incorporated into the calculations. Likewise, elderly people beyond the age of sixty are accorded the same weight, 0.5, though clearly the relative contribution of an individual would depend upon his or her state of health. It is felt that this more straightforward index is as effective overall as the more sensitive classification found in Deere and de Janvry (1981).

Table 6.8: Household Labour Strength by Landholding Categories

Labour Strength	Landholding Categories				TOTAL
	I	II	III	IV	
<2	9	2	2	0	13
2-2.9	11	7	5	3	26
3-3.9	5	2	3	2	12
4-8	1	3	3	5	12
Total	26	14	13	10	63

NOTE:

Labour strength for each household is calculated according to the following weighting:

Men and women 15-59 years - 1.0

Adolescents 12 - 14 years and

men and women 60 and older - 0.5

See Appendix II for the composition and number of labour units for each household.

Source: Field Data

The matrix of household labour strength by landholding categories is comparable to that developed by Deere and de Janvry (1981) from survey data collected in Cajamarca, Northern Peru. In both cases the most frequent occurrence is households in the range 2-2.9, tending to correspond to nuclear family units comprising an adult couple with young children. However, while in Santa Rosa the remaining households are almost equally divided between the other three classes of labour strength, in Cajamarca the aggregated categories of labour strength display a better fit to a normal distribution. That is, Deere and de Janvry's lower category of less than two units and upper category of between six and nine units of labour power equally share

the lowest number of households and together account for just eighteen per cent of the total sample (n=105). In Santa Rosa, on the other hand, thirteen households, over 20 per cent of the total, fall into the category of below two units of labour power, though the differences in weighting the labour of children may explain this disparity.

With respect to the distribution of households within these labour-unit categories and according to the size of landholding it is possible to identify a slight degree of polarisation. The majority of Group I households have below 2.9 units of labour, with almost 35% falling into the weakest labour category below 2.0. On the other hand five of the ten households in Group IV possess more than four units of labour and fulfill the Chayanovian prediction that families retaining the labour of adult children farm more land to meet its greater consumption needs. However, beyond these rather superficial observations the data do not permit a thoroughgoing evaluation of the validity of Chayanov's model of the family life cycle, nor is it necessarily relevant to conduct such an exercise here. Rather, the intention is to predict the movement of labour between households on the basis of the size of holdings and the labour strength available to work them.

For example, it would seem incontrovertible to argue that the three Group IV households with only 2-2.9 units possess insufficient labour power to effectively exploit their holdings in excess of six hectares, whilst the five Group I households with between 3-3.9 units have inadequate access to land to absorb surplus labour power. Before examining patterns of labour movement between households possessing different levels of labour strength, it is necessary to aggregate the total amount of days sold, purchased and exchanged by each of the landholding categories. This data, displayed in Table 6.9, excludes all non-agricultural employment either within Santa Rosa or beyond, and it does not take account of those household members largely involved in urban wage work.

Table 6.9: Labour Movement by Landholding Categories
(In Days)

Group	Labour Sold	Labour Purchased	Net Transfer*	Ayni
I	1215	15	-1200	400
II	330	115	-215	245
III	55	605	+550	160
IV	25	1010	+985	75
TOTAL	1625	1745	(+120)	880

* Net labour transfer = labour purchased - labour sold

Source: Field Data

As Table 6.9 demonstrates, there is a significant transfer of labour power from the land-poor to the land-rich categories, with the bulk of total wage labour provided by the 26 households in Group I. Discounting those households in this category that possess inadequate labour power (women headed, aged couples), there are clearly others for whom wage work would appear to be an important source of earnings. Amongst them, for example, are two father and son pairings both of whom account for over 120 days of labour sold during 1981-82. In addition to working for the land-rich of Santa Rosa, wage employment is also found with a local landowner, Juan Betancur. He purchased a total of 250 days labour from Santa Rosa households in 1981-82, though wages were not always paid in cash, an issue to be discussed below. Overall, though occasional off-farm employment is quite common, just six households account for 580, or 36 per cent, of the total number of days sold locally.

Predictably, Group IV is the largest employer of wage labour despite a larger average household size. However, if Group IV is disaggregated we find that just three households account for almost 80% of the total number of days purchased, with Household 9 alone employing 500 days of wage labour during the agricultural year in question. For Rigoberto Jimenez, the hiring of two permanent wage workers in Esteban and Victor Ramirez, a father and son from the community of Tiquirpaya a little way down valley, who together supplied some 300 of the 500 days, allowed him to concentrate upon his primary activity as a transportista. While dedicated to his truck operations between the zone and the Lower Valley, Jimenez was able to rely upon the Ramirez' to produce over fifteen tonnes of potatoes on his land without the need to mobilise labour daily.

Given the employment of individuals from outside Santa Rosa, of which the Ramirez' are the most important, and wage work for Betancur, it is difficult to establish a precise audit between the number of days purchased and sold within the community. However, it is estimated that besides the Ramirez', other individuals from outside Santa Rosa perform another one hundred days of wage labour, making a total net import of approximately 400 days over the year. On the debit side the total of 1625 days of labour sold, includes the 250 days purchased by Betancur. Thus, the movement of labour occurring between the 63 households within Santa Rosa can be calculated as 1345 days purchased (1745-400) compared to 1375 (1625-250) days sold, a margin of error of around two per cent.

Finally, the column headed "ayni" in Table 6.9 refers to the number of days of reciprocal labour exchange between households. However, labour is often "reciprocated" for the use of means of production (oxen, horses) not owned by the poorer households, or for food or services rendered during a time of need. Consequently, though some balanced reciprocal exchange of labour does take place between some of the poorer households, much is accounted for by unpaid labour

cancelling debts incurred by the poor in the use of productive resources owned by their wealthier neighbours. This will be discussed in the forthcoming section examining the distribution of livestock and access to other means of production.

It is now possible to assess the movement of labour according to the categories of labour strength developed above. It should be remembered that these categories were loosely devised from the number of active members, and that households with quite different levels of landholding can be grouped together. The resulting distribution is shown in Table 6.10.

Unlike the preceding table, dealing with the movement of labour by landholding category, there is no immediately obvious pattern to the results in Table 6.10 due to the grouping together of households according to their units of labour strength, suppressing their diversity in the size of landholdings. Yet the complementarity between landholding and household size is further confirmed by the figures for mean labour strength and mean landholding, shown in the first two rows. In terms of labour balance the inclusion of the two households within the labour strength category of 2-2.9, which together account for 650 of the 980 days purchased, makes this a net purchaser of labour rather than a net seller. The labour strength category 3-3.9 falls into the latter with its extra labour power reducing the land per labour unit ratio to the lowest of the four groups at almost parity. However, whereas the category 4-8 has only a slightly better land per labour unit ratio, its superior mean landholding illustrates its ability to absorb household labour (low number of days sold), whilst making use of labour purchases. Finally, at the other end of the spectrum are those households with less than two units of labour power and includes amongst them one Group III household accounting for the purchase of 150 days of labour. This again disguises the primacy of the sale of labour power despite the limited labour strength of this category.

Table 6.10: Labour Movement by Household Labour Strength

	HOUSEHOLD LABOUR STRENGTH (UNITS)			
	<2	2-2.9	3-3.9	4-8
N	13	26	12	12
Mean labour strength (units)	1.15	2.1	3.25	5.25
Mean land-holding (Has)	1.73	2.75	3.27	5.56
Days sold	220	840	435	130
Days purchased	175	980	245	345
Net labour balance (days)	-45	+140	-190	+215
Ayni (days)	185	415	150	130
Mean days sold	17	32	36	11
Mean days purchased	13	38	20	29

Source: Field Data

Taking Tables 6.9 and 6.10 together, then, there appears to be a clear movement of labour power from households impoverished in terms of landholding and, frequently, in labour strength towards those better endowed with both. However, it will be demonstrated that this transfer of labour by the resource-poor is often not an optional decision reached by the household as a means of earning wage income from its "surplus" labour, but represents a degree of compulsion stemming from restricted access to means of production. For those households that depend heavily upon non-family labour power, the need to assure themselves of a reliable supply of workers requires that they take steps to reduce competition between themselves

and other hirers of labour. This involves introducing an element of compulsion, in order that labourers will perform when they are required, while at the same time keeping wages low. A variety of mechanisms have developed under commodity production, though principally involve control over means of production. Thus, when a resource-rich household requires labour at the time of planting or harvesting, it calls upon those poorer neighbours who had earlier sought the loan of a horse, yoke of oxen, or perhaps a few arrobas of potatoes in the pre-harvest period. Such an exchange of labour for means of production appears to be embedded within an ideology of co-operation and redistribution, in which community-level traditions and expectations of mutual help ensure collective survival (Grindle 1986). However, a veneer of mutual aid disguises the relations of "bonding" between households with substantially different resource bases.

Although theoretically the local labour market allows for the "free" buying and selling of labour power, in practice many of the land-poor households are tied into bilateral relations with a land-rich neighbour. Problems of economic instability and uncertainty to which the land-poor are especially vulnerable, force them to take measures that minimise their exposure to risk. For example, during 1982 the real value of the casual daily wage (jornal) fell sharply while the prices of basic consumption goods rose as a result of rapid inflation within the national economy. Rather than demanding an increase in the daily wage to compensate for rising prices, many of the poorer households sought to forge closer ties with their richer neighbours to guarantee their survival under conditions of economic uncertainty. Thus while the ratchet of the "simple reproduction squeeze" was being tightened amongst the land-poor, it appears that pre-capitalist ideological notions of mutual support were reinforced while at the same time the authority of the land-rich was being strengthened through differentiation. This is in line with the observations of Sánchez (1982) in the Peruvian sierra.

However, besides the consequences of deteriorating economic circumstances and the objectives of securing loans of food or cash, "bonding" between resource-rich and -poor households most often occurs as a result of the unequal distribution of means of production, especially animal power. Under the intensification of commodity production, access to yokes of oxen for ploughing and horses or mules for carrying loads has become vital. Yet whereas oxen may once have been exchanged between kinsmen without payment, today every "loan" must be reciprocated in cash or labour. Thus, although the pre-capitalist vocabulary (ayni, mink'a, ayuda) persists, the market mechanism regulates, if imperfectly.

An analysis of the differentiation process, then, must examine the distribution of productive resources such as oxen and horses, but also essential inputs in the form of potato seed and chemical fertiliser. While livestock that provide animal traction represent high value assets which earn their keep in on-farm work and being hired out largely in return for labour, seed and fertiliser are also important commodities whose supply can be regulated by the land-rich. In the following section the distribution of livestock amongst the four landholding categories illustrates a further dimension of differentiation and should be understood in relation to the logic of controlling labour power. The provisioning of potato seed and chemical fertiliser is then addressed, which leads into a discussion of the system of sharecropping practised in the zone which, it is argued, greatly contributes to differentiation.

IV. Livestock

In Chapter Five, where the system of agricultural production was described, the role and relative importance of different kinds of livestock was briefly assessed. Although many households retain a small flock of sheep, some poultry and perhaps a pig as part of a stock of wealth, it was argued that possession of a horse or mule and a yoke of oxen were vital to establishing and maintaining a degree of autonomy in agricultural production. The justification for this argument is that first, as the accessibility of Santa Rosa has deteriorated, equine power has become indispensable to commodity production. Horses and mules are necessary for the transport of sacks of fertiliser into the community, and for the movement of potatoes from the fields to the increasingly distant roadhead where they can be loaded onto trucks for transport to the Lower Cochabamba Valley markets. Secondly, the use of oxen for draught power is central to a farming system based on plough cultivation, and they are unlikely to be replaced by mechanical technology in such a steeply sloping and inaccessible environment. However, the distribution of both horses and oxen is highly skewed.

Table 6.11 presents a complete inventory of livestock within Santa Rosa in June 1982. The numbers of cattle, sheep and horses do not differ substantially from those that appear in the Agrarian Reform Documents for the 65 colono households in 1954, although ownership was similarly concentrated (see Chapter Four). There is no evidence to suggest, therefore, that wealth is being accumulated in the form of livestock, although some households are obviously well-off in terms of the value represented by their animals (4). Moreover, some six or seven households are involved in livestock dealing as a means of generating income, and this activity is discussed in Chapters Seven and Eight (5).

For the majority of households, however, the market value of livestock may not be realised except at a time of cash scarcity. While horses and oxen are valuable for their work, other domestic animals are kept for their meat or other produce (milk, eggs, wool) although productivity, or yield, is extremely low. There has been no attempt to improve the genetic stock of animals throughout the zone by introducing improved strains for cross-breeding: all livestock is of the criollo variety. While undoubtedly well adapted to the conditions of the Morochata Valley, better quality stock would increase incomes through greater productivity. For example, the egg yield from hens is extremely low, while sheep are not sheared annually for they produce little wool and their fleece is used only when they are slaughtered. However, small domestic animals such as sheep, pigs and poultry, which are cared for by women, are retained for their future use values rather than for short-term exchange, and productivity, representing the efficiency of converting browsing to animal protein, is not a calculation of any apparent importance. In the case of the larger animals, which possess greater value and a more significant source of wealth, then men are more actively involved in their welfare. Though women may tether and provide fodder to horses and cows, they are strictly excluded from tending to oxen. This is part of the rigid protection of ploughing and its associations by men (see Chapter Five).

An examination of Tables 6.11 and 6.12 will reveal several disparities in the distribution of oxen. First, there are more oxen in the community than those which comprise yoked pairs. For example, amongst the twenty six Group I households there are six beasts but just two yoked pairs; amongst the fourteen Group II households there are fourteen oxen but just three yunta. On the other hand the ten Group IV households together own sixteen yoked pairs: two (Households 40 and 45) each own three yunta, another two (Households 4 and 39) own two yunta apiece, and the remaining six households each possess one yoked pair.

A yoke of oxen are a matched pair that must be trained to work in tandem, and consequently also embody the time invested in "breaking them in", and they are unlikely to be worked separately. There are a few households with one young ox who have sought to match it with a similar animal owned by another household caught in the same position, but these arrangements have not proved popular or successful. This may be because of actual or perceived conflicts over the use of the oxen at peak times of the agricultural year when both households are anxious to plough their own land. Alternatively, it may be a practice that has suffered as part of the more general decline of co-operation under the process of commoditization.

Whatever the explanation, it is clear that the land-rich households exert a near monopsony on yokes of oxen within the community, with just twelve units (the ten Group IV plus two Group III households each with two yunta) owning almost seventy per cent of yoked pairs. Indeed, if we group together those six households with more than one yoke of oxen each we find that they possess an average of 7.32 hectares of land each. Although they are also well endowed with labour (an average of 4.75 units according to the criteria used earlier - see Table 6.8), their larger landholdings require the use of extra-household labour at peak periods. Thus, multiple yunta ownership appears an attractive investment, especially when only five of forty Group I and II households have access to their own yunta. Given the high demand for oxen early in the agricultural year for land preparation and sowing of the first mishka crop, multiple yunta owners are in a position of performing the necessary tasks upon their own land while still being able to deploy another yunta or two to secure bonded labour. The pattern of ownership found in the distribution of oxen is repeated, if in less dramatic fashion, across other types of livestock.

Table 6.11: Livestock Distribution by Landholding Categories

	I	II	III	IV	Total
No. H/holds	26	14	13	10	63
Horses/Mules	8	10	25	31	74
Oxen	6	14	19	32	71
Cows	11	18	21	57	107
Sheep	152	132	156	190	630
Pigs	11	6	6	6	29
Poultry	144	72	83	45	344

Table 6.12: Control over Productive Livestock

	I	II	III	IV	Total
No. of Yunta	2	3	8	16	29
No. of H/Holds with Yunta	2	3	6	10	21
% H/Holds in Group with Yunta	8%	21%	46%	100%	
No. of Horses and Mules	8	10	25	31	74
No. H/Holds with Horses/Mules	6	7	11	10	34
% H/Holds in Group with Horses and Mules	23%	50%	85%	100%	

Source: Field Data

As Tables 6.11 and 6.12 indicate, amongst the Group IV households, all thirty-two oxen are paired in productive yokes, while just six out of the fourteen oxen held by Group II form part of a yoke held by a single household. Although two of the remaining eight are paired between two households, the others are retained in the hope of being paired in the future - or will be sold for cash. Indeed, the ownership of non-working cattle represents a valuable asset, not only in terms of the sum of money that can be raised by selling an animal to a dealer for slaughter but, in the case of a fertile cow, for the rearing of a future working ox.

Nevertheless, the distribution of cattle follows the pattern of other productive resources, with the ten Group IV households owning 53 per cent of the 107 head in the community. A similar concentration appears in the case of horses and mules, with 76 per cent of these animals held by one-third of all households. On the other hand the pattern is not so apparent in the case of the smaller domestic animals which largely represent a source of use values rather than exchange or means of production. Given this unequal pattern of distribution of livestock ownership, it is now necessary to examine control over two other vital elements in the potato farming system: tuber seed and chemical fertilizer.

V. Seed and Fertiliser

Potato tubers from one harvest can usually be stored and sown as seed at least once thereafter, depending upon altitude, the prevalence of pest and virus, and the expectation of yields. Seed stock, however, degenerates after one or more generations and results in declining yields. Degeneration is principally due to temperature during the growing season (high temperatures result in weak seed) and viral infections (Beukema and van der Zaag 1979). Under the warm, humid conditions prevalent throughout much of the irrigated land used for mishka production in Santa Rosa, and where viral infestations spread rapidly across adjacent fields all planted with potato, seed stock must therefore be replenished more frequently than in the past in order to maintain yields. Besides, many of the poorer households are unable to carry over sufficient potato to cover their consumption requirements, let alone to put aside as seed for the following year. Consequently, prior to the new round of mishka production, most producers obtain fresh seed potatoes which are grown in the higher altitude estancias above Morochata.

It may be recalled that early in Chapter Five it was stated that the production of unirrigated temporal potato in many of these higher communities had become heavily commercialised as their reputation for producing clean seed of the variety waycha pacena began to spread. As consumer demand for this variety encouraged the intensification of mishka production, seed producers have experienced a "derived demand" resulting in high seed prices. This is also explained by the circumscribed area in which the variety waycha is produced (until now only the Morochata zone), as well as by the diversified nature of the farming system of the estancias, where potato has provided just one component of a mixed cropping system. Consequently, given the relative scarcity of seed vis a vis its demand by producers of mishka ware potato, it is not surprising that the price of seed generally exceeds that paid to producers

for first class mishka potato. This relative scarcity also explains why some seed producers, rather than selling their crop, are able to deploy it in sharecropping arrangements with the lower altitude mishka producers.

The system of sharecropping practiced in the zone is discussed in detail in Section VI. Here, however, it is important to recognise the heavy cost of renewing the stock of potato seed for all households but especially for the poorest. For example, in April, at the time of planting the first mishka crop, the price of seed hits a peak: in Morochata in 1981 it reached 850 pesos per carga, while the price of the first class mishka potatoes (i.e. chapara size - see Chapter Five for explanation) that were harvested from this seed in August and September were sold in the Lower Valley markets for between 550 and 600 pesos per carga. Naturally, for those households with access to land at higher altitude it is possible to produce their own seed for sowing in their lower fields. This is an advantage enjoyed, for example, by the Caballero household (Number 13) the largest landholders in Santa Rosa.

In August 1981 Miguel Caballero employed wage labour to plant potato for the third consecutive year in a parcel of land inherited from a deceased relative, measuring around half of one hectare, in a location known as Yuraj Pampa (White Plain) situated above the main settlement of Santa Rosa. Five cargas of potato seed were purchased in Morochata at 650 pesos per carga, (the price in August being below that of earlier in the year) and the crop was harvested in December. It was anticipated that the parcel would produce sufficient seed to meet the requirements for sowing land in the bottom part of the community. However, in its third consecutive year of production under potato, yields fell dramatically, from 40 cargas in 1980 to 17 cargas in 1981, of which only 13 cargas (golge and murmu sizes) were suitable for seed. The household, therefore, had to make further purchases in order to be able to sow the 34 cargas of seed that it required for the April to

June mishka crops occupying its land in the very lowest reaches of the community. Thus, 1981-82 proved a less successful illustration of its own seed production system, but the great benefits that it has enjoyed from this arrangement suggest that it encouraged the household to over-cultivate one of its most strategic assets.

Given the potential savings from sowing second-generation seed, it is not surprising that many households are encouraged to recycle part of the previous year's crop. In contrast to most other crops, where seed represents a minute proportion of total production costs, potato seed may comprise a large component and exceed one third of total costs (Horton 1980). In an attempt to reduce such costs producers may opt for seed of lower quality, although tubers infected with virus are difficult to identify. At higher altitudes, where diurnal temperature variations are more extreme and night-time frosts occur throughout at least part of the year, the threat posed by pests and disease is lessened. This is why the estancias above 3,500 metres in the Morochata area have become important seed producers because of their relatively "clean" environment. At lower altitudes, in contrast, many of the problems outlined in Chapter Five represent serious hazards which are intensified by poor seed management practices. Hence there exists a potential symbiosis between potato producers operating in different ecological zones, although this relationship has become increasingly regulated by merchant capital. Thus, today, intermediaries exert an important influence over the supply of potato seed.

Under the current system of commodity production and a virtual potato monoculture of the variety waycha paceña, it might be argued that there is an even greater importance attached to the frequent renewal of seed in order to reduce vulnerability to infestation and declining yields. Given the high costs of production, producers must be assured of certain minimum levels of output that will cover the costs of inputs and the reproduction of the household during the

year. Reassurance is provided by sowing quality seed in which the producer has confidence. Poor quality seed, in contrast, increases susceptibility to fungal infections, pest attack and soil borne parasites such as root-knot nematodes; this results in low yields, indebtedness, impoverishment and loss of productive assets (6). Consequently, with healthy seed indispensable to survival, but the cost of its acquisition being so high, sharecropping has grown in importance. However, before we examine the nature of sharecropping agreements in detail, it is necessary to look at the second vital input to the potato production system: chemical fertiliser.

In Chapter Five it was mentioned that producers appeared almost to fetishise all agro-chemical inputs, but fertilisers above all. Notwithstanding the length of time a field has lain fallow or whether animal manure (guano) is applied, no producer will consider sowing potato seed without sprinkling chemical granules along the bottom of the furrow. Under circumstances of declining soil fertility this may well be a sensible response, except that it is applied in quite arbitrary quantities irrespective of the requirements of the soil, and securing supplies represents a heavy financial burden. It is the route through which chemical fertiliser is acquired, and the implications of this for differentiation, that concern us here.

The type of chemical fertiliser most commonly used in Santa Rosa is Nitrofos (20-20-0) and, to a very much lesser extent, Nitrofoska (15-15-15), both manufactured by BASF in Belgium. The European origin is important, for the importation of such a vital product for agricultural development by a landlocked South American state has led to Bolivian producers paying amongst the highest prices anywhere for chemical fertiliser (Dandler et.al 1985). It explains why, under hyper-inflation and regular currency devaluations throughout the early and mid 1980's, prices of fertiliser soared at a rate many times greater than those for potatoes and led to the re-emergence of the regional Association of

Potato Producers (APP) whose main demand was for parity in the price of a carga of potatoes and a quintal (50 kgs) of chemical fertiliser (see Chapter Four). The rising price of fertiliser is a very important element in increasing inequalities between households given the contrasting ways in which rich and poor meet their different requirements.

For resource-rich households, a visit to the Lower Valley markets to sell a crop of potatoes usually also involves the purchase of as many sacks of fertiliser as it is thought will be required for the following agricultural year. In this way they invest part of their immediate cash surplus in necessary inputs for the next round of production, and take advantage of any discounts in urban bulk purchasing. For the resource-poor, on the other hand, buying chemical fertiliser some six months or more before it is needed is not seen as an investment but, rather, as the locking-up of scarce capital. Moreover, the sum of money which they have received from the sale of their own potato crop is usually not comparable to that held in the hand of their land-rich neighbours, for besides often lower levels of production, many of the resource-poor must immediately divide the cash from their potato sales with a sharecropping companion. With the half that remains they purchase a range of necessary consumption goods - food, clothing, household items - and must also usually meet the cost of fertiliser from the last round of production. This, for many households, has been obtained on credit from one of two principal suppliers involved in the sale of chemical fertiliser locally.

The first is Juan Betancur, to whom reference has previously been made as large nearby landowner, employer of wage labour and ex-truck operator, and who wields enormous authority within the area. Besides his own farm operations, which yielded over one thousand tonnes of potato during the agricultural year 1981-82, Betancur also owns a small agro-chemical business in Quillacollo. In order to obtain fertiliser on credit from his store, individuals in Santa

Rosa must display a willingness to work as wage labourers when required. In addition to fertiliser, he also provides small quantities of pesticide or tools which are paid for in labour, lends money at ten per cent interest per month and will supply potatoes to those households who experience a shortfall in consumption needs. All of these services are deployed selectively as a "favour" to create a client group of temporary labourers that can be drawn upon during the course of the year. Such services also serve to legitimise his intervention in the life of Santa Rosa as judge and moral guardian, and he regularly holds court to hear complaints and settle disputes, passing sentence on those convicted of misbehaviour usually in the form of fines in cash or labour, occasionally imprisonment and, rarely, a beating.

The second individual, Lucho Coca, is a merchant in Morochata who has a general store besides a lucrative sideline in chemical fertilisers. A vecino de pueblo in every respect, Coca is a corpulent, taciturn man with a strong belief both in the sense of his own worth and the ignorance of "campesinos". The turnover from his shop, which is the most well-stocked in Morochata and which is run by his wife and two daughters, in itself provides a good living; but his earnings from the sale of fertilisers must exceed even this, although such details were not naturally forthcoming. It was possible to establish, however, that in 1981-82, Coca sold between fifty and sixty sacks of fertiliser on a credit basis to households in Santa Rosa alone. To be eligible for such credit, producers must display acceptance of some form of patron-client relationship to assure him of their trustworthiness. This is most commonly established and maintained through an act known as t'inka, involving the occasional delivery of a gift in the form of eggs, a hen, some potatoes and so on. Once a client relationship is established, Coca will then consider providing sacks of chemical fertiliser and receiving payment three months later once the crop has been sold: but such credit has its cost.

In May 1981, one quintal (50 kgs) of chemical fertiliser could be purchased in cash for 650 pesos (US\$ 26) or alternatively paid for three months later for 900 pesos (US\$ 36). However, as the rate of inflation began to rise, so did the cost of Coca's credit. By March 1982 one quintal of fertiliser could be purchased in cash for 1,400 pesos, otherwise producers had to pay Coca's price of 2,800 pesos in May, yet the average price of a carga of potatoes in the Cochabamba market in May was just 715 pesos (7).

The participation of resource-poor households in an intensive system of potato production clearly carries considerable costs. The requirements of animal power, chemical fertiliser and decent seed force the resource-poor into economically inequitable and socially subservient roles with neighbours and outside actors in order to secure essential inputs and means of production. The highly disadvantageous terms upon which the poor struggle to maintain production are no more clearly illustrated than in the case of the system of sharecropping found throughout the Morochata zone and other parts of the serranía. This is now described in the following section.

VI. Sharecropping: Mutual Benefit or Surplus Extraction?

Sharecropping is a contractual arrangement usually between two parties which agree to share certain productive resources in return for a predetermined proportion of resulting output. It is a system that has been traced back into deepest history (see Byres 1983). It has also provided the focus of considerable theoretical debate, which for reasons of relevance and brevity, will not be addressed here. It has been said that most of the literature on sharecropping approaches the issue from the perspective of neo-classical economics (Pearce 1983), dealing in statics in determining its effect upon the level of production as compared with other forms of tenure (Lehmann 1984). For example, it is usual to find an analysis of sharecropping approached in terms of a model where landowners contract labour (a household) to grow a specified crop in return for shares of the resulting harvest rather than in return for wages. Calculations are then made regarding the relative efficiency of sharecropping over the use of wage labour in terms of yields and returns to capital and labour (see, for example, Cheung 1969, Martinez-Alier 1983).

However, while the "seigneurial stereotype" of landowners and bonded labourers provides the most popular model of sharecropping, and one that has led to accusations of its "quasi-feudal" nature, it is by no means the only variant. It certainly is not one that can be applied to the arrangement which most commonly operates in Santa Rosa. As the empirical specificity of the sharecropping contract which is found here is of greater immediate concern than abstract theorisation, it is proposed to concentrate upon the importance of the practice according to the four landholding categories, then examine its implications for the process of differentiation. Before dealing with the concrete evidence, however, it is useful to consider aspects of a recent study that attempts to develop a methodological and conceptual framework for the comparative analysis of sharecropping. Robertson (1987) proposes that:

"...sharecrop contracts are not determined exclusively by custom, nor by the remote dialectical processes of social structure, nor by the short-run strategic choices of individuals, but by combinations of all three. They reflect the access of different categories of people to productive resources, they are expressed by generalised norms in a locality from which they acquire the necessary social recognition and legitimacy, and they are sustained by individual negotiation, through which they are made responsive to the variable needs and capacities of the contracting parties." (Robertson 1987: 16).

Robertson's obvious enthusiasm for sharecropping appears to stem from a belief in the essentially co-operative nature of the arrangement irrespective of the precise variant of form which is found. Co-operation may be enforced by the relative scarcity of productive resources and the nature of local markets. Yet such factors, together with property structures and power relations, will not only "shape the general character of sharecropping" (*ibid.*: 8) but will surely influence the path of agrarian capitalist development within a region. While Robertson's analysis is strong in dealing with the complex micro-structural arrangements within and between households and other productive units, he seems unwilling to address questions regarding the social relations of production, mechanisms of surplus appropriation and their consequences for class dynamics. One valuable feature of his approach is the emphasis that he places upon time and temporal variations in the relationship between productive units:

"The contract may be executed within eight or nine months, but its efficiency and equity may not be judged solely in terms of inputs and outputs in a single crop season. Scott points out that sharecroppers who can count on interest-free food loans prior to harvest, who are allowed more than their nominal share of the crop in a bad year, who get help in case of illness ... have a substantially stronger subsistence insurance than one would infer from the usual division of the crop." (1987: 13,14)

Consequently, for Robertson, sharecropping forms part of a complex repertoire of productive relationships between households or other farm enterprises, and one in which the terms of the contract can be modified "according to the changing needs and capacities of the partners, finding expression in a pattern of maturation, possibly in favour of one of them." (*ibid.*: 18). He sees this process occurring in classically Chayanovian terms, as in the gradual transfer of land from father to son. Elsewhere he notes the frequency of relationships based, if not through kinship, on compadrazgo or even residential proximity ("neighbours") that unite sharecropping partners. Robertson's view of sharecropping, then, is of a benign, paternal arrangement ensuring mutual co-operation and survival. Let us examine his view against the arrangement found in Santa Rosa.

In the preceding section some of the problems associated with the annual renewal of potato seed were outlined. It was noted that for the overwhelming majority of households without access to suitable land upon which to produce their own seed, their needs were met through purchases at one of the Sunday markets in Morochata. However, given the relatively high cost of potato seed (the equivalent of US\$34 per carga in April 1981), many of the resource-poor households were unable to pay cash for more than a fraction necessary to plant all of the land which was available for production. Under these circumstances many producers have entered into sharecropping agreements with suppliers of potato seed. Some of the wealthier households within Santa Rosa or individuals from outside perform this role.

During 1981-82, 29 households sharecropped their own land (en compania) using their own labour and supplying chemical fertilisers which were usually obtained on credit from Lucho Coca or Juan Betancur. The sharecropping partner invests the seed and helps with planting and harvesting but assumes no other costs of production: yet he takes half the harvest. Table 6.13 summarises the relative importance of sharecropping for the four landholding categories.

Table 6.13: Sharecropping and independent potato production by landholding categories

Category	I	II	III	IV	TOTAL
No. of producing households	24	14	13	10	61
No. of households sharecropping own land	19	8	2	-	29
No. of households sharecropping another's land	-	-	7	5	12
Total independent production (<u>cargas</u>) (excl. sharecrop.)	113	323	739	758	1,933
Total sharecropped production (<u>cargas</u>)					
suppliers of land	501	316	156	-	973
suppliers of seed	-	-	193	261	454
Share to Group (total harvest)	250	158	175	130	713
Total pertaining to Group (independent sharecrop. prodn.) +	363	481	914	888	2,646
Mean total prodn./household (<u>cargas</u>)	15.1	34.4	70.3	88.8	

Note: All production figures in cargas; 1 carga = 100 kgs.
24 producing households in Group I; two units not engaged in production during 1981-82.

Source: Field Data

For Group I we can see that independent production by the 24 households with their own resources on their own land is considerably less important than the sharecropping of that land with providers of seed. Whereas two thirds of Group I households are only engaged in sharecropping their own land, only five of the fourteen households in Group II are caught in this predicament, and independent production marginally exceeds the volume resulting from sharecropping. For Groups III and IV, however, independent production predominates and sharecropping, with two exceptions, is of others' land as providers of seed. Of the two households in Group III which sharecropped their own land during 1981-82, one comprises an elderly couple whose labour capacity is restricted and for whom simple reproduction has become the principal objective, while the other household was confronted by the death of its male head. Although a son was able to achieve a high level of production within a sharecropping arrangement offered by a neighbour, the incident illustrates aspects of vulnerability amongst the middle strata of rural producers and their higher productive levels are no guarantee of longer-term stability.

Meanwhile, for the twelve households from Groups III and IV which invested seed in sharecropping arrangements, the net return to them was 227 cargas (22.7 tonnes) of potatoes or an average of almost 19 cargas per household. Nevertheless, a greater volume of potatoes were produced under sharecropping arrangements with individuals from outside Santa Rosa who provided seed, and whose share totalled some 260 cargas or 26 tonnes. Of this net return to "outsiders" 157 cargas, or 60 per cent, was acquired by five individuals from Morochata, 40 cargas (15 per cent) by three people from the Lower Cochabamba Valley, with the remainder accruing to individuals from higher neighbouring communities. One Morochateño, carried away 108 cargas from contracts with five separate households, while the remaining partners each had only single agreements, with two of the three from the Lower Valley disguising their commercial intentions through ties of compadrazgo (fictive kinship).

While there is not the space here to develop a detailed theoretical explanation for the particular sharecropping arrangement found in the Morochata zone, it is necessary to make clear that it hardly conforms to the often cited view of share tenancy. One popular perspective, which permeates much of the literature on the subject, tends to emphasise the mutually profitable, cost-sharing, risk-minimizing nature of sharecropping. This view has been suggested as an explanation for the existence of the arrangement amongst potato producers in highland Ecuador. According to Lehmann, the high costs of production and variations in yield have forced producers to seek to diversify risks in time (volatility of prices) and space (climatic hazards) and, thus, turn to sharecropping as a route toward the accumulation of capital and land (Lehmann 1984). This has led to the emergence of "capitalised family farms" which engage in sharecropping as a form of capitalist partnership rather than as a tenancy arrangement. The "success story" which Lehmann recounts may have something to do with the equitable division of costs, including labour, which are carefully bargained and agreed between partners. This contrasts markedly with the arrangement in Santa Rosa where the provider of potato seed exerts the dominant influence, a puzzle which deserves closer scrutiny.

The existence of share contracts is based, in essence, upon unequal access to, and control over, different productive resources. Each resource necessary to production is accorded a relative weight within the production process, depending upon its general level of availability. Possession of all the necessary productive resources carries maximum economic leverage and thus a dominant position in negotiating share contracts. Under the circumstances of commodity production which prevail in the Morochata zone, then, the resource which is accorded a priority weight appears to be that of potato seed. Why? The structure of land distribution does not appear to be a major factor, insofar that there is not any major hunger for land, nor an

excess which might encourage a shift to the "seigneurial" model. Besides, access to cheap labour through low wages and forms of "bonding" between households offers no rational economic incentive to the land-rich to sharecrop its own land.

Cheap labour is, of course, sustained by its own access to land which covers part of its costs of simple reproduction (but through commodity exchange rather than subsistence). The proletarianisation of this labour, through its dispossession of land, would consequently increase its costs to local employers. However, it is possible to extract a surplus from such labour beside the value that it generates through wage employment. This is done by penetrating the production process in which this labour is engaged upon its own land through regulating the supply of productive resources. For example, the loan of oxen and horses represent one possible mechanism, although they are more often used as a means of securing repayment in labour. Chemical fertiliser is another vital input but its supply is less easily controlled; besides, producers could substitute animal manure if access became difficult. Potato seed, on the other hand, represents the single most important input, whose market operates at a local level but, because of poor information between producers and consumers, can be most easily controlled by intermediaries. Thus, it is the role of merchant capital in regulating the supply of potato seed through the market which has been vital in determining its weight within sharecropping contracts.

Indeed, the presence of individuals from beyond the boundaries of Santa Rosa and their involvement in sharecropping arrangements with resource-poor households not only illustrates the weak negotiating strength of the latter. It shows that sharecropping provides the most accessible route by which merchant capital from outside the community can penetrate the production process, using opportunities for accumulation within agriculture for

limited capital investment. Discussion with transportistas operating in the Morochata zone revealed that much of the capital needed to purchase a truck was acquired by investing seed in sharecropping contracts with resource-poor households. For example, one independent owner-operator described how in one good year the returns from sharecropping enabled him to buy a small shop in Quillacollo, where previously his wife had sold goods in the plaza:

"From here we took seed in large quantity. Each year fifty, sixty cargas, like that we took. There are many poor people who do not have seed and do not have fertiliser; they have land but they do not have anything in order to be able to sow. That is why I took seed and fertiliser to them; to be able to produce; and then we divided it in half. That is where I financed myself, not here (in the city), its too difficult."
(Interview with Amadeo, March 1982)

The pattern, which is manifest here and is repeated time and again, is for agriculture to offer a route to accumulate up to a critical threshold, when resources are then diverted into other activities which yield better rates of return than would reinvestment in agriculture itself. But for those households which sharecrop their own land, it represents a serious compromise and loss of control over their means of production and fruits of their labour. It is rare for the resource poor households to break the cycle of dependence upon the richer providers of seed, and sharecropping often initiates relations of "bonding" between households which were described earlier. Under this arrangement, the idea of sharecropping being mutually beneficial is a fallacy.

VII. Summary

This chapter has examined access to the means of agricultural production in Santa Rosa and has demonstrated the existence of an unequal pattern of distribution according to landholding categories. By examining a wide range of elements that are central to the dominant system of agricultural production in Santa Rosa, i.e. land, labour, livestock, seed and fertilizer, the chapter has indicated the multi-dimensional nature of resource scarcity for individual households. This demonstrates the error of treating access to a single element, e.g. land, as a sufficient measure of differentiation and, consequently, of class location. Yet, notwithstanding the analysis here of a variety of means of production, it remains difficult to identify an unambiguous process of differentiation. What is clear, however, is the importance of wider sets of social relationships beyond the simple capital - wage labour polarity favoured by some scholars of agrarian societies.

The discussion of sharecropping, for example, demonstrated a process of surplus transfer from those households lacking in seed potato to those able to supply this vital input, yet this process does not pass unrecognised by the resource-poor. By "bonding" themselves to richer neighbours less well-off households are at least able to secure the seed with which to plant their land and engage in commodity production. How far this enables them to avoid more intensive spells of wage labour is not yet clear. However, it is not only the social relations between households which are of interest; those within units of production which have, hitherto, been treated uncritically and homogeneously require scrutiny. Moreover, the preoccupation hitherto with agricultural production must now give way to an examination of the roles played by non-agricultural activities. These issues are addressed in Chapters Seven and Eight.

NOTES

1. The Chi Square Test and Kolmogorov-Smirnov Test produced no evidence against the random distribution of the data.

2. Information from Agrarian Reform documents and rural property tax declarations. The persistence and continuity of political and administrative authority by a rural elite - who may even no longer own land themselves - is an intriguing subject worthy of detailed investigation. Once again, the influence of networks would require examination. In this case the functionaries brother owns some 40 - 50 hectares in a community adjacent to Santa Rosa, where he was once the administrator under the Hacienda. It is not fanciful to link the present accumulation of land by a representative of the old regime to the authority of his brother in an organisation that ostensibly represents the interests of peasants.

3. We shall look more closely at the dynamics of this particular household in a case study in Chapter Eight.

4. Though the value of an animal will vary according to its age, size and health (and strength in the case of working horses and oxen), a very general indication of the range of prices within Santa Rosa in early 1982 is given below (together with the mean equivalent in U.S. dollars).

Sheep 450 - 550 pesos (US\$ 20)

Pig 500 - 1,050 pesos (US\$ 30)

Hens 100 pesos (US\$ 4)

Cow 5,000 - 6,000 pesos (US\$ 220)

Horses 4,000 - 6,000 pesos (US\$ 200)

Oxen (suitable for yoking) 7,000 - 10,000 (US\$ 340)

5. Briefly, however, they include a few women dedicated to petty trading who travel widely in the zone, exchanging manufactured goods (articles of clothing, food products) for sheep which are then resold in the Lower Valley markets, while several men engage in cattle dealing, making their purchases in cash then driving up to six or seven head to the slaughter house in Quillacollo. Sizeable price differentials between the countryside and the town provides a lucrative income for those with the capital to invest in livestock dealing, though it is an activity which is not without its risks, as we shall later see.

6. However, seed potatoes can be of variable quality and it is difficult to determine, especially just by observation, if tubers are infected with virus diseases (Horton 1980). This may help to explain why mishka producers establish and maintain relations with one or two seed producers in whom

they can have confidence that their crop is of high quality.

7. Price data from CIPCA Cochabamba (unpublished). The average price of a carga of potatoes is calculated by taking the price per carga of each class of potato (Chapara to Chilimurmu - see Chapter Five for explanation) and applying a relative weighting to each class.

CHAPTER SEVEN

Women's Labour and Household Reproduction in Santa Rosa

I. Introduction

The difficulties associated with securing sufficiently remunerative free wage employment for land-poor households in Santa Rosa is paralleled by the limitations on capital accumulation from agricultural production for the land-rich. Together, the obstacles of low wages and low producer prices highlight the importance of non-agricultural, income-generating activities, many of which are in the hands of women. These activities fulfill fundamentally different functions according to the characteristics of the household, particularly its resources in land, labour and capital.

Many of these income-generating activities may be said to have either a "complementary" or "supplementary" relationship to agriculture. By complementary is meant that such activities serve to extend and deepen control over means of production, especially labour power which is procured through forms of debt bondage, and which offer a route towards sustained accumulation through a combination of agricultural intensification and economic diversification. Supplementary activities, on the other hand, are necessary in order to acquire extra cash income beyond that derived from agricultural production in order to meet the needs of household reproduction. In the case of female-headed households, for example, who, without access to male labour and under dominant notions of gender roles, are prevented from fully participating in agricultural commodity production, such income-generating activities as petty trading and chicha (maize beer) production are central to household survival. However, the role, scale and extent of economic diversification is influenced by other important considerations.

One of the objectives of this Chapter, then, is to explore the weight and function of women's economic activities in relation to the organizational structure of the household. However, these activities can only be fully understood against the background of women's reproductive roles. An examination of the domain of life under the control of women is necessary in order to rectify the rather androcentric view of the household which might be interpreted from the earlier preoccupation with agricultural commodity production. This was, arguably, somewhat inevitable given the outcome of the Agrarian Reform (where men were largely the beneficiaries of titles to land - see Chapter Four), the gender division of labour in agriculture (described in Chapter Five) and the rise of a male-dominated potato farming system. Thus, while these earlier chapters did not set out to deliberately diminish women's work, nor to ignore those activities which are central to the day-to-day reproduction of the household, these were tangential to documenting changes in patterns of agricultural production.

Following a brief exploration of the concept of "household", which argues for the disaggregation of the unit to the individual member, the Chapter proceeds to focus upon the domain under women's control. This also requires a brief theoretical exegesis, especially a summary of the debate surrounding the concepts of "production" and "reproduction". Under the rubric of the latter, data relating to biological reproduction in Santa Rosa is presented to underline the burden of child bearing and rearing for women's wellbeing. This is followed by an examination of the two principal economic activities in which women in Santa Rosa are involved; petty trading and the production of chicha. Finally, the chapter concludes with contrasting case studies; of two older, single women and two widows with children.

II. Concepts of the Household

As already noted, the opportunities to secure "free" wage employment locally are restricted, thus those eagerly seeking work as a means of earning cash have generally migrated to the Lower Valley towns of Cochabamba and Quillacollo. Though the pattern and extent of outmigration is discussed in Chapter Eight, it is necessary to note here that it is usually the young and single in their late teens and early twenties who seek employment away from the zone. However, the motives, time spans and circumstances of such work vary according to individual aspirations and household strategies. It appears from individual behaviour that personal ambition is often subsumed to the collective objectives of the parental household, especially when resources and decision-making are usually concentrated in the hands of the senior generation.

As the level of commodity relations deepens within the reproductive cycle of the household, social relations may be despotically reinforced in order to control the labour power of family members (Smith 1986). Preventing the subdivision of land and maintaining control over the labour of adult sons and daughters is a source of considerable internal conflict within households, particularly amongst those with the greatest resources. Between parents and their children there can be substantial discord over the allocation of roles and distributional rewards, and this may be accompanied by struggles between siblings over proposed divisions of family property (Long 1977). The principal conflict, however, arises from the irreconcilable differences between the objectives of the senior generation - especially the male head of household (the "patriarchal figure") - and the aspirations of sons and daughters (1).

These internal sources of tension do depend, however, upon a range of variables: the household's resources in land, livestock and capital; its involvement in non-agricultural activities; and its social aspirations,

including the construction of social networks, the value placed upon education and the ambitions for, or responsibilities assigned to, children. Such variables are, in turn, dependent upon the organizational form, structure and stage in the life cycle of the household, and these provide significant dimensions of difference between units. Consequently, though hitherto treated as an unproblematic, internally-coherent entity "locked-into" a social, economic and demographic trajectory, the household is very much more than a unit of production and consumption "subject to" processes of commoditisation and differentiation. If, as is proposed here, the household displays such heterogeneity of form, and as its internal relations are frequently marked by conflict and struggle, it would seem necessary to question the conventional definitions of households as being characterised by virtues of "pooling, sharing and generosity" (Harris 1981, Friedmann 1986).

Feminist analysis, in particular, has contributed to undermining the belief in a harmony of objectives within the household, and emphasised the internal divisions of labour and differential distribution of the product along the lines of gender, age and marital status. Other authors have explicitly questioned the status and validity of the unitary concept of "household", but at different scales of analysis. For example, in Africa the diversity of conjugal arrangements suggests that it may be necessary to identify smaller functional units (often matrifocal) which possess overlapping memberships and highly permeable boundaries (Guyer and Peters 1987). Other authors argue for an analysis of how household patterns are linked into the changing labour-force requirements of the accumulation process (Martin and Beittel 1987).

Further problems in adopting the household as the basic analytical unit of rural society have been highlighted by critics of the New Household Economics approach. First of all they have challenged the assumption that the survival of all individuals is assured through

pooling, that the individual and the household are synonymous and indivisible, and consequently that all members are assumed to occupy the same class location as established by the resources of the constituent unit (Wong 1984, Schmink 1984). Such an assumption not only incorrectly implies equal distribution of consumption goods, but also equal access to productive resources. It effectively subsumes the activities of individuals as mere components of some wider collective household strategy.

Secondly, the approach assumes a congruence of diverse familial functions operate entirely independently of other family units, and that residential boundaries coincide with functional boundaries (Oppong 1982). The historically complete individualization of household units may reflect the requirements of capital accumulation in developed "core" countries (Wallerstein 1984), but the belief in "primordial" autonomous households resisting commoditization as they reproduce capitalist labour (Stauth 1984) is hardly a universally-applicable definition. Indeed, such euro-centric, culture-bound assumptions of family systems have been subjected to particular criticism for failing to recognise the importance of wider kin and social networks (Oppong op.cit.). As Schmink observes:

"The household unit therefore may not constitute the most relevant unit in mediating such diverse kinds of behaviour as income pooling, consumption, labour-force decisions, fertility, migration and others." (Schmink 1984: 94).

A more sensitive, less household-centred analysis of rural society reveals personnel who are often excluded from notions of collective decision-making and production strategies. Joan Vincent identifies three categories of individuals which may be overlooked in studies of agrarian society: the landless; women, children and young men; and the artisan sector, including shopkeepers, middlemen, money-lenders and so on. While these are neither exhaustive nor exclusive categories, Vincent argues that a focus upon such individuals, whose career paths may weave in and out of the

fabric of rural and urban life, allows one to perceive the changes of local rural society and appreciate its deceptive appearance of structural stability while the content is in flux (Vincent 1977:58). Oppong (1982) also proposes a focus upon women but within a wider analytical framework concerned with the conjugal division of labour, rights and duties within the domestic context.

Perspectives, such as that of Vincent, offer a valuable methodological lesson in the study of rural society, for no community solely comprises a collection of ideal-typical households exclusively dedicated to agricultural production. As Table 6.8 indicated, almost thirty percent of households in Santa Rosa do not conform to either "nuclear" or "extended" forms. The preponderance of woman-headed and other household forms (aged couples, single males) within the land-poorest category (comprising exactly half of all units in this Group) attests to the instability of the conventionally-viewed household as a unit of production and reproduction (Deere 1978). As households which are neither "nuclear" nor "extended" are characterised above all by inadequate labour power, which severely hampers their ability to produce agricultural commodities from a limited land-base, their reproduction must be secured through alternative economic strategies. While some of the younger and stronger members of such households retain a degree of spatial mobility in search of improved personal livelihood prospects, women with young children and older people encumbered with social and physical constraints that severely limit their mobility may pursue a variety of non-agricultural activities that can generate sufficient income to ensure their survival.

During the course of this and the following chapter there will be an attempt to focus upon some of Vincent's "overlooked individuals". While the main concern of the current chapter is with the various roles and responsibilities of women, Chapter Eight will describe the strategies and activities of those young people who orbit around the

community in search of improved personal livelihood prospects. These will be illuminated through the use of case studies, the only systematic way of capturing an appreciation of personal circumstances and decision-making. For example, attention will be given to women without a co-resident spouse, for they display, by necessity, the greatest degree of autonomous involvement in income-generating activities. The main objective is to capture, in an essentially qualitative fashion, the contribution of such activities to household reproduction and social differentiation: it is not intended to conduct a detailed micro-economic analysis of revenue generation within the household fund.

III. Women's Domain

In Chapter Five the gender division of labour in agriculture was outlined in which the generally well defined allocations of roles were nonetheless subject to some flexibility according to the landholding strata to which a household belonged. Gender roles within the household determine participation for a myriad range of tasks that play some part in the developmental cycle of the household, encompassing social, cultural, economic and physiological functions, involving frequencies of varying duration. In order to short circuit extended discussion of the complex issues associated with gender roles at inappropriate points earlier in the thesis, and in order to bring into sharper relief the sexual division of labour in agriculture, much of women's daily work was placed within a category labelled "the domestic sphere". This served as a convenient heuristic device whilst dealing with the detail of agricultural intensification and social differentiation, but now demands to be unpacked and subjected to a more rigorous analysis.

The domestic sphere, it has been argued, obeys a different logic to the sphere of social production and exists outside of the market producing use-values with the objective of maintaining the conditions of reproduction of the household (Harris and Young 1981). As domestic labour is not accorded the status of commodity production, indeed is frequently equated with reproduction, it is overwhelmingly treated as distinct from productive labour (Harris 1981). Given the ideological structures which place women in the domestic sphere, separated one from another, with men occupying public space engaged in the social relations of commodity production, then ipso facto women's labour has often been perceived in the literature as somehow not productive and therefore not worthy of analysis. Even within some of the literature which has sought to challenge these assumptions there often remains an implicit belief that all of women's work falls within the domestic sphere and this constitutes the sexual division of labour within a given society. Harris argues that this is simply tautological: "what women do is treated by definition as belonging to the domestic sphere, simply because women do it", and the consequence is to "render invisible whatever activities women engage in that manifestly cannot be treated as domestic, for example wage labour." (Harris 1981: 64)

In contrast to the literature which fails to address the domestic division of labour within the household, the literature associated with the "domestic labour debate" has placed women's work within the home centre stage. For marxist-feminists the critical theoretical issue has been: does domestic labour create value and, if not, how does home production relate to capital accumulation? (Mackintosh 1988). Mackintosh's answer to her own questions is that housework does not create value for it is not involved in the production and exchange of commodities, though it is affected by the operation of the law of value. The opposite conclusion, however, is reached by Bennholdt-Thomsen (1981) who argues that use value always has its counterpart in exchange value, though this may not be immediately apparent

and the realization of use into exchange value may follow a considerable time lag. She writes:

"The housewife, like the peasant, produces use values - this is the goal of her production process - but these use values become exchange values the moment when the labour power, produced and reproduced within the household, is sold" (Bennholdt-Thomsen 1981: 20).

This cross-cultural comparison, between housewives of the industrialised "core" countries and peasants of the "periphery", reaches its apotheosis in a rhetorical article by von Werlhof (1984) who argues that First World housework and Third World production are both performed by unfree labour. Audacious though it may be, von Werlhof's article is not ultimately convincing, a criticism that has also been levelled at Bennholdt-Thomsen's otherwise more analytically powerful piece. As Long observes of the latter, it is difficult to explain non-capitalist relations of production by reference to capitalist principles, and in the end Bennholdt-Thomsen simply assumes that exchange value is produced, partly from lack of reference to concrete social forms (Long 1984). One is inclined to agree with Molyneux (1979), who argues that much of the domestic labour debate is excessively economistic, and Mackintosh (op.cit.), for whom it is necessary to deconstruct the concept of domestic work and examine its components empirically. Before proceeding to do so, however, there is a need for further conceptual clarification and definition.

Given the wide range of remunerated and unremunerated tasks performed by women, it appears somewhat arbitrary to divide them between domestic and productive spheres, for boundary definition would seem unnecessarily problematic. Nanneke Redclift observes how such dualism, especially that associated with the "informal sector" debate, constructs categories of labour that are treated as self-contained and mutually exclusive, and fails to specify the complex relationships through which such work is carried out (N.Redclift 1985). She elucidates this point through reference to the way that women can produce both use values and exchange

values domestically. This can be illustrated empirically, for many women in Santa Rosa occasionally engage in forms of petty trading that involve exchanges of food goods, for example potatoes for onions, tomatoes or chilli peppers, of which part are consumed within the home and the remainder exchanged for other goods, for example maize. The maize may then be consumed within the home as food or, alternatively, transformed through women's labour into chicha for sale within the community. Though it may be possible to disaggregate the various transactions and processes involved as constituting either reproductive labour (furnishing family consumption needs through use-values) or economically productive work (the manufacture of chicha which generates cash income), this seems rather an unnecessary task which only serves to reinforce categorical rigidities (2).

Harris and Young (1981), on the other hand, find something appealing in the separation of production and reproduction which distinguishes between the sphere of social production, where the law of value operates, and "the home", where it does not. Their argument for sustaining this distinction is based upon an analytically powerful explanation of reproduction that identifies three meanings at different levels of abstraction. In the first, and most abstract, sense they refer to **social reproduction**, involving the reconstitution of the social formation. In the second they discuss the **reproduction of labour**, though subject this term to further disaggregation in order to identify three critical functions: the allocation of labour to particular class positions; the role of ideology in socialising labour to dominant norms and values; and, finally, the material reproduction of labour which ensures its day-to-day maintenance. In the third and last sense in which Harris and Young define reproduction it is with respect to **biological reproduction** which they discuss in relation to the control of women's fertility. All three meanings, then, are inter-related yet distinct and together provide a valuable theoretical framework in which to examine, historically and cross-culturally, women's status.

The rigour with which Harris and Young's framework is established demands that, notwithstanding minor methodological difficulties in separating productive and reproductive labour, they should be treated as distinct analytical categories. Though reluctant to accept a model that sustains dualism and notions of separate spheres, Redclift concedes that, "the difficulties of empirically separating production from reproduction are evident" and she implicitly recognises the value of both within

"a totality in which each is enmeshed in the other, ... (with) neither independent, determined nor determinate in any simple mechanical way."
(N. Redclift 1985: 119, 120).

To summarise this discussion in more concrete terms, then, we refer to the domestic sphere as the site of much of women's work, though the activities which are pursued here are considerably more diverse than can be satisfactorily subsumed under the rubric of "domestic" labour. It is analytically useful to distinguish between the variety of reproductive and productive roles in which women engage, providing both are seen as inter-related. The distinction between them is made on the basis that the former involves the creation of use values, while the latter produces exchange values.

Consequently, reproduction is taken to encompass the biological functions of childbearing and early nurturing of infants, which only women are physiologically capable of performing, together with diverse and longer-run tasks of reproducing labour. These include the care, health, education and socialisation of children which women are socially expected to perform, though could as easily be undertaken by men. Reproduction also involves the daily maintenance of the household, that is establishing the physical conditions to meet the needs and satisfactions of people, and the range of tasks within this category are demanding. In contrast, productive roles are those which generate some form of income (in cash or kind) for the individual or the household through the creation of

exchange values, and these can vary according to the structure and resource base of the household. These will be described after an examination of the dimensions and burden of reproduction for women in Santa Rosa.

IV. Reproduction

In emphasising the importance of women's productive roles both in agricultural field tasks and in non-agricultural activities, the literature frequently appears to undervalue the demands that reproductive duties make upon women. These are generally treated as a universal constant unworthy of attention, unless time budget studies are employed to document precisely the amount of time spent in their performance (3). Yet besides constituting one part of what has been called the "double day" of working women, reproductive activities absorb women's energies, and jeopardize their nutritional status and wellbeing. Before exploring women's economically productive roles, then, it is appropriate to outline the burden of reproduction.

Biological reproduction for rural producers, according to a somewhat functionalist interpretation, is necessary for the creation of a future agricultural labour force, represents the possibility for economic diversification in the long-term and offers a source of security to ageing parents (Archetti 1984; de Janvry and Garramon 1977). However, the significance of even biological reproduction varies according to the mode of production (Meillassoux 1981). The formation and developmental cycle of the household, in particular its fertility behaviour, are complex and multi-dimensional issues which need not be discussed in detail here. Nevertheless, it is useful to provide an indication of the variables associated with, and the different interpretations of, biological reproduction. One set of issues is expressed thus:

"Under general conditions of rural poverty, it may be economically rational for all families to reproduce at a biological maximum due to the economic value of children. But actual family size may vary according to class position, which reflects differences in infant and child mortality rates resulting from variations in household incomes. In addition, the economic value of children may differ according to class position ... " (Deere, Humphries, León de Leal 1982: 101).

In contrast to this position, Youssef proposes an approach to fertility that:

"...stresses a linkage to women's workload (both home and productive activities), draws upon a maximization of utility model based on the mother (woman) as the basic unit of analysis (as opposed to the household), and allows for the specification of differential interests in children among household members, since it grounds fertility behaviour in the woman's rational calculation of perceived benefits." (Youssef 1982: 190. Original emphasis).

Youssef's belief that women place a high value on children as substitutes for the workload assigned to them by the labour allocation process within the household is extremely problematic and contradicted by the observations of Kabeer (1985). Not only do Bangla Deshi women express a preference for a smaller family size, but pregnancy, delivery and lactation of children represent serious hazards and a heavy physical burden for most rural women (4). Yet, unless treated by female anthropologists as specific objects for analysis, birth practices are ignored because they represent a "natural" biological function of women throughout the world. Though a detailed analysis of cultural practices involving sexual relations, fertility control, childbirth and so on, are beyond the boundaries of this study, the burden of biological reproduction borne by women is not. Consequently, below the practices associated with child-bearing and delivery in Santa Rosa are outlined (5).

IV.1 Biological Reproduction

For the majority of women within the second and fifth decades or so of their life, pregnancy, birth and lactation are regular features of everyday existence. As Bourque and Warren (1981) observe, having children is very positively valued by both men and women, though their commentary suggests that perspectives on the sex of children and optimum family size may differ between the parents. In general childlessness, deriving from infertility or lack of partner, is a plight viewed with sympathy, for people have no other means of support in old age. Yet pregnancy and childbirth, besides the potential hazards of miscarriage and complicated deliveries, impose a strain on women's nutritional and physiological status, especially where there is little control over fertility and conception may quickly follow weaning of the preceding child.

In Santa Rosa, as part of the household census, a survey of births and deaths provided 26 cases with reliable data of women's completed fertility history (6), that is women who were unlikely to conceive again, thus excluding the young who were still engaged in family building strategies. As the ages of these women varied substantially they do not represent a cohort, and the data are inadequate to calculate cohort or period fertility figures. Nevertheless, for the 26 cases the data reveal a wide range of births per woman, from three to twelve, with a total of 205 averaging 7.88 births per woman. This compares to a figure for the Province of Ayopaya calculated from the 1976 Census data of 8.7 births per woman (7). However, this total of 205 births is divided exactly between those children who were still alive in 1982 (103) and those who had died (102). Of the latter group, and making due allowance for memory recall, 51 or exactly half, were reported to have died between the ages of one and five years. Of the remainder, 20 (19.6%) had died below the age of one year, though had survived more than one week; and 21 (20.6%) had died within one week of birth, along with one mother (8).

Extrapolating these figures into the conventional form of expression for the indicator gives an infant mortality rate of 200 per thousand live births and a child mortality rate of almost 250 per thousand. The infant rate for Santa Rosa is close to the figure of 204 calculated from the 1976 Census data for Ayopaya (I.N.E. pers.com.). These extraordinarily high rates of infant and child mortality reflect both the poor sanitary and nutritional conditions prevalent within the community, and the effective absence of adequate mother-and-child care (9). The failure of health agencies to disseminate information on nutrition and advice on simple preventive techniques in rural areas and the efficacy of "traditional" health practices is illustrated by the high levels of infant and child mortality. The delivery of children in Santa Rosa, moreover, represents a hazard to the well-being of mother and child (10).

Once labour pains commence the woman's mother, or an older woman in the community who has experience as a partera (midwife), is summoned to facilitate delivery which always takes place at home. Few households have beds, so the woman usually gives birth on a dirt floor covered by a blanket. Often the woman's partner or father participates, holding her in the upright position in which she generally gives birth. It is believed that the uterus can move up through the woman's body and emerge at the mouth, so a belt (chumpi) is tightened around the body before the placenta follows the baby. This often causes the placenta to be retained inside the body, with the baby still attached via the umbilical cord. This can be left uncut for days or is simply cut with an unsterilized knife or broken with a stone. This can produce septicaemia in the new born child as well as in the mother when the placenta is retained by the body. The doctor attached to the hospital in Morochata informed me that from the problems of infection resulting from retention of the placenta and tearing of cervical tissue, he had attended at the death of over twenty women in just six months in the area (11).

Despite the existence of the hospital in Morochata, a woman would not seriously consider delivering her baby there. Yet the numbers of women who must seek attention following delivery, as a result of infection, haemorrhaging and placental retention suggest that local practices exact a heavy toll from women. Should the baby die within a week of birth, then it is quickly blessed and buried in the cemetery. Stillbirths are not despatched in this manner. The young child's struggle for life is not supported by seeking medical attention if it should be in difficulties; only the strongest survive this period. It has been suggested that the high levels of infant and child mortality serve to limit the rate of demographic growth through traditional methods of neglect and little concern with hygiene and the health of children (Young 1978; Archetti 1984).

Women always breast feed their children up to the age of one and usually beyond to the age of two. It is believed that this prevents the woman from becoming pregnant, though it is the pattern and regularity of feeding which will influence hormonal changes in the woman's body and determine whether she recommences ovulation. This means that besides spending almost six years of her life in pregnancy delivering the "average" number of 7.88 births, a woman spends a further 10.5 years lactating; in other words she spends over sixteen years of her life in biological reproduction. As Pearson notes all that is entailed by this continues alongside "productive activity" (Pearson 1987).

The transition from breast feeding to solid food is another critical point in the child's life, for it becomes exposed to new sources of infection through contaminated food and water. Also the quality of the diet must severely test a child's digestive system for it moves directly onto local staples, potatoes and maize. Contamination, in particular, is responsible for the high level of child mortality indicated by the figures for children between the ages of one and five years, who suffer from gastrointestinal infections above all other kinds of child illnesses (12).

As children become older they are expected to render useful assistance in the home, and from about the age of five or six years they move into gender-differentiated roles. Though both boys and girls collect water and fuel and keep an eye on animals pasturing near the home, only girls begin to participate in the preparation of food, washing of clothes and care of younger siblings. The labour of even young children, then, can usefully replace that of their parents (usually the mother) who can then perform additional work or simply their daily tasks more quickly (Collins 1983). Though the attendance of children at the village school, up to the age of twelve or thirteen, restricts their contribution to household tasks, responsibilities according to gender must still be performed in the early morning or evening. However, the allocation and burden of such tasks is influenced by the composition and resources of the household, with children amongst the land-poor categories expected to make a more substantial contribution to their keep (13). It is not surprising that it is from these categories that young women seek to escape from unpaid, repressive responsibilities in search of waged domestic employment in the city of Cochabamba.

IV.2 The Material Reproduction of the Household

Notwithstanding the assistance that daughters provide, the woman retains overall control of the daily reproduction of the household and one of the most time consuming tasks revolves around the preparation of food for domestic consumption (14). Though the staple dishes are generally simple (comprising potatoes and maize, sometimes rice or noodles, rarely meat) they nevertheless absorb several hours per day in their preparation. From the stock of food retained by the household for domestic consumption, principally potatoes and maize though with other tubers such as oca and lisa available for part of the year, women must produce at least two cooked meals per day.

In the early morning potatoes are boiled in their skins and served as papawayku with a chili sauce llajwa, which is prepared from grinding some peppers, a tomato and perhaps some herbs under a semi-circular stone (marron). Before leaving for the fields at around 10 am the main meal of the day, almuerzo (lunch), is prepared and consumed. This often consists of lawa, a maize gruel containing potatoes, onions and chili pepper. In the fields at between 2 and 3 pm sama is eaten which usually comprises mot'i, boiled maize kernals, or perhaps cold potatoes. This is usually carried to the fields earlier, though on the occasions when a large group of people are together engaged in harvesting work, then the woman may deliver freshly prepared food to the field workers (15). Finally, the evening meal usually consists of a soup or stew containing potatoes and possibly noodles (fideo).

Food preparation, then, demands women's attendance around the cooking hearth for long periods in the peeling of potatoes, the dislodging of maize kernals from the cob and grinding of maize and peppers. Yet for many women at critical times of the year preparation of food must be preceded by its procurement when the household's own supplies have been exhausted, and this responsibility takes women away from the domestic hearth and into an important sphere of interaction with other households. For in this sense, the majority of women are by no means confined to the role of domestic slaves isolated one from another in servicing their families' needs. Women in Santa Rosa have a high level of interaction one with another, though circles of friendship and support tend to be formed between women of similar age, status and residential proximity. As they are responsible for storehouse management they are also able to exchange small amounts of produce between each other. Thus, besides their shared interests as a gender, the basis of women's solidarity arises from their common interests of survival in the face of scarcity and other difficulties:

"These may be of access to money and labour, as well as those, such as illness or eviction, which threaten their capacity for daily survival. Most studies have shown that poor women, as well as women who are independent child-rearers, maintain significant female networks which function as daily or weekly or annual safety nets" (Whitehead 1984: 6).

According to personal observations, it appeared that, prior to the first mishka (irrigated potato crop), domestic food stocks amongst many of the land-poor households often fell to low levels, in which case it was the woman who sought to replenish the store of potatoes through representations to richer households or to the local landowner, Betancur. Such credit was generally forthcoming, though often on the basis that her partner's labour would be available later to pay off the debt. Only in this respect did men appear to exert any influence over the transactions and exchanges conducted by women, though they would be forced to agree to this arrangement after complaint. Thus, for most regular transactions involving cash and exchange of products, women possess a high degree of autonomy over the domestic budget. This nevertheless varies according to the nature of the "conjugal contract" within households.

Whitehead uses the term "conjugal contract" to refer to "the terms on which husbands and wives exchange goods, incomes, and services, including labour, within the household" (1981: 88). This is a useful concept for it suggests that women and men possess areas of independent economic action within which they are able to make their own decisions with reference to market criteria (Ellis 1988). The product of these individual actions, in the form of cash or use values, is then contributed towards household subsistence. The way in which cash and other resources are created will naturally vary between households, but so will the way in which they are divided and the order of priority of claims upon them.

For example, the production and sale of potatoes may realise an important contribution toward the requirements for simple reproduction, but the costs of renewing inputs for the next round of production (seed, fertilizer, labour, transport etc.) also act as a substantial drain on cash resources. In other words, a high level of investment is necessary to sustain independent potato production, and this investment has a priority claim amongst the male member(s) of the household for whom agriculture does much to establish their sense of gender and personal identity. On the other hand, activities in which women engage generally require very little investment, and through a series of separate transactions can yield significant profit margins which are channelled directly into simple reproduction. These activities involving women almost always exclude wage labour, because of the restricted opportunities that are locally available, but there are others which fall exclusively within women's domain. These are explored below.

V. Production

V.1. Use Values

In Chapter Five, the description of agricultural tasks revealed that whilst women's contribution to the system of potato production had become marginalised, it nevertheless remained significant in relation to maize and other crops which were of importance to household subsistence. Indeed, women's labour remains predominant across all forms of use-value production within the household, which underlines the difficulty discussed earlier of distinguishing between production and reproduction. Nevertheless, it is necessary to emphasise that gender roles are more flexibly interpreted for women from land-poor households than amongst the land-rich (Youssef 1982, Deere and León de Leal 1982).

Besides the performance of tasks associated with field cultivation, agricultural work involves the pasturing of livestock. While children are allocated this role if or when they are available, domestic animals fall within the domain of women. This usually excludes oxen and sometimes horses and mules, which are looked after by men, but includes non-working cattle, sheep and fowl. However, these animals have an extremely low productivity. In the case of sheep, for example, some households have flocks of ten, fifteen, up to thirty head, which may produce two or three lambs each year. Sheep are rarely sold; rather they serve as a reserve stock of wealth that can be turned into cash at a time of need. One may occasionally be slaughtered to provide meat, a small part of which may be sold or exchanged, and that which is surplus to immediate needs is preserved through drying to make chark'i. Sheep are not systematically shaven for their wool, most of which is either derived from the fleece of slaughtered animals or acquired in exchange with peasants from the estancias of the highlands.

The spinning of wool is a ubiquitous activity, as women are rarely seen without a drop-spindle dangling from their hands. There are a multitude of activities which women perform that allow them to continue to spin thread simultaneously, though not all women themselves turn their stock of thread into woven cloth. Indeed, weaving is one of the first crafts to be undermined with the widespread availability of manufactured goods, and increasingly comes to fulfill a largely symbolic role whose techniques are no longer learnt by the young.

Traditionally the weaving of bayeta, a soft woollen cloth used for clothing, was performed by men, though only two elderly ex-colonos, who once wove, survive. Though bayeta has been replaced to a considerable extent by purchased clothing made from artificial fibres, a small local demand is now met by the weavers from Oruro who arrive in September each year and weave bayeta in exchange

for maize. The weaving of sacks (qostales), carrying cloths (llujllas or awayos) and blankets has always, however, been performed by women and though still widespread, is in inevitable decline. With the increasing availability of factory-woven carrying cloths (primarily smuggled in from Peru to avoid import tax) and strong but cheap nylon sacks, and given the limited returns on the labour time invested when more profitable activities are evident, weaving is increasingly only practiced by older women with limited reproductive duties (16).

V.2. Exchange Values

In contrast to the time-consuming production of use-values from weaving the production of chicha, maize beer, possibly offers the most lucrative activity under women's control, with petty trading a popular, though less remunerative, alternative. Because of the economic importance of chicha for several households in Santa Rosa, as well as the role that it fulfills within the Cochabamba region as a whole, chicha deserves quite detailed attention. Petty trading activities, on the other hand, vary so widely by type, scale and frequency that it is more appropriate to deal with these through a series of case-studies. It is possible, however, to distinguish some common features as well as to identify different kinds of trading operation.

1) Petty Trading

Trading activities perform an important function for many households, particularly the land-poor for whom they can generate a vital source of income at critical times of the year. It is common for women in female-headed households - mothers and daughters - to secure some part of their income from petty trade, the proportion depending upon the role of agriculture and, more specifically, their control of land and access to male labour. The poorest households engage in trading operations involving the

smallest capital outlay, purchasing such items as tomatoes, chili peppers, onions and lard in the Cochabamba or Quillacollo markets. These products are then exchanged in small quantities for maize or, less frequently, the high Andean tubers, oca and lisa. Generally only the poorest female-headed households in Santa Rosa accept such tubers in exchange with producers of the estancias, where commodity relations are less well developed, for they are usually directly consumed by the household and meet a possible food shortfall in the months March to May. On the other hand, if maize is acquired in exchange this can be either directly consumed, turned immediately into a source of cash after degrading or, alternatively, increased in value by fabricating chicha. The case studies will illustrate such exchanges and sales in more detail.

Trading activities are not confined to land-poor households, however, nor are they conducted solely by women. Amongst some of the land-rich who retain a strong commitment to agriculture, a variety of commercial trading ventures provide a significant source of income. Possibly the most profitable involves the purchase of cattle from households throughout the zone, and these are driven to Quillacollo on the hoof to be sold to wholesale meat traders. This activity is dominated by just a few men and requires significant cash outlay, though it is not without risk, as we shall see. Several women, on the other hand, also travel widely in the zone, visiting some of the higher communities where they exchange items of clothing for sheep. Thus barter and the exchange of goods characterises women's trading activities, while men use cash to purchase outright. Finally, in addition to such mobile trading ventures, there are two small part-time shops with limited stocks and a few other forms of petty production and exchange which are described during the course of the case studies in this and the following chapter. The most significant in terms of income generation, however, is the elaboration and sale of chicha.

ii) Chicha Production

The production and consumption of chicha throughout the Andean countryside dates back to pre-Columbian times, though its use was apparently restricted until the era of Pachacutec, three centuries before the arrival of Pizarro (Antunez de Mayola, n.d.). It is an alcoholic beverage strongly associated with Andean cultural practices. Chicha, together with coca, was offered to the Mountain Spirits and Earth Goddess (Pachamama) on ceremonial occasions. Though these cultural and religious associations remain, today in the Cochabamba region chicha has come to represent a valuable source of income whose symbolic function is secondary. Though production largely remains at the household level, there is considerable diversity in the scale and frequency of manufacture. In the Cochabamba Valleys chicha is a valuable component of the regional market. In Santa Rosa, on the other hand, many households produce some chicha, usually to celebrate a major family event (birth, death, marriage) or the community patron saint day, while a few also derive substantial income from occasional elaboration. Overall, the importance of chicha production as an economic subsystem has strong parallels with traditional brewing in many parts of Africa, which is also largely under the control of women (17).

The procedure for producing chicha is a skill that is handed down from mother to daughter, though some men acquire the knowledge and techniques through assisting in the process. Nevertheless, it is an activity that firmly remains under women's control and one that can provide an important if not dominant source of income for the household. The process commences by turning the maize kernels into malt, with usually around 200 kilos (two pesadas) of maize used to produce chicha on a commercial basis for sale in Santa Rosa. To make the malt, known as wifapo, the maize is soaked in water for 12 to 14 hours, drained, spread out on nylon sheets and then covered with eucalyptus leaves or another nylon sheet. It is left in this way for 4 to 6

days, by which time the maize kernels have sprouted shoots one to two centimetres long. It is then left exposed in the sun to dry, periodically being swept and turned, before being milled. Prior to the Agrarian Reform, chicha was made from muko de boca rather than wiñapo, which involved chewing the ground maize so that it was mixed with saliva to produce a cake of moist maize flour which was then allowed to dry before then being used in the same way as wiñapo. The production of muko was frequently part of the obligations of mitanaje for women on many haciendas, but with the abolition of servile duties the process of muko was gradually replaced by that employing wiñapo (18).

The elaboration of chicha is a relatively arduous operation requiring care, knowledge and vigilance in combining the ingredients in the right proportions at the correct temperatures. It generally commences well before dawn when a fire is lit under one of the large metal pans which first heats water to a temperature slightly hotter than would allow skin contact, and part of this is then gradually mixed with the ground wiñapo in a large clay vessel, or virque. Once the remaining water reaches boiling this is also added gradually, ensuring that the correct consistency and colour result. Though it is not always necessary, some producers add sugar at this stage, up to ten or twelve kilos (an arroba), but this will depend upon the quality of the wiñapo. In the Cochabamba Valleys, where production is more continuous and competitive, producers add more sugar and often cane alcohol to make their chicha sweeter and stronger, while using less wiñapo. In Santa Rosa producers are, by necessity, much less selective about the maize that is used in making chicha for, as mentioned above, it is often acquired in small quantities through exchanges and some varieties that are used may not be ideal. Therefore, sugar is added in order to reduce the slightly bitter flavour that can result.

The liquid which stands in the virques is allowed to settle briefly and three distinct layers with different consistencies emerge. At the top is upi, a light-coloured liquid which is transferred to another clay virque; the middle layer comprises a darker liquid called arope dulce in Spanish and misk'i q'eta in Quechua; and at the bottom is the sediment known as janchi. While the misk'i q'eta is returned to the pan for further cooking, water is added to and mixed with the janchi in the same manner as with the original wiñapo. This produces a second round of upi and misk'i q'eta and these are dealt with in similar fashion, with further heating before being separated in different virques for cooling. Finally the different liquids are mixed and allowed to stand for four to six days to ferment before then being ready for drinking.

As this brief description suggests, not only does the process of elaboration require careful skill and judgement but it is also physically demanding and tiring. The first day's work, which begins at three or four in the morning, is not complete until after midnight of the following day and during this time up to 500 litres of liquid have been moved backwards and forwards between containers. Although the woman retains control of the entire operation, other household members are expected to contribute labour, with older sons involved in the heavier tasks. Prior to commencing the operation a large quantity of wood must be gathered in order to maintain the fire under the large cooking pans (which are shaped like giant woks) for almost two full days. The fuel wood, which comprises brush for light, rapid heat and heavier logs for long, slow burning, is gathered from a forested area in the higher reaches of the community lands, and requires some three man-days with horse to cut and carry sufficient wood for the entire operation. Those women without sons or spouses in their household hire labour to provide the fuel wood but, with the help of other kin or neighbours, manage the remainder of the operation, including the carrying of water from the irrigation ditch to the house, themselves.

Though the above description attempts to capture the general process of elaboration, each producer has her own style of preparation and organisation with the result that chicha of slightly different quality, taste and consistency is produced. Some varieties of chicha will also keep better than others, though four to seven days is the average life of a brew. Neither can this brief description here do justice to the varieties of chicha and side-products that are elaborated and consumed within the household, for sometimes women will produce a special quality chicha at the time of a fiesta only for domestic consumption. For example, some six households produced chicha during the time of Carnaval in late February, using only a few arrobas of wiñapo to produce around one p'alta of chicha to facilitate family celebrations. Furthermore, two households produced around four or five p'altas of chicha on the occasions of Carnaval, San Juan and August 6th (Republic Day) for consumption by the community as part of their obligations as alcaldes (19). However, it is the commercial value of chicha which is of concern here and therefore the sixteen households which engaged in the production and sale of chicha at least once between July 1981 to June 1982 are of more direct interest.

It may be self-evident to state that chicha production performs a different economic function according to different groups of households at different times of the year, but this indicates the diversity of contexts and objectives which with it is associated. For four woman-headed households, the elaboration of chicha does not equally represent the same income-generating livelihood solution to their situation, for the frequency with which they engage in production varies from once to four times over the year. This variation reflects the existence of alternative economic opportunities and the level of need for cash, besides the more practical issues such as the availability of maize and labour within the household.

In contrast, at least two other "nuclear" households use chicha as a means to secure labour power through indebtedness as much as for its income generating potential. This provides them with labourers to work on their lands while they themselves engage in other non-agricultural economic activities. In these cases, women's labour is directly complementary to their partners' expressed need for cheap agricultural labour, and together this contributes to fulfilling the objectives of expanded accumulation.

With respect to timing, then, it is natural to find chicha production coinciding with religious and secular fiestas, and there are several "peaks" in the quantity produced over the year. These occur around the time of Carnaval in February, Todos Santos (All Saints) in November and Concepcion, which celebrates the Virgin Saint of the community, in December. At these times chicha is available for purchase at several houses, besides that which is produced purely for domestic consumption by a few other households. For the remaining fiestas of the calendar, chicha may only be available from one or two producers, giving the impression (though this was not confirmed) that women may reach an informal agreement to avoid competition and eliminate the risk of being left with unsold chicha. The other principal occasions when chicha is produced are: Christmas-New Year, May (for the Fiesta of San Isidro), June (San Juan) and in August for the two state-instituted celebrations, the Day of the Campeño (2nd) and Republic Day (6th).

Chicha is not only produced to coincide with these occasions, however, especially if a household urgently needs to generate cash. As the case studies later will indicate, a woman who has acquired sufficient maize through a series of exchanges may not wish to wait until the next fiesta to turn this into cash in order to purchase food or pay for medical attention. Equally, there is no resistance

in Santa Rosa to drinking alcohol outside official fiestas, and with no competition a household could be assured of selling its chicha within the space of two or three days (20). Yet the transaction between producers and consumers of chicha is complicated by the incomplete monetarization of the local economy and this prevents a straightforward realization of the potential profit that can be derived from chicha production. While, on the one hand, this allows the land-rich, chicha-producing households to secure labour power in cancellation for debts accumulated from drinking sprees, on the other, land-poor households usually have little need for labour and prefer full payment in cash. Often products are used to settle debts, though these more often comprise oca and lisa rather than maize or potatoes. Several producers commented that around 25 per cent of potential earnings are lost in unrecovered debts, and that this would be much higher if women producers did not visit the drinkers who owed them money and harrassed them for payment.

In calculating the costs of production and the potential profits that can be derived from elaborating chicha, it is necessary to be aware of many of the variables discussed above. As there are variations between producers in the amount of wifapo and the production methods which are used, there are variations in the amount of chicha that is produced. Then there are losses arising from accidents or problems with the production process, the consumption of chicha by household members, and non-payment and payment in kind by customers. Notwithstanding such factors, which determine the actual financial outcome of the enterprise, it is possible to make an approximate calculation of costs and potential profit margins. These are calculated at December 1981 prices.

A. Costs of Production

1) 2 cargas of maize for wiñapo with a market value of 950 pesos per carga represents its opportunity cost, not purchase price, for it is either produced on household land using unremunerated (often women's) labour or acquired on favourable terms through exchange. Nominal market value of maize.....1,900 pesos

2) Cost of milling the wiñapo at 50 pesos per carga ...100 pesos

3) Collection of wood fuel requiring 3 man-days with horses. If household members fulfill this function their labour is generally discounted, but its opportunity cost can be calculated at the daily wage (jornal) of man and horse at 50 pesos. Thus labour costs for fuel wood collection.....150 pesos

4) Addition of one arroba of sugar.....275 pesos

5) Chicha tax levied on producers.....240 pesos

6) All other labour inputs discounted, that is for carrying water to the point of production, and the three days and two nights required by the elaboration process.

7) Total costs of production 2,665 pesos

B. Returns on Production

1) The quantity of wiñapo used in the calculations above generally fills four large earthenware p'uños with chicha, each of which is thought to contain approximately 120 bottles or about 80 litres, and "un poco mas" ("a little more") according to producers. Thus total production is estimated at 500 bottles or 330 litres.

2) Chicha is sold in metal jugs called jarras which are of two sizes; the smaller holds precisely one bottle (0.66 litres) and the larger about 1.2 litres. In December 1981 the smaller jarra cost 7.5 pesos and the larger 15 pesos, though the latter was served with a yapita, an extra glass of chicha.

3) Using these measures and prices, income from the sale of chicha is 500 bottles @ 7.50 = 3,750 pesos.

4) Subtracting total costs of production leaves a profit margin of 1,085 pesos. However, this is substantially higher in real terms because the production costs or exchange value of maize are lower than its market price. This is substantiated by the calculations of producers themselves who most frequently spoke of profit margins around 2,000 pesos, or US\$ 80 at 1981 prices. Thus the elaboration of chicha, though extremely hard work for the women producers, represents a significant source of earnings for the household. More qualitative detail on the economic role of chicha is provided in the case studies that follow.

Finally, one of the occasional sidelines for some of the women who produce chicha on a more regular basis is worthy of mention: the fattening of pigs on the sediment remaining after the elaboration and sale of chicha. Besides the janchi that is left after the second cycle of extracting the upi and misk'i q'eta from the wiñapo, a product known as aqha qonchu is left in the bottom of the virques which have been filled with the fermenting chicha. The small criollo pig which is kept locally is fattened quickly on these sediments, besides kitchen scraps, and by the time the next round of chicha is ready for sale one may be slaughtered and served up as chicharron, fried pork pieces. Though this is more common in the chicherias of the Cochabamba Valleys (21), it occurs occasionally in Santa Rosa.

For example a young producer, Lucy, bought a small pig from a household above Santa Rosa for 250 pesos and fattened it up on kitchen scraps and the sediment derived from her mother's last round of chicha production. After four or five weeks, and to coincide with the sale of her own chicha on the Sunday of Carnaval, the pig was served up as chicharron together with boiled maize kernels (mot'i). Lucy said that she earned around 1,000 pesos from this, less the price of the pig and the market value of half one arroba of maize (6 kgs), leaving her with a profit of about 700 pesos.

In drawing these observations toward a conclusion, then, it is clear that the circumstances which encourage or constrain women's involvement in such activities as chicha production, petty trading or even wage labour are complex and wide-ranging. At one level decisions regarding one or other activity are undoubtedly influenced by the household's resources in land, the sexual division of labour in agriculture and the capabilities of the unit to reproduce itself from agricultural commodity production, but these are by no means determining factors. The structure and organisational form of the household, its social and economic aspirations, and the precise degree to which commodity relations have penetrated its cycle of reproduction, will all heavily influence the combination and function of women's roles and activities.

In certain cases women's income-generating activities serve to complement the male-dominated agricultural sphere by securing labour through forms of debt-bondage. Elsewhere such activities provide an important supplementary source of cash where the returns from agriculture are insufficient to ensure household reproduction. In other words, there exists a diversity of circumstances in which women make particular choices and develop responsive strategies.

However, this reference to diversity highlights the dangers of universalising women's roles and activities. Moreover, discussion at a certain level of abstraction and generality can prevent a more sensitive appreciation of intra-household dynamics, decision-making mechanisms, and the value of inter-household networks. Nor does it allow a deeper and more qualitative understanding of the struggles of women within a predominantly patriarchal agrarian society. Thus, in order to capture a picture, if somewhat fleeting and incomplete, of this dimension, the following section provides several illustrative examples, or brief case studies, of the concrete circumstances of several women's lives, and the strategies and activities which they pursue in order to ensure their survival.

These examples are drawn from a group of households which have, so far, received little attention: those headed by women. Their selection recalls a discussion early in the Chapter which drew upon points made by Joan Vincent (1977) regarding the identification of rural personnel which are often uncaptured by conventional approaches in the study of community and household. While the women in this group share one common characteristic, viz. the absence of a spouse or partner whether through death, abandonment or choice, they strongly diverge in the manner with which they have responded to this situation. Some are able to maintain an interest in agriculture through retaining control of land and access to male labour, whether as son(s) in the household or exchanges with kin and neighbours. Others have leased or sold their land, lacking the labour with which to work it. All, however, are involved in non-agricultural income-generating activities, though the precise combination and role of such activities varies considerably.

VI. Case Studies

VI.1 Two Single Women

The closest illustration of a subsistence ideal in Santa Rosa is provided by Household 56. Juliana is in her late forties and lives alone in a rather dilapidated house in the higher reaches of the community where she has about half a hectare of land and some livestock - 15 sheep, a cow, a plough ox and four hens - another ox having recently died, and the number of hens reduced by the nocturnal visits of a gato montesa (mountain cat). The land was inherited from her father, Dionicio, who as an ex-colono, was awarded over seven hectares under the Reform, but the bulk of this passed to her brother, Pablo, on their father's death some years ago. However, Pablo himself died in April 1982 when he fell from the cage crossing the River Morochata at Lachiraya, on his return from a heavy drinking session in a chicheria.

Pablo's family still live close to Juliana and they regularly exchange labour: Pablo had always performed the ploughing operations on Juliana's land, though this was now being undertaken by his eldest son, Nicolas. In return, Juliana contributes her labour at planting and harvesting times. She also works occasionally for other households, usually in the "women's tasks" of sowing potato seed and sorting the harvested tubers under the arrangement of papa tarpuja, where she is paid in kind. Juliana is part of a social network of a small group of women who share a similar position to herself and with these women who live in adjacent communities, she freely exchanges her labour. Besides ploughing, from which women are strictly excluded, most of the remaining agricultural tasks on her land are performed by Juliana and these women friends.

During the agricultural year 1981-82 Juliana produced around 50 kilos of wheat, about the same of barley, and one and one half cargas of potatoes which were divided with a compañera. She then intended to sow a crop of broad beans, wheat and potatoes - the latter in a sharecropping arrangement - during the subsequent agricultural cycle. Juliana's priority is to meet her food needs, including exchanging small quantities of her own produce for other goods such as chili peppers and onions, without resorting to cash. She is able to do this through a social network comprising close friends and kin, with her brother's family providing an important input of male labour for ploughing as well as other forms of support. But she is nevertheless financially autonomous, with the bulk of her cash income during 1981-82 provided by the one-off sale of a carrying cloth (awayo) for 650 pesos (US\$ 26) to an outsider, a social promoter who visited Santa Rosa on a few occasions. Juliana spins and weaves the wool from her own sheep, which she spends much of her time pasturing, and in this way clothes herself and, as in this particular year, sells or exchanges a blanket, carrying cloth or potato sack to cover most of her necessary expenses. The only other source of income is derived from occasionally selling eggs to the co-operative store at 2 pesos each, providing about 15 to 20 pesos per month. Yet though her cash income is low, so are her expenses, with contributions to the syndicate (100 pesos in 1981) and small expenditures on kerosene, aniline dyes and the occasional glass of chicha.

If Juliana offers an illustration of a subsistence ideal, where minimal consumption needs are met by direct production, doña Benedicta (Household 26), a widow in her late sixties, is an example of an equally low level of consumption being met by a higher level of cash generation. She also has access to half a hectare of land, retained from her husband's allocation as an ex-colono of 1.26 hectares, with the remainder held by Household 45.

Under an arrangement made several years before, don Torribio, who is unrelated by kin to Benedicta, agreed to sharecrop this half-hectare parcel, providing both potato seed and labour, in return for control over her remaining land. As an ex-colono himself, Torribio received over five hectares under the Reform and with further acquisitions now controls in excess of seven hectares, including the remains of the old Hacienda house, and after providing a son, Juan (Household 44) with an anticipatory inheritance of 1.2 hectares. Although Juan lives with his own wife and children, Torribio still has five other sons in the household under his control. Thus, he is able to enter into such an unusual sharecropping agreement with Benedicta in providing both seed and labour in return for half the harvest. For her part, although she is too frail and elderly to make any physical contribution to the production process, Benedicta insists on paying for the chemical fertiliser that accompanies the planting of potatoes, for this ensures that the subsequent crop of maize is also equally divided.

During 1981-82 Benedicta's share of the potato crop was 5 cargas, of which three were sold and two retained for consumption while, from the following crop of maize, two pesadas were sold and two retained. Besides an income of over one thousand pesos from agricultural production, Benedicta also derives cash from spinning wool. Though she no longer weaves, local women who continue to do so can provide her with wool and she is paid 20 pesos for every pound of yarn produced, an arrangement curiously known locally as mink'a (22), and this earns her 40-50 pesos per month. Finally, Benedicta also sells up to 15 eggs per fortnight to the co-operative store, providing a further small income with which to purchase her limited food and other needs.

Despite similar resources in land, Juliana and Benedicta have developed different responses to their circumstances as single women with limited resources, frugal lifestyles and low levels of consumption. Both women

have limited kinship networks on which to draw, though Juliana's relationship with her brother's family is clearly more supportive. Benedicta's kin is limited to a brother (Household 23) who lives nearby, but he is aged, infirm and supported by a single son on less than 1.5 hectares of land; besides, relations between them are somewhat strained. Her husband died in 1977 and none of the three children to which she gave birth survived beyond the age of four years. Thus both women lead fairly autonomous lives, neither supported nor encumbered by dependents, with levels of production designed to meet consumption needs. Yet it is for the elder and frailer of the two that commodity exchange exceeds use values in ensuring survival.

VI.2 Two women with children

In mid-1981 Doña Julia, a widow of 47 years with three children (Household 16), was working as a cook for the landowner, Juan Betancur, for whom her husband, Aurelio, had worked as a peón up until his death in 1979. She was remunerated in food and a small cash wage for this work and this provided her with sufficient income to support her two youngest children, a boy of eight and a daughter of three. Meanwhile Leboria, her nineteen year-old daughter, had begun work as a domestic servant in the city of Cochabamba, in the home of a neighbour's sister who had left Santa Rosa many years before, and was earning 500 pesos (US\$ 20) per month. Thus, unusually for Santa Rosa, the household was reproducing itself entirely from wage labour, though it appears that it had done so to some degree prior to the death of Julia's spouse.

Although Aurelio had received an allocation of three hectares under the Reform, some of this had been leased and sold by him before 1979, partly explaining why he worked for Betancur. In 1981 Julia sold one of the remaining parcels of land, measuring three quarters of a hectare, to Household 46 for 6,000 pesos (US\$ 240), and the following year leased another parcel, under the anticretico arrange-

ment, to the same Household for 1,000 pesos (US\$40). This has left her with just one third of a hectare which has remained in fallow.

In September 1981 Julia lost her job as cook as a result of her behaviour during a weekend of drunkenness, decadence and infidelity in Santa Rosa. It is not clear what triggered such excesses, besides the availability of chicha, but a number of people were arrested and sentenced by Juan Betancur, whose role as moral guardian, arbitrator of disputes and benevolent patrón of Santa Rosa has been previously noted. He heard how Julia had reputedly had a sexual liaison with a neighbour, while Leboria had committed a carnal crime with a transportista. Both men were married but remained at liberty, while Betancur sent Julia and her daughter to Morochata to spend a week in the cells (23). Besides illustrating the gross moral hypocrisy of Betancur, a modern-day hacendado who has fathered several children with different women in the area, it also highlights the difficulties facing a woman who transgresses social norms regarding behaviour, for Julia is unable to draw upon the support of other women in the community who regard her with suspicion.

Following the loss of her job as cook, Julia turned to the more popular combination of income-generating activities: petty trading and chicha production. In early October she travelled to Quillacollo and spent 450 pesos (US\$ 18) on onions and lard. Returning to Santa Rosa, Julia then spent a week or so visiting households in the locality exchanging small quantities of these products for maize, acquiring in total some two pesadas (200 kgs) with a market value of 1800 pesos, thus realising a useful profit from the exchange alone. She then secured the use of the utensils for making chicha from her next-door neighbour, doña Amelia. The chicha was prepared in time for Todos Santos (All Saints) though this failed to yield the level of profit which she might have hoped for. Though reputedly clearing a profit of 2,000 pesos after expenses, it also

gave her the opportunity to stay drunk for a week, a danger to profitability which most chicheras strictly avoid by not drinking. Julia's efforts to sustain a regular cash income then found her developing a new activity: making bread. She bought a one quintal sack (50 kgs) of flour in Cochabamba for 600 pesos and baked bread on three separate occasions, selling the rolls at 4 for 10 pesos in the village and making an overall profit of 750 pesos.

Though the bulk of Julia's monetary income during 1981-82 was derived from petty production and wage labour she also worked a total of some fifteen days in agricultural activities receiving payment in kind under the papa tarpuja arrangement. She can also attribute her survival and that of her younger children to the proceeds from the sale and leasing of assets in land which, though it had not been worked since Aurelio's death, represented one possible source of income through sharecropping. It was clear that the remaining third of a hectare was soon likely to follow the route of the other land parcels, passing out of her control in order to meet the needs of day to day survival.

Yet even this was thrown into question when, in mid-1982, Leboria underwent a medical examination at a hospital in Cochabamba and a malignant cancer was diagnosed. An operation was performed, apparently costing 15,000 pesos (US\$350), which was met by Leboria's employer, but under the condition that Julia paid this back within the year. Leboria died several months later, leaving Julia with an insurmountable debt and with few resources that might have allowed her to meet even part of it. Her vulnerability to crisis was now perfectly exemplified as a single woman with two young children and without assets to turn into cash. Both of her children had emerged from the critical phase of early childhood, which had seen the death of seven of Julia's other children, and required expenditure on food, clothing and education, yet were some way from being economically productive. Her status in the community was low, with limited networks of kin (only a poor and elderly

sister survived) or friendship, and no-one appeared able or willing to assist her. Indeed, people said that this was "God's punishment" ("castigado por Dios") for her behaviour, an expression that probably sought to justify their lack of support for someone in need and a sense of relief that it was not themselves who were suffering so (24).

In contrast to Julia's predicament, a more fortunate, successful case is that of doña Fransisca (Household 36). She is also a widow and, at 50, just a few years older than Julia, but her children have proved their economic independence. During the preceding two years or so Fransisca's household had begun to return to its earlier size after the absence of two daughters and a son who had all found work in the city of Cochabamba. By mid-1982 only one daughter, Simona, remained in the city working as a domestic servant, a position she had occupied for the last four years. Though the youngest of Fransisca's four children at eighteen and still single, Simona had acquired both a daughter of eight months and a debt of ten thousand pesos: the cost of the baby's delivery by caesarian section in hospital. Moreover, her efforts to pay off this debt were being hindered by the owner of the house in which she had lived for these four years, who had suddenly and unexpectedly threatened to double the rent to 1,000 pesos per month (25).

The life of a domestic servant can quickly lose any attraction it once may have held. The long hours, low wages and mistreatment, in terms of physical violence and sexual abuse, force many women to abandon urban life and return to their home communities, providing that their families are not dependent upon their remittances (Radcliffe 1986). None of Fransisca's daughters have illusions about the economic opportunities available to rural women in the city; Maria, the eldest at 25, spent one year in Cochabamba before returning home - single, penniless and pregnant. Esperanza also worked as a domestic until her husband, from a community adjacent to Santa Rosa, temporarily deserted her and she returned home with a son of two in 1980.

Alcides, Fransisca's only son, is thirty years of age, single, and returned home in 1982 after five years of working in construction in Cochabamba. He now dedicates himself to agriculture, and is helped by a boy of thirteen who is Fransisca's deceased sister's son and who had lived in a children's home until early 1982. Consequently, with the return of her own children, together with those of Maria and Esperanza, Fransisca's household has been revitalised, with a dynamic matriarch ensuring their collective well-being. For despite the absence of male labour with Alcides in Cochabamba, Fransisca had maintained an involvement in agriculture by sharecropping one parcel of land while another three were left fallow, and had not been leased or sold.

During 1980-81 an ex-neighbour, who now works as a permanent labourer for Betancur the landowner, provided potato seed and some labour, and they divided the harvest of 10 cargas, with Fransisca selling three. She then sowed and harvested a crop of maize from this land using family and hired labour, while sharecropping potatoes on another parcel with Esperanza's husband, reappearing after a year's absence. They shared a harvest of 20 cargas, with Fransisca selling seven and retaining three cargas, supplementing the maize and broad beans produced solely for domestic consumption. Besides meeting a high proportion of the household's food needs, agricultural production in 1981-82 also provided an income of approximately 2,500 pesos, which will rise in subsequent years as the return of Alcides eliminates the need to engage in sharecropping arrangements.

However, besides this involvement in agriculture, the majority of Fransisca's energies have been directed into trading activities. Four or five times each year she travels to Cochabamba to buy a range of garments, principally polleras, the pleated skirt worn by all rural women, and mantas, a wrap also used by women. After investing some two to three thousand pesos (up to US\$ 120) in goods,

Fransisca travels widely on foot throughout the zone exchanging items of clothing for sheep, pigs, hens and wheat. These products are then sold in the markets of Cochabamba or Quillacollo and part of the profits are then reinvested in purchasing more garments. Unfortunately price inflation during 1982 began to seriously disrupt her business; the cost of polleras, Fransisca complained, had doubled while the value of sheep had risen only slightly. She had already ceased to bring headwear (sombreros) and was being forced into cheaper lines of clothing such as shirts and jumpers for men and women. She found it difficult to estimate how much she earned from trading, but it was clearly substantially in excess of that derived from agriculture.

Finally, Fransisca produced chicha on one occasion for the Fiesta of Concepcion in December, using two pesadas of maize acquired from exchange. Unfortunately, Esperanza's husband threw the contents of two p'uños onto the floor in a fit of rage so that only half the potential earnings were made - about 1,700 pesos. Nevertheless, this was not a disaster for Fransisca as it would certainly have been for Julia, given the range of income sources which she has developed.

Fransisca has a substantially stronger resource base in both land and animals than many other households. Though her husband, Paulino - who died in 1970 - received only two-thirds of one hectare of land under the Reform, she purchased one hectare from the old landlords in 1977 for ten thousand pesos (US\$ 500). This provides her with an adequate landbase for the present, though one she will undoubtedly expand if given the opportunity in the future. The household also has a flock of twenty sheep, a donkey, two cows, a pig and five hens, a range of livestock which metaphorically reflects a deliberate policy of spreading resources and minimizing risks.

It is unnecessary to elaborate on points of comparison and divergence between Julia and Francisca for their individual profiles also reflect the unique conjunction of circumstances that are beyond the powers of either woman to determine. Nevertheless, the case studies illustrate the importance of understanding the dynamics of individual lives if we are to avoid the inappropriate application of functionalist household models. For example, although all four households described in this section comprise a woman without a spouse, simply applying the label "female-headed" is now shown to be notably unrevealing. It disguises a considerable diversity of individual circumstances and the range of women's responses in dealing with their personal situations. Indeed, any unitary notion of "the household" as an autonomous unit has been proved to be dangerously misleading even though, for reasons of brevity, the importance of wider external relations have been underplayed. The case studies have attempted to sketch out the types of socio-cultural constraints faced by women, within the context of the natural unfolding of the household's life-cycle and deeper processes of structural change. Yet it is clear that women are not powerless as individuals or as a gender within these various structures. In Chapter Eight there are further illustrations of the power and influence held by women within an analysis of household economic diversification.

NOTES

1. The term "patriarchal figure" is used here very carefully and deliberately to refer to a small number of ex-colono heads of household who have retained absolute control over land and labour. They have effectively denied the possibility for off-spring to depart the parental home and establish a new domestic unit of their own by refusing to provide an anticipatory inheritance. While such individuals fully merit the label of "patriarch", the term is used more in the sense of a gerontocracy than in the sense of feminist theory. As Kandiyoti observes,

"the term patriarchy often evokes an overly monolithic conception of male dominance, which is treated at a level of abstraction that obfuscates rather than reveals the intimate inner workings of culturally and historically distinct arrangements between the genders" (Kandiyoti 1977: 1).

Furthermore, Harris argues that social and economic relations within most households are more complex than to be reducible to the idea of a total centralisation of power in a single figure, when she writes,

"In formal terms, then, it is general to identify domestic units with a male head, and the identification is guaranteed by endowing this figure with the ideology of paternal authority. Both the source, the content and the effectivity of that authority must be investigated if we are not to fall here too into naturalistic assumptions that eternalise the concept of the household" (Harris 1981: 60-61).

2. For an elaboration of the complexities involved, see Goldschmidt-Clerment (1987).

3. See Mueller (1982) for a discussion of women's use of time and its relation to fertility in general, and a review of the compatability of child care and market trading work in particular. Dixon-Mueller (1985) discusses the methodological and conceptual issues in measuring women's participation in agricultural production, which is affected by their child-rearing responsibilities. The discussion by Beneria (1988), though useful, is pitched at a more general level of conceptualizing women's work.

4. According to Kabeer, it is estimated that 27 per cent of deaths among women in the reproductive ages in Bangla Desh is due to maternal mortality (Kabeer 1985).

5. Unfortunately there is a paucity of information on women's health and child-care practices in Bolivia, particularly for the highlands. There is a need for the sorts of studies represented by Ferguson (1986) and van Ginneken and Muller (1984) for rural Kenya.

6. The data of births and deaths did not identify miscarriages that occurred before completion of the term, though women revealed incidents of stillbirth. I have also no evidence of abortions or attempts at terminating pregnancy. The reliability of the data must also be weighed against questions being asked by a male researcher. Nevertheless, I found a surprising degree of openness by older women responding to my inquiry; it was more awkward posing such questions with younger women (who are not included in the 26 cases).

7. Data provided by the Instituto Nacional de Estadística through personal communication.

8. The surviving husband provided the completed fertility history for his deceased wife. Though due allowance must be made here for memory recall, not only was it surprising the clarity and objectivity with which women generally remembered the sequence of births and deaths, but if they were at all confused or forgot a child then their partners often prompted or reminded them of the correct order. All children, in most cases even the stillborn, were recalled by name. Though I believe the data to be generally correct - it will only underenumerate slightly if anything - most care is probably required with the ages of children's death. The one year old boundary is probably the most vulnerable to shifts between categories.

9. A small hospital exists in Morochata which was staffed (in 1981-82) by a male doctor and woman nurse. They visited Santa Rosa on one occasion during the period of fieldwork to conduct an immunisation programme for children. There was no evidence of any attempt to establish a primary health care scheme, or mother-and-child programmes. It was extremely rare for people from Santa Rosa to attend the hospital for medical attention; in cases of serious illness individuals travelled to Cochabamba, effectively bypassing any referral system.

10. See Bourque and Warren (1981) for a good account of childbirth practices from the viewpoint of rural Peruvian women.

11. Interview with Carlos Gutierrez Lara, Morochata, August 1982. He was to die later in a road accident in the area.

12. Interview with Carlos Gutierrez Lara. He indicated that respiratorial infections were the most serious cause of illness and death during the winter months, although gastrointestinal infections, including parasitosis, was the principal cause of death over the year as a whole.

13. See Bourque and Warren (1981) and Radcliffe (1986) for a slightly fuller description of gender roles amongst children and their performance of household duties.

14. Post-harvest food processing tasks are minimal for tubers, besides those infected with rot which are sliced and dried, and maize, in which kernals are left on the cob until required. Little time is spent in food processing, then, though very much more in food preparation.

15. Deere and León (1982) emphasise the importance of food preparation and delivery to the fields by women, arguing that it should be seen as complementary to men's work in the fields and included within a broad definition of agricultural work. There may be some justification in this argument in the context of the area in Colombia in which they worked, where it is not unusual for women to prepare and serve from two to five meals each day to field hands, thus keeping them continuously occupied in cooking. It is an argument which is also strengthened in those areas where the supply of meals constitutes an integral part of the wages paid to field workers. However, neither issue is applicable in Santa Rosa, where food is seen as an "optional extra" (though the supply of coca is almost obligatory), and where a "meal" is more often than not a bag of mot'i taken to the fields by the workers in the morning. This is not to diminish women's work; it is simply to employ work categories more carefully.

16. The declining importance of weaving in Santa Rosa, in terms of both the production of use and exchange values, stands in sharp contrast to its increasingly commoditized nature in areas such as the western highlands of Guatemala. Carol Smith (1984b) describes the role of petty commodity artisanal production in sustaining an undifferentiated mass of small producers, of which the weaving of ethnic clothing is a dominant handicraft. In contrast, within the Morochata zone and indeed much of the Cochabamba serranía, handicrafts have not evolved into an income generating activity. Rather, the remnants of artisanal production is under threat by the penetration of industrialised goods.

17. See McCall (1987) for details of pombe in Tanzania and Saul (1981) for an analysis of sorghum beer (raam) manufacture in rural Upper Volta (Burkina Faso).

18. In an account of the range of servile obligations paid by service tenants (colonos) on estates in the Cochabamba region, Andrew Pearse concludes:

"Even corn-beer was prepared by the mukeo duty, consisting of interminable chewing bees, in which corn was masticated and spat into the pot and thus the bodily secretions of the service-tenants could be appropriated and used as fermenting agents" (Pearse 1975: 126).

Leonard, in two fine monographs, describes the process of chicha production by the muko process and notes that "when these people work fairly regularly at muko making a general paleness and anemia develops" (Leonard 1952: 251).

19. There are two posts of alcalde in Santa Rosa, with usually older men nominated every year to fill them. It is an expensive ceremonial post whose functions appear to be limited to handing out coca and chicha at times of fiesta.

20. Indeed, the earnestness with which many people set about drinking chicha when it is available is worthy of note. When there is no chicha a core of hardened drinkers in the community turn to chapu, cane alcohol. There is no benefit in producing more chicha to meet this insatiable demand, however, for many of the bigger drinkers would simply not be able or willing to pay off their debts. There is also a sanction imposed on the community not to produce chicha too frequently by the local landowner, Juan Betancur.

21. A chicheria is usually just a ground floor room of the producers house where chicha is sold. The availability of chicha in the Cochabamba Valleys is marked by a small flag fluttering from a pole outside of the house.

22. Conventionally, throughout much of the Bolivian and Peruvian Andes, mink'a is a term that refers to work groups drawn from amongst a set of people who collectively perform a task (such as building or re-roofing a house) for one of their number. Though the work is performed in a co-operative, and frequently festive, spirit, the members of the work group receive food, coca, chicha and sometimes additional remuneration. Mink'a, in other words, is an example of inter-household co-operation on a larger scale than ayni. See Orlove and Custred (1980) for a further discussion of the arrangement.

23. This outbreak of moral turpitude was not a regular event in Santa Rosa, though drunkenness amongst a small group of people is fairly regular. Nevertheless, from what I could gather, on this occasion there was widespread promiscuity and fighting, and Betancur imposed fines on

those involved. Only Julia, Leboria and another young woman were sent to gaol in Morochata.

24. It is believed that Julia later found work in a chicheria in Morochata, though her story remains incomplete due to the termination of fieldwork.

25. This demand may have been partly due to rising inflation within the economy but more than likely to the appearance of Simona's baby. While single mothers are not uncommon, especially amongst domestics who almost exclusively comprise young women from the countryside, they are viewed as morally degenerate by the urban lower middle class who eject them from jobs and home.

Diversification and Differentiation in Santa RosaI. Introduction

Hitherto, households in Santa Rosa have been disaggregated according to their access to land and other means of production; their structure and internal morphology; and the degree to which commodity relations have penetrated their cycle of reproduction. These variables have underlined critical dimensions of dissimilarity between households, ensuring that they not be treated in a uniform manner. However, beyond recognising such multi-dimensional diversity which has distinguished between such categories as land-rich and land-poor, or nuclear, extended and woman-headed household forms, with particular concern for the availability and control of labour power, these variables have yet to be thoroughly integrated within a systematic analysis of differentiation. One of the objectives of the present chapter, then, is to move toward such an analysis, and, in the process, explore the role of individual and household strategies (1).

The chapter explores the importance of spatial mobility amongst different categories of individuals in order to assess the role of wage labour in the reproduction of Santa Rosa households. It then examines forms of economic diversification and concludes with several case studies that illustrate the multi-dimensional nature of differentiation. The intention is to uncover the relationship between agricultural commodity production, forms of economic diversification and household morphology in order to reveal deeper insights into social aspirations, underlying motivations and the economic trajectories of individual household units. It will then be possible, on the basis of a more sensitive appreciation of different strategies, critically to assess the relevance of models of differentiation in terms of the crystallization of discrete social classes.

One of the main themes of the study has been to show how the majority of serrania households have become deeply involved in agricultural commodity production, though the importance of the income that the unit derives from this activity varies considerably. Nevertheless, in terms of their wider external relations and, more specifically, the nature of their insertion into the regional economy, both land-rich and land-poor households surrender an agricultural surplus to economically more powerful groups. At one level of analysis, then, both share the same general conditions of existence, possessing common characteristics as petty producers whose relations with the market are mediated by merchant capital. However, on closer scrutiny it is clear that the contrasts between the land-rich and land-poor are substantial, reflecting different levels of development of the productive forces (purchase as opposed to sale of wage labour) and the stronger internal relations of production and reproduction within land-rich households (Bernstein 1986).

The land-rich seek to subordinate labour and maintain low wages, not only through providing access to means of production, but also by fostering debt and dependency through the supply of consumption goods. Within agriculture sharecropping has proved an excellent mechanism to reinforce the hegemony of the land- and resource-rich (2), through the provision of potato seed, as well as further reinforcing a strategy of accumulation. Their involvement in a range of non-agricultural economic activities, besides providing a further diversification of income, also frequently complements the needs of their farming operations. For example, one way in which the land-rich might overcome their recognised powerlessness in the commercialization of their produce is to enter into transport operations (3). Besides providing a much-needed diversification out of agriculture, it is generally agreed that truck ownership is the most lucrative source of earnings in the countryside. In this way the savings of the land-rich can be turned into

merchant or circulation capital and regulate the production process of their land-poor neighbours. Such economic dominance might also be reinforced by their ability to exert a social and political hegemony in the locality through gaining control of community posts, such as in the sindicato, and via networks of patronage which serve to legitimate and reinforce their strategies of accumulation.

While a set of similarly generalised, if contrasting, characteristics might be applied to the land-poor households, the purpose of this chapter is to move beyond schematic representations of "class" strategies and examine the concrete circumstances and apparent objectives of both individuals and household units. Consequently, the chapter will continue to disaggregate the household in order to understand its internal dynamics and the struggles of individual members. This will reveal new dimensions of dissimilarity that may provide important elements in establishing and sustaining processes of differentiation. It is intended that this will help to overcome an excessively simplified and reductionist view of the labour process tending towards ideal types, which in turn creates an abstract, static notion of differentiation. Some of the limitations of the dominant conceptual approaches to differentiation are presented below.

II. Dimensions of Differentiation

The first and most fundamental problem confronting a clear identification of differentiation is to be found in the persistence of household forms of organization and production. Many units do not conform to either nuclear or extended forms. Amongst the poorest stratum, in particular, there is a large proportion of "incomplete" family forms with inadequate labour power. Such an "incomplete" household, for all its problems, is still the locus of forms of production which must serve to ensure its reproduction. The death or departure of spouse and/or children within such households, however, may be more a symptom of pauperisation through differentiation than the cause. This is why the case for the deconstruction of the household, in order to better understand the roles, relationships and activities of individual members as well as its collective trajectory, was made early in Chapter Seven. Goodman and Redclift have correctly observed that the nub of the problem for the linear model of differentiation is the difficulty of characterizing small commodity producers who retain some control over the immediate labour process and who are not wholly dependent on the wage-form for their reproduction. (Goodman and Redclift 1981).

A difficulty encountered in attempting to identify differentiation is the persistence of communal and reciprocal notions of co-operation and exchange. In Chapters Five and Six the various forms of ayni were described, especially its operation between those households well endowed with means of production and those lacking animal traction who "reciprocated" labour power. Though it continues to operate in a more egalitarian form between poor households who exchange labour without resort to cash, and for whom such "traditional" practices serve to mitigate their conditions of poverty (Sánchez 1982), the adoption and distortion of arrangements such as ayni by the land-rich disguises the emerging polarization and conflict between households with unequal resource bases.

In the Central Highlands of Peru, Mallon's account of agrarian transformation records ^{how} an emerging peasant bourgeoisie has used communal ideology and relations of reciprocity "to get access to labour and political power, which they could then manipulate for private profit", while the poor have used them to "guarantee subsistence and remind the rich of their redistributive responsibility to the village as a whole" (Mallon 1983: 341). This is echoed by developments in Santa Rosa, and illustrates another difficulty in establishing differentiation, when both rich and poor households use the same language but with clearly different objectives.

It seems that to get access to cheap labour and to make effective use of political power, those land-rich households concerned with both will be forced into contradictory modes of behaviour. If cheap labour is secured through "bonded" arrangements with poorer neighbours, this must be justified through notions of "communalism". The political authority of land-rich households is legitimised in the eyes of the community through superior education, the ability to speak Spanish and, importantly, social networks that provide access to the real power brokers of the area: landowners such as Betancur, vecinos de pueblo and other economic actors in Morochata, the old landlords in Cochabamba, transportistas and so on.

A third problem which obscures the identification of rural classes concerns the generational element in the transfer of resources. This will be the true test that distinguishes processes of social from demographic differentiation. In other words, will the sons and daughters from the land-rich households become capitalist farmers in the same way as those from the land-poor become fully-fledged rural proletarians? Or will all be impoverished by fragmentation through inheritance? Moreover, what are the gender dimensions of inheritance?

In theory the system of inheritance throughout the Bolivian and Peruvian Andes is supposed to conform to the partible bilateral type in which all children, male and female, receive equal shares of household property (Long and Dandler n.d.). This may occur in some localities; Skar reports that in a community in the northern Apurimac valleys, on the death of the parents or when the children begin to marry, "the land, animals, and belongings (of the household) will be scrupulously divided up between the children of both sexes" (Skar 1984: 88). Though this equitable division of land and livestock has also been observed by Radcliffe, she notes that women without access to male labour to work this land may lose their rights of usufruct (Radcliffe 1986). In other words the gender division of labour, which marginalises women's involvement in agriculture, has come to override the "traditional" system of inheritance which increasingly favours male offspring. This is clearly the situation which now prevails in Santa Rosa.

With regard to systems of inheritance in general, and the question of anticipatory inheritance in particular, it is important to focus upon the decisions of the senior generation in the cases where their resources in land and other means of production are not simply to be divided amongst heirs. The decisions and aspirations of offspring are equally important, for they may strike out alone in search of improved opportunities and the promise of something better, either than that offered by a future partial share of already inadequate resources, or the prospect of continued rural deprivation and a lifetime of agricultural labour. The rejection of rural life appears to be a choice more fully enjoyed by offspring from land-rich households, though as an expression of independence it mingles with the aspirations of the senior generation for their children. Thus, movement away from Santa Rosa may follow one of two forms:

1. "Routes of escape", where the daughters and sons of the land-poor flee from the oppression of a patriarchal agrarian system and the prospect of poverty and landlessness; 2. "Avenues of ambition" that lead toward more and better education, beyond that provided by the school in Santa Rosa, and toward the prospect of a skilled trade, regular income and a higher social status.

As opportunities for education and wage labour exist in the Lower Valley urban centres of Cochabamba and Quillacollo, some experience of residence in one or other centre is not uncommon amongst many of the younger people in Santa Rosa. Examples of individual experiences will emerge during the course of this chapter as it explores the relationship between spatial mobility and the social and economic strategies of households.

This brings us, finally, to one of the most critical dimensions of differentiation in Santa Rosa: the role and importance of non-agricultural economic activities. It has already been shown in Chapter Seven how activities such as chicha production or petty trading can generate a significant, and possibly crucial, source of income for the household. Indeed, for many, and not only the land-poor, the revenue derived from such activities can exceed that generated by agricultural production. The process of accumulation amongst a handful of rich households can therefore take place across a broad front, with priorities shifting between activities whose relative profitability fluctuates according to price movements within the national economy. However, when the income earned from cattle dealing, transport, or running a small shop rivals or exceeds that derived from agricultural commodity production, what might be the ramifications for the household's interests in farming? The emergence of a capitalist enterprise in Santa Rosa, in other words, may not necessarily be synonymous with an agrarian bourgeoisie, for there may be little desire to capitalise production and raise yields when transport operations or other forms of intermediation and exchange provide greater returns on capital investment.

For the land-poor, on the other hand, the ability to engage in forms of economic diversification is severely constrained by lack of capital which largely restricts their activities to petty trading and the elaboration of chicha. Revenue so derived may, nevertheless, prove vital in supplementing income from the sale of agricultural produce, and in bridging the pre-harvest shortfall of cash. Such activities, as discussed in Chapter Seven, are largely in the hands of women, whereas for men there are few small-scale alternatives besides the sale of their labour power. Yet as the opportunities for earning cash from wage labour, as opposed to securing access to means of production, are locally restricted, those seeking to do so must find work beyond the confines of the Morochata zone.

III. Spatial Mobility

III.1 Structural Factors

The conventional approach to the study of migration has tended to focus upon structures external to the rural household and to see them as, if not determinate, then certainly strongly influential in patterns of spatial mobility. This approach is both characteristic of the neoclassical equilibrium model, where labour responds to imbalances in the distribution of factors of production, and the more critical historical-structural and dependency perspectives, which view migration as a reflection of deeper relations of exploitation and uneven development (Portes and Walton 1981). More recently there has been a growing recognition of the need to view spatial mobility as an adaptive response by the household to changing structural constraints (Wood 1981). Thus migration of varying duration and frequency may either be pursued as a means of maintaining consumption levels under conditions of heightened surplus extraction, or offer the opportunity to acquire savings for investment in new means of production in the migrant's home community.

This approach takes us back to the discussion early in Chapter Seven where such notions as unity and collectivism frequently attached to the household unit were critically examined. Once again the problem is raised of the household mediating the class location of individual members, that is determining the nature of their insertion into structures of production, as well as implying the collective disposal of an individual migrant's earnings (Schmink 1984). While this may undoubtedly occur in certain cases or under particular conditions, it should not be treated as representing a universal fact, for what of the personnel, previously identified, who continue to fall outside the household-centred perspective? Individuals, such as young men, the landless, and women, are likely to be amongst the most spatially mobile in their search for economic independence or prospects of an improved livelihood. Such individuals comprise the majority of the "people in motion" (Vincent 1977) in Santa Rosa and their patterns of movement are described below (4).

Before embarking upon an examination of individual mobility, however, it is necessary to review the main structural factors that are believed to influence migration, and relate these to circumstances in Santa Rosa. First, there are the conditions of scarcity of productive resources, such as insufficient land and other vital means of production, that either guarantee subsistence through the production of use values or simple reproduction through commodity production and exchange. In Santa Rosa, though many of the households in the Group I landholding category (with less than 1.5 hectares) have an inadequate land base, many are able to reproduce themselves through 1) low levels of consumption, 2) a combination of use value and commodity production, involvement in non-agricultural economic activities, and spells of wage labour in the locality. Employment in the fields of the land-rich in Santa Rosa serves to strengthen bonds that provide access to means of production (e.g. loan of oxen) and to inputs (e.g. potato seed in sharecropping arrangements) and ensures survival

during critical periods (bridging loans of food or cash). Such employment does not, however, offer a route for raising cash. There is one exception: occasional wage labour for the nearby landowner, Juan Betancur, and the 250 days of labour contributed by land-poor workers, described in Chapter Six, is evidence of this.

It will also be recalled that within the poorest landholding category there is an abundance of fragmented households with insufficient labour, and while many have some knowledge of migration, this is largely a result of the flight and absence of young sons and daughters searching for improved prospects for themselves. Migrant remittances are, however, negligible. Only one young nuclear household illustrates a more "conventional" migration from this Group; don Angel (Household 11), who owns just one-half hectare of land that is leased to his wife's nephew, works in building construction in Quillacollo, while his wife moves backwards and forwards between their home in Santa Rosa and the town. Besides this example, there are no formally-constituted households (i.e. excluding the young and single) amongst the land-poor who engage in wage labour in order to accumulate sufficient resources to improve levels of production.

Another factor discussed in the literature which is believed to encourage migration are the opportunities that exist in urban centres for unskilled labour. However, recalling the description of the regional economy in Chapter Two, there is a very low level of industrial and commercial capital investment in the Cochabamba region. The long-established dominance of small-scale enterprises in the Cochabamba Valleys not only generates little wage employment, but also leaves little opportunity for self-created occupations within the urban economy for migrants from the highlands. The most common type of work in which the young people of Santa Rosa engage has been in the construction sector for men and domestic service for women. Some jobs may be secured through contacts established via

social networks, for many households in Santa Rosa and adjacent communities have links with the "illustrious sons and daughters" of the area now resident in Cochabamba and Quillacollo. So, for example, a young woman wishing to find a position in domestic service may talk to a neighbour who is known to have a relation or compadres (fictive kin) in Cochabamba, and who in turn might be disposed to provide some assistance on the woman's arrival.

III.2 Santa Rosa Migrants

As part of the household census conducted in June 1982 data was gathered regarding those members who were currently, or had previously been, absent from Santa Rosa for periods longer than two months. The purpose of the question was to assess the degree of migration experience within the lifetime of all household members, and so was posed and prompted in a deliberately open-ended fashion. One of the methodological problems raised by this line of questioning was the failure to identify those individuals who were simply not perceived as members of households centred upon the nuclear family structure. In other words, parents responded to the past or present absence of their children but not to their own brothers or sisters who may have left Santa Rosa many years before. These siblings, who may have renounced any claim to land and who do not retain a home in the locality, are therefore excluded from consideration. Nevertheless, through continuing ties of kinship, it is recognised that siblings may perform a valuable function in providing a base and job information in the towns.

It is now possible to summarise the location of sons and daughters who have departed the parental household. The object is to establish the location of children of households still in existence, in other words those in which one or both parents survive and who remain in control of the means of production. The data is presented in Table 8.1. In June 1982 the Table indicates that seven sons and sixteen

daughters remained in the area (within Santa Rosa or elsewhere in the Morochata zone) generally within new household units of their own. In addition, eighteen sons and seven daughters had departed the parental home and the Morochata zone. Of the sons, twelve were in some form of employment and five were in full-time education, while one was doing military service. Amongst the daughters, six were employed as domestics and one was in full-time education. However, just one household (Number 10, the Valdivieso s) accounted for eight of these twenty five children (seven sons and a daughter), all of whom were in Cochabamba, with four of them working, four in education (including the daughter) and all but the three eldest sons resident in the family's urban home. The Valdivieso family is discussed in depth in a case study later in the chapter.

Note that Table 8.1 does not include those other individuals and families who have left Santa Rosa. Among them are two women who have abandoned their husbands (Households 1 and 31) and taken their children to live with relations elsewhere; one elderly man who has retired to Quillacollo leaving the land to his son (Household 4); the family of Angel Solis (Household 11) who also live in Quillacollo for much of the time; and the family of Roberto Manzanilla who works as a full-time peón for Juan Betancur but whose son, Candido (Household 20), continues to work the land. Moreover, those returnees who have spent a period of time outside Santa Rosa, but who have been reincorporated into the parental household, are also excluded. These include for example the two daughters and one son of doña Fransisca (Household 36); four sons from two Group IV households who had furthered their education and training in the Lower Valley towns (Households 13 and 42); and another four who had worked in construction. This list of exclusions highlights the fluidity of movement between Santa Rosa and the Lower Valley towns and the willingness to return to the parental home.

Table 8.1: Location of Sons and Daughters who have Departed the Parental Home.

Location:	SONS	DAUGHTERS
Santa Rosa	5	8
Within zone	2	8
Outside zone	18	7
Total	25	23

Source: Field Data

As noted above, the Valdivieso family accounted for seven of the eighteen sons of Santa Rosa families absent in June 1982. Of the remaining eleven, five were from three households from the largest landholding category, four were land-poor individuals and two were from one household in the third landholding category. Of the first five, two brothers were in full-time college education, two more brothers had diverged into military service and truck driving, and the fifth owns and works land in Vallegrande, Santa Cruz. The last two sons are brothers from Household 25 and are discussed within the case study below. Finally, amongst the daughters, one was in full-time college education, while six were from land-poor households and employed in domestic service in the city of Cochabamba.

1) Case Study: Household 25

With regard to the two brothers mentioned above, it is revealing to describe their activities within a wider consideration of the social and economic aspirations of, and long-term planning by, the household. For with their departure, the household was left with no other adult sons to help in agricultural production in Santa Rosa, which highlights the costs of out-migration.

The eldest son, Benino, is a tailor employed in a small sastreria in Huayra K'asa, a poor and rapidly growing suburb of Cochabamba. In late 1981 he was earning about 1,000 pesos (US\$ 25) per week. He is married to a seventeen year-old girl from Ucureña, Julia, who works in one of the Cochabamba markets as an ambulante, hawking fruit. They have one child of eighteen months. Benino's brother, Angel, is also seventeen; he works in construction and attends evening classes in the hope of qualifying as a master builder. They all live together in a house in Huayra K'asa, constructed by the family in the mid-1970s, on land purchased from the municipal authorities. Benino, Julia and their child have spent periods of up to two months in Santa Rosa, principally so that he could help his father during planting and harvesting. But Julia hates the deprivation of life in Santa Rosa and its poverty compared to Ucureña, and expresses her displeasure by refusing to eat. Angel, on the other hand, is almost continuously occupied with his work and studies and rarely leaves Cochabamba to return home and help his father, Teodosio, in agricultural labours.

Just as fieldwork in Santa Rosa was drawing to a close, Teodosio, his wife Guillermina, and their three younger children suddenly made preparations to leave Santa Rosa and join their two sons in the city. Teodosio was assured of being employed as a labourer for his son, Angel, while Guillermina intended to purchase metal washing trays (bateas) in Cochabamba and resell them in Santa Cruz for a healthy profit. The move would also allow their young teenage daughter to continue her education beyond that offered by the school in Santa Rosa. Initially their land was to be left idle, but if the move proved successful after a few months, Teodosio intended to enter into a sharecropping agreement with someone in the locality. This was a rather surprising move given that the household possessed over 3 hectares of land and produced over fifty cargas of potatoes during 1981-82. However, the household itself was unusual in many ways, not least being Teodosio and Guillermina's conversion to the Adventist Church some years before, mak-

ing them the only people in Santa Rosa who did not profess to be Catholics. This is not to say that their Protestant faith made them more "progressive"; rather, their own sense of identity made them feel apart from the community and they possessed great ambitions for improved social status.

The case of the Gonzales family illustrates the long-term planning, investment and sacrifice that precedes the relocation of the household to the urban arena. For several years the family had straddled the rural-urban divide, gradually consolidating a base from which two sons, who quickly adapted to urban life, launched relatively successful and independent careers. Once their sons had become established, the financial prop of agricultural commodity production could be removed to be replaced by more lucrative income-generating activities including, though not exclusively comprising, wage labour. The Gonzales' are not unique in Santa Rosa in moving along this road, though few have surrendered direct involvement in agriculture, even temporarily.

ii) Other Illustrations

As mentioned above, eight of the Valdiviesos children live in Cochabamba, with five of these remaining within the urban home, yet Ramiro and Hortencia continue to be based in Santa Rosa (Household 10), and engage in a variety of activities, including agriculture, which are described in a later case study. Likewise, though Gregorio Aquino and his elder son Pablo (Household 42) also remain in Santa Rosa, dedicated to the demands of an intensive potato production system, both their wives and Pablo's five children live most of the time in Quillacollo. What is the motivation behind such spatial transposition of household members?

A long-term strategy of social and economic improvement clearly involves considerable investment. For the Aquinos such improvement began with the construction of their own house in Quillacollo, which took place in the early 1970s at a cost of around US\$ 5,000. Its purpose was

to meet the needs of the household in the 1980s, principally the education of Pablo's children. Though the eldest is just twelve years old and the youngest eighteen months, Pablo has ambitions for them all, though especially his sons, who he hopes will secure urban professions. Such long-term objectives, while they are designed to fulfill grander social aspirations, may also be explicitly conceived as a way of avoiding the problem of fragmented inheritance. In this regard, Pablo hopes the land will pass undivided to his youngest son. The son may then acquire the true characteristics of a capitalist farmer.

But what about those individuals whose households have no resources for such grand schemes, but whose objectives are rather closer to the immediate concerns of simple reproduction? All six young women in urban domestic service fall into this category, as do four sons working outside Santa Rosa. Only one of the sons, however, was employed in the "traditional" activity for casual male labour, the construction sector, in this case in Vinto a small town a few kilometres from Quillacollo (5). The other three, in contrast, were to be found in the Chapare, employed by colonists to help in the harvesting and processing of coca leaves. Such work gradually began to replace the building trade as the most popular source of casual labour (in terms of pay and availability) from the early 1980s.

Hitherto, occasional spells of employment in the Chapare were primarily associated with the rice harvest, with some young men from the Morochata zone spending four or five weeks working for pay in kind, before returning home with sufficient rice to last them the year. However, as the price of coca began to rise, especially from mid-1982 when it increased from US\$ 180 to US\$ 265 per carga of leaves by the end of the year, the traditionally diversified cropping system of the Chapare began to give way to a coca monoculture and increased quantities of labour were required for harvesting the leaf and processing it into coca paste (Flores and Blanes 1984, Healy 1986, Sage 1989).

Drawing upon a newspaper report, Healy notes that from 1984 between 5,000 and 7,000 youths of between fourteen and nineteen years of age were making the trip each week to the Chapare (Healy 1986). While many were undoubtedly escaping the poverty and landlessness of the countryside, the not-so-poor have also been attracted by the prospect of earning large sums of money which they would be unable to acquire from potato production.

For example, Miguel Caballero, the youngest son of Household 13 which possesses the largest landholding in Santa Rosa, spent three weeks in the Chapare in early 1983 working as a pisador (6). At the age of 29, Miguel is anxious to establish his economic independence away from Santa Rosa, even though he believes he will receive the largely undivided lands on his parents' death, and is therefore expected to remain at home. While his previous aspirations revolved around securing some form of business in the city of Cochabamba, like many of his poorer contemporaries, he now wishes to acquire coca lands of his own in the Chapare that will offer a route to unparalleled wealth. This is one illustration of the degree of attraction exerted by this modern-day El Dorado. As for the other young men from land-poor households who circulate between Santa Rosa, the Lower Valley towns and the Chapare in constant search of improved livelihood prospects, they do not enjoy the secure base to which Miguel returns.

Land hunger is not a phenomenon confined only to the descendants of land-poor households, however. This can be illustrated by considering one individual who orbits around Santa Rosa and who has desperately sought to secure an anticipatory inheritance from his father in order that he might settle here. His father, Guillermo, is not short of land or other resources; he and his wife (Household 7) own a shop and diesel-powered mill, regularly produce chicha and bread for sale, and sharecrop others' land besides owning almost five hectares of their own. However, Guillermo refuses to recognise his son's claim for land.

The following life history illustrates both intra-household tensions and the patterns of spatial mobility of some young men, but is not necessarily representative; the circumstances which force or encourage departure and circulation are complex and specific to each household. In this case, the details of Walter's life history have not been cross-checked with his father, Guillermo (7).

III.3 A Personal History of Spatial Mobility

Walter Vasquez was born in Santa Rosa in 1955 to Guillermo and Henriqueta. Guillermo's father had been a colono, as had his brother, Roberto, both of whom received land under the Agrarian Reform. Guillermo himself was too young at the time of the Reform (1953) to have had his own pegujal and its associated obligations and therefore did not receive land, although by the time detailed allocations were made for Santa Rosa in December 1961, he had a wife and six year-old Walter to support. A succession of deaths, however, changed the picture.

On the death of his father, Guillermo inherited two small parcels of land, amounting to less than a hectare. Meanwhile Henriqueta, who came from Tarata in the Upper Cochabamba valley, was busy conducting petty trading activities, exchanging food and manufactured goods for maize and carrying this to sell in the Lower Valley markets. Henriqueta died in 1962, when Walter was just seven; Walter's younger sister then lived with a neighbouring family, but died within the year; around this time, Guillermo's brother Roberto also died. As Roberto had received 3.4 hectares under the Reform and had no wife or child, this now passed to Guillermo and transformed the economic base of his existence.

Though Walter began attending the village school at the age of seven, his father preferred that his son should help him in the fields; Walter recounted how his father beat him frequently. A couple of years after his wife's death, Emilia Galarza moved in with Guillermo, and Walter was sent to live with the same neighbours who had looked after his sister. Emilia was much younger than her partner; she came from Vinto and travelled frequently between the Lower Valley and the Morochata zone as a petty trader. Her arrival heralded a new and highly commercial phase in Guillermo's life, just as it marked the beginnings of wage labour for his young son.

At the age of ten, Walter went to live with Leandro Orellana, a small arrendero and arriero, i.e. he leased land and owned a pack of 24 mules which were used to carry products to the Lower Valley markets. However, arrieros were gradually being eliminated by motorised transport. At the age of 12, Walter was hired as a driver's mate, whose job is to help load, unload and clear obstacles from the road. He spent his early- and mid-teens working for most of the transportistas who travelled between Quillacollo and the Morochata zone. Eventually, at the age of seventeen, he was taken on by Antonio Ayala who owned a large Scania truck and worked long distance, national routes. This certainly gave Walter an opportunity to see more of the country than most of his contemporaries, but did not afford him upward mobility; by the age of twenty he was working on a small truck delivering soft drinks around Cochabamba.

After two years of humping bottles but without any savings to show for his efforts, Walter made his first trip to the Chapare in 1977. He easily found work as a labourer in both rice and coca, moving around the zone as far as Puerto Villaroel, earning up to US\$ 150 per month. However, one of Walter's self-confessed problems is that once having saved some cash, he abandons work and spends everything on alcohol until he returns, penniless, to labouring in other

farmers' fields. In 1978 he was very ill with yellow fever, but recovered after a couple of months. Although he has many contacts throughout the Chapare, is assured of finding work and could probably even acquire a chaco of his own, he has always returned to Santa Rosa to visit friends and to take up once more the struggle with his father for a plot of land.

By the middle of April 1982 Guillermo finally conceded that the issue of inheritance should be settled legally as he was tiring of his son's constant demands for land. He decided that they should all visit his padrino in Morochata who was a retired solicitor, so on April 19 Guillermo, Emilia and Walter set out to walk there together. By the time they reached Morochata Walter, who had stopped to slake his thirst in several chicherías along the way, was quite drunk. On entering the "office" of his father's padrino, Walter was subjected to a barrage of abuse from the retired solicitor who concluded with a blow to Walter's head. Sensibly, the latter retreated to the home of another eminent Morochata resident, an ex-hacendado and collector of the chicha tax, who advised him to get signed statements from witnesses in Santa Rosa who would testify to Walter's legitimate claim to land. Though the outcome is unknown, given Guillermo's influential social network, it is almost certain that the legal process continues in the present day and Walter remains a spatially-mobile landless labourer.

III.4 Gender and Generation

The movement of young people in and out of Santa Rosa, as represented by the example of Walter, reflects a deeper and more intractable problem than can be explained by the search for wage employment. The pattern seems to imply that the young retain an attachment to land which they see as offering them a secure base upon which they might one day establish their own household unit, and from which they can launch a range of activities, even including wage labour. Walter's case also illustrates the underlying antagonisms between parents and their children over the control of household resources, to which the latter believe they have a rightful claim (Long 1977). There may be some evidence to suggest that such claims are more actively pursued by sons than by daughters. However, insufficient data and the diversity and complexity of individual circumstances prevents an unambiguous confirmation of this general assertion. Nevertheless, it would seem correct to suggest that there is a dimension to spatial mobility which is influenced by patterns of inheritance and the possibilities for establishing a new domestic unit.

The evidence from Table 8.1 and the list of exclusions that were discussed earlier does not support the hypothesis that young people in general, and women in particular, are expelled from the parental household in order to find urban wage employment. This must be considered in the light of findings elsewhere.

The gender division of labour in agriculture in Santa Rosa, described in Chapter Five, parallels observations that have been made in other parts of Latin America and elsewhere regarding the impact of commoditization upon rural women (see Beneria and Sen 1988, Sen 1982). Though the outcomes for women are potentially diverse, one of the consequences which has been observed is to result in a relative surplus population of women. This does not appear to characterise the situation in Santa Rosa.

For example, in a study of agricultural communities in a mountainous area of Oaxaca, Mexico, Young (1978, 1982) documents the effects of commercialization on the sexual division of labour. Her study reveals contradictory processes of change: there were both high rates of outmigration as well as acute shortages of labour at critical times of the year; and in an effort to bridge the simple reproduction squeeze, rather than adopting agricultural innovations, households reduced their consumption needs by expelling their young adult children, particularly daughters. The decision became easier as introduced technology began to lighten women's labour, for example hand mills halved the time spent grinding corn by traditional methods (Young 1982). Moreover, though young women generally possess a lower level of education than males (for they are expelled from home at an earlier age, five years or more before their brothers), they have at least always found work as domestics, whilst the urban employment situation for men has been more difficult. Thus, while there are pressures on young men to keep them at home working on the land, young women become redundant in the household and within the rural sector as a whole (Young 1982).

This pattern of expulsion of young women from rural areas has been echoed on the agricultural frontier, in the Middle Magdalena Valley of Colombia. Townsend and Wilson de Acosta (1987) report on the discrepancy in the sex ratio that has resulted from patterns of outmigration that take predominantly young women to the cities in search of domestic work. In the Middle Magdalena Valley, the benefits of this migration for the household are threefold: those who leave cease to make demands upon household resources; they offer a route by which other household members can secure access to health, education and employment; and, finally, though remittances are uncommon, they bring gifts and cash into the household when they visit. Yet these benefits are marginal compared to the labour needs of the household, and immigrant male labour must be recruited to

meet the shortfall. Ironically, the redundancy of women within a dominantly male local labour market has forced men to perform many of the productive and reproductive tasks within the domestic sphere (Townsend and Wilson de Acosta 1987).

Clearly, such gender differentiated patterns of outmigration as reported in the studies of Young, and of Townsend and Wilson de Acosta are not mirrored in Table 8.1. The male to female sex ratio for Santa Rosa appears to be well balanced at 91:87 among adults (15 years of age and over) compared to a ratio of 189:100 for San Lucas in the Middle Magdalena (Townsend 1988). Taking adults and children together there are 140 males and 145 females in Santa Rosa which proves that females are not being "sloughed off" at an early age as in Oaxaca or Central Colombia. Table 8.1 does reveal an important distinction between young men and women, however, in their likelihood of establishing new household units locally.

While sixteen daughters either remain within Santa Rosa or adjacent communities, only seven sons do so, with five of these receiving anticipatory inheritance from their parents in order to settle with their partners nearby. The two who live outside Santa Rosa but within the zone are the eldest son of Household 13, who has leased and purchased land from neighbours, and the younger son of Household 8 who works as a permanent labourer for Juan Betancur. While the younger man, together with Roberto Manzanilla mentioned earlier, are the only individuals to be permanently employed by Betancur, a further 250 days of labour was provided by other households in Santa Rosa to the landowner during 1981-82, which was discussed in Chapter Six. This remains the only source of wage labour in the zone, hence the need to find employment in the city and, increasingly, in the Chapare as a means of earning cash.

III.5 Household Diversification and Spatial Mobility

There is no single pattern of migration away from the zone, rather a fluidity of movement according to the complex interaction of individual and household strategies. The most "permanent" outmigration i.e. long-term but not yet definitive, appears to be more likely amongst the offspring of the wealthier households, who are able to support their children's education beyond the age of twelve or thirteen. This higher level of education, acquisition of skills and familiarity with urban life substantially improves their job prospects. They may then act as "bridgeheaders" (to give a new application to Turner's metaphor; Turner 1976), providing the entire household with access to urban services and the possibility for relocation. Thus spatial mobility is an option which substantially increases the life chances of household members.

Mobility by the offspring of poor households, on the other hand, rarely involves education or the opportunity, barring the exception, for personal improvement. Young women rarely find alternatives to domestic service in the homes of the urban middle class; young men work as low-paid labourers in construction, unless they take advantage of the current "coca boom". This form of mobility is less motivated by optimism or achievement-orientation, than by a desire for temporary release from the difficult circumstances of collective survival. If the possibly transient phenomenon of the Chapare is discounted, the regional economy, centred upon the capital and provincial towns of the Cochabamba Valleys, appears to present a limited permanent attraction to the young. For many, the opportunities offered by the regional economy cannot compare with the prospect of a little land in Santa Rosa.

Altogether, it is a situation which may parallel Mallon's speculative projection for communities of the Peruvian Central Sierra. There it seems that the sons and

daughters of the wealthier households have sought to integrate themselves into urban professional careers at the national level rather than to take over the family enterprise. This tendency might transform these communities into "villages of proletarians - conglomerations of households helping to reproduce wage labour for agrarian (and urban) capital" (Mallon 1983: 345). This is a rather stark image which Mallon creates for the Central Sierra, though it may undoubtedly reflect the outcome of contemporary forces in Peru, but probably overstates the position in Bolivia.

If it is not applicable here, this has much to do with the relatively lower level of industrial and commercial capitalist development in Bolivia which severely reduces opportunities for social mobility. However, it is true that some sons and daughters of wealthier households do follow a route into the urban arena where services, employment and social improvement become available to all family members. Nevertheless, communities such as Santa Rosa still offer opportunities for accumulation, power and prestige which the wealthier households could not enjoy in the city. Neither does such status derive solely from the production of potatoes: it is systematically established through the promotion of non-agricultural economic activities, construction of networks and alliances, and the occupation of key positions. These issues will be illustrated in the case studies presented below.

IV. Economic Diversification

The discussion of spatial mobility presented above in many ways returns to the "decomposition" approach to the study of social differentiation where emphasis is placed upon the role of wage labour in the reproduction of rural households. This approach was criticized earlier for its linear projection and functional inevitability, for it was argued that the diversity of local and individual circumstances, and particularly the resilience of household forms of production, ensure that such a process is by no means universal. Indeed, sufficient evidence has been presented to show that the restricted opportunities available to rural labour mean that many of the land-poor households, rather than reproducing themselves from the sale of wage labour, are actually deeply involved in agricultural commodity production. Income from the sale of potatoes is then supplemented by other non-agricultural activities in which women perform a dominant role, such as the production of chicha or petty-trading.

Conversely, amongst the ranks of the land-rich there are many households which pursue an active involvement in non-agricultural activities, and these offer some functional complementarity to agricultural commodity production. It is the purpose of this section to explore the complementary nature of such activities via the presentation of several case studies. It will then be possible to move towards a deeper understanding of differentiation, not purely in terms of access to land and other means of production, but in relation to strategies that establish economic and social hegemony.

Long (1977, 1978, 1979) has explored the involvement of rural households in diversified income-generating activities and their transformation into multiple economic enterprises. Drawing upon observations in the Mantaro region of the Peruvian Central Sierra, Long argues that household diversification can promote capital accumulation

while remaining essentially small-scale. Though requiring only low levels of investment, diversification serves to reduce the high degree of uncertainty prevalent in regional and national markets. The particular interest of Long's study of multiple enterprises is his focus upon the networks of social relationships which are constructed and mobilized and which provide essential inputs to economic ventures. While such inputs naturally include labour and capital, which are often drawn from the tighter networks comprising sanguineal and fictive kin, more ambitious entrepreneurs may require political support, financial and legal knowledge and technical skills which can be tapped from specialists incorporated into wider social networks over many years. Through the case-study method, Long provides excellent illustrations of how such networks are constructed, maintained and mobilised at times of need. Long's work serves to underline this important dimension to successful strategies for entrepreneurial accumulation.

The Cochabamba serrania, however, contrasts markedly with the high degree of economic diversification in the Mantaro valley. It would be misleading, therefore, to emphasise the importance of regional-wide social networks here when, across a range of social and economic indicators, the Cochabamba serrania has yet to reach either the levels of development or the degree of integration into the national economy of the Mantaro valley.

Moreover, forms of economic diversification need not be dependent upon the existence of wider social networks, for they operate at a variety of scales, degrees of capital investment and profitability, and are found amongst both land-rich and poor households. Examples of diversified economic activities are presented below, but once again it needs to be emphasised that agricultural commodity production remains the priority amongst the majority of households in Santa Rosa.

Levels of involvement in various kinds of non-agricultural activities reflect important differences between households and are developed according to the decision-making framework within each of them. Thus, petty trading or the elaboration of chicha may be essential to supplement revenue from agricultural production and meet the household's requirements for simple reproduction. Alternatively, a household with more than adequate resources in land and labour may seize the opportunity to promote internal accumulation through involvement in an activity offering higher returns from capital investment than potato production. Thus, economic diversification may well prove a determining factor of differentiation, though this will become clearer after a brief appraisal of the types of non-agricultural income generating activities.

IV.1 Resource-Poor Households

One of the most prevalent and ubiquitous activities remains the elaboration of chicha. As we have seen in Chapter Seven, this is one of the leading components of economic diversification in Santa Rosa. Considerably lower down the scale in terms of total turnover, there is another alcoholic beverage which is drunk in Santa Rosa, and this provides a small, but significant, income for six or seven of the poorest households which occasionally have some to sell. Called "chapu", it consists of a high octane spirit produced by the industrial sugar-cane distilleries of Santa Cruz, which is mixed with boiled water. The cane alcohol is purchased in one, two or eight litre cans (called uk'utas, ch'itis and p'altas respectively) in one of the Lower Valley towns, with the largest costing 500 pesos in early 1982. Bottles containing 0.66 litres of chapu are then made up by adding boiled water to a quarter of alcohol, and this sold, in early 1982, for 15 pesos. The profit margin on trading chapu is small at around 200 pesos on an eight litre can, and in practice is probably even less as those who sell it also drink extensively. Death through alcohol

poisoning and accidents, and an apparently high incidence of burst stomach ulcers suggest that the consumption of chapu is widespread and potentially dangerous (8).

Though chapu is drunk all the year round, consumption peaks at times of fiesta, especially if chicha is in limited supply. Fiestas offer petty trading opportunities too, particularly at Carnaval, in February, and Concepcion, in December when, besides fruit, vegetables and other basic food goods, some of the poorer households buy or make sweets for exchange. One household (Number 19), for example, bought one arroba (25 pounds) of sweets for Carnaval in 1982 at 400 pesos, and exchanged them at the rate of one pound of sweets for half an arroba (12.5 lbs) of maize kernels. This was equivalent in monetary terms to exchanging 16 pesos of sweets for 60 pesos of maize, providing a total income of 1,500 pesos and a profit of 1,100 pesos. Regular petty trading does not deal in such trivial items as sweets, exchanging instead a small range of food goods and garments for which there is a more reliable demand. It serves, however, to illustrate that at the slightest opportunity, households will seek to acquire extra maize which can be sold, consumed, or turned into chicha. Food products therefore provide an important medium of exchange between households - almost to the degree that they serve as a form of currency - and yield a valuable source of income in terms of timing and frequency. Another example of this is provided by the preparation and sale of bread in which several households are occasionally engaged, though the most regular producer deserves attention.

1) Case Study: Household 14

Doña Amelia is a woman of at least seventy years who lives with three male grandchildren. The two eldest, Ignacio and Iván are twenty one and eighteen respectively, and are the offspring of Amelia's only son, Fidel, who died in 1972 (9); their mother abandoned Santa Rosa shortly after and has never reappeared. The third grandchild, Nicholas, is eleven years old and is the son of Amelia's

second daughter, Bertha, and a truck driver who worked in the zone and who was killed in 1975. Bertha has five children by her current partner and together they comprise Household 52; Amelia's two other daughters also live locally. One of them is Isabel (Household 11) whose husband, Angel, works in Quillacollo and who has leased his small half hectare parcel to Ignacio and Iván. These two also sharecrop a parcel of land belonging to the husband of Amelia's youngest daughter, Lucy (Household 19). However, the income that Ignacio and Iván derive from their agricultural labours largely enters their own pockets and is not used to meet household needs.

Thus, Amelia produces chicha on four or five occasions over the year but supplements the annual income of ten to twelve thousand pesos from chicha with a regular return from making and selling bread rolls. Once per month Amelia turns almost 25 kilos of wheat flour (purchased in one of the Lower Valley markets) into 450 bread rolls. These were being sold at four for ten pesos in April 1982 providing an income of around 1,100 pesos and a profit of approximately 600 pesos each month. This income is used to support herself, Nicholas, her youngest grandchild, and the day to day needs of the household. However, the fragile structure and limited emotional bonding of the household (Amelia, Ignacio, Iván, Nicholas), which is frequently evident in the open conflict between members and especially between Ignacio and Iván, have created two relatively independent spheres of production, with Amelia's non-agricultural income-generating activities playing a decisive role in household reproduction.

IV.2 Resource-Rich Households

As a counter-point to such small-scale, survival-led petty production and exchange, it is illuminating to consider some of the activities in which several of the land-rich households participate. It is hardly surprising that these households are reluctant to give information on their income from such activities. What they reveal is usually a gross underestimate of the true scale. The most resistant informant has already been introduced: he also provides a particularly excellent profile of economic diversification. This is Guillermo Vasquez (Household 7), the father of Walter.

1) Case Study: Household 7

Guillermo, it will be recalled, inherited land on the death of his father and brother and supplemented this with the purchase of one hectare from the old landlords. Today, Guillermo possesses almost five hectares of land, most of which is worked with bonded wage labour, although two small parcels are sharecropped. These two parcels illustrate the way bonding makes use of "precapitalist" relations to further accumulation. One of these bonded labourers and sharecroppers is Aniceto Arce, a young man in his late twenties who lives with Guillermo's wife's sister (Household 62).

Aniceto owns less than one hectare of land and is dependent upon Guillermo for a regular wage, potato seed and for whatever other benefits he can derive from his benefactor in order to support his family. Guillermo's second parcel is sharecropped with Eziquel, Aniceto's younger brother, who lives with his mother and sister (Household 3). Thus, Guillermo has fostered strong ties with two young, land-poor males by sharecropping a small area of his own land (in addition to sharecropping theirs), in return for a reliable supply of labour that provided almost one hundred of the 150 days purchased in 1981-82.

It is estimated that over the agricultural year, Guillermo's land yielded around 110 cargas of potato, of which a minimum of seventy cargas were sold. According to the most conservative estimation, this provided Guillermo with a return of approximately 35,000 pesos (\$US 1,400). However, when we deduct the cost of chemical fertilisers (20 quintales @ 650 pesos = 13,000 pesos), seed (8 cargas purchased @ 820 pesos = 6,560 pesos), labour (say 120 man-days @ 35 pesos = 4,200 pesos) and marketing costs (70 cargas @ 50 pesos = 3,500 pesos), Guillermo's net profit might be as low as 7,740 pesos, or a little over \$US 300. Nevertheless, it remains a very worthwhile source of income for several reasons.

First, there is hardly any household labour invested in agricultural production; Guillermo has a gammy leg resulting from being thrown by his mule and, despite two operations, he says it prevents him from participating in agricultural labour. Emilia, meanwhile, is far too busy with her commercial activities to engage in field tasks. It is the involvement of household labour, of course, which normally makes potato production so profitable. Secondly, the subsequent crop of maize is brought in with little cost; it is the "added extra" to the potato farming system. Although Guillermo "could not remember" total maize production for 1981-82, it surely exceeded fifteen pesadas, given the area under cultivation and the fact that ten pesadas were used in the elaboration of chicha, besides that retained for domestic consumption. The third and final variable which keeps Guillermo's land cultivated may be a combination of his own attachment to it as a symbol of prosperity, as well as his determination to deny Walter's claim to a share, which might be strengthened if the land were to be left fallow.

Agriculture, however, makes up only a small part of the household's range of activities for Guillermo and Emilia run a truly multiple enterprise. Their location in the centre of the village, directly opposite the dwellings

occupied by the teachers who work in Santa Rosa, is ideally suited to their commercial ventures. The first of these is the small shop for which the six teachers and their families provide a regular clientele, purchasing food and other necessities besides bread, beer and cigarettes. It is usually Emilia who travels down to the Lower Valley three or four times per year, spending around \$US 100 on provisions for the shop and arranging their transport back to Santa Rosa. As one might expect, the purchase and movement of goods is hard work and has justified the large profit margins incorporated in their prices, at least until the appearance of competition in August 1980.

Under the guidance of a state-directed community development project (Desarrollo de la Comunidad), a co-operative shop was formed in 1980 and provided with premises in part of the old Hacienda house. It is important to emphasise that the initiative for the co-operative came from outside Santa Rosa rather than as a collective response to the commercial monopoly enjoyed by the Vasquez. The co-operative's capital base was established with every household in the community contributing 2 arrobas (25 kgs) of maize. This was then sold in Cochabamba and the revenue of 12,500 pesos (\$US 500) was used to purchase a comprehensive range of food and basic household items.

Turnover in the Vasquez' shop must certainly have fallen as the co-operative offered a wider range of cheaper goods. When its stocks were exhausted Juan Caballero (who was paid a small salary to manage the shop, and is discussed in a later case study) returned to the Lower Valley to purchase new supplies. Unfortunately, hyper-inflation, which began to reach three digit levels by late 1982 and reached 14,500% in 1985 (Dunkerley and Morales 1986, Morales and Sachs 1989) destroyed the value of the co-operative's assets and eventually led to its collapse. Though the Vasquez' were also affected by this wider economic catastrophe, they had minimized their exposure to loss by raising the price of their limited stocks in line

with inflation. They were also in a stronger position to re-capitalise the business once inflation had been reduced to more manageable levels. The period certainly illustrated the dangers of retailing, for Household 6 had also begun to carry limited stocks of basic items, but were ultimately unable to replace them as urban prices soared.

While their shop declined in popularity during the heyday of the co-operative, Guillermo and Emilia were not without other forms of custom and sources of income. During the course of 1981-82 Emilia produced chicha on five occasions, using their own maize. This yielded a total profit of between ten and twelve thousand pesos. Meanwhile, Guillermo produced bread on ten occasions over the year, providing direct competition with doña Amelia, though he used slightly smaller quantities of flour, half of which was from locally-grown wheat. This yielded an annual profit of perhaps six or seven thousand pesos. Finally, the household has a large diesel-powered milling machine, which they purchased in 1980 for 75,000 pesos (US\$ 3,000) and which is used to grind corn. They charge 30 pesos for one arroba (12.5 kgs) of wheat and 50 pesos for one carga (100 kgs) of wiñapo, the sprouted maize kernels used in the preparation of chicha. Guillermo revealed that this had provided a profit of 3,000 pesos (US\$ 120) over the year.

Thus, excluding the returns from agriculture, the Vasquez' derive considerable income from a diversified range of activities which they control from their own home. They do not appear to suffer from a lack of household labour (they have just one surviving child aged three, after the deaths of a five and three year old in 1980 and 1981 respectively). Agricultural operations are reliably left in the hands of Aniceto, whose ambitions, if not his very survival, are dependent upon a close and trusting relationship with Guillermo. With bonded labourers in the fields, the Vasquez' can securely dedicate themselves to non-agricultural operations at home within a strategy of accumulation.

11) Livestock Dealing

What of other principal activities amongst the land-rich and wealthy? Perhaps one of the most lucrative is cattle-dealing, though there are risks associated with this as we shall see in the case of Household 50. This is a household which comprises two nuclear families which eat from separate pots, yet which is treated as one domestic unit, since the two families organise production as a single enterprise. One family centres on the older generation, Francisco and his wife Honorina, together with three children of which the eldest, José, is fifteen. The other family comprises Francisco and Honorina's eldest son, Juan, who is twenty-two, his wife and their two young children. This household controls almost 7.5 hectares of land and this is worked collectively by the three men supplemented by wage labour. It is necessary to note that the women of the household play very little part in agricultural production, to the extent that at times of planting extra-household female labour is contracted in and paid either a daily wage or in kind under the arrangement of papa tarpuja. Both wives and a daughter of fourteen are restricted to the production of use values for the household in the form of food products (chicha, bread, cheese) and woven goods, none of which were said to have been sold or exchanged.

During the course of the preceding year (1980-81), the household bought and sold around thirty head of cattle, making a minimum profit of 1,000 pesos (US\$40) on each (10). Francisco and Juan travel widely together on foot throughout the zone, purchasing one or two cattle from here and there for which they pay between 7,000 and 11,000 pesos (US\$ 280 - US\$ 440) per head. They then drive a small herd of five or six beasts on foot to the market in Quillacollo where they receive between 5,000 and 14,000 pesos per head. This is a business that father and son have begun to pursue with enthusiasm, with the intention of increasing their level of commitment in capital and time. However, early in 1982 a large herd of cattle that they had been accumulating and fattening in preparation for the drive to Quillacollo,

began to fall sick with brucellosis. In total they lost fifteen head of cattle to this disease over a period of several months and, without access to veterinary services, simply slaughtered the beasts and sold the meat, minus the liver, locally. This only very partially offset their losses as the glut of meat meant that much of it was simply given away. Yet they faced this near-catastrophe impassively, determined to recover their operating capital quickly through a series of rapid sales.

Livestock dealing, then, is not without its dangers but it represents a sufficiently profitable activity to render the risk worth running. Household 4, for example, traded six steers over a period of a few months in early 1982, and made a profit of US\$ 360 on the transactions, and Hortencia Valdivieso (Household 10) exchanges manufactured garments for sheep. Both of these households are well-off in land and other material resources, but do not possess a large number of adult workers; Household 4, for example, comprises a young nuclear family. Both, therefore, make extensive use of wage labour. In other words they sustain an interest in agricultural commodity production, but use hired and usually bonded labour to perform the onerous and unrewarding field tasks while they themselves deal in more remunerative activities. These require a level of capital investment beyond the means of the poorer households, which are in turn restricted to involvement in petty trading and other less profitable ventures.

It would appear that there is no direct correlation between household structure and involvement in diversified economic activities; these can be developed by substituting wage and, preferably, bonded labour for family members. Yet even the most profitable activity has its risks, with commercial ventures vulnerable to wider economic fluctuations, livestock dealing prone to animal disease, and transport operations subject to mechanical breakdowns and accident. Indeed, it is due to the latter that the chapter is unable to include an examination of truck operations: the accident

which killed Rigoberto Jimenez, a resident of Santa Rosa and a transportista, was described in Chapter Five (11).

The preceding short case studies have provided brief illustrations of forms of economic diversification and their relationship to agricultural commodity production. In the following section two in-depth case studies will provide a more detailed insight into the organisation and social and economic trajectory of households, and the activities and aspirations of individual members.

V. Two Case Studies

V.1 Household 10: The Valdiviesos

This household has been selected for close scrutiny because it occupies an unusual position in Santa Rosa with respect to its economic base: a continuous association with salaried labour. However, in developing detailed profiles of Ramiro and Hortencia, the heads of household both of whom were mentioned earlier, this case study will not only focus upon their individual activities and aspirations. It will also illuminate events in recent village history that provide insights into the consolidation of land ownership since the Agrarian Reform and the influence exerted in the locality by Juan Betancur, the nearby landowner. In this respect, the case study offers a framework in which to explore specific events together with a more conjectural analysis of social relationships.

Ramiro Valdivieso was born in Colcapirhua, a village in the Lower Valley between Cochabamba and Quillacollo, in 1925. He arrived in Santa Rosa at the age of twenty in order to work as an assistant to the administrator of the Claire estates, Hugo Vargas. In 1952 he was placed in charge of the neighbouring estate of Pulperas, with the responsibility for organizing labour and overseeing production. By this time he had already married Hortencia,

who came from Torotoro in the North of Potosí, and they had had two children though the first, a girl, had died. Their home was situated below the main settlement of Santa Rosa, on the old road (long since destroyed by slumping) that linked Independencia to Quillacollo, an ideal location for Hortencia who produced and sold chicha on a regular basis.

However, with the promulgation of the Agrarian Reform in 1953 and the suspension of labour services to the estate, Ramiro's position on the Hacienda soon became redundant. Although the administrator, Vargas, departed for good and the landlords remained in the city for fear of reprisals, Ramiro said he did not experience any resentment at his continued presence in Santa Rosa. He continued to perform an invaluable service for the Claure's by remaining locally and ensuring that their property (dwellings and land) were not abused. However, though this was to prove rewarding (as we shall see below), the main reason for remaining in Santa Rosa was his new post as administrator of a nearby mine.

Despite difficulties within the mine, besides those involved in transporting the mineral to Cochabamba, Ramiro remains the local administrator of the operation. His job entails provisioning the miners with equipment (picks and dynamite), coca and some foodstuffs, and arranging the removal of the mineral, first by horse to his house in Santa Rosa and then on by truck to Cochabamba. His ambition is to build a new road running along the ridge of the Morochata Valley to join the existing road at the Tunari pass, but low mineral prices, low productivity and uninterested owners have prevented him from realising this idea. Ramiro's salary is 4,000 pesos per month (US\$ 160), and he earns every centavo for he is constantly moving between the mine and his home, which are separated by an hour's hard walk, and Cochabamba where he delivers the mineral and purchases provisions. Nevertheless, the difficulties facing mining in the area are resulting in its slow demise.

By 1982 there were just six miners working in the "Begonia" mine, three of them from Oruro and three from communities in the vicinity. This compares to between thirty five and forty who worked in the "3 of February" mine until its closure in 1968. The majority of these miners came from the city of Cochabamba, though some were locally resident: very few men from Santa Rosa were attracted to work in the mines, although there were a few notable exceptions.

The first was Ponciano Arce (Household 3), an ex-colono who worked in "Begonia" for six months during 1976 until his death, when he fell down the steep drop at the entrance of the mine to a tributary of the River Morochata. A second was Angel Solis (Household 11) who we have met before as a permanent construction labourer who lives, along with his family, in Quillacollo. He came to the area as a boy along with his parents from Kami, which is the largest mining centre in the Province of Ayopaya. With the running down of the mines "3 de Febrero" and "Begonia", Angel moved together with his mother to the large mining centre of Llallagua near Oruro, though left his mother there after three months to return to Santa Rosa to form a union with Isabel. Finally the third person reputed to have worked in the mine was Fidel, son of doña Amelia, and who apparently retired with a lung complaint from which he may have later died.

Though Ramiro is the only person in Santa Rosa to retain links with the mine, his job is by no means the only source of income for the household. His position as assistant within the Hacienda established a strong and trusting relationship with the Claire family, and this proved rewarding for Ramiro following the implementation of the Agrarian Reform. Although he did not qualify as a beneficiary of land under the Reform, he was able to acquire a significant extension through other means.

First he was given a parcel of land by the ex-landlords, which had been initially consolidated in their favour and which measured a little under one hectare. He then occupied 2.5 hectares of the 2.74 hectares of land donated to the school under the Reform. This effective appropriation of school land by Ramiro and Hortencia was very curious for not only did it take place without dispute, but apparently without any knowledge by the community that such land had been allocated for collective use. Indeed, the unauthorised nature of the occupation only came to light when a copy of the Agrarian Reform documents for Santa Rosa was made available to the community during fieldwork for this study. The incident highlights once again the low level of mobilisation around the Agrarian Reform within the locality. It also illustrates the ability of certain households to exploit the process of Reform through social networks that reinforce their own positions of authority and privilege.

While the dispute which arose over the occupation of this school land was nominally between the "community" on the one hand and the Valdivieso household on the other, it was triggered by a wider struggle taking place in the countryside. During 1980 and 1981 the regime of Garcia Meza sought to consolidate its tenuous grip on political power by fostering the support of the "campesino masses". The role of Juan Betancur and, one assumes, other landowners like him, was critical in this regard. The combination of patronage and populism, which had long served to legitimate Betancur's own position of authority within the zone, was now also aimed at securing support for the regime in La Paz. Schemes such as the construction of football pitches in rural communities provided suitable, "non-political" examples of government beneficence which would be sure to gain the enthusiastic support of young males, which the installation of drinking water, for example, might not.

In May 1981 road reconstruction after the seasonal rains was taking place in the Morochata zone with the use of machinery belonging to the Servicio Nacional de Caminos. Betancur arranged that a bulldozer and scraper would make their way to Santa Rosa, clearing the track in the process, in order to level land for use as a football pitch. He was insistent, however, that the pitch should be full-size, and measuring revealed that it would exceed the dimensions of the land available for it. In typically autocratic fashion he asserted that it would simply have to be extended into the adjacent parcel, and this was part of the land held by the Valdivieso's.

By this time there was some enthusiasm amongst the young men of Santa Rosa and adjacent localities at the prospect of a full-sized football pitch. This was not necessarily because all of them played the game or were remotely interested in it, but because it represented a prestigious acquisition which no other community in the zone possessed. The Valdiviosos were asked to surrender a small piece of their land to allow the pitch to be constructed to the dimensions which Betancur had demanded, and when they refused, were accused of holding back "progress" in Santa Rosa. At this point the Agrarian Reform documents were introduced into the dispute and suggested that the Valdiviosos were illegally occupying land donated to the school.

It was Hortencia, rather than Ramiro, who responded, producing papers to prove their legal ownership of the land: a plan dated April 1969 and two documents prepared by lawyers in La Paz dated October 1980 and April 1981. As these were not made available for closer scrutiny their contents and validity were not determined. However, her line of argument rested less upon these documents than upon the fact that they had occupied this land for close to thirty years so why should they surrender it now? Furthermore, she had raised nine children in Santa Rosa and

although eight of them lived in the city, what would they do without land? Ramiro added that they had obtained it through an "option of sale" as it had remained unused since the Reform and had presented a claim to the Peasants Federation (Federacion de Campesinos) who were processing their application.

Significantly, only part of this land had been cultivated during previous years; in 1980-81 it yielded just 50 cargas of potatoes, representing only a fraction of its potential productivity. When the dispute began in May none of the land had been planted, though by the time the bulldozer arrived three or four days later potato seed had been sown throughout its entire area. This did not prevent the bulldozer from ploughing under a ten by twenty metre section of this field in creating the football pitch, with the Valdivieso's appearing to reconcile themselves to this loss in the hope that the remaining 98 per cent of their land would remain inviolable. Their hopes appear to have been fulfilled, for as quickly as the dispute flared it died without resolution and the status quo suited the Valdivieso's perfectly.

Soon after the preparation of the football pitch, it was formally inaugurated. The leading dirigente of the ultra-right wing faction of the Regional Peasants Federation, which espoused strong support for the García Meza regime, arrived in Santa Rosa. Besides his cronies, he brought with him a full football team strip (shirts, shorts and socks) and ball, which were handed over to the community with great ceremony following a long rhetorical diatribe against communism. Betancur also spoke at length and announced that, henceforward, all young men (under the age of thirty or so) were obligated to present themselves on Sunday afternoons at the football pitch; those who were absent would be fined.

While the visitation and even the dispute were quickly forgotten by the community, the incident offered an insight into power relations within the Valdivieso household that may not have gone unnoticed. Ramiro, the salaried worker, put up little defence of their lands and appeared to be intimidated by Betancur, with whom he is a compadre. Hortencia, on the other hand, placed much greater store on their control of land, and was resistant to surrendering one square metre without a fight. The incident certainly suggested that it is Hortencia who has greater influence in managing the household's resources and, indeed, in generating the greater part of its income.

Although she has long been involved in various commercial activities, such as chicha production, Hortencia has recently experienced a real liberation of her economic potential through freeing herself from most domestic responsibilities. This freedom has been won at the expense of the young wife of her fifth son, both of whom live in the home in Santa Rosa. Though all of her remaining children live in their Cochabamba residence, Hortencia visits them only occasionally, bringing with her sufficient maize to produce chicha for sale in the city. She then purchases a variety of articles of clothing, in the same way as Fransisca, described in Chapter Seven, and then trades them for sheep throughout communities of the zone. During 1981-1982 Hortencia sold some forty sheep in the Cochabamba market, earning close to US\$ 500 from these transactions.

However, it is in chicha production that Hortencia really expresses her true commercial acumen. She is always ready to acquire maize or wiñapo (sprouted maize kernels used in chicha, see Chapter Seven) in small quantities, through cash or exchange of products, at every opportunity. She is the only person who trades in kerosene: as households use only small quantities for their primitive lamps (faroles), this may explain why she is able to trade one litre for one arroba of maize (12 kgs), an exchange which yields a profit ten times her outlay in monetary terms.

Once she has acquired sufficient maize she then turns this into chicha, further increasing her profit margins over initial outlay. On each of the six occasions during 1981-82 that she manufactured chicha in Santa Rosa (i.e. excluding her operations in her home in Cochabamba), Hortencia made a profit of US\$ 200.

Hortencia is the only woman to sell chicharron (fried pork scraps) on a regular basis, buying, fattening and slaughtering a pig to coincide with the availability of her chicha. She is also undoubtedly the only chichera who loses considerably less in unrecovered debts than the 25 per cent of turnover of which most producers complain. This is because she ensures that people who cannot pay their debts in cash must pay them off with labour. On several occasions Hortencia's early morning rounds to collect debts from hung-over neighbours, were witnessed. When debtors plead an absence of memory and no cash, they are told to report for a day's work within a couple of hours. Besides performing agricultural tasks, such labour is used to cut and carry the large amount of fuel wood and water needed for chicha elaboration. Thus, Hortencia secures her labour needs without the need to pay a daily wage.

It is perhaps surprising that Ramiro, in his late fifties, and Hortencia, in her late forties, appear to prefer the relative austerity of life in Santa Rosa. Eight of their nine children are well established in the city of Cochabamba and are unlikely to return to live in the countryside. The eldest four sons each have regular jobs - bus driver, tailor, hardware shop assistant, builder - and the last four, of which just one is female, are all in full-time education. Only the fifth child, Jaime, continues to live part of the time in Santa Rosa together with his wife.

Clearly Ramiro and Hortencia have placed considerable importance upon their status and economic power in Santa Rosa, a position which has been established through their own individual activities and which collectively character-

ises the household as displaying a high degree of economic diversification. Their apparently low level of interest in agriculture has not prevented them, or Hortencia at least, from attaching an importance to land. Potato production still provides a significant income although hired, usually indebted, labour is overwhelmingly greater than the input of household members. This case study contrasts sharply with the next in which economic diversification is minimal and emphasis is placed upon agricultural commodity production combined with political power.

V.2 Household 13: The Caballeros

Early in Chapter Seven there was a brief discussion of the need to understand the internal structure of the household, particularly the control exercised by the senior generation over the labour power of adult sons and daughters. It was suggested that individual ambitions can often be subsumed to the collective objectives of the parental household, with internal social relations marked by despotic control over resources and the distribution of the product. One of the consequences of this form of organizational structure is the substantial discord which arises over the allocation of roles and rewards, which generates conflict not only between parents and their offspring but also between siblings. This case study, then, serves to illustrate a gerontocratic model of patriarchy, where an aged couple retain an iron grip over household resources, and in which there is considerable mutual suspicion and animosity between its members. Yet this conflict occurs within a household which is conceivably the most powerful, economically and politically, in Santa Rosa. The case study focuses upon personal relations and individual aspirations, and provides little detail regarding production, specifically in order to highlight the value of moving within the domestic arena and treat individuals as worthy units of analysis.

Isaac Caballero is an ex-colono of 76 years who arrived in Santa Rosa from the Lower Cochabamba Valley during the 1920s. Under the Hacienda he became the village blacksmith, and was largely relieved of his labour-service duties on the demesne land in order to make and repair tools. Besides his small forge, Isaac had just over two hectares of usufruct land and this was consolidated by the Reform. He clearly enjoyed a favoured status with the landlords of the Estate, and this enabled him to substantially increase his landholdings in the years following the Reform. However, legal purchases were not the only source of his post-Reform acquisitions.

Isaac and Rosa inherited over three hectares on the deaths of Rosa's sister, brother-in-law and brother, and have surreptitiously occupied land to which they have no legal right. This has been done through exploiting Ramiro's position of trust with the old landlords (see preceding case study), in order to falsify the amount of land that was being purchased. For example, in 1969 a legal statement was prepared by a lawyer in Cochabamba testifying to the purchase of 1.8 hectares of land for three thousand pesos (approximately US\$ 250). Ramiro assured the owners, who had long ceased to visit the area, that this was an accurate measurement of the land which the Caballeros wished to purchase; yet in reality the total area was in excess of three hectares. It was not possible to discover what Ramiro gained from this falsehood, though it may have involved an assurance of support for his own tenuous claim to the school land, discussed above. Notwithstanding such deceit, the Caballeros have amassed the largest landholding in Santa Rosa of just under thirteen hectares of irrigated land.

Soon after the implementation of the Reform, Isaac exchanged his anvil and hammer for the ploughshare and has dedicated himself to managing a highly chemical and labour-intensive system of potato production. Despite his age, 76, Isaac still spends every day in the fields observing the

work. However, excluding for the moment the extensive use of wage labour, most of the field tasks are performed by the two eldest sons remaining in the household, one 58 and the other 35 years of age, both of whom are deaf and dumb. The first son, who is sixty, departed the household many years before but received no anticipatory inheritance from his father; instead he acquired land through purchases and leasing, as was noted in Chapter Six (12). One daughter also departed the parental home many years before and she lives in one of the higher estancias beyond Santa Rosa. That leaves the two deaf and dumb sons, a daughter of 48, and two more sons; Juan, 32, and Miguel, who was introduced earlier, the youngest at 29.

It was noted earlier that Miguel enjoys the indulgence of his parents and is expected to inherit the undivided lands on their death. Miguel's ambitions, on the other hand, are attracting him away from rural life; he is keen to escape the drudgery of agricultural work although his grudging contribution of labour is limited to ploughing operations. He is kept at home, however, by a half share of the proceeds derived from the sale of potatoes and this has enabled him to accumulate considerable savings. In mid-1981 Miguel provided documents to show that he had 100,000 pesos (US\$ 4,000) in a co-operative savings account, and close to 150,000 pesos (US\$6,000) in loans earning interest at four per cent per month.

It may be surprising to learn that such a sum of money had been saved from the sale of potatoes over a period of just five or six years. Yet, this financial incentive to remain in Santa Rosa has not prevented him from pursuing the possibilities of securing an alternative livelihood. Prior to his recent fascination with the earnings from coca in the Chapare, Miguel was set upon owning a taxi in Cochabamba. The appeal of unstrenuous, well-paid urban work, despite the fact he could not drive, led him in 1981 to purchase an old taxi in Cochabamba for US\$ 3,200. However, the difficulties of securing a licence made him change his

mind, and he sold the taxi shortly after for more than he paid. Irrespective, however, of his specific schemes, their common ground is an escape from agriculture. He has never, for example, considered investing his savings in improving agriculture; a decision which would appear to be shared by all of the wealthier households in Santa Rosa.

It is not surprising to learn that Miguel's elder brother, Juan, harbours considerable resentment at his own status in the household. His contribution to agriculture is limited by ill-health and involves only light work at the time of planting, in addition to performing daily chores of tethering and watering the horses and collecting firewood for which he earns his keep. He has been unable to engage in heavy manual work since November 1980 when he suffered a burst stomach ulcer. He was hospitalised in Quillacollo for one month and had to pay medical expenses of 25,000 pesos (US\$ 1,000), with which his parents refused to help him. Neither have they proved willing to finance an operation to cure the severe cataracts from which he suffers, and he struggles on with diminishing vision.

Being relatively freed from agricultural work, Juan has instead dedicated himself to occupying a number of functionary positions within the community. He has been the Civil Registrar since 1979, a position hitherto performed by Juan Betancur, and this involves recording the deaths, births and marriages for the surrounding communities, subject to the declarations (and small gratuities) of the families involved (13). He operates the telephone line, which passes through Santa Rosa and some half dozen other localities on its way from Independencia to Quillacollo, and which provides an important system of communication in the zone. The hand-cranked telephone sits in the room that Juan shares with his three brothers, and twice a day (at 8am and 6pm) a small cluster of youths can be found outside expectantly awaiting news from the city.

Juan was also responsible for managing the small co-operative store, mentioned earlier, which offered basic consumption goods, and this paid him 500 pesos per month initially, rising to 1,000 pesos by November 1981. However, the venture collapsed in late 1982 as inflation destroyed the value of its small capital base. Finally, Juan filled the post of Corregidor (Mayor) between 1973 and 1980, a position that nominally carries the responsibility of maintaining order and discipline, though it is largely symbolic. However, beyond the prestige and authority attached to these posts there is little income to be derived from them. Consequently, as a means of earning some money, Juan has invested potato seed in sharecropping arrangements with younger, poorer neighbouring households, though much of his savings were spent on his medical expenses in 1980.

While Juan's position within the household and the community appears somewhat anomalous, it is not comparable to the isolation that must be felt by his two deaf and dumb brothers who are treated by the rest of the family as peones (labourers). The behaviour of the eldest is very temperamental and erratic, and communication with him was difficult. In contrast, long signing exchanges with the younger of the two were interpreted as displaying his intention to escape his position of servitude within the household, though how he was to achieve this was not clear. Nevertheless, it is difficult to imagine a situation that is less caring and supportive than this home, where family members meet each other in sullen silence. It is a curious paradox that the apparently most successful household in Santa Rosa is riven with such personal animosity and mutual suspicion.

The most tangible source of rancour emanates from Rosa, a matriarch who dominates the household and provides its uniquely hostile atmosphere. Despite her 78 years she is an extremely active woman who undoubtedly exerts the greater influence in household decision making. Her fierce expression and grim, unflagging toil are intimidating,

while stories of her meanness are legendary within the locality. She has had her share of personal tragedy: a son of 29 was killed in a shooting accident in Cochabamba while an epileptic daughter died during a fit at the age of 24; she has also born two sensorially-deprived sons, while a third suffers such ill-health he is unable to contribute productively.

Finally, there is the one daughter who lives at home, 48 years of age and unmarried, though with two children who have been sent to live in Quillacollo. Their father is Juan Betancur, the landowner. It is this figure, who has appeared time and again throughout the thesis, who has done so much to establish the apparent authority of the Caballero household within Santa Rosa, although it should, by now, be clear that this household is little but a fragile shell around a group of disparate individuals.

NOTES

1. Schmink (1984) believes that the concept of "strategy" can lose its meaning as it is applied to whatever behaviour is found, implying a veneer of free choice in which household decisions are made. Her article sets out some of the pitfalls of the term, particularly the dangers of treating the household as a homogeneous entity, a "black box". Such problems were addressed in Chapter Seven; therefore we move forward on the basis that strategy is a problematic, but still useful, concept which denotes the general objectives of the household (e.g. simple reproduction and survival or expanded accumulation), and the means by which these objectives might be achieved, within the wider structural constraints which it confronts.

2. The term "resource-rich" is used to denote the abundance of means of agricultural production, besides land, and the economic dominance amongst those households well endowed with land.

3. A revealing sense of powerlessness at the monopolistic role of transportistas and other intermediaries was provided in Chapter Four by Miguel Caballero, a member of the household with the largest landholding in Santa Rosa.

4. Joan Vincent uses the term "men in motion" to provide a sense of the movement, both spatial and social, that exists within rural society. As a contribution to a methodological debate calling for a fresh analytical approach it argues that,

"A perspective which views society as "men in motion" and policy as involving the control of movement directs attention to who lives where, when, and how and who goes where, when, and how as a necessary preliminary to the understanding of politics both as process and as historical development" (Vincent 1977: 64).

5. It should be noted here that in referring to the construction sector this is not confined to the large-scale capitalist building industry producing office blocks and high-value residential properties. Indeed, such constructions represent a small fraction of the building trade which is characteristically small-scale, and which largely produces adobe-based dwelling units on the urban fringe of towns and in urbanising villages, such as Vinto.

6. A pisador is employed to tread the coca leaves, mixed with sulphuric acid, kerosene and water, in the first stage of the process to produce coca paste. During those three weeks, Miguel said that he was paid 2,000 pesos each night

he worked and had saved 15,000 pesos by the time he left. At official exchange rates at the time he was earning the equivalent of US\$ 10 per night, saving US\$ 75 over the three weeks. Unfortunately for him, Miguel had all his savings stolen on his return from the Chapare to Cochabamba.

7. The details of Walter's life-history are presented here as an honest biographical chronicle. With regard to reliability the innovators of the life-history technique have written:

"We believe that deliberate falsification is less of a problem in life histories than in most other survey data. It is clearly easier to fabricate a single item of information than a whole life history. Few respondents have the talent to make up plausible and consistent histories on the spot" (Balán, Browning and Jelin 1973: 350).

8. The abuse of chapu, as defined by frequent drunkenness, was limited to a handful of men in Santa Rosa, several of whom seemed close to being alcoholics. There were several incidences of death from alcohol intoxication and accident (falling out of the cage crossing the river at Lachiraya being the most common) during the duration of fieldwork; death through vomiting blood after drinking sessions were also recounted on several occasions.

9. The cause of Fidel's death was variously attributed to lung complaints acquired from working in the mine 3 de Febrero (see Case Study 1) or the consequence of symptoms that suggested a stomach ulcer.

10. They also traded 8 pigs making a profit of 400 - 500 pesos on each. Though this represents a higher return on investment than that for cattle - the price in late 1981 being 600 pesos for small and 1,000 pesos for large pigs - rural people prefer to retain a litter for household consumption than sell to traders for relatively little cash.

11. The accident occurred before it was possible to conduct an in-depth interview with Rigoberto. However, it is clear that he ran a very profitable operation during the latter years of his life. He owned twelve hectares of land on which at least 150 cargas of potato were produced annually and exclusively by wage labour, while he dedicated himself to transport within the zone and elsewhere during the slack season.

12. Guillermo lived outside the boundaries of Santa Rosa and was excluded from the earlier fieldwork surveys; he then died before an interview with him could be conducted.

13. The Civil Registers did not prove informative documents. Parents do not register their children's birth until they have reached at least one year of age, and often older. Likewise, children who die in infancy or early childhood are rarely recorded in the Death Register, and when they are details are often incomplete. Thus, the Registers do not provide the information necessary to calculate birth, fertility or mortality indicators. The Marriage Register is more meaningless still, as unions may not be formalised by civil marriage for many years, if at all. There is also a suspicion that people, especially in the higher adjacent communities, do not declare births or deaths in order to avoid paying Juan his "registration fee".

CHAPTER NINE

Conclusions

The thesis has conducted an analysis of agrarian change in the ex-hacienda of Santa Rosa, and has described the emergence of a specialised and intensive system of agricultural production based upon the cultivation of potato. This final chapter will assess the degree to which the questions posed in Chapter One can be answered in the light of the data derived from the study of Santa Rosa. It will then be possible to evaluate whether the questions themselves were the most appropriate for guiding the study.

The first question posed in Chapter One was concerned with conceptualising the units engaged in agricultural production. Chapters Five and Six demonstrated that the household provides the basic organizational form in which, in general, family labour is mobilised and employed on family land to produce commodities for the market. Although the use of wage labour does not in itself negate this general principle, a number of significant exceptions have been identified. Purely for the purposes of illustration it can be proposed that, amongst young nuclear households with limited labour resources, the performance of key agricultural tasks, such as planting or harvesting potato, requires the use of extra-household labour. In such cases the use of wage, or reciprocal, labour at critical periods of the agricultural cycle does not disprove the general argument regarding the primacy of family labour. The exceptions, however, occur in two important areas.

First, there are those cases where wage labour is employed to replace household members who are either absent or otherwise engaged in more remunerative activities. Such activities may include transport operations or urban wage labour, examples of which were provided in Chapter Eight.

Secondly, there is the critical issue concerning the structure and morphology of the household. In this respect, the collective preponderance of nuclear and extended family units in Santa Rosa allows us to construct the general argument regarding a household form of production, even though within both categories there are important exceptions. However, a significant number of other units do not conform to either nuclear or extended family forms. Those households headed by women (10), comprising single men (4) and aged couples (4), which together account for almost thirty per cent of the total number of units in Santa Rosa, highlights the need to look at concrete social forms rather than idealized entities. We return to this issue below.

The second main question posed in Chapter One concerned the process of differentiation between household units. The question was based on the assumption that there was a clear, unambiguous understanding of the factors which constitute differentiation. According to the "Leninist" model, differentiation can be measured by examining the degree of control over means of production. In Chapter Six such an exercise was conducted, and it revealed a high degree of inequality between households in access to land, labour, livestock and inputs. However, does such inequality indicate the existence of the linear process of agrarian change implicit in this model of differentiation? The model predicts that differentiation ultimately leads to the formation of two opposing classes: a rural bourgeoisie and a rural proletariat. Are the lineaments of these two classes present in Santa Rosa? It is believed that the economic circumstances of capitalist penetration and agrarian transformation, which have led to rural class formation in different historical epochs and social contexts, do not explain the nature of change in Santa Rosa. However, it is necessary to examine the social relations between households to determine whether incipient class formation may be taking place. One of the single most important indicators in this regard concerns the existence of wage labour.

The thesis has demonstrated the existence of non-systematic wage labour within Santa Rosa, as well as a small flow of labour away from the locality to other parts of the Cochabamba region. Such seepage of labour to largely urban employment is of more interest for the gender, age and social composition of migrants than for their number, particularly as many young people return home to work on the land. The significance of the locality as an area of labour reserve is therefore recognised, but here concerns us less than the movement of labour between households.

Crudely, it may be argued that the existence of labour transfers from poor to rich households is evidence of a process of decomposition amongst the poorest stratum and proves the existence of semi-proletarianization. Yet the data do not substantiate the case that this stratum has become dependent upon wage earnings to supplement income from its own agricultural operations, which together would provide the basis for simple reproduction. The evidence to support this argument rests on two points: wage levels and the needs of land-poor households themselves.

First, the level of the daily wage, which in mid-1981 was worth US\$ 1 and which fell substantially in real terms during the course of this and the following year, offers little incentive for supposedly semi-proletarianised households to sell their labour. While the significance of cheap labour for land-rich households is recognised in terms of the surplus product which it is able to generate, such households do not participate as buyers of labour power in a free market. In general, low wages suggest an abundance of labour, yet in Santa Rosa labour is still firmly attached to land as the means by which it can secure its needs for simple reproduction. Indeed, there appears to be no attempt to alienate poor households from land in order to create a class of wage labourers. Rather, the land-rich resort to other mechanisms by which to secure labour power, and forms of debt-bondage, described in Chapters Seven and Eight, provide examples of this.

In examining labour movement from the perspective of land-poor households, however, then the argument for the existence of semi-proletarianization would be still more inappropriate. As the means of production are unequally distributed, yet have become increasingly commoditized, the movement of labour from poor to rich households is mirrored by a reverse flow of livestock, seed and loans. This indicates the high degree of commitment amongst even the poorest households to agricultural commodity production. This is no more clearly demonstrated than by the sharecropping arrangement which exists in Santa Rosa. Here, even the poorest choose to sharecrop their own land within commodity production rather than opt for the more self-contained cultivation of use values.

Yet labour movement is more than a mechanism designed to secure access to essential means of production. It forms one strand of a complex web of relations that link households endowed with different levels of resources. While such relations serve to conceal the often exploitative basis by which poor households are bonded to the rich, to focus upon this alone fails to address the need by the poor to establish some guarantee of security at times of need. Thus, while they experience a scarcity of resources and a greater vulnerability to both external shocks (natural hazards or the fluctuations of market prices) and labour shortages (arising from the death or illness of family members), the data cannot substantiate, in unambiguous fashion, a view of differentiation in which proletarianization forms an integral part.

If the "Leninist" model of differentiation is unable to provide a suitable framework with which to draw conclusions from the data, then it becomes necessary to examine alternative perspectives if we are to avoid forcing the data into inappropriate theoretical strait-jackets. In Chapter Six it was suggested that there is much benefit to be gained from an understanding of Chayanov's model of demographic differentiation which emphasises the importance

of the household life-cycle. The data within this chapter demonstrate a direct relationship between size of household and landholding, and an especially striking correlation in the worker - dependent ratio over the four landholding categories. In Group IV, those units with access to more than six hectares of land, households conform to Chayanov's "mature" type, where adult sons and daughters provide a labour force which is capable of farming large and expanded holdings. In Group I, on the other hand, units with access to less than 1.5 hectares are characterised by households with generally inadequate labour power and a variety of family arrangements reflecting the difficult circumstances in which many of the poor are trapped.

However, a preoccupation with measures of the current pattern of land ownership disguises the longer-term consequences arising from the division of land and its inheritance by sons and daughters across all landholding categories. It is through this process of "generational class transition" (Deere and de Janvry 1981) that land fragmentation and longer-term social differentiation may become more apparent. Unfortunately, however, we do not yet have sufficient time-series data to permit an evaluation of this process, although details provided within the case studies in Chapter Eight suggest that this may yet prove a significant source of change in Santa Rosa.

Yet the thesis has also demonstrated that it is unsatisfactory to take access to means of agricultural production or to focus upon the existence of wage labour, as the only measures of differentiation. While, Chapter Six indicated the marked degree of concentration of all means of agricultural production among the land-rich categories, it was evident in Chapter Eight that other activities can, and do, exert a considerable, and even determining, influence over the social and economic trajectory of individual households.

Economic diversification provides an opportunity for the resource-rich to generate levels of income that exceed those derived from agricultural production. For the resource-poor, on the other hand, such activities as petty trading and chicha production provide a crucial source of earnings that serve to reduce their dependence upon wage labour. Such involvement in non-agricultural activities raises further questions regarding conventional notions of rural class formation. If transport operations and other forms of intermediation and exchange offer greater returns to capital than investment in agriculture, then the emergence of a class of capitalist farmers is less likely than the further growth of a class of merchant intermediaries.

The third and final question posed in Chapter One was concerned with identifying the dynamic and agency by which producers in Santa Rosa were incorporated into the market. It was believed that in this regard the commoditization approach would prove most useful in providing a framework by which to examine the interface between producers and external economic forces and their social actors who have played such an influential mediating role. In Chapter Four the activities of the independent truck operators were examined. While it was difficult to retrospectively reconstruct the exact mechanisms by which producers became increasingly dependent upon the truck operators, the account of the attempt to establish a producer-controlled transport system (described in Section VI.3, Chapter Four) illustrated the determination by producers to strengthen their relations with the market. The scheme sought to replace the existing system of intermediation with more direct ties to the market. With the collapse of the Committee, the transportistas re-established control over the movement of produce, and have continued to penetrate the production process by providing potato seed in share-cropping arrangements with local producers. This raises two important issues.

First, the active role played in the commoditization process by the producers themselves. The thesis has, if nothing else, demonstrated the dynamic, commercially-oriented activities of people in Santa Rosa. Despite the vestiges of "pre-capitalist" relations of exchange, households primarily use cash to purchase their consumption needs: growing potato in bulk, as well as non-agricultural activities, offers the opportunity to increase monetary income. Secondly, the subordination of all households in Santa Rosa to a class of merchant intermediaries is a critical feature of the process of agrarian change. This occurs in terms of transport and in the provision of inputs, especially chemical fertilizers. For the resource-rich, who obtain their agro-chemical requirements from agencies in Cochabamba, such subordination is mainly limited to the transport of their produce to market. However, even this can be overcome if they embark upon their own transport operations, as Rigoberto Jimenez and other transportistas operating in the Morochata zone have done.

The resource-poor, on the other hand, have much less opportunity to escape their economic subordination to a range of intermediaries. Securing chemical fertilizers on credit in Morochata, working for Juan Betancur to obtain a small bottle of pesticide or a new pick head, sharecropping their land to get access to potato seed, all serve to emphasise the scarcity of their material resources and provide opportunities for outside actors to extract surplus. In this respect a category which has been labelled "merchant capital" subsumes a variety of different mechanisms and agents, but captures the essential logic of securing profit without direct productive investment.

All households in Santa Rosa, then, experience economic subordination to one degree or other, but retain their essential form as petty commodity producers. How far was this a predictable outcome of the Agrarian Reform? Chapters Three and Four demonstrated that a clear, if implicit, objective of the Reform was to establish a functional

relationship, in areas of the country where this was possible, between the old landowning class and their ex-labour-rent tenants. The pattern of consolidating demesne holdings in favour of the landlords was intended to create the conditions for a capitalised agriculture that would draw its labour from amongst the mass of local households. However, if this was the objective it has had only limited success. In Santa Rosa, and most other adjacent estates, the landlords simply sold-off their land to households already well-endowed under the Reform. The exception, of course, is Juan Betancur who has, indeed, capitalised his operations and makes use of local labour. Moreover, if the intention was to foster a "peasant" petty bourgeoisie through the unequal distribution of titles to land, then this has had more success, though often as much a result of its off-farm, as agricultural, activities.

However, the emergence of specialised petty commodity production amongst households throughout many parts of the serrania was surely not predicted at the time of reform: indeed, it still remains largely unrecognised by state agencies, which bemoan the low productivity of "peasant subsistence" agriculture, while concentrating investment in agro-industry in the Eastern Lowlands. Consequently, it is evident that, beyond eliminating servitude under the hacienda and providing titles to land, the Agrarian Reform has made little contribution to raising the level of the productive forces in agriculture. The state has played a limited role throughout the Morochata zone and, in terms of technical support and credit, throughout the region as a whole. The incentive for producers in Santa Rosa to participate in the regional economy, once liberated of their labour-rent obligations, derived from their own limited demands as consumers combined with the services offered by intermediaries. The result has been to create a locality firmly incorporated into the regional spatial division of labour. But what of the future?

Notwithstanding the relative optimism that has so far been expressed in these Conclusions - relative because, unlike much of the comparable literature, there is no evidence to support the view of the imminent decomposition and destruction of households in Santa Rosa - there are grounds for concern regarding the long-term stability of the existing pattern of production, and especially in the relationship between producers and land. Local resources are finite and pressure upon them is likely to increase in two respects. First, as a result of the fragmentation of holdings, through the division and inheritance of property. Secondly, through the intensification of production to combat the "simple reproduction squeeze".

During the course of fieldwork the consequences arising from the inappropriate demands made upon local resources became increasingly clear. Following a period of heavy rain one hillside collapsed, engulfing several cultivated parcels, while other parcels were washed away by swollen streams. Some of the earlier photographs provide graphic illustration of such physical destruction wrought by rainfall. However, it is the more insidious process by which the local agro-ecosystem appears increasingly fragile and vulnerable to natural hazards which is of concern. For over a decade, producers have been systematically extracting soil nutrients at a rate in excess of replenishment and, notwithstanding the chemical balance, the composition of organic matter is believed to have been reduced. Yet, declining terms of exchange with the market have forced producers to further intensify, rather than to reduce, production. Given such factors as the present level of commodity relations, an agricultural regime based upon potato cultivation, and the limited opportunities locally for resource-poor households to generate equivalent levels of monetary income, the creation of a productive, sustainable agriculture in Santa Rosa looks a distant prospect.

So, what are the remaining questions that need to be resolved? There are several, mostly of a methodological and conceptual nature. The first is how to conceptualise the household in a way which takes account, not only of the variety of structural forms in which it appears, but in a way that permits a closer scrutiny of individual members. As the case studies in Chapters Seven and Eight demonstrated, it is not sufficient to treat the household as if it were organised around principles of collective sharing and common objectives, a perspective which stems from a rather andro-centric view of the household. Rather, it is necessary to enter the hidden domain of the domestic sphere, with an understanding that the household is likely to be internally differentiated along the lines of gender and generation, in order to examine the struggles and aspirations of individual members.

The second, major unresolved issue concerns the way in which different categories of producers are conceptualised. During the course of this thesis it has become clear that many of the conventional categories that are used to capture the nature of relations between different groups of producers, and their respective access to means of production, have not proved either appropriate or helpful. While ideal types are central to the process of simplifying reality in order to construct theoretical explanations, it is necessary to be conscious of the multi-dimensional nature of reality. So, for example, it is possible to assert that resource-poor households in Santa Rosa constitute a hidden or semi-proletariat as a result of their employment by the rich. However, such an assertion diminishes the commitment displayed by the resource-poor to commodity production and overlooks the way in which labour power is used to secure access to means of production.

In making the case for closer attention to be paid to actual, rather than idealised, relations between households endowed with different levels of resources, it is important to draw a distinction between this argument and those which

emphasise the persistence of non-commoditized relations as a means of resisting capitalism. While capitalism is undoubtedly present in Santa Rosa, as in most other parts of the developing world, we require more sensitive conceptual tools than, for example, the labour - capital distinction, by which to examine the complex web of relationships that bind households to each other.

In this context, and in conclusion, it is now apparent that questions derived from abstract theoretical debates, that employ preconceived social categories and economic trajectories, and which ponder such issues as the eventual emergence, or not, of a class of capitalist farmers, are of limited use in providing solutions to more urgent problems. An analysis of the circumstances prevailing in Santa Rosa has demonstrated the value of multi-disciplinary empirical research that is sensitive to local concerns, and capable of documenting social, economic and environmental change. It is vital to develop more empirically-relevant research that does not commence from the perspective of household production as if it were merely a transitional stage within an incomplete or "blocked" transition, and therefore doomed to eventual extinction. Rather, as the vast majority of agricultural production throughout the world is largely in the hands of poor household enterprises, it would seem appropriate that less concern should be focussed on whether such units are differentiating, and more attention given to the ways by which small-scale farming can be supported and sustained.

A P P E N D I C E S

APPENDIX ONE

Size and Origin of Landholdings for Santa Rosa Households,
1982.

House- hold No.	L A N D I N H E C T A R E S				
	Total Land	Agrarian Reform Endowment	Inher- itance	Purchased (sold)	Leased (in/out)
1	1.42	1.42	0.00	0.00	0.00
2	1.22	0.00	1.22	0.00	0.00
3	1.94	0.00	0.54	1.40	0.00
4	9.31	0.00	4.04	1.00	4.27
5	1.00	0.00	1.00	0.00	0.00
6	0.90	0.00	0.00	0.40	0.50
7	4.85	0.00	3.85	1.00	0.00
8	1.01	2.01	-1.00	0.00	0.00
9	12.00	0.00	1.00	11.00	0.00
10	3.35	0.00	0.00	3.35	0.00
11	0.00	0.00	0.00	0.46	-0.46
12	0.44	0.41	0.03	0.00	0.00
13	12.89	2.09	3.08	7.72	0.00
14	1.19	0.00	0.73	0.00	0.46
15	1.40	3.86	-2.46	0.00	0.00
16	0.33	0.00	3.20	-0.74	-2.13
17	2.50	0.00	1.24	0.60	0.00
18	2.37	0.00	1.37	1.00	0.00
19	3.86	0.00	4.96	-0.77	-0.33
20	0.64	0.00	0.64	0.00	0.00
21	3.43	0.00	2.93	0.00	0.50
22	1.46	0.00	1.46	0.00	0.00
23	1.47	1.47	0.00	0.00	0.00
24	1.03	3.73	-1.00	0.00	-1.70
25	3.22	0.00	1.22	2.00	0.00
26	0.50	0.00	1.26	-0.29	-0.47
27	1.02	0.00	1.02	0.00	0.00
28	3.83	0.00	3.83	0.00	0.00
29	1.22	1.22	0.00	0.00	0.00
30	2.75	4.02	0.00	0.00	0.00

House- hold No.	Total Land	Agrarian Reform Endowment	Inher- itance	Purchased (sold)	Leased (in/out)
31	1.32	0.00	1.80	0.00	-0.48
32	2.20	0.70	1.50	0.00	0.00
33	1.04	0.00	8.04	0.00	-7.00
34	4.40	4.40	0.00	0.00	0.00
35	2.00	0.00	2.00	0.00	0.00
36	1.66	0.00	0.66	1.00	0.00
37	9.00	6.42	0.00	2.50	0.00
38	5.40	3.30	0.80	1.30	0.00
39	9.77	8.77	0.00	1.00	0.00
40	8.53	6.53	0.00	2.00	0.00
41	4.50	0.00	4.50	0.00	0.00
42	7.92	5.25	0.00	2.67	0.00
43	2.20	0.00	8.05	-3.50	-2.35
44	1.20	0.00	1.20	0.00	0.00
45	7.29	5.39	-1.20	1.90	1.20
46	3.63	0.00	1.59	2.04	0.00
47	1.20	0.00	1.20	0.00	0.00
48	6.40	0.00	6.40	0.00	0.00
49	2.10	0.00	4.10	0.00	-2.00
50	7.45	0.00	3.50	3.95	0.00
51	4.50	0.00	3.50	1.00	0.00
52	5.27	0.00	5.27	0.00	0.00
53	2.11	0.00	0.00	1.30	0.81
54	2.20	0.00	2.20	0.00	0.00
55	2.60	0.00	1.20	0.00	1.40
56	0.50	0.00	0.50	0.00	0.00
57	2.15	0.00	1.80	0.00	0.35
58	1.80	0.00	1.80	0.00	0.00
59	1.20	0.00	1.20	0.00	0.00
60	0.85	0.00	0.85	0.00	0.00
61	1.00	0.00	1.00	0.00	0.00
62	0.78	0.00	0.43	0.00	0.35
63	3.10	0.00	2.46	0.34	0.30

Note: a minus sign indicates the amount of land released by the household according to the category in which it appears

Source: Field Data

APPENDIX TWO

Demographic Composition, Units of Labour Strength and Labour Transfers by Household, Santa Rosa 1981-82.

H/H No.	C O M P O S I T I O N					LABOUR TRANSFERS (Days)		
	Men	Women	Boys	Girls	Labour Units	Sold	Bought	Ayni
1	1	0	0	0	1.0	40	0	10
2	1	2	0	0	3.0	80	10	20
3	1	2	0	0	3.0	30	5	30
4	1	1	1	2	2.0	0	150	0
5	1	1	2	3	3.0	60	0	10
6	3	2	0	0	5.0	15	0	10
7	1	1	0	1	1.5	0	150	0
8	1	1	0	1	2.0	30	0	20
9	1	1	0	1	2.0	0	500	0
10	2	2	0	0	4.0	0	100	0
11	1	1	4	3	2.0	0	0	0
12	1	1	1	1	2.0	50	0	10
13	5	2	0	0	6.0	0	150	0
14	2	1	1	0	2.5	50	0	15
15	1	1	0	0	1.0	0	0	15
16	0	1	1	1	1.0	15	0	0
17	1	1	2	1	2.0	10	20	15
18	2	1	2	2	3.5	10	0	5
19	1	1	1	0	2.0	0	60	5
20	1	1	1	2	2.0	80	0	10
21	1	3	0	0	3.5	0	120	0
22	1	1	2	4	2.5	80	0	35
23	2	0	0	0	1.5	50	0	15
24	2	1	1	1	3.5	120	0	0
25	1	1	1	2	2.5	0	30	0
26	0	1	0	0	0.5	0	0	0
27	1	1	0	1	2.0	70	0	20
28	1	2	1	2	2.5	0	50	15
29	2	1	0	3	3.5	120	0	15
30	2	3	0	2	5.5	40	0	20

H/H No.	Men	Women	Boys	Girls	Labour Units	Sold	Bought	Ayni
31	1	0	0	0	1.0	60	5	30
32	2	2	0	0	4.0	30	0	15
33	1	1	2	0	2.0	50	0	10
34	1	1	0	0	1.5	20	0	15
35	2	1	0	1	2.5	50	0	20
36	1	3	2	1	4.5	0	0	0
37	2	1	2	1	3.5	0	5	5
38	3	3	0	2	5.0	0	10	10
39	3	3	0	0	5.0	0	0	10
40	4	2	0	0	5.5	15	25	20
41	1	4	1	0	5.0	30	10	30
42	2	1	0	2	3.0	0	80	5
43	1	1	0	1	1.5	0	20	0
44	1	1	4	2	2.0	30	0	20
45	6	3	0	0	8.0	0	0	15
46	1	2	2	0	3.0	5	15	20
47	1	1	0	0	1.0	20	0	30
48	2	1	0	1	2.5	10	50	20
49	1	0	0	0	1.0	0	0	30
50	3	2	1	3	5.5	0	50	0
51	1	1	1	1	2.0	0	20	30
52	1	2	1	1	3.0	0	10	25
53	1	1	1	4	2.0	10	45	15
54	1	1	2	0	2.0	25	5	15
55	1	1	2	0	2.0	5	15	30
56	0	1	0	0	1.0	5	0	10
57	1	1	0	1	2.0	60	5	25
58	1	1	2	0	2.0	60	0	25
59	1	3	0	2	3.5	10	0	15
60	0	1	2	1	1.5	10	0	30
61	1	1	1	0	2.0	70	0	20
62	1	1	1	1	2.0	100	0	30
63	1	1	1	0	2.0	0	30	10

Note: Labour unit index: men and women 15-59 years: 1 unit; adolescents 12-14 years and those over 60 years: 0.5 units. (see Chapter Six for details)

Source: Field Data

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