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THE REFORM OF RURAL LAND MARKETS IN LATIN AMERICA AND THE CARIBBEAN: RESEARCH, THEORY, AND POLICY IMPLICATIONS

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ECONOMIC THEORY OF LAND MARKETS AND ITS IMPLICATIONS FOR THE LAND ACCESS OF THE RURAL POOR

Michael R. Carter and Dina Mesbah

June 1990

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EXECUTIVE SUMMARY

In Latin America and Caribbean (LAC) countries, inequitable land distributions and inadequate access to agricultural land for the majority of the rural populations have been recognized as fundamental obstacles to rural development and central policy concerns for decades. Research during the 1960s and 1970s highlighted the close links between the land tenure structure and agricultural performance, social welfare, environmental degradation, and civil unrest; agrarian reforms were enacted in most countries of the region, with varying levels of impact. In the 1980s, both governments and international agencies began to seek supplementary approaches to these problems, focusing on rural land markets and the land transfer processes inherent to the land tenure structures as well as on issues of tenure security and land titling and registration.

This paper summarizes recent research on rural land markets in the LAC region and on the relationship between this research and broader land tenure issues. Most studies were carried out under the auspices of the Tenure Security and Land Market Research Project financed by the U.S. Agency for International Development. The purpose of the research has been to understand how land markets work in order to develop programs and policies to increase the openness and efficiency of the markets and their accessibility for land-poor and landless agriculturalists.

Because little systematic research had been done on this theme in the past, the Land Tenure Center (LTC) approach has been exploratory. Broad theoretical guidelines have been used to identify the constraints to efficiency in rural land markets in the region and to land access and market participation. The field research has examined land market operations on the community level in a variety of environmental, socio-cultural, economic, political, and legal situations throughout the region.

Everywhere land markets are more distorted than the markets for labor and capital, and land markets in the LAC region are even less likely than those of the United States or Western Europe to meet the hypothetical conditions for a perfectly competitive market. Land is clearly heterogeneous; individual buyers and sellers can influence price; institutional and customary factors do affect land transfers; perfect information for all market participants is unattainable; and barriers to both entry and exit do exist. In terms of the market, the fundamental difference between land and other factors of production is that it is fixed in place and it is not infinitely reproducible in the way that labor and capital are. In LAC countries, the major cause of inefficiency in land markets and of restricted access for the landless and land-poor is the existing highly skewed distribution of agricultural land.

The main objective of land market reform policies and programs is to affect the skewed landownership structure by shifting land from the large landholding sector to efficient,

small-scale producers. Market reforms are designed to correct the constraints to market participation and, thereby, the restrictions on market access and sustainable land use. In the LAC context, three types of constraints affect small-scale farmers' ability to use the market: (1) constraints to demand, namely, the small farmers' lack of equity for purchase and the high land transfer costs; (2) constraints to the supply of land for small farmers at prices they can pay; and (3) burdensome legal, administrative, and fiscal constraints on land transfers.

Case studies examine rural land market conditions in four countries of Central America (Guatemala, Honduras, El Salvador, Costa Rica), in two countries of the Caribbean (St. Lucia and the Dominican Republic), and in Ecuador in the Andean region. The studies highlight the barriers facing land-poor *campesinos* in gaining access to land through the market and shed some light on the strategies of *campesinos* in attempting to manipulate the market.

Most LAC countries are characterized by a dual land market, one which operates for large holdings and another for small parcels. Small farmers and land-poor *campesinos* participate only marginally in the large farmland market, and, in general, large holdings are not subdivided for sale. There is some evidence from Ecuador, El Salvador, and Costa Rica that land has moved from the large-farm to the small-farm sector as a result of pressure from organized *campesinos* and the threat of both land expropriation and direct government action.

Because of the limited supply of land in the small-farm sector and the absence of credit, land is less available to the younger generation than in the past, and the average size of the parcels young people buy and inherit is declining. Where small farmers are highly commercialized, they are sometimes able to purchase small parcels of land despite the great imbalance between the demand for and the supply of land, but the parcels tend to be small because of high prices. Small farmers and landless *campesinos* rarely have access to either institutional or informal long-term credit to finance land purchases. In a country like Guatemala, with a growing disparity between wages and land prices, it is increasingly difficult to finance land purchases with savings from agricultural day labor.

The case studies also point to the importance of informal and customary forms of land transfer among small farmers. Formal titling and registration procedures tend to be costly and time-consuming, and sometimes place legal restrictions on transactions. Land sales among small farmers are generally completed outside the formal system with bills of sale or other informal documents. Locally recognized customary practices seem to provide adequate tenure security for smallholders as long as there is no incursion into the local market from outside the community. At the same time, they may restrict the supply of land to the formal market and limit the use of land as collateral for credit. The benefits and limitations of such a customary tenure system are illustrated by the case of family lands in St. Lucia.

The case studies examined the conditions in local rural land markets and the obstacles for small-scale farmers to acquire land through the market. Various strategies are being

proposed and tried to affect the skewed land distribution and to remove the obstacles for the land-poor and landless farmers, including elimination of subsidies to scale in agriculture, land taxation, modernization of land registration systems, land titling, land purchase/sale programs, and mortgage banks. Economic theory is useful in outlining the factors which will determine whether these measures can be effective.

Land markets in the LAC region are characterized by inactivity across strata. The primary goal of land market reform programs and policies is to move land from the extensive large-farm stratum to the intensive small-farm stratum by activating the market. This goal is premised on the hypothesis that making the large-farm sector more accessible will, over the long term, promote a more efficient allocation of resources between small and large holdings and transform the pattern of ownership by shifting land to the more efficient users of resources.

A closer look at factors influencing market participation suggests a second hypothesis, however, through which simple stimulation of land markets may increase land concentration and inefficient resource use. Because land markets do not operate in isolation and are affected by markets for labor, technology, and capital, land market activation, in the context of multiple imperfect markets, will shift resources to units of production scale that are best positioned to expand. When agricultural income is the only income from land, and mortgage finance is available at the market rate of interest, small-scale farmers will not be able to purchase land at market prices without cutting consumption considerably below what they could gain in the labor market. Financing land purchases by the poor is even more difficult to the extent that the expected future real appreciation of the land price is capitalized into the market price. In the presence of imperfect capital and labor markets, holding prices fixed, it is the labor-hiring larger farms with access to capital markets that are best positioned to expand through a market mechanism. Small farmers in the land market are further disadvantaged if land transaction costs are fixed, so that transaction fees are a smaller portion of total costs for buyers of large than of small tracts of land, and if there is no insurance system, so that small farmers without access to capital are often forced to sell their land to cover unexpected expenses or misfortune.

The reasoning underlying this second hypothesis suggests that the impact of market activation policies and programs on the overall distribution of land depends on their effect on different groups in the land market. For example, the impact of land and mortgage banks on an individual's ability to buy land may be greater for individuals without equity; land registration and titling may have a greater impact on individuals who buy land in small quantities. Large farmers tend to benefit more than small farmers from agricultural subsidies, like special credit lines, reduced tariffs on imports of capital equipment, and tax breaks. Eliminating these subsidies will improve the bargaining position of small farmers in the land market because the subsidies tend to offset the inherent advantages of small versus large farmers. Strengthened and enforced land taxation policies could be used to increase the supply of land available for purchase by pushing large farmers to sell land that is underutilized. The measures are not mutually exclusive. In fact, two or more programs may be necessary to achieve the desired outcomes.

As part of the infrastructure of the land market, inadequate and costly registration procedures hinder efficient market operation. Reform of registration systems and reduction of transaction costs for small purchases and sales can be an advantage to smallholders. Land titling projects, promoted by A.I.D. and other international donor agencies in recent years, have sought to improve the extent and ease of land titling for small farmers in order to increase their security of tenure and to raise their productivity and, hence, their ability to acquire more land. Land prices should increase because titles allow improved access to credit for investment which in turn increases the value of the land. While the long-run effects of these projects on the land market are not known yet, it is clear that the link between titles and land prices is not automatic. Titles may increase access to credit only if credit is available, and using titled land as collateral not only may increase investment but also may lead to foreclosure and land loss. Titles may offer more advantage to large than to small farmers who have better access to markets in general.

The most recent attempts in the LAC region to improve market access for the landless and land-poor are mortgage banks, which make loans to purchase land, and land banks, which purchase large estates for resale in family-sized parcels or to groups of *campesinos*. Programs of these types are under way or being considered in four A.I.D.-assisted Central American countries—Guatemala, Costa Rica, Honduras, and El Salvador. The theory points to two central concerns which may affect the impact of these activities. The first is the limited availability of funds for the projects. Unlike industrialized countries, capital markets do not exist to allow land-financing institutions to raise the cash necessary to finance transactions and the purchase funds may be exhausted after only a few land purchases. The second concern is that the sustainability of these programs depends on the beneficiaries' ability to service their debts. If the interest rate is too high or land prices exceed the land's agricultural capacity, *campesinos* will not be able to cover their loans. The impact of mortgage and land banks will depend on resolution of these two difficulties.

Research on land markets in the LAC region and programming to make the markets more efficient and effective in alleviating inequities of distribution are relatively new. The case studies of local land markets are particularly important in understanding the complexities of land transfer activities in the rural areas for the design of projects and policies. Economic theory alone does not explain market behavior. Through monitoring and evaluating ongoing efforts over time, with comparisons across countries, considerable data will be gathered to analyze the impacts and shortcomings of these programs and policies and the factors which benefit or impede them. At the same time, these data should be used to fill in the blanks in the incipient theory of rural land market functioning and its relationship to agrarian structure. Combining land market theories and findings with the theoretical and empirical base from the land reform and land tenure experience of LAC countries since the 1960s will give perspective to the expectations for the land market activation efforts and a realistic assessment of their potential for achieving structural change.

I. INTRODUCTION

A. OVERVIEW

Because agriculture continues to be the economic foundation of Latin America and the Caribbean, the skewed distribution of rural landownership and the archaic and incomplete titling and registration systems which define the land tenure structures are central policy concerns in most rural development strategies. Building on a generation of attempts to modify land use and distribution through government-directed agrarian reforms, policymakers are increasingly expanding their options to include land transfer processes and land markets in their search for ways to increase land access for the rural poor.

The unequal distribution of land which characterizes most of the countries of the region affects agricultural production levels and land use as well as the distribution of income, wealth, and power. The current interest is in examining this distribution from the point of view of the needed market reforms.

This paper is written as part of the Tenure Security and Land Market Research Project funded by the U.S. Agency for International Development (USAID) in 1986. The purpose of the project was to carry out cross-country and longitudinal research on land tenure issues in the Latin American and Caribbean region so as to provide an instructive and informative analysis of how tenure patterns affect economic, rural development, and environmental issues. The principal research areas, as defined by the project paper, are: (1) tenure security through improved titling and land registration systems; (2) the potential for farmland markets to increase access to land; and (3) second-generation problems of existing agrarian reforms. This paper summarizes the research undertaken by the University of Wisconsin's Land Tenure Center (LTC) on the second of these research areas. The studies reviewed are exploratory and are designed to investigate how land markets work in order to develop projects and policies which will make the markets more open and efficient and more accessible to land-poor and landless farmers.

The paper is in six parts. Following a general introduction and discussion of the broad schematic framework which guided the fieldwork, section 2 discusses the constraints to small farmer participation in rural land markets. Section 3 examines the country study research carried out under the project, while section 4 begins the process of putting these studies into the theoretical framework needed for future research and programs. Section 5 discusses potential land market interventions, and section 6 presents the conclusions derived from the paper.

B. THE ROLE OF LAND MARKET REFORMS IN DEVELOPMENT

1. Relation of tenure structure to productivity and economic development

Since the end of World War II, and especially since the United States began to involve itself in the socioeconomic development of Latin America and the Caribbean under the banner of the Alliance for Progress, the inequitable distribution of agricultural land prevailing in the region has been singled out as a fundamental obstacle to development. The need for correction of the land tenure structure—if necessary through government-directed land redistribution programs—as a precondition of rapid development has been recognized by international agencies and endorsed by most of the nations concerned. The "Declaration of Punta del Este" of 1961 was for many years a cornerstone and constant point of reference in this respect. Research has highlighted the close links between the land tenure structure, on the one hand, and agricultural performance and social welfare, on the other.[1] Multilateral and bilateral development-financing institutions endorsed the need for land reform but in many cases the structural change resulting from the programs was minimal.

Virtually all the Latin American countries are still characterized by a skewed land tenure structure: a few large landowners occupy and often do not fully utilize most of the land while masses of peasants share only a small part of it. In most countries, there is also a large—and growing—mass of underemployed, landless rural laborers. Even from a purely economic point of view, this structure is highly inefficient and has a negative effect on national income.

For Latin America as a whole, more than one-third of the population was rural in 1980, although the proportion had declined sharply from over 50 percent only twenty years earlier (Thiesenhusen 1989, p. 14). There are marked differences among countries: the proportion of rural population in 1980 ranged from 19 percent in Argentina and Chile; to 32 percent and 35 percent, respectively, in Brazil and Mexico; and to more than 50 percent in Bolivia, Ecuador, and Paraguay. In three out of six Central American countries, rural people account for more than 60 percent of the total population.

The majority of these rural people control a small proportion of land. According to data for 1970, *minifundios*[2] still represented the vast majority of the holdings of rural families. In Guatemala, Ecuador, and Peru, nearly 90 percent of the farms could be classified as

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1. Such research includes the monumental effort sponsored by the expired Interamerican Committee for Agricultural Development (CIDA) in six countries between 1962 and 1964 (summarized in Barraclough 1973) and in three land reform countries plus Central America between 1966 and 1968; USAID's *1970 Spring Review of Land Reform*; and the World Bank's 1975 sector policy paper on land reform. See also Thiesenhusen and Melmed-Sanjak (1990) and Carter and Kalfayan (1989).

2. In Thiesenhusen's (1989, p. 13) simple definition, a *minifundio* is a farm "too small to provide sustenance to a family."

minifundios; they constituted less than 20 percent of the occupied land area in Guatemala and Ecuador and less than 10 percent in Peru (Thiesenhusen 1989, pp. 14 –15).

Studies have shown that, in general, the productivity per unit of land on small farms is measurably greater than on large farms in the Latin American context (Barraclough 1973; Dorner 1971, 1972; Berry and Cline 1979; World Bank 1975; Thiesenhusen 1989).[3] As Thiesenhusen (1989, p. 19) explains, small farms are more productive because they use the land and labor resources more intensively:

> Small farms in these labor-surplus, capital-scarce LDCs use more labor per hectare than do large farms—up to the point where an additional laborer will add very little to output, the point of near-zero marginal productivity. These small farmers, in order to add to output, have no choice but to use unpaid family labor in this way. They tend to press all arable land into production. . . . *Minifundistas* raise and utilize their own labor force, and it is often kept in farming for lack of alternatives. Large farms that hire labor, on the other hand, must maximize profits. They do not press production beyond the point where the wage equals the marginal product of the last laborer hired.

Based on data from two Latin American and four Asian countries, Berry and Cline (1979, pp. 131–32) also conclude, "The small-farm sector makes better use of its available land than does the large-farm sector, largely through applying higher levels of labor inputs (family labor) per unit of land."

The skewed tenure structure also limits savings for domestic investment. Large landowners tend to spend or save their profits abroad or invest them in urban real estate, at least under conditions of chronic and acute political instability. The CIDA studies (Barraclough 1973) in the 1960s confirmed the impression that large landowners tend to be urban-based and to care little for the rural communities where their properties are located. While studies in the 1970s and 1980s have illustrated the investment strategies of entrepreneurial peasants (for example, Lehmann 1986) and showed that some large landowners are increasing the technological level of and capital investments on their agricultural enterprises (López Cordovez 1982), the great majority of the rural population

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3. Like other generalizations in the social sciences, however, this one has its exceptions, at least when productivity is measured in terms of gross value of output per unit of land: first, *minifundios* tend to occupy marginal land; second, even with equal land capability, the average land productivity of subsistence farms may be smaller than that of the more market-oriented small family farms because the latter tend to have better access to purchased inputs; third, middle-sized entrepreneurial farms (especially tenant-operated ones in the Latin American context) and centrally managed plantations may have higher average value of production per hectare than small farms within any given universe because they tend to occupy the most fertile land, produce only cash crops, and have the best access to markets, market information, up-to-date technology, and capital.

continues to live at or below subsistence and is virtually incapable of significant savings, much less reinvestment on the farm.

The land tenure structure also contributes to urban poverty. Unless conditions for stable self-employment on the land, even at zero marginal return, are assured for the rural poor, already high migration rates into urban areas will increase. The increasingly capital-intensive industrialization in the region is unlikely to absorb this prospective labor force.

Finally, an additional cost, even in cold terms of economic development, is the endemic political instability characteristic of countries with a large rural underclass. Political instability and unrest are not conducive to long-term investments that lead to sustained development.

2. State-mandated tenure reforms of the last twenty years

Most countries in Latin America have enacted land reforms, although in some countries they were nominal. The radical reform in Cuba (1959) preceded the Alliance for Progress, as did the extensive reforms in Mexico (1930s) and Bolivia (1950s). Thiesenhusen (1989) estimates that about 9 million families have been directly affected by reforms in the twentieth century in Bolivia, Chile, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Peru, and Venezuela, to which another million could be added for Cuba, El Salvador, Honduras, Nicaragua, and the hesitant reform activities in Brazil.

In his synthesis of the experience of this era in Latin America, Thiesenhusen (1989) argues that the reforms should be examined in terms of their social and political results as well as their economic effects. In general, the reforms: (a) broke the political hegemony of the landed elite and/or emancipated a substantial proportion of an oppressed indigenous population (Mexico, Bolivia, Cuba, Ecuador, Peru, Nicaragua); (b) temporarily resolved acute regional or local problems of landless unemployment and/or unrest (Panama, Honduras, Dominican Republic, Venezuela, El Salvador); and (c) everywhere improved the low levels of living of vast numbers of rural families.

The economic effects of land reforms are less easily identified than social effects because of the complex of factors which control agricultural production. A significant shortcoming of most reform programs has been the inadequacy of support services and the inflexible land tenure and management systems, imposed from above, which have hindered the subsequent development of rural infrastructure and economic efficiency. It has never been demonstrated, however, for countries which have undertaken agrarian reform, that farm output or economic efficiency would have been better under the prereform tenure pattern in the medium or long run. The crowding of reform beneficiaries onto marginal land or land at the agrarian frontier, however, has in some instances produced serious environmental problems, declining yields, and deforestation.

Despite the presence of land tenure reform and increasing urbanization and industrialization, the problems associated with unequal land resource distribution remain:

- declining per capita farm production,
- increasing numbers and shrinking size of *minifundios*,
- growing numbers of landless farm workers,
- environmental degradation.

3. Land market reforms

With shifts in political regimes and economic priorities—and increasing external debt problems—governments and donor agencies have sought a wider array of policies for agricultural and rural development. The policy focus has expanded to include market reforms for effecting greater sector efficiency in the neoclassical sense, with increasing attention to problems of tenure security for small farmers, legal and administrative processes related to the tenure structure, and the functioning of land markets.

Land market reforms were analyzed initially in 1981 by Dorner and Saliba, who took care to describe them as "supplementary devices . . . most effectively applied in other situations where redistribution via expropriation and tenure reform has already proceeded; where a relatively egalitarian landholding structure already exists; where the land market can be made, with the aid of these lesser instruments, to work more efficiently in the interests of both productivity and equality" (Dorner and Saliba 1981, p. 1). In their view, land market reforms may be politically valuable: "Governments that are either unwilling or unable to intervene directly through a process of land expropriation and redistribution, even where land ownership is very concentrated, may indeed be interested in providing more opportunities for the rural poor while simultaneously developing a progressive agriculture" (ibid.).

The economic and social obstacles facing a land market reform strategy are great. The fundamental obstacle to broader market-generated access to land is the existing maldistribution of land and the political power relations that flow from it. From this it follows that: (1) the institutional obstacles to broader market entry of the peasantry are symptoms of these power relations; (2) the reforms directed at the obstacles may be no more than palliatives in the absence of a prior coercive redistribution; and (3) the structural change due to market reform will be limited. However, a land market reform strategy can be made effective by (1) increasing the **supply** of land accessible for peasant purchase, (2) improving the effective **demand** for land by peasant producers, and (3) reducing the market access costs of peasant land purchasers.

Government intervention to reform rural land markets has been a constant of agricultural development policies in Europe and the United States for most of this century. In Latin American and Caribbean countries, on the other hand, there has been little experience with programs like land banks and subsidized or government-guaranteed, long-term, land-purchase financing. Further, the literature on rural land markets in the region is extremely limited.

C. RESEARCH OBJECTIVES AND APPROACH

The need for additional information on land transfers and market institutions led to a regional research effort, the Tenure Security and Land Market Research Project. This project allowed the LTC to carry out community-level studies of land transactions as well as macro-level research on the nature of land transfers in the context of the skewed landownership distribution and land tenure systems characteristic of this region. The avenues of investigation outlined when the project began (see USAID 1986) are evidence of the broad, exploratory nature of the research:

a) the scope and structure of land markets, both formal and informal;

b) the proper set of incentives required to stimulate land markets;

c) the role of land banks and their effect on land prices, fragmentation, capital investments, and labor use;

d) appraisal and valuation of land;

e) the experience in land market activation policies of various countries; and

f) the role of institutions such as cadastre agencies, public sector development banks, agriculture ministries, and private banks.

This paper deals with research into the functioning and reforms of land markets, locating this body of studies within the broader literature on land tenure and agrarian reform in Latin America. The project's concept paper, "Farmland Transfers and the Role of Land Banks in Latin America," by Randy Stringer (1989a), served as a general framework and theoretical guide for a diverse set of studies to gather information on how rural land markets operate in various countries. The challenge of the present paper is to summarize and draw generalizations from these cases, to identify patterns and key variables which will form the basis for designing effective land market program and policy interventions, and to elaborate a realistic theoretical framework grounded in empirical evidence to guide further applied research.

D. TOWARD A THEORY OF LAND MARKETS

Together with labor and capital, land is conventionally considered by economists to be one of the three basic "factors of production." As such, in an exchange economy, land must be capable of being "traded"—bought and sold, rented, and used as collateral for obtaining capital. Thus, there is a "market" for land as for the other two factors of production, and the combination of relative scarcity and monetary productivity of land should determine its value in the market.

Neoclassical theory does not make a fundamental distinction between the market for land, on the one hand, and the markets for the other factors of production and for goods and services. (Indeed, the concept of "economic rent" in the Ricardian sense—originally thought to apply only to land—is now applied equally to extraordinary profits extracted by an

enterprise from certain imperfections in the market.) Neoclassical economics stipulates the same conditions for the existence of a perfectly competitive market for land as for other markets, including those for labor and capital (Stringer 1989a, p. 8):

- a substantial number of buyers and sellers so that no single purchase influences the price and an individual's demand or supply may increase or decrease without affecting prices;
- homogeneous units to ensure that buyers and sellers are indifferent about from whom they buy or to whom they sell;
- easy and equal access for buyers and sellers to information about current transactions, including prices and bids;
- no influence of customary and institutional rules on the distribution of resources among prospective buyers and land sold to the highest bidder;
- complete freedom of entry and exit from the market for both buyers and sellers; free movement of resources into uses which are in great demand, thus replacing inefficient resource users by efficient ones.

These ideal conditions do not actually exist for a land market in any country. While land markets are everywhere more distorted than the markets for labor and capital, the degree of distortion is far greater in developing countries than in industrialized countries. Land is clearly heterogeneous, individual buyers and sellers can influence price, institutional and customary factors do affect land transfers, perfect information for all market participants is unattainable, and barriers to both entry and exit do exist.

Assuming competitive conditions, land prices and rental rates tend to be a function of the person/land ratio in both temporal and spatial terms: the greater the pressure of population on the available land resources at any specified place and point in time, the greater the competition for land and thus the higher the price (Boserup 1965). The price function for land purchases and rentals is further modified in relation to imperfections of the market for agricultural land by the relative industrialization of the country or region in question, as well as by its socio-political development.

In fact, agricultural land[4] may be categorized according to location, fertility, and ownership structure, each classification representing a submarket. For example, obvious submarkets exist at both extremes in the traditional latifundio-*minifundio* system and in "colonization" (frontier peasant settlement and resettlement) areas where ownership or occupancy of land is more uniform. Other market "imperfections" (in the neoclassical sense) result from nonpecuniary, and even nonmaterial, preferences such as social and cultural factors.

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4. Our definition of agricultural land includes land whose uses rely on the biological fertility of a given area, as modified by human technology. The use of land as a foundation for buildings and roads is excluded from this discussion, even though this use is becoming increasingly competitive with biological use, even in the Third World.

Institutional theory, while accepting the neoclassical conditions for perfection, makes additional allowances for those peculiarities which logically distinguish the land market from the markets for labor and capital. What distinguishes land fundamentally from the other factors is that (a) it is fixed in place (the theoretician may want to define it as "perfectly immobile"), and (b) it is not infinitely reproducible over time in the way that labor and capital are.

Differences in land markets among countries and regions within countries are related to natural resource endowment and population density, as well as to the development of social and economic infrastructure and institutions. The existence of an apparently ample frontier does not guarantee a competitive land market, either in the settled area or at the frontier (for example, Brazil). A low (rural) person/land ratio combined with relatively good infrastructure, in the absence of the appropriate political conditions (Argentina), also distorts market activity.

Land market theories suggest that where the landownership pattern is most unequal, the land market is least active and most stacked against the *minifundista* and the landless. An inequitable land tenure structure tends not only to perpetuate itself, but to worsen without some kind of intervention by the state. Research on potential interventions in land markets to improve access of efficient small-scale producers to land should focus on this dynamic. Indeed, the research undertaken under this project was guided by this hypothesis.

II. CONSTRAINTS AFFECTING LAND MARKETS

The main objective of land market reform programs and policies is to help resolve social and economic problems which derive from the skewed landownership structure that exists in most countries of the region by shifting land from the large landholding sector to the small landholding sector via market mechanisms. The specific policies are designed to remove constraints and obstacles that hinder the functioning of the land market. The previous section reviewed the general economic theory of land markets and how they should function. This section discusses a series of specific constraints affecting land markets in Latin America and the Caribbean. These constraints can be grouped into two categories: those that affect the supply of land and those that affect the demand for land. Most market constraints relate to the supply of land, particularly for small and landless *campesinos*.

Very little research has been undertaken to determine specifically how these constraints affect land market activities. The following discussion, therefore, explores how these factors may limit land transactions. Careful discussion of and research on these constraints are important since they often form the basis for land market activation policies and measures.

A. DEMAND CONSTRAINTS

The constraints on demand for land stem from two sources: lack of equity for purchase and high land transfer costs. Assuming an ample supply of land of appropriate size, the majority of the landless and land-poor have neither equity capital nor access to borrowed financial resources for converting their land hunger into effective demand. The most common form of public intervention to remedy this problem in industrialized countries has been the provision of long-term financing at affordable interest rates for farmland purchases to permit young and otherwise landless farmers to establish themselves or to obtain enough land to become full-time commercial farmers. In the Latin American and Caribbean region, however, credit and long-term financing for land purchase are rarely available.

Complex transfer procedures also affect the demand for land. The high costs associated with land transfers as a result of highly bureaucratic procedures and taxes increase the cost of acquiring land and thus decrease a potential buyer's ability to purchase land. In Guatemala, for example, verifying ownership information in the general property registry is time-consuming and costly. It requires the services of a lawyer who travels to one of the two registry locations. Inaccuracies in the registry often have to be resolved before a transfer can be completed, thus adding to the costs. Also, because registrars earn commissions based on the value of transactions, they tend to put off cases involving only a few hectares; as a result, registration of small land transfers may take more than a year. More than half the landholdings in Guatemala, it is estimated, do not have the benefit of currently registered titles.

In Costa Rica, the procedure for title search and registration has been relatively efficient since the property registry was computerized in 1979. The land settlement institute (Instituto de Desarrollo Agropecuario, IDA) alone has processed 12,000 titles through the registry since 1986, through a special agreement whereby IDA pays registrars for overtime work. Yet problems of inaccurate and incomplete information have not been solved. Here, too, at least half the rural landholders do not have currently registered titles. Despite computerization, registration remains a time-consuming, cumbersome process. Complex and costly transfer procedures also affect the supply of land on the market and will be discussed more fully under supply constraints.

B. SUPPLY CONSTRAINTS

There is limited land available to small farmers for purchase at an affordable price. The supply of land is constrained by land concentration, by lack of private ownership title, and by excessively bureaucratic land transfer procedures and restrictions. Some of these constraints (for example, land concentration) limit the actual amount of land available for transfer. Others (for example, land transfer procedures) may limit owners' options in selling land. For example, some transfer restrictions may result in land being transferred only among family members or transferred extralegally. Other transfer requirements, such as high tax levies, encourage nonregistration of transfers or underdeclaration of land values. In different ways, these constrain the supply of land for an active land market.

1. Supply constraints due to land concentration

While the objective of land market policies is to affect landownership concentration through the land market, this concentration itself affects land market activities. Concentration in large units that seldom go on the market limits the supply of land and thus produces land price and rent distortions. It also restricts the supply of small and family-sized parcels of agricultural land. Large farmers generally sell to other large farmers while transfers among *campesinos* are limited to smallholdings in a fraction of the total land area.

2. Supply constraints due to lack of private ownership title

Lack of a fee-simple title to the land is generally thought to keep that land off the market or, at least, to lower its value. This deficiency usually occurs either when land is owned by a group (for example, an ethnic community, an extended family) or when land has never been officially registered. Moreover, it is the holdings of small farmers and *minifundistas*, compared to those of middle- and large-sized landowners, that are especially likely to be untitled. Without fee-simple title, sellers may underprice their properties to compensate for the risk and the difficulty of obtaining production credit from most institutional lenders (Feder 1986, p. 10). The scarcity of institutional financing for the purchase of the land also lowers prices, and occupiers of untitled land may prefer to hold it off the market solely because they cannot expect to obtain a given price.

Much of the land held by small farmers without fee-simple title is communally owned. The liberal reforms introduced in virtually all South American countries after independence

in the nineteenth century prohibited communal ownership of land and sought to convert the communal lands of indigenous peoples to private ownership, which often meant their dispossession. These reforms, however, were not totally successful: customary land-tenure forms that exist today in the Andes and Meso-America are, in general, accommodations and modifications of some of the precolonial tenure systems.

Modern legislation has sometimes recognized these communal forms of ownership. For example, in the Peruvian highlands, the traditional communal lands of indigenous communities are today legally recognized even though individual families work their cropping parcels as though they were their own and are allowed to pass them on within the family or sell them within the community. In Bolivia, the agrarian reform of 1952 and the titling program of the 1960s contemplated individual titling only of the customary family cropping parcels, while the traditionally common grazing lands of the altiplano were titled in the name of the indigenous communities (Thome 1970).

In many Caribbean countries, the institution of joint property is often considered to be an impediment to a fluid land market. The widespread custom calls for each heir to receive a share of the undivided farm or parcel, known as "family land." Research in St. Lucia, however, has shown that the population appears to be generally satisfied with the institution (Stringer 1988).

In Honduras, a large proportion of national and municipal lands is farmed without formal title. A titling program was begun in 1982 (funded by USAID) for small farmers occupying these lands. However, only about a third of the farmers eligible for title have applied for and received titles. In part, this is due to restrictions imposed by the titling program: for example, parcels smaller than 5 hectares, unless planted with coffee, may not be issued a fee-simple title. But it also reflects farmers' doubts about the desirability of legal title (Stanfield 1990).

While economic theories consider these customary and joint forms of ownership to be barriers to the functioning of a capitalist land market, Lemel (1985, p. 4) suggests that

> where state enforcement or the constant updating of documentation is an unrealistic expectation, . . . nonformal, nondocumented communal or tribal forms of tenure prevailing in parts of . . . Latin America may be at least as effective and perhaps more so than formal title in providing members of a community with secure access to land. Perhaps this is why initiatives to incorporate peasants into formal, individualized systems of private property are sometimes spurned or rejected.

In some cases, titles can **heighten** insecurity, especially when individual titling is imposed for land traditionally held communally. Lemel (1985, p. 5) points out that, on the one hand, mere possession of a piece of paper called a title is relatively meaningless unless it is backed by a government willing and able to enforce its validity:

> Tenure security and the role of title in enhancing it can be evaluated only if attention is shifted away from physical parcels of land and physical documents and toward property as a social institution. . . . Under conditions of economic hardship, legal or formal title may provide scant protection or security. Indeed, where individual private property exists and land becomes a commodity to be freely exchanged, title may actually smooth the path toward property loss.

3. Legal, administrative, and fiscal constraints

Other supply constraints affecting the operation of a relatively efficient land market stem from legal, administrative, and fiscal impediments that discourage land transfers or at the least discourage the official registration of transfers. Three types of constraints can be identified: excessively complex and costly land transfer and registration procedures, transfer restrictions placed on agrarian reform-sector land, and fiscal requirements which accompany land transfers.

a. General land transfer and registration procedures. The land transfer process in most countries is complex, expensive, and excessively bureaucratic for both buyer and seller (Moquete 1986). As a consequence, many transfers among smallholders are completed with private documents without the benefit of formal registration. Such land is vulnerable to disputes and competing claims, and owners cannot use it as collateral for agricultural production loans from commercial institutional lenders.[5] In addition, in most Central American countries, the registry is not supported by a cadastre to verify the location of registered properties.

In the Dominican Republic, for example, the costs in time and effort needed to secure a legally valid title to land are often prohibitive for peasants. Even in areas of the country where property demarcation is much more precise than in most of the rest of Latin America, there are no mechanisms to control fraud or to prevent private surveyors from measuring in favor of their own clients (Moquete 1986, p. 90).

In Honduras, titling and registration procedures are subjected to a series of time-consuming and expensive procedures, hampering the efforts of a titling program for small farmers occupying national lands. In addition to costs for preparation of legal documents and travel to the capital to register the documents, owners of properties titled under the project face additional barriers. As a consequence, Coles (1989) found, even after obtaining title, owners do not register subsequent transactions.

In Ecuador, several researchers (Roberts 1989; Thurner 1989) found a marked preference for intrafamily land transactions. One reason for this, they concluded, is the very intricate and costly paperwork involved in the formal, legal documentation of all land

5. This is an important theme for further research. Some official, small farmer-oriented credit institutions in many countries in the region, as well as most PVO-financed credit programs, do not require a property title or impose a mortgage on the land for a production loan.

transactions and the heavy load of restrictions imposed by the guidelines set by modern agrarian legislation, such as the requirement that first refusal for a land sale must be offered to all contiguous owners. A law allowing a tenant who works a plot of land for an extended period without a legal contract to lay claim to it also contributes to the kin preference in renting or sharecropping.

Research in Ecuador also illustrates the accommodation of customary and formal land transactions. A case study (Coronel 1989, p. 27) of traditional methods of transferring and inheriting land among the highland peasantry found that generally land transfers among family members are binding through customary agreements. Transactions are formally legalized only every other generation.

b. Transfer restrictions on agrarian reform land. Land transfer constraints may be aggravated by restrictions imposed in support of agrarian reform. Agrarian reform beneficiaries are often forbidden to sell or rent their parcels for many years. In Ecuador, for example, in addition to the bureaucratic obstacles, a further barrier to land transfers is the requirement that all agricultural land transactions since enactment of the agrarian reform legislation in the 1960s be authorized by the director of the Instituto Ecuatoriano de Reforma Agraria y Colonización (IERAC). Thus, owners often resort to renting or sharecropping with relatives when the real preference may be to sell. In Honduras, the Instituto Nacional Agrario (INA) must authorize all transactions involving reform-titled parcels of less than 17 hectares. These regulations are intended to avoid fragmentation of smallholdings, but they also hinder development of a land market where size of parcel is determined by economic efficiency and ability to pay rather than by bureaucratic decree.

c. Fiscal constraints in land transfers. Fiscal constraints such as land-transfer and capital-gains taxes also inhibit formal transactions. Where rates are significant (say, 2 percent or more), they lead to underdeclaration of the sales price (as they still do even in some industrialized countries) or even nondeclaration of the transaction, and most of these taxes yield little revenue. In Ecuador, in addition to the capital-gains tax, land sales are also subject to a straight transfer tax, a national defense tax, a potable water tax, a provincial tax, and various stamp taxes. As a result, most purchasers agree on a “real price” for the transaction and another “declared price” to avoid taxes. In some cases the transactions are simply not reported at all. This underreporting may represent an obstacle to an efficient and open land market by limiting the public information available to potential buyers and sellers (Strasma et al. 1987, p. 78).

III. LAND MARKETS AND AGRARIAN STRUCTURES: COUNTRY STUDIES

The review of constraints to land market transactions highlights the need for policymakers to understand how land markets operate, not only nationally but above all at the local level, before attempting to design instruments of intervention. This section presents a summary of the most significant land market studies carried out by the Land Tenure Center in conjunction with the A.I.D.-funded Tenure Security and Land Market Research Project. Four of the countries are in Central America—Costa Rica, El Salvador, Guatemala, and Honduras; two are in the Caribbean—the Dominican Republic and St. Lucia; and one, Ecuador, is in South America. Perhaps the most valuable aspect of the studies is that they illustrate land market operations in a variety of environmental, socio-cultural, economic, political, and legal situations. They raise fundamental questions for the design and implementation of programs in support of greater access by the rural poor to the land market.

A. CENTRAL AMERICA

Land issues have been at the heart of economic, social, and political programs in Central America for much of this century.[6] The economies and societies of all four Central American countries (Costa Rica to a smaller degree) are still burdened by an inefficient agricultural sector: with roughly 50 percent of the labor force dependent on agriculture in 1980 in three of the countries,[7] the sector produces only about one-fourth of the region's GDP (IDB 1989, table IV-1). Land is not only a fundamental economic resource but also a source of wealth and power. Historically, access to and ownership of arable and grazing land in these countries have been controlled by relatively few wealthy domestic landholders and foreign-owned corporations, while the majority of the rural population has been landless or confined to subsistence production on micro-parcels of marginal land.

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6. The three most dramatic events of the last half century in Central America had their roots in land conflicts and rural misery: the massive repression of a peasant revolt in El Salvador in the 1930s and the ongoing civil war that escalated in 1980; the violent overthrow in 1952 of the Arbenz regime which was attempting to implement a drastic agrarian reform in Guatemala; and the "soccer" war of 1969 between El Salvador and Honduras, which had its origin in the massive expulsion of landless Salvadoran squatters on Honduran public land (which also seriously aggravated El Salvador's rural problems).

7. In Honduras, 61 percent, but in Costa Rica, only 31 percent (World Bank 1988, table 31).

Governments in all the countries of the Central American region have attempted agrarian reforms to redistribute agricultural land and initiated resettlement programs to provide for landless or land-poor peasants. The most recent, in Nicaragua and El Salvador, have been the largest. In most of the countries, these programs have had limited impact on the overall distribution of landownership, rural development, or alleviation of rural poverty. New approaches to these problems may emanate from a better understanding of the distributive processes inherent in the land tenure structure itself, in particular, the markets for land.

1. Guatemala

Guatemala has the most skewed distribution of landownership in Central America. An incipient, radical land reform in the early 1950s was nipped in the bud by the 1954 armed overthrow of the elected government and all expropriated lands were returned to their former owners. Empirical studies and agricultural censuses show that landownership has become even more concentrated over the past thirty years (Stringer and Lambert 1989; Stewart 1987). At the same time, the agricultural labor force—57 percent of the total labor force in 1980—increased at an annual rate of 2.8 percent during the 1980-85 period, while real value added in agriculture was virtually stagnant throughout the decade of the 1980s (World Bank 1988, table 31; IDB 1989, tables A2 and B7). Real wages for farm labor, according to unpublished IMF data, declined 28 percent from 1983 to 1986 and recovered by only 5 percent between 1986 and 1989. Rural poverty is rising and the number of landless workers is increasing; the average size of the *minifundios* is diminishing (Stringer and Lambert 1989).

Since the aborted land reform of almost forty years ago, the government has done little to modify land distribution or make land available to land-poor farmers. Indeed, Guatemala is the only country in the region that has not implemented at least a nominal land reform since the l960s. There have been land settlement projects on state-owned land (called *parcelamientos*) on the south coast and colonization of public frontier land in the north. These programs are expensive, however, and very limited in scope.

Few regulations govern land use and land transfers in Guatemala. There are minimal restrictions on land rentals and sharecropping; taxation and regulations concerning underutilized land are weak and not enforced. Proposals for tax reform have met with considerable resistance from large rural landowners, and land invasions and squatters on private land are not tolerated (Stringer and Lambert 1989).

The market for land is divided between a submarket for wealthy landowners and another for sellers and buyers of smallholdings. Information about the sale of large landholdings is passed by word-of-mouth among a limited group of people with the resources to buy large holdings either whole or in large tracts. Large commercial plantations on the south coast, especially in sugarcane, tend to be vertically integrated so that owners can maximize profits without maximizing production. In general, large landowners are unwilling to divide their holdings to sell to numerous individual small farmers or to deal with groups of small farmers that may wish to purchase large farms (Stringer and Lambert

1989). Owners' reluctance to subdivide may constitute a fruitful area for future research. Among the rural elite, land continues to be an important source of local and national political power.

Within this generalized description, there are significant differences in land distribution and land market structure among the country's distinct geographic regions. The fertile south coast is the most commercialized agricultural region. Almost the entire production of non-coffee export crops is grown here, along with about one-third of the coffee. Land distribution is highly skewed and a comparison of 1964 and 1979 data shows that land concentration has increased in the period: farms of less than 3.5 acres almost doubled in number while their average size declined. By contrast, in the medium and large categories (17–110 acres and 110–1,100 acres, respectively), the number of farms, as well as their average size and the total area they control, increased (Stringer and Lambert 1989, pp. 8–10).

Although the land sales market is relatively stagnant on the south coast and, in particular, closed to landless and small farmers, thousands of *campesinos* depend on a very active land rental market. Both highland migrants and resident laborers rent land from large producers, paying either in cash, labor, or a share of the crop. *Campesino*-rented land is typically planted with basic food staples, mostly for home consumption. Investments for cash crops are rare because credit agencies normally will not lend to small tenants without land collateral. In many cases, parcels are rented from large landowners for the part of the year that the land is not needed for livestock or export crop production (Stringer and Lambert 1989).

The temperate highlands is the most densely populated region of Guatemala, and most of the rural population is indigenous. In contrast to the coastal region, *minifundios* predominate. Land has deep cultural significance for the indigenous communities. Its fundamental function is to provide the family's traditional food staples: corn, beans, and wheat. Preliminary evidence suggests that rising production of export vegetable crops on the very small farms in the highlands is increasing the demand for land and thus raising land prices. Informal land rental is common in the region, usually on a small scale and typically within the family.

Information on land transactions in the highlands was obtained from a 1988 survey of members of a rural credit cooperative. About two-thirds of the sample had purchased at least one parcel at some time, but the average size of these parcels has declined steadily over the last few decades, from 3.5 hectares prior to 1949 to 1.4 hectares from 1980 to 1988. Typically purchases were financed with off-farm wages, earnings from an exceptional harvest, or savings accumulated over a number of years. Only 22, or 7 percent, of the purchases were financed with loans and, of these, only three were obtained from a bank. Most of the land was purchased from neighboring small farmers or family members; about one-fourth of the land purchases came from large farms (Richards et al. 1990).

The highlands survey also found that land prices have gradually risen over the last four decades. Prices for 1988 transactions varied from 1,500 to 3,000 quetzals per *manzana* (0.7

hectare), or about 3.3–6.6 years' wages per hectare for an unskilled farm laborer (US$1.00 = Q2.60). The majority of the land purchasers surveyed obtained a legal bill of sale but did not register their parcels, partly because of the high cost involved. Of the total of 293 parcels purchased and the 179 inherited over the decades by individuals in the survey, fewer than 13 percent were registered.

Nearly 40 percent of the farmers in the survey rented in some land in 1988. The modal size group of the farms (comprising one-third of the total) was 2.2 hectares, of which roughly one-half was rented. Rented land was important for all farm size groups. Those with the smallest farms relied completely on rented land (average 0.4 hectare). The next two groups (0.7–3.5 hectares) rented one-half their total farmland, but the 84 largest farms rented less than 20 percent of their average farm area of 8 hectares.

Schweigert's 1988 study of two *parcelamientos* created by the Instituto Nacional de Transformación Agraria (INTA) on the south coast thirty years ago examines changes in land distribution within peasant communities created by the settlement program. Initially, land distribution in the *parcelamientos* was highly egalitarian; landless peasant families were granted large parcels of 18 to 20 hectares. Thirty years later, two marked, opposite tendencies can be observed: fragmentation and consolidation. A moderate number of holdings preserve the original parcel size or have been consolidated (that is, have increased in size). The majority of the holdings have been subdivided, in most cases through inheritance. Usually five to six plots have been carved out of one original parcel. Once an original parcel is fragmented through inheritance, the successors may sell their shares to other family members, neighbors, or other *campesinos* of the area. Interestingly, no fragment of an original parcel has been bought by an outsider (Schweigert 1989b, p. 14).

On the other hand, 15 percent of the *parcelarios* interviewed owned consolidated holdings, but half of them were either non-*campesinos* or *campesinos* who did not belong to families of original land grantees. Almost one-fourth of the land that had been originally allotted to the two *parcelamientos* is now in the hands of non-*campesino* farmers. Most of the consolidations are multiples of the original parcels of 18–20 hectares and by 1988, one-fourth of the land was held by just six *parcelarios* (4 percent of the total number interviewed).

Schweigert's findings show two patterns in the land market in this coastal area: (a) Peasant farmers either subdivide their land among their children or sell the entire parcel to an unrelated buyer; they do not dispose of the parcel piecemeal. Some peasant heirs do sell the inherited land, usually to another peasant. (b) The buyers of large tracts, including entire parcels, are "outsiders," that is, persons who have moved into the area since the *parcelamiento* was established; in many cases, these buyers are urban professionals, ranchers, or military personnel.

Schweigert also looked at land prices and rental rates. Land prices, adjusted for inflation, increased at a rate of about 8 percent per year from 1974 to 1988. Calculations comparing 1965 and 1987 data in La Máquina *parcelamiento* show that as land-use intensity

increased over the twenty-year period, average real land-rental rates rose 280 percent (1965 data are not available for the other area). Few *parcelarios* rented in land. Schweigert estimates that about 5 percent of the land is rented out, usually to other peasant families. Rents today probably absorb about half or more of the surplus after all other costs have been paid.[8] Returns to land increased 150 percent, while machine plowing rates declined 25 percent, and real wages barely held their own.

LTC research in Guatemala also looked at small farmers' capacity to repay mortgage loans at commercial interest rates. Calculations using the south coast *parcelamiento* data, considering land prices, wage rates, prices for corn and sesame, and average productivity in 1988, suggest that a 3-hectare parcel under rain-fed double cropping could produce sufficient net income to support a family and repay a loan at market terms (10–20 years at 14 percent), leaving a net family income equivalent to that of a fully employed worker at the going wage rate (Schweigert 1989b, pp. 51–54). On the other hand, the 1988 survey of small highland farmers who were members of a rural credit cooperative indicates that the typical small farm in this region does not generate enough surplus to pay off a land purchase loan: nearly 40 percent of the sampled households had farms of less than 1.4 hectares in 1987, and the climate allows only one rain-fed crop per year (Richards et al. 1990).

Several conclusions regarding the land market in Guatemala emerge as a result of LTC research. Land distribution continues to be extremely concentrated and, in the absence of any land reform effort, has even increased in the last few decades. Second, land transactions, particularly sales, generally occur within submarkets. Large properties constitute one market and are sold as large units; subdivision of large farms into smaller parcels for sale is not common. Another land market is that of small farms. Peasants do sell land among themselves; however, the evidence indicates that these parcels are becoming smaller and that their unit price is increasing, suggesting a scarcity of small parcels on the market relative to the demand. And finally, research findings indicate that small farms are usually not registered to the current owner. Peasant parcels, when inherited or bought and sold, are not formally registered nor are titles updated. Most farmers cite the high costs, in time and money, involved with legal registration of title.

2. Honduras

Honduras is the least industrialized of the Central American countries and has the lowest per-capita GNP. It has a low proportion of good arable land and, except for the banana and African palm plantations in the north and the sugar plantations in the south, agricultural production is not highly commercialized. Close to 80 percent of the agricultural labor force grows rain-fed subsistence food crops (Stringer 1989b). In spite of the 1962 and 1972 agrarian reform laws in Honduras, the number of *minifundistas* and landless rural laborers

8. All nominal figures were deflated by the price of corn, which Schweigert considers a more realistic measure of rural prices and wages in this environment than the urban consumer price index. The full results Schweigert's of research are available from his (1990) dissertation.

has increased over the last few decades and "the 25-year . . . effort has not succeeded at breaking up traditional landownership patterns" (Stringer 1989b, p. 16).

In contrast to most of Central America, Honduras has large areas of national land. While more than half the total land area is still legally in the public domain, a good deal of this is farmed by *campesinos* without title. More than three-fourths of all Honduran farmers occupy land without any kind of officially recognized document to prove possession. Stringer (1989b, p. 11), citing a 1982 USAID source, notes that "there are only around 3,800 fully titled [*dominio pleno*] private holdings . . . ."

LTC research in Honduras, which has centered on the production effects of a land titling program, partially supported by USAID, has also yielded some information on land market activities. The primary objective of the Land Titling Project, begun in 1983 and still in progress, was to establish a mechanism for granting fee-simple property titles to small farmers on public land. The project assumed that secure, legal titles would encourage the farmers to invest in their land and enable the banks to help finance these investments, and that the end result would be significant increases in farm productivity and output.[9]

The titling project was also designed to improve the operation of the land property information and registration systems for legal and tax purposes and to facilitate the buying and selling of land. There were two underlying and contradictory hypotheses with regard to how the project would affect the land market: (1) that security of tenure would encourage farmers to remain on their newly titled parcels and invest in them, and (2) that secure title inherently increases the value of land, which would tempt the less entrepreneurial *campesinos* to sell. Under the first hypothesis, the volume of land sales would decline; under the second, it would increase. Research in two regions of the country, however, provides little conclusive evidence for either hypothesis regarding the relation between titling and land market transactions (Nesman and Seligson 1988; Seligson and Nesman 1989; Coles 1989).

Coles's (1989) study also underlines peasant reluctance to obtain legal title. He found that even titling program beneficiaries tend not to legalize their titles because INA requires prior settlement of the outstanding payments for the land and because beneficiaries resent the costs in money and time. In addition, *campesinos* have been suspicious of the government's motives in inconsistent application of often contradictory land laws.

An interesting by-product of the titling evaluation studies in Honduras is the information collected on how land was acquired by small farmers. Data from two different areas indicate that while about one-third of the sample *campesinos* had inherited their

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9. Stanfield (1990), in a review of titling and registration projects, shows that over a period of five years, titling, of and by itself, did not increase the number of credit transactions nor improve production because the processes that result in production and productivity increases are much more complex.

parcels, the most common way to acquire land was to buy it: about half of the farmers had purchased their parcels from another individual (Seligson and Nesman 1989, pp. 21–22), indicating an active commercial land market among small farmers in Honduras. In fact, the studies suggest that as much as 3 percent of the plots occupied by peasant farmers changed hands every year during the 1980s (Coles 1989).

Several conclusions regarding the land market in Honduras can be reached as a result of LTC research. In comparison with Guatemala, it appears that land transactions within the peasant sector are more frequent. However, as in Guatemala, small farmers are reluctant to register their property. Both high costs and lack of confidence in government's ability to enforce property rights were cited as reasons for not registering or updating titles.

3. El Salvador

Even though El Salvador is the most industrialized country in Central America, the pressure of people on the land continues and rural landlessness and poverty are widespread. Forty percent of the total labor force is employed in agriculture, producing an added value equal to that produced by the 14 percent engaged in industry. The continuing civil strife has caused a stagnation in the economy, including agriculture, in the last few years (IDB 1989; World Bank 1988, 1989; Thiesenhusen 1989, ch. 15–17).

The last agricultural census in El Salvador, taken in 1971, showed not only that landownership was highly concentrated, but that, untypically for Latin America, cash renting of small parcels (with payment in advance) was very common (Strasma 1989a; Pearce 1986). In 1980, the government of El Salvador initiated two separate agrarian reform programs, called Phase I and Phase III (Phase II, which would have affected medium-sized estates, was announced but never implemented). The Phase I program expropriated large agricultural estates of 500 hectares or more and formed cooperatives. The estate workers and salaried employees became the cooperative members. The landowners were allowed to reserve between 100 and 150 hectares for their own management. Phase III of the agrarian reform is also called the land-to-the-tiller program. It affected those lands which were rented or tilled by someone other than the owner. This land (up to a maximum of 7 hectares) is purchased by the tenant, making the beneficiaries individual landowners. As of 1985, the land reform had redistributed the equivalent of about one-fifth of total farmland to a similar proportion of rural poor families.

A 1988 sample survey of ownership of land not redistributed by the land reform programs, carried out after the bulk of the expropriations had been made under the agrarian reform, revealed that landownership distribution continues to be highly skewed: fewer than 1 percent of the landowners, with an average of 292 hectares, still own 42 percent of the farmland outside the land reform sector, even though nearly one-third had sold some of their land recently; at the other extreme, 95 percent of landowners owned parcels of less than 25 hectares, averaging only 2.2 hectares each; in the middle, a mere 4 percent own parcels of between 25 and 100 hectares (Gore et al. 1988). The sample survey also showed that over the past ten years, 30 percent of the large owners in the sample had sold land, with an average of 72 hectares. Only 14 percent stated that they had lost land through reform

expropriation. Evidently the combination of the agrarian reform and continuing rural insecurity has encouraged many landowners to sell part or all of their holdings.

In a background study for a possible land bank, Strasma (1989b) ascertained substantial potential demand among land-poor and landless *campesinos* as well as potential supply from owners of remaining large properties, at the terms proposed by the government.[10] On the other hand, he found no interest in the formal banking sector in lending for land purchases. Strasma also comments that despite the "land to the tiller" or Phase III program of the land reform, land renting is not outlawed by the reform, with the 1988 survey indicating that about 5 percent of the nonreform farmland is farmed by tenants.

Several conclusions regarding the land market in El Salvador emerge as a result of LTC research. In spite of a recent land reform, in which approximately one-fifth of El Salvador's farmland was redistributed, land concentration continues to be high. There are indications, however, that large landowners are selling part of their properties. This may be in response to the land reform program and rural unrest. The land rental market also continues to be very active, particularly of very small parcels, even after the land reform.

4. Costa Rica

At an average $2,235 in 1988, Costa Rica's per capita GNP was far higher than that of any other Central American country. And with 28 percent of the labor force producing 21 percent of the GDP, per-capita productivity in the agricultural sector is unusually high (IDB 1989; World Bank 1988). Landownership distribution—though far from equitable—is less skewed than in other Central American countries. Until the introduction of export crops (coffee and bananas) in the middle of the nineteenth century, Costa Rica's rural population had little difficulty gaining access to good farmland. Even then, and until the 1960s, public frontier land suitable for farming was available.

In the 1960s, when accessible public land became scarce and most of the Guanacaste plain had been deforested and occupied by large cattle ranchers, land-poor and landless peasants began increasingly to encroach on fragile and forested public land as well as to invade unused privately owned land. Laws and practice in Costa Rica protect private rural property as long as farmland is actually and visibly in use, but a squatter who stays on a piece of unused land for ninety days or more can be evicted only with great difficulty and, when actually evicted, must be reimbursed for the value of any improvements made.

Organized groups of peasants have resorted to land invasions as a means of gaining access to land. Various large properties, either undeveloped or at least quite run-down, have been seized over the last 20 years by groups of 20 to 200 families. In most cases, the owners

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10. Establishment of a land bank in El Salvador at this time, combined with a well-planned, interdisciplinary research program, would also allow determining how market-based self-selection functions among a peasant population that is well known for its entrepreneurial attitudes.

of invaded land eventually sold their lands, at the tax-assessed value, to the government land-settlement agency, the Instituto de Desarrollo Agropecuario (IDA). IDA then helped the squatters lay out individual parcels and gave them secure possession backed by provisional titles. Legally, IDA must approve all subsequent transfers of parcels allotted under its program, but a good deal of extralegal buying and selling is taking place within IDA settlement projects among the original clients or even with other *campesinos* (Strasma et al. 1989).

Squatting and land invasions appear to have produced a kind of spontaneous land reform. According to data from the 1973 and 1984 censuses, there has been a significant decline in the number of large farms and in the proportion of the farmland they control (from 36 percent to 27 percent), accompanied by an increase in both number and area of small farms (the proportion of total farm area covered by farms of less than 5 hectares rose from 1.9 percent to 2.5 percent).

Since the mid-1980s, however, the government has refused to legitimize land invasions through land purchase. IDA now prefers to buy land put up for sale voluntarily. Parcels are to be resold to qualified land-poor and landless peasants with 15-25 year mortgages, although IDA has been remiss in collecting payments. Because of limited funds and IDA's statutory obligation to pay no more than the tax-assessed value for land, IDA settlement programs fall short of the need. Tax-declared values are typically far below market value,[11] and sellers, less afraid of invasions, are now demanding higher prices. IDA claims to have turned over more than 100,000 hectares to 2,000 families in the 1986-88 period, but an estimated 15,000 to 20,000 potential buyers remain in line.

The commercial land market in Costa Rica is much more active and visible than in other Latin American countries. Newspapers and billboards advertise offers to buy and sell land, and real estate brokers abound. With the farm labor force still growing at 2 percent per year, the potential demand for land by smallholders is quite high. As elsewhere, there appear to be two land markets in Costa Rica. In one, people with money or credit buy relatively large blocks of land. Given a general absence of institutional credit with which to buy land, such buyers are typically medium-sized entrepreneurial farmers and merchants collecting bad debts. The other market is among smallholders, including squatters who occupy pieces of land which the present owner is not using and thereby create some rights to that land. The smallholder market often consists of informal transactions.

B. THE CARIBBEAN

The island nations of the Caribbean have a great deal in common with parts of continental Latin America with regard to land tenure structure and land markets. At the same time, there are important distinctions among them, reflecting their different colonial histories, in terms of ethno-cultural, political, legal, and administrative organization and, thus, in their tenure

11. Strasma (1988b) calculated that the recent indexation of existing assessed values barely doubled them between 1978 and 1986, while the consumer price index rose by a factor of 6.5.

systems and structures. Virtually all of the major Caribbean islands have in common the early and complete annihilation of the indigenous population and the establishment of sugar plantations with slave labor imported from Africa. Changes in the world sugar market have strongly affected land tenure and land use over the centuries, as did the heavy dependence on slave labor. The sugar plantations (together with cattle ranches) have traditionally controlled most of the good cropland, while an emerging small farmer class has had to settle on fragile, marginal hillsides.

A distinctive characteristic of land tenure systems on certain English-speaking Caribbean islands (for example, the Windward Islands and, to a smaller degree, Jamaica) is the institution of "family land," under which each co-owner holds a fractional interest in the entire parcel of land, *pro indiviso* in legal terms. Family co-ownership occurs when an owner of property dies intestate and inheritance laws prescribe how the estate is to be divided among the heirs. In practice, most landholdings are not formally subdivided upon succession; the heirs usually apportion the land informally among themselves in a manner which may bear little relation to the shares that they would legally inherit (Bruce 1983, pp. 2–7). Not all the co-owners necessarily occupy or farm their family land. By tradition, the person who plants and tends the crop is entitled to its entire proceeds. Conflicts are said to be rare and usually arise only when a family member wishes to build a house on a very small plot of family land.

As a tenure system, Bruce (1983, pp. 16–19) suggests that family land has both benefits and drawbacks for the co-owners and for agricultural development. On the one hand, the system prevents excessive fragmentation of landholdings on these densely populated islands. On the other hand, family land engenders insecurity for the landholders. It discourages investment because the legal system does not define the rights of co-owners in relation to one another regarding the land and its production. In addition, the plot boundaries within a family land parcel are not enforceable under the law.

How does family landholding affect the land market? Bruce (1983, p. 21) believes that, for all practical purposes, family land is shut out of the market, "frozen in the hands of the co-owners in possession." As the number of co-owners multiplies with each succession, obtaining the consent of all for a sale becomes increasingly improbable.

Thus, while family land, on the one hand, may retard or even prevent excessive subdivision of agricultural parcels, the nonmarketability of family land may retard consolidation of parcels via the land market and thereby perpetuate subdivision (Bruce 1983, pp. 21–22). Also, because family land is not marketable, it restricts the access of the co-owners to credit.

1. St. Lucia

The Caribbean island of St. Lucia is a country of approximately 150,000 people and an agricultural area of about 140,000 acres. Its economy has traditionally been highly dependent on a single agricultural export, sugar prior to the 1960s, and more recently, bananas.

Two characteristics of the land tenure structure affect the land market on this island: the highly skewed pattern of land distribution and the institution of family land. Most of the best agricultural land is in large estates owned by a small number of families and corporations. The 1973/74 agricultural census showed that 73 holdings occupied 52 percent of all agricultural land, while over 80 percent of holdings were smaller than 5 acres and covered only 14 percent of the agricultural land. Over a decade later, there has been slight improvement. The 1986 census revealed that farms over 50 acres (0.8 percent of holdings) controlled 50 percent of agricultural land. At the other end of the spectrum, farms under 5 acres accounted for 76 percent of all holdings and occupied 21 percent of agricultural land.

Landownership concentration, in combination with the institution of family land, limits the number of land transactions. A 1982 survey indicated that nearly 40 percent of smallholder parcels is held as family lands (Stringer et al. 1989, p. 350), a high proportion relative to other countries. Of this family land, 82 percent is in parcels of less than 10 acres, and no family parcel has more than 100 acres. On average, there are six co-owners per parcel.

An extensive LTC study of land tenure in St. Lucia affords some interesting insights which might be applicable in similar environments. The LTC survey was carried out in 1987 as part of the evaluation of the USAID-funded Land Registration and Titling Project (LRTP), which ended in 1987. One of the objectives of the LRTP was to convert family landholdings to individual fee-simple holdings to make the land more marketable. However, the component of the LRTP that was to promote and assist buy-outs of joint properties by individual family members was not implemented. In addition, attitudinal data collected in LTC's 1987 survey reflect the difficulty of doing away with family land. Almost half of the respondents who owned family land said it would not be possible to sell their land to nonfamily members, and another fourth said it would not be likely. As for sale to family members, 27 percent said that it is not possible to sell the parcel to one family member only (Stringer 1988). In fact, despite official encouragement, about one-third of the parcels in the new registry at the end of the LRTP were still undivided family holdings (Stanfield 1989b). The prevalence of family landholdings, the perception on the part of family landholders that these lands are unlikely to be sold, and the persistence of family lands after the LRTP demonstrate persuasively that this type of land tenure offers a number of benefits to the co-owners that they are unwilling to surrender.

The 1987 survey showed that family land prevents extreme subdivision and fragmentation of landholdings. Unlike individual properties, many of the family-land parcels were found to have been formed by parcel consolidation, and family lands were observed to have impeded the breakup of parcels. Fewer than one-third of the surveyed parcels that had resulted from subdivision were family land (Stringer 1988).

2. Dominican Republic

The Dominican Republic's agrarian structure and institutions resemble those of most of the continental Latin American countries, while the origin of the skewed land distribution was

the typically Caribbean, slave-operated sugar plantation. Landownership concentration increased under Trujillo's long dictatorship (1930 to 1961), which brought a significant portion of the prime sugarcane and cattle land under the control of Trujillo and his cronies. In 1960, 1 percent of the country's 450,000 farmers owned over 50 percent of the land and there were at least 200,000 landless rural families living exclusively from rural wages (Stanfield 1989a).

After Trujillo's death, the government confiscated the sugar lands and transferred them to a public sugar corporation. Other land from the large-farm sector was distributed to small farmers and the landless by the agrarian reform program of the Instituto Agrario Dominicano (IAD). Production collectives were organized in the rice-growing farms in the northeast, with beneficiaries receiving provisional titles to the land. During the first agrarian reform phase (1962 to 1972), land was adjudicated to individual beneficiaries who were given provisional property certificates. Until the land is completely paid for and definitive title granted, beneficiaries are not allowed to sell, rent, sharecrop, or mortgage it. While some illegal transfers of land are made, this stipulation restricts the supply of reform land on the market.

Like most Latin American nations, the Dominican Republic has a dual land market structure, one for large holders and another for smallholders. The large-holding market consists of parcels with duly registered freehold titles and may be distorted by three factors. First, lending institutions do not make long-term loans for land purchases, in part because the maximum legal interest rate tends to be well below the expected rate of inflation. Second, the supply of land is constrained by the large blocks of land under state control which do not come on the market. Third, the market supply may be further constrained by the lack of an effective annual land tax to encourage sale of underutilized land (Strasma 1990).

Among smallholders without titles, many transfers occur outside the formal market. Despite the legal prohibition against transfers by the more than 50,000 beneficiaries of the IAD's redistribution program, most of whom have only provisional titles, informal land sales and rentals of parcels are common. The purchase prices tend to be low because the parcels could be confiscated by IAD if the abuse were uncovered.

C. ECUADOR

Like Peru and Bolivia, Ecuador has a large indigenous population concentrated mainly in the higher altitudes of the Andes. Although more than one-third of the labor force is in agriculture, the sector contributes only about one-seventh of the GDP. Industrial development lags substantially behind that of neighboring Colombia, but per-capita GDP stands at about $1,500, thanks to petroleum production.

The inequitable landownership structure typical of the temperate sierra arose from the semifeudal colonial and postcolonial grants of land that included dominion over entire indigenous communities. By the beginning of this century, this structure had evolved into an

hacienda system dependent for its permanent labor force on a variety of arrangements with the indigenous population. The best known was that of the *huasipungo*, under which virtually indentured Indian families were assigned plots of land for subsistence farming in return for their free or poorly paid (including payment in kind) work on the hacienda land, in its processing facilities, and in the owner's household.

Capitalist development in agriculture and the subsequent agrarian reform program initiated by a populist military junta in the 1960s have gradually begun to modify the tenure structure and labor relations in the sierra. Overall, however, the distribution of landownership remains highly skewed. In fact, only a small number of large estates have been affected. Most of the resettlement has taken place on public land under "colonization" projects (Forster 1989). In the twenty-five years since the land redistribution program began, only 25 percent of the land-poor and landless have received any land.

Research on small farms in Ecuador shows, however, that a viable family-farm sector has developed and that the land market in some areas is quite active. While little land was redistributed directly under agrarian reform legislation, the threat of expropriation led many landowners to modernize their farm enterprise and reduce their holdings by selling off the least productive areas (Ramón 1989). Even before the advent of the reform program, many highland haciendas had begun to be dismembered by inheritance and subsequent sale of pieces of land to outsiders. This fragmentation gave rise to a new, commercial farm sector and to a significant, but often precarious, *minifundio* sector. Today, the classic latifundio-*minifundio* pattern is no longer characteristic of highland Ecuador's agrarian structure, and the smallholder sector supplies the bulk of Ecuador's domestic foodstuffs (Thurner 1989). At the same time, frontier lands in the western foothills and coastal plain as well as on the eastern slopes toward Amazonia are being settled.

Several studies undertaken by the Land Tenure Center and the Centro Andino de Acción Popular (CAAP) in Ecuador have looked into land transactions and transfers among peasant families (Forster 1989; Roberts 1989; Ramón 1989; Coronel 1989). Another researcher has studied the fragmentation of three highland haciendas and peasant control of some of that land (Thurner 1989).

A study in the Cantón Gualaceo, in the southern highlands (Coronel 1989), found two very distinct land markets. On the valley floor, where agricultural land is fertile, located close to the provincial capital, and commanding relatively high prices, there is an active cash land market among nonrelatives, and transactions are duly registered. By contrast, in agricultural areas on the hillsides and at higher altitudes, land tends to be handed down informally from one generation to another under a kind of "family land" inheritance system. The family parcel is passed from grandparents to grandchildren *pro indiviso* and the change of ownership is registered locally only every other generation.

In addition, Coronel found that the growing scarcity of land within the canton has been remedied in part with the acquisition of "complementary" land in an area of spontaneous settlement to the east, with the guidance and assistance of a government agency (Centro de

Reconversión Económica del Austro, CREA). Since the area is contiguous to their place of origin, the *campesinos* who are farming the new lands have not given up their home ties; they classify their eastern lands as "productive," and the home land as "residential."

Forster (1989) shows that in the central highlands (Ambato), over several generations smallholders have chipped away at large holdings, incorporating more land into their domain. Off-farm salaries from seasonal migration have often provided the capital for land purchases. Although a significant number of peasant households were able to generate savings for land purchases, the market supply of land has dropped substantially in recent years, especially since land values have increased due to the spread of high-value crops, particularly onions. Increasingly, the poorest farmers in the area have not been able to buy land, and Forster (1989, pp. 25–26) concludes that "without some change, either spontaneous or induced, the market is unlikely to provide enough land for the local@ peasantry in the future. . . . Furthermore, the free market has not adequately sustained the poorest of the poor."

Forster's description of the government's initiative to expand the agricultural frontier by opening up the *páramo* to individual ownership for crop production illustrates the relation between land tenure and resource conservation and of the emerging conflict between the search for short-term gains and the need for long-term sustainability in economic development. While the land privatization relieved the peasant pressure on land temporarily, opening this fragile environment to intensive agricultural use may well have a high long-term environmental cost. The destruction of the *páramo*'s capacity to store irrigation water for the watershed could threaten the survival of agriculture in the entire area.[12]

Roberts (1989) studied the land market in the small-farm sector on the coast (Manabi) in order to analyze small farmer participation in the land market and patterns of land access over the past 30 to 40 years. Despite differences in environment and socioeconomic history, some of the conclusions are quite similar to Forster's in the highlands. Roberts found that, over the years, young farmers start by leasing land and later begin to acquire their own land through both purchase and inheritance. Of the sampled farmers, 41 percent have been able to buy land over a 36-year period. Most of the land purchases are financed through long-term savings or from good harvests or the sale of animals. Here, too, there is a consistent tendency toward purchasing from family members. Little institutional credit has been available for land purchases.

While there is an active land market, the amount of land being purchased as well as the size of the parcels have decreased during the 40-year period, while land prices have gone up. Not only are fewer farmers buying land now than before, they are buying less land per

12. A model of the private-public boundary in land developed by Bromley (1989) would seem to question the wisdom of privatization of fragile common lands. Bromley shows that the costs of privatization (fences, measurement, title insurance, record keeping) may well exceed the benefits of increased production on these fragile lands.

household. Moreover, farmers purchasing land now have larger prior landholdings than did previous generations. Finally, younger farmers, increasingly unable to buy land, are renting and sharecropping more than did their seniors. (The average young farmer has only about one-fourth the minimum area necessary for family subsistence.) Unlike sales, rentals have increased with each generation, with the average area of land rented remaining steady over the generations.

The Forster and Roberts studies show that small farmers in the highlands as well as in the coastal regions are active participants in the land market, but that the size of land purchases by small farmers is declining from one generation to the next. The intergenerational comparisons in both studies reveal also that peasant families accumulate as well as dispose of land over time. A family accumulates land through inheritance, purchase, and leasing, but because inheritance customs and laws dictate that property be divided equally among all children, in later years the family breaks up its holding. What is interesting is that neither study found any significant relation between amount of land inherited and amount of land thereafter accumulated. In other words, the amount of land accumulated in one generation did not determine the heirs' relative landholding status in the next. Both authors call this type of nonprogressive differentiation "dynamic equilibrium."

Another LTC study of Ecuadorian land markets (Thurner 1989) analyzes how over time three traditional haciendas in the Chimborazo highlands were fragmented into peasant farms. Peasants residing on the large landholdings actively pressured both the state and the landowners to sell or cede the land to them, rather than to outside, nonpeasant buyers.

One of the three haciendas was owned by the local social welfare agency, which leased the land out to members of the local elite who, in turn, hired the resident *huasipungueros* to work it. The latter, who had received legal title to their tiny usufruct plots in the mid-1960s under the first agrarian reform law, petitioned the government in 1970 to have all hacienda land turned over to them under the new agrarian reform law. Following a protracted struggle against the hacienda owner and other assorted local interests, they acquired most of the land but lost some of it to other peasants and to the agricultural school.

The other two case studies were private haciendas that ended up in the hands of their *huasipungueros* and other peasant families through a process of inheritance, subdivision, and sales. Small parcels were sold off to favored hacienda tenant-workers. Some land was sold to local merchants and moneylenders, and a minimal area was ceded to *huasipungueros* under the first agrarian reform law.

As the subdivision and fragmentation proceeded, at a time when demand for food products increased on the local market, intensive agriculture (dairying, alfalfa, and vegetables) replaced the extensive grain and cattle operations that had been typical of the traditional hacienda/subsistence-plots economy. Hacienda heirs met increasing difficulties in recruiting the amount and kind of labor necessary for intensive crop production. (By contrast, peasant farmers were able to draw on kinship and community relationships to

obtain and retain workers.) This, plus the threat of expropriation, encouraged heirs (particularly the absentee heirs) to start selling the rest of the land to local peasants.

Thurner's study shows how resident and neighboring peasant workers have struggled successfully, collectively, and individually to gain access to hacienda lands, in part with the support of the national government. The partial breakup of highland haciendas through agrarian reform and subsequently by market forces created a land market for *minifundios* as hacendados unloaded marginal land. Increasing political instability and labor problems pushed the market even further. The supply of this type of land in the highlands is rapidly being depleted.

D. CONCLUSIONS

These empirical studies under the Tenure Security and Land Markets Research Project highlight the nature of land markets in Latin America and the Caribbean and the barriers facing landless *campesinos* in gaining access to land through the market. They also begin to shed some light on strategies of peasant populations to manipulate the market. A number of common characteristics emerge:

- Land distribution in Latin America and the Caribbean remains highly skewed. While agrarian reform has reduced somewhat the level of concentration in some countries, other countries which have not undergone agrarian reform have actually experienced increased concentration.

- Existing landownership distribution influences land markets. In general, land concentration in the hands of a small minority sharply constrains the land market.

- Most countries are characterized by a dual land market, one for large holdings and another among small holdings. Very small farmers and landless peasants participate only marginally in the large farm land market.

- Because of limits to supply of land in the small farm sector and absence of credit, the younger generation is finding access to land increasingly difficult, and the average size of the parcels they buy and inherit is declining. Where small farmers are highly commercialized, they are sometimes able to purchase additional small parcels of land despite the great imbalance between the demand for and the supply of land. The ensuing rise in land prices in such areas is reducing the size of parcels being bought by small farmers.

- In general, small farmers and landless peasants have no access to either institutional or informal long-term credit to finance land purchases. In Guatemala, for example, the growing disparity between wages (or returns to labor) and rent (or returns to land) makes it increasingly difficult for subsistence farmers and the landless to finance land purchases from savings.

- There is some evidence from Ecuador, El Salvador, and Costa Rica that land has moved from the large farm to the small farm sector as a result of the threat of land expropriation.

- Land sales among small farmers are generally informal. Formal transactions with registration and titling of the transfers are costly in both time and money.

IV. ECONOMIC THEORY OF LAND MARKETS AND ITS IMPLICATIONS FOR THE LAND ACCESS OF THE RURAL POOR

It is a widely accepted belief of the rural development literature that the markets for buying and selling land in Latin America are relatively inactive:[13] "even with full property rights in land, the market for buying and selling of cultivable land is often rather inactive. Unless forced by extremely difficult circumstances, a resident villager does not usually sell his land" (Bardhan 1984, p. 95). It is very important, however, to define what is meant by "inactive land markets." Indeed, for our purposes here it is useful to distinguish between intrastrata and interstrata land transactions. Intra-strata transactions are transactions between individuals from the same farm-size stratum. Interstrata land transactions occur between individuals of different farm-size strata. Smaller farm units are generally believed to trade actively in land while the "submarket" for large farm units—which account for the majority of rural lands—is less active. Moreover, when large holdings are put on the market, *campesinos* are not potential buyers. Increasingly in the late 1980s, both governments and international aid agencies have sought policies and programs to activate land markets (see section 5).

This section examines theoretically the consequences of a free and active land market for the evolution of land distribution and agrarian structure. Agrarian structure and its relationship to land markets is important because, in addition to equity concerns, there appears to be a strong and systematic relationship between farm size and land productivity in the imperfect size-sensitive environment of Latin America and the Caribbean.[14] Berry and Cline (1979), presenting evidence from throughout the Third World, confirm the generality of an inverse relationship between farm productivity per hectare and farm size rooted in

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13. It ought to be clarified that the literature does recognize that the rental market for land is far from inactive. However, throughout this section, we shall ignore land rental transactions as a means of access to productive land assets. Land rental markets—despite their predominance in South Asia and in Asian-oriented economic literature—seem not to function in Latin America as a way to shift radically the operating farm distribution away from highly concentrated landownership distribution. Transaction costs may be part of the explanation for this phenomenon.

14. A factor market is "size-sensitive" if the effective or shadow price of the factor systematically varies with the size of the farm unit, other things being equal. Theories of labor monitoring suggest that the effective cost of labor increases with farm size. Theories of capital rationing suggest that capital's shadow price decreases with farm size and wealth. Imperfect factor markets and their characteristics are discussed in greater detail in section 2 of the annex (Carter and Mesbah 1990a).

massive cheap labor inputs on small holdings. On the other hand, Feder (1985), and especially Carter and Kalfayan (1989), develop the argument that capital constraints facing small farmers attenuate the inverse relationship.

If access to labor, land, and capital markets and the effective prices in those markets are scale-sensitive, then one might expect to observe pronounced size-related patterns of resource allocation and productivity, even in the face of scale-neutral technology. Such productivity-size relationships would indicate a potential to increase total production by transferring land from one end of the scale where the marginal productivity of land is low to holdings where it is high.

There are two competing hypotheses about the effect of active land markets on agrarian structure in the imperfect market environments characteristic of this region:

(1) Active land transaction markets tend, over the long term, to promote a more efficient allocation of resources between small and large holdings and transform the pattern of ownership holdings by shifting land to the resource-poor.[15]

or

(2) Land market activation, in the context of **multiple** imperfect markets, will instead shift resources to units of the production scale that are better positioned to expand in an active land sales market because of advantages in other markets such as the capital market.

To explore these hypotheses, this section sketches the main elements of a theoretical framework that can be used in future empirical research on small farmers' access to land via the market.[16] The following section will use insights offered by the theoretical framework to evaluate the potential impact of a number of land market-intervention strategies on the evolution of landownership distribution.

A. THEORETICAL FRAMEWORK AND HYPOTHESES

Can competitive market forces break down and reform a bimodal tenure structure, shifting land to the landless and land-poor? Confidence in this possibility has inspired land titling, land registration, and other land market activation measures.

Recent economic theory presents the following characterization of land transfers and land markets in Latin America. In a model assuming perfect markets, Binswanger (1987) has argued that the market will not spontaneously shift land to the resource-poor. In a

15. The microeconomic rationale of this conventional case for land market activation policies is the inverse relationship between farm productivity per hectare and farm size.

16. Full treatment of this theoretical framework can be found in the annex.

perfect market situation, the value of the land reflects the present value of agricultural profits, capitalized at the opportunity cost of capital. If the poor have to borrow money to purchase a unit of land at the market price, they will use the entire increase in their annual income from that unit to pay for the interest charges on the loan. The only income flow that they would have available for consumption expenditure and their repayment installments on the loan would be the imputed value of family labor. The consumption level of these individuals would therefore be considerably below what their income would be in the labor market.

> *Hypothesis*: When agricultural income is the only income derived from possessing land, and when mortgage finance is available at the market rate of interest, poor people will not be able to purchase land at market prices without curtailing consumption considerably below what their income would be in the labor market.

The problem of financing land purchases by the poor is worsened to the extent that the expected future real appreciation of the land price is also capitalized into its current market price, driving it above the capitalized value of the agricultural income flow. The expected capital gains component of land cannot be realized on a period-by-period basis, except by selling off the land, which is clearly infeasible for smallholders using credit to buy land at its present value.

> *Hypothesis*: The larger the expected capital gains components of land income and land price, the higher the equity required to buy land, or the higher the nonfarm income required to finance consumption and mortgage payments.

Extending the Binswanger model to imperfect market environments, Carter and Kalfayan (1989) analyze a producer's economic ability to purchase a unit of land using a conventional present-value calculation of the returns or surplus the producer will realize from that unit of land. In an environment of imperfect markets (that is, of differential access to labor and capital markets), differences in agricultural activity (for example, choice of crop) and productivity among different-sized producers suggest that large farmers may be better able than small farmers to generate and accumulate a surplus over consumption needs.[17] If land markets are active, this implies that larger farmers enjoy a systematic capacity to outbid smaller farmers for available land, indicating the relative potential for

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17. A substantial literature addresses the problems of imperfect labor and capital markets. The common feature of these factor market-imperfection theories is that the effective cost of labor increases with farm size while the shadow cost of capital decreases with farm size and wealth. It is the ability of different strata of producers to mediate labor and capital market imperfections and to exploit remunerative economic opportunities that explains differences in productivity by farm size. Imperfect factor markets and the nature of the productivity-size relationship are discussed in greater detail in section 2 of the annex.

expansion by the larger farm-size group and, therefore, for increasing concentration in the ownership of land.

> *Hypothesis*: In the presence of imperfect capital and labor markets, holding prices fixed, it is the labor-hiring larger farms with access to capital markets that are best positioned to expand through a market mechanism. This suggests that the agrarian structure under free and active land markets may potentially be characterized by increasing concentration of land.

B. OTHER FACTORS

In addition to the impact of imperfect factor markets on small farmers' ability to purchase land, two other factors influence their position in the land market: transaction costs and distress sales of land. Both factors work to the relative advantage of large over small producers in an active land market.

The process of registering and legalizing land transfers can be very complex, time-consuming, and costly (Lambert 1989). These problems are exacerbated in Latin America and the Caribbean by the large proportion of the rural properties that have no registered title. In terms of the Carter-Kalfayan model presented above, an individual will choose to purchase a unit of land only if the current value of the net returns that will accrue in future periods from that unit promises to exceed the costs of acquiring the asset, which include both its market price and the transaction costs involved in purchasing it.

Clearly, to the extent that such transaction costs are fixed irrespective of the size of the land transfer, the per-hectare costs of transactions would be radically different. In other words, the greater the number of land units purchased by an individual, the lower the value of transaction costs per unit of land purchased. Fixed transaction costs imply that potential buyers of large holdings will be able to pay more for a unit of land relative to small buyers.

> *Hypothesis*: Fixed transaction costs favor buyers of large holdings and will therefore provide an additional force toward increased concentration of ownership holdings in the hands of the larger holders.

The Carter-Kalfayan model, as the Binswanger model before it, ignores stochastic variations in production and income levels; the potential returns from the land are, therefore, assumed constant over time. In real world situations, however, individuals face risks from many different sources—the production process, the market, their health, family circumstances, and so forth—that threaten their normal income and consumption streams. In the absence of insurance, access to well-functioning capital markets (for example, access to credit in times of crisis such as crop failure) can serve to even out consumption streams over time (Carter 1990).

In general, access to this type of credit would increase with wealth and farm size. Therefore, when small, poor farmers cannot fully insure themselves nor freely borrow against their expected future income stream, stochastic shortfalls in realized production and income can induce distress sales of land—that is, the sale of land for the purpose of satisfying basic consumption needs (Cain 1982). In other words, under free land market conditions where land is very alienable, during bad years small farmers (who have no cushion to fall back on) are likely to lose their land. The sale of land erodes the small farmer's productive capacity and diminishes the farmer's ability to recover in the postcrisis period.

V. THE IMPACT OF LAND MARKET REFORM POLICIES

Market reform measures proposed and implemented in Latin America and the Caribbean to increase market efficiency and make land markets more accessible to the landless and rural poor have included:

- elimination of subsidies to scale,
- land taxation,
- modernization of land registration systems,
- land titling, and
- land banks and mortgage banks.

Drawing on the theoretical framework presented in the previous section, this section evaluates the potential impact of these policies on landownership distribution.

Land market reform measures such as taxation, elimination of subsidies to large landowners, and improvement of land registration and titling can be analyzed in terms of their impact on the amount of land available for purchase in the market by different strata of producers. Mortgage banks and land banks, on the other hand, are potentially able to increase the rural poor's effective demand for land. In any case, the effects of these policies and strategies will differ by a person's access to resources. For example, the impact of land and mortgage banks on an individual's ability to buy land may be greatest for individuals without equity to buy land; land registration and titling may have a greater impact on individuals who are able to buy land in small quantities.

These measures are not mutually exclusive. In fact, two or more reform measures may be necessary to achieve the desired outcomes. Taxing larger units at higher rates will probably not expand land markets unless credit also is made available for land purchases. Land titling and registration might increase land transactions and provide incentives for more intensive land use, but in the absence of other measures to control the concentration of ownership, such programs could work to the disadvantage of the landless. Credit for land purchases will serve no purpose if land units of appropriate size are not offered for sale, or if the price at which land is sold to poor farmers exceeds the agricultural income flows that could accrue from it.

A. ELIMINATING SUBSIDIES TO SCALE

One of the reform policies proposed to activate land markets has been the elimination of agricultural subsidies. Although subsidies in a development context are typically designed and implemented without regard to scale, they are more available, in fact, more to large than

to small farmers. To the extent that land-poor people are less likely to have access to agricultural subsidies, an increase in government subsidies to the agricultural sector (in particular, credit subsidies) will potentially worsen the bargaining position of the landless and land-poor in the land market. The reverse will hold when agricultural subsidies are reduced.

A notable example of such subsidies in the past has been the official agricultural credit policies common to many countries of the region, which supply credit to farmers at negative real rates of interest. The benefits of these programs are, more often than not, captured by the large farmers who not only have better access than small farmers to the information and legal council needed to take advantage of them, but are also more likely to possess the land titles required for eligibility. Moreover, subsidized credit is often allocated to large farmers because even public lending institutions are reluctant to lend to small farmers given high lender transaction costs involved in processing and servicing loans.

Binswanger (1989, p. 16) points out how subsidized credit can be equity-negative in the land market:

> Because real interest on agricultural loans is lower than for other sectors this difference is . . . capitalized into the land price . . . . [Thus] the subsidies will increase the difficulty of poor people to buy land. . . . Since the poor are less likely to have titles or certificates of occupancy, or are more likely to be tenants, share croppers, or workers and therefore not eligible for subsidized credit, an increase in the credit subsidy will worsen the distribution of income and ownership . . . in rural areas.

Subsidizing the purchase of capital equipment that replaces labor, by means of tariff or exchange mechanisms, also tends to favor large landholders and to perpetuate or even reinforce the existing inequitable land distribution. “Subsidies for mechanization and for credit have provided impressive ‘gifts’ to large farmers” (Binswanger and Elgin 1988, p. 13).

Binswanger (1989, pp. 20-21) also argues that tax breaks to agriculture have serious land tenure implications. For example, “because the income tax preferences for agriculture, agricultural profits, and other factors are capitalized into the land price, small farmers and other poor individuals cannot buy land in areas of well integrated land markets. If they want to acquire land, they have to squat on land at the frontier.”

This unequal access to subsidies by farm size is capitalized into the present value calculation of the returns farmers will realize from the land, through the cheaper shadow price of capital for larger farmers—due, for example, to cheaper credit or subsidies to import machinery at negligible duty levels.

There has been little research on the issue in Latin America and the Caribbean and no programs have been established for systematically adjusting or eliminating direct or indirect

subsidies for the express purpose of ending distortions of the land market (that is, beyond the general and sectorial "structural adjustment" measures). Research along the lines of Binswanger's (1989) argument needs to be conducted in a number of countries of the region in order to clarify the direct effects of subsidies on land markets and to develop policies to reverse the inequities.

B. THE IMPACT OF LAND TAXATION

Land taxation is another policy option which could be explored as a means to promote the redistribution of agricultural land and enhance the rural poor's access to land through the land market. It has been argued that land taxation with progressive rates will provide large landowners with incentive to sell parts of their land in order to escape the higher tax rates (Strasma et al. 1987). Under a progressive taxation structure, the capitalized value of the expected income flows to be realized from one additional unit of land will contain a component corresponding to the size-differentiated tax provisions. Other things being equal, the preferential treatment of small farmers under a progressive tax structure increases their ability to pay for a unit of land relative to large farmers.

However, progressive tax rate structures have been very difficult to implement and enforce. Moreover, under a progressive taxation structure, regulations must be designed to guard against "paper subdivision" of large estates that continue to be operated as single units. This type of evasion is very difficult to detect and penalize. For these reasons, Dorner and Saliba (1981) argue, a heavy fixed-cost tax burden (which is less complex in implementation and enforcement) may be preferred: as a fixed cost, a flat tax rate (at significant levels) can, they argue, potentially encourage landowners to either use their land more productively or sell it to people who will.[18] Even where land taxes have been levied and strictly enforced, however, the combination of appraisals consistently far below market values and low (normally flat) tax rates have resulted in levels of effective taxation that are too insignificant to affect the economic decisions of landowners. As regards the redistributional potential of a flat-rate land tax, Strasma et al. (1987) conclude that land taxation at a high enough level to achieve the redistribution of land is unlikely ever to be politically acceptable to landowners.

With the exception of Chile and Jamaica and, to a lesser degree, Colombia, there has not been a systematic effort in any of the countries to make land taxation an effective fiscal policy tool. Honduras, for example, has a very low tax rate (1.5/1,000), which has minimal

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18. Alternatively, if land rental markets are functioning well (or if credit is not available for would-be purchasers), some farmers may wish to rent their underutilized lands to tenants, instead of using it more productively. The incentives would imply a worsening only of the operational holding distribution and not necessarily of the ownership distribution. However, as Dorner and Saliba (1981) point out, these arrangements may, in the absence of fair rental regulations, produce conditions more inequitable than those before the tax.

effects on land use decisions. A costly land and natural resource cadastre undertaken in Panama in the late 1960s and consultants' recommendations for tax reform were not translated into a modification of the single, low, standard valuation of U.S.$30 per hectare of rural land. Broad reform of the land tax system in Argentina, fully planned and agreed to with the World Bank in 1988, was derailed by party politics before it could get under way.

Attempts to stimulate policymakers to renewed efforts in this direction may well depend in part on the results of well-designed empirical research into the impact of effective land taxation in specific places. Too much of the current argument depends on persuasive but unproved theory. In the absence of any significant empirical evidence on the volume of sales from large estates that might be expected to result from taxation, the most certain benefit from taxation is the increased revenue generated that might be used to finance loans to potential buyers.

C. IMPROVEMENT AND COST REDUCTION OF LAND REGISTRATION PROCEDURES

An important constraint to the efficient operation of land markets in rural Latin America has been the complex, expensive, and excessively bureaucratic nature of the land transfer process and registration procedures (Lambert 1989). As a result, many transfers among smallholders are completed with private documents without the benefit of formal registration, and information in the registry system is incomplete and inaccurate. Moreover, high transaction costs are incurred by both sellers and buyers. In general, large landowners prefer to sell to one buyer rather than to subdivide their holdings for sale to numerous small farmers. To the extent that transaction costs are fixed irrespective of size, they constrain the amount of land available to small farmers in the market by adding a disincentive to large holders who might consider subdivision.

The Property Registry and related institutions are important to the functioning of the market as a record of property holdings, extensions, and boundaries. To provide an effective infrastructure for market operations, the system must include all properties, and information must be current and legally binding. The system should protect the interests of property owners, ensure the veracity of ownership for mortgage and credit institutions, and facilitate transfers by assuring buyers that the person selling has the right to collect on that property. From the point of view of the individual with an interest in land, the registry's value is its ability to issue a secure and negotiable title to a parcel.

In Latin America, an important objective of a reform of the registration and titling system should be to shorten the time required and thereby lower the high direct and indirect costs of the process for buyers and sellers of land. Transfer procedures and transaction costs can be alleviated by a wide range of technical, legal, and administrative reforms. The modern cadastral survey, which exists in only a few countries of the region (for example, Chile, the Dominican Republic, parts of Colombia), kept up-to-date through structured links to the Property Registry, forms the basis for an accurate land information system for tax,

management, and transfer purposes. Reforms in the information storage and retrieval mechanisms will improve accessibility and could cut costs. Decentralization of registry and cadastral offices could make it easier for transactions to be recorded and improve accuracy. In some cases, additional training for registry employees and tying them to the civil service system could improve efficiency and accountability.

D. LAND TITLING

Increasing attention has been devoted in recent years to land titling as a means of stimulating land markets and making land more accessible to landless and small farmers. The rationale for this new policy emphasis is spelled out in a recent and widely cited microeconometric analysis by Feder et al. (1988) of the farm-level impacts of land titling in Thailand. Land titles, they argue, reduce the uncertainty over the entitlement of owners to maintain or transfer land rights and in turn affect the price and scope of land transactions. More specifically, they hypothesize that greater security of ownership raises farm productivity and that, as a result, the market value of land is higher for titled land than for an identical tract of land that is not securely
titled.

Titled land → Higher output per acre → Higher land prices

Following the theoretical approach adopted by Feder et al. (1988), the direct effects of land title provision can be divided into demand and supply effects. Demand effects occur when the acquisition of land title increases the farmer's security and certainty that he or she will be able to maintain possession of the land and benefit from investments improving the productive capacity of the farm. Increased security is hypothesized to enhance investment incentives and increase the demand for capital and variable inputs complementary to capital and, thereby, raise agricultural productivity. Supply effects result when provision of secure and legal land title improves a farmer's access to cheaper and longer-term institutional credit because land can be pledged as collateral for loans.[19] Output on securely owned parcels is consequently expected to be greater than on untitled farms because of increased use of inputs of capital and other variable production factors and potential shifts to more capital-intensive crops. Thus, the combined demand and supply effects, it is hypothesized, cause higher farm productivity on securely owned (that is, titled) land and also raise the price that land can command in the land market.

In terms of the theoretical model offered by Carter and Kalfayan (1989), land titles increase the value of the returns farmers realize from the land through greater investment

19. The function of collateral in lending is discussed by Binswanger and Rosenzweig (1986): with a fixed rate of interest, the amount of the loan is expected to increase as the value of the collateral increases, other things being equal. As Binswanger and Rosenzweig note, land has several attributes that make it a desirable collateral.

incentives and access to cheaper credit. This argument implies that the provision of secure legal titles to land increases the ability of small farmers to pay for land and improves their bargaining position in the land market.

The rationale provided by Feder et al. (1988) for land titling, however, ignores a number of other factors which shape farm productivity and may affect the desired outcomes of titling programs. In particular, Stanfield (1985) argues that, in addition to ownership security, farmers' investment decisions are affected by a number of factors such as alternative investment opportunities, accessibility of production inputs, the farmer's present debt structure, and overall profitability of farming and the availability of investment capital. Moreover, the assumption that credit is available must be seriously questioned. In an environment of imperfect capital markets, small farmers' access to credit is rationed and a title to land may not overcome the obstacles to getting access to institutional credit.

Finally, under some conditions the provision of land titles may work to the disadvantage of smallholders. Carter (1990, p. 217) argues:

> If titled land operates as collateral as Feder et al. indicate, then foreclosure and land loss is a real possibility. Threat of land loss is of course supposed to mitigate moral hazard problems associated with credit contracts. But in a stochastic agricultural environment which lacks insurance markets, the farmer faces a genuine exogenous probability of loss of titled and mortgaged parcels.

Under these circumstances, the impact of land title on individual investment incentives and productivity—and, therefore, on ability to pay for land— is likely to be greater for better-off farmers whose size and wealth leave them favorably situated with respect to capital and insurance markets. For small-scale farmers, potential benefits of land titles may be overwhelmed by market access problems, leaving little incentive for title acquisition.[20] Moreover, the basic rationale for land titling does not consider the dynamics of property systems and the longer-term structural consequences of these programs.[21] If land titling programs widen the gap between better-off and poorer farmers in their ability to pay for land, the bargaining position of the latter in the land market is likely to be worsened by titling programs.

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20. This suggests, therefore, that the possession of land titles is likely to be systematically related to market access.

21. To date, studies suggesting the important benefits from secure land titles—including Feder et al. (1988)—have mainly been based on cross-sectional analysis comparing titled farms to untitled farms and have generally failed to consider the longer-term impact of land titling on land transfers and, possibly, land concentration. The exception is Seligson and Nesman's (1989) longitudinal studies of the Honduras titling program.

Finally, in the environment of imperfect or missing capital and insurance markets, communal land tenure systems can act as important substitutes for those markets (Stanfield 1985; Carter 1990). Where public lands or communal or group tenure forms are extinguished by private land titling, Stanfield (1985) predicts that there will be a tendency for the newly titled to sell their land in times of stress, unless strong credit and technical support are also provided.

Although the Land Tenure Center has been involved in the evaluation of the impact of land titling programs in several countries in the region,[22] the short time frame for the evaluations means that little information is available on the long-term impact of titles on agrarian structure and land market activity. This is an important area for longitudinal research and evaluation in the future. Studies by Stanfield et al. (1986), Seligson and Nesman (1989), and Nesman and Seligson (1988) in Honduras have shown that titling, in and of itself, has not increased credit transactions or improved production on titled land. The procedures for maintaining legally registered titles remain cumbersome and difficult, and informal or customary transfers continue. The impact of titling on land market activities is inconclusive. Studies by Seligson and Nesman (1988, 1989) in Honduras indicate no effect of the titling project on land sales in one region, while in another region the titled parcels were less likely to be sold than untitled ones. Coles (1989) similarly found that titling has had little if any effect on the number of land sales.

A study by Boster et al. (1989), connected to the land titling project in Ecuador, concluded that legal title in Ecuador made little difference with regard to use of agricultural inputs, investment in infrastructure, credit use, or crop yields. The study did not investigate the impact of titling on land market activities.

E. MORTGAGE BANKS AND LAND BANKS

The majority of the landless and land-poor do not have savings or access to the financial resources required to convert an economic desire to own land into effective demand. Commercial banks and financial institutions do not lend for land purchases because, as Stringer (1989) argues, they cannot afford to tie up capital raised largely through short-term deposits in the long-term loans required for farmland purchases. Also, most banks, and even public credit institutions, are unwilling or unable to provide mortgage credit to the landless and small farmers because of the high lender transaction costs involved in processing and servicing large numbers of such loans (Dorner and Saliba 1981). Lack of resources severely restricts land-market entry for the landless or land-poor and constrains their bargaining power in the land market. Under these circumstances, establishing land-financing systems may represent a viable institutional means to promote the participation of the resource-poor in land markets.

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22. For discussion of these studies and further information on the impact of titling, see Stanfield (1990).

Modeled on successful farmland mortgage systems in industrialized countries, land-financing programs have recently gained attention in some Latin American and Caribbean countries. In particular, mortgage banks and land banks have been established on a pilot basis in a number of countries to finance peasant purchases of land. Mortgage banks make loans to individual peasants, or groups of peasants, to finance the purchase of land. Land banks, on the other hand, purchase large estates which they then either resell to groups of peasants or subdivide into family-sized farm units that are resold to landless or land-poor families as freeholds. Land banks may also finance the sale of the land to these selected beneficiaries, who are responsible for a minimum down payment, with the remaining cost to be paid over a number of years.

Mortgage banks supplying credit for land purchases will serve no purpose if land units of appropriate size are not offered for sale, and large landowners are often reluctant to subdivide their holdings. By purchasing large estates and subdividing them, land banks may help resolve the inconsistency between the size of farm plots offered by sellers and those wanted by buyers. Land banks as land market interventions, therefore, attempt to correct both supply and demand distortions in the market. Another option is to organize groups of buyers to acquire large tracts of land. Such efforts have been tested in Ecuador, Guatemala, and Honduras, though their results have not yet been documented.

A review of the designs and performances of land-financing programs currently being considered or implemented in Latin America and the Caribbean leads to a number of concerns that could negate the desired outcome of land or mortgage banks. A major problem is the availability of funds for the projects. In industrialized countries, well-developed capital markets allow land-financing institutions to raise the cash necessary to finance farmland transactions.[23] In developing countries, lending institutions rely on depositors and international donors to raise funds for land-purchase financing. Unless these institutions have very large quantities of capital, they will exhaust their funds after only a few land purchases, leaving them unable to finance further transactions until those funds are replenished by borrowers (Stringer 1989). Long-term financial mechanisms must be developed for these programs if they are not simply to evaporate when the grants run out (Dorner and Saliba 1981; Stringer 1989). Under unstable macroeconomic conditions, with high levels of uncertainty, inflation, and devaluation, the terms for purchase demanded by sellers, such as payment in cash or dollars, or variable interest rates, may not only close the market to small buyers but also make it impossible for land banks to purchase land or for finance institutions to offer long-term credit.

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23. Unlike commercial banks, which depend on savings deposits for their funds, financing institutions in industrialized countries issue longer-term mortgage bonds and other securities or receive capital resources and/or guarantees from the government. In the United States, for example, the Federal Land Banks issue large-denomination bonds which are purchased by institutional investors such as commercial banks and insurance companies. These bonds are competitive, offering an interest rate 0.5 percent higher than Treasury bonds.

A second concern is that the continued success of these programs closely depends on the beneficiaries' ability to service their debts. The lending institution's assessment of the value of the farm property for which a loan is to be issued, the interest rate charged on the loan, the required down payment, as well as the length of the loan are critically important in determining the borrower's ability to repay. Clearly, if land prices contain any premiums reflecting nonagricultural income streams—that is, if the cost per unit of land exceeds its agricultural capacity—*campesino* beneficiaries will not be able to pay for the land and will default (Binswanger 1987; Binswanger and Elgin 1988).[24] Moreover, the clients of the land banks will be narrowed to those *campesinos* who have enough resources for a down payment.

The rest of this section reviews a number of land mortgage and land purchase programs that have been implemented in the region.

1. Costa Rica

Since 1937, the National Bank of Costa Rica has made agricultural loans to individual, bona fide small farmers, including loans for land purchase. The guarantee for a land loan is the property being purchased. This subsidized rural credit program is gradually disappearing with the increasing dominance of lending at commercial interest rates in the banking system. Lending for small farmer land purchase under this program was much greater before 1955; only fourteen land purchase loans were made in 1988.

The major land-purchase program in Costa Rica is administered by the Instituto de Desarrollo Agropecuario (IDA). Since 1965, IDA (formerly ITCO) has purchased large landholdings and divided them into family parcels. In many cases, purchases were made in response to land invasions by *campesino* groups. IDA negotiated purchases with landowners who would otherwise have faced lengthy and costly legal procedures to remove squatters. IDA beneficiaries are expected to pay for their parcels even if they were acquired through invasion. In recent years, with a new government policy of not buying invaded lands, land invasions have declined and landowners, no longer under duress from the threat of invasion, are bargaining with IDA for higher prices. IDA is recognized as the principal buyer of large farms in Costa Rica today and is said to have more offers for sale than funds with which to purchase. USAID supported IDA in two land projects during the early 1980s, one on the Caribbean coast and the other in the north near the Nicaraguan border.

The latest public intervention in the Costa Rican land market is a provision in a 1988 law to create an agrarian trust in the National Bank and to make it easier for state-controlled banks to foreclose mortgaged land if the land is sold to the trust, divided into family parcels, and resold to small farmers. Payments collected from new buyers would replenish the trust

24. See Binswanger's model in previous section. See also section 3 (part A.1) for a review of studies in Guatemala on the economic ability of small farmers to repay land mortgages at current commercial interest rates.

fund. The National Bank Small Farmer Credit Program would be available to provide production credit and technical assistance to the new buyers. Although the trust is not yet operating (as of March 1991), the rules for operation have been approved and several farms have been offered for sale to the trust. The government would like to use PL-480 funds for a part of the initial capitalization of the trust.

2. Guatemala

In Guatemala, the Cerezo government began a public land purchase/sale program soon after its accession to power in 1986. To date, the government has purchased 11 farms, totaling more than 16,000 hectares, and resold them to *campesinos*, benefiting about 1,800 families. Two farms were turned over for purchase to ANACAMPRO, the organization founded by the activist priest, Father Andrés Girón. Beneficiaries on each farm are organized into a "campesino business association" (*empresa campesina asociada*), which holds a collective title to the land and is responsible for the land debt. In most cases, the farms are divided into parcels for individual farming. The program has been very constrained by lack of funds for land purchase and by inadequate technical assistance and production credit.

Since 1984, USAID has supported an alternative approach through a local private voluntary organization, the Fundación del Centavo (Penny Foundation). This private sector Land Purchase/Sale Project began with annual grants of U.S.$1 million from USAID. In 1987, the project was extended for another five years with an additional $7.5 million grant. Total AID financial assistance to the Foundation project as of early 1990 amounts to $10.5 million.

The Penny Foundation negotiates the purchase of farmland on the open market, with the owner receiving up to 50 percent of the price in cash and the balance over 3 to 5 years through certificates of guarantee. The Foundation purchases large blocks of land, subdivides them into economically viable, family-sized units, and resells them individually to selected landless families. The recipient pays the Foundation for the parcel over 10 years, during which time the Foundation provides technical assistance and credit for production of commercial crops. The Foundation also concerns itself with other aspects of integrated rural development, including education and housing. More than 1,700 *campesino* families, most of them previously landless, were settled on 28 farms covering 6,252 hectares in seven of Guatemala's 22 departments. Most farms grow coffee or other export crops such as vegetables.

Under this approach, the Penny Foundation acts as broker, banker, and technical advisor for *campesinos* who aspire to become independent farm producers on their own land. As broker, the Foundation's technical personnel appraise the farms offered for sale, negotiate with the landowners, and register the properties. As banker, the Foundation provides long-term financing for *campesinos*, who have no assets for collateral other than the mortgage on the newly acquired land, as well as short-term production credit and medium-term investment financing for planting permanent crops. As advisor, a Foundation agronomist is assigned to live on each farm and provide technical assistance to the new family farmers resettled on the former large holdings.

The Penny Foundation program demonstrates the multiple components of an effort to help landless *campesinos* overcome the barriers they face in the land market. At the same time, this project illustrates the high cost involved in assisting landless *campesinos* to become landed commercial farmers. Land purchase (including purchase price, interest, unrecovered defaults, and possible capital erosion from inflation) is only a small part of the total cost; overhead for administration and support services such as technical assistance as well as the production credit that makes it possible for new owners to pay for the land make up the bulk of the financial cost. One problem with such an approach is that limitations of human and financial resources tend to confine it to such a small number of beneficiaries that it cannot make a tangible impact on the vast numbers of landless *campesinos*.

A review (USAID/Guatemala 1990) of the Fundación del Centavo (FUNDACEN) land purchasing program has revealed a number of problems, some of which are most likely endemic to this type of program. One of the more serious problems is a cash flow one growing from the desire to guarantee that *campesinos* buying land could pay for it through revenues from the land and also enjoy an improved standard of living. Beneficiaries under the program are required to grow a cash crop—in most cases, coffee. The crop requires a large investment up-front in labor and inputs and generates no income for at least three years. Beneficiaries' land payments are therefore deferred for three years. In the meantime, the FUNDACEN had covered 50 percent of its purchase of the land from the original owner with five-year certificates, which are now coming due. The FUNDACEN is paying out on the certificates yet getting no income from the beneficiaries. Although the original project design anticipated this timing problem and included a schedule for land purchases which would balance outputs and inputs, the FUNDACEN accelerated the pace of purchases in order to take advantage of temporarily favorable conditions in the land market.

Additional land purchases in the near future are unlikely because of changes in market conditions (and the cash-flow problems). The inflationary economy has contributed to an excessive rise in the price of land and a general tightening of the sales market, to the point where payment is demanded in cash dollars.

Another serious problem in the FUNDACEN program is the high costs borne by the beneficiaries. Analyses of agrarian reforms have shown that they fell short of their goal of improving the living standards of rural residents and increasing land use and production because they had inadequate funds for technical assistance and production credit. These two factors are important components of the FUNDACEN program, but they are very costly both to FUNDACEN in the short run and to the beneficiaries in the long run since these costs are added to the land purchase price as part of the beneficiary debt package. The tradeoffs to resolve this problem are difficult. One possibility would be to buy more developed land (for example, with coffee trees in place) and thereby cut the cost of technical assistance and credit, provide immediate income, and shorten the beneficiary grace period. Unfortunately, more developed land is also more expensive. On the other side of the coin, cheaper land has higher technical assistance and credit costs, especially up-front, and contributes to more difficult living conditions for the beneficiaries and probably to a higher

dropout rate as well. Beneficiaries also could be allowed to grow subsistence crops for a few years while getting established, which would lower the initial technical and credit cost but would also delay repayment and decrease the likelihood of improved living standards.

The living conditions on many of the farms are very poor, contributing to illness, intragroup conflicts, and abandonment. While the FUNDACEN program provides for strong technical assistance for agricultural production, little attention has been given to the problems of community organization and household survival in the new communities being created. Binswanger (1987) has argued that land banks cannot work because *campesinos* can pay for the land only by cutting back on subsistence or tapping nonfarm income sources. Unfortunately, the workload on the FUNDACEN farms in the initial years, to clear the land and put in and nurture the coffee plants, does not allow time for off-farm employment. Case studies of FUNDACEN farms have shown that families which are most likely to survive the first years on the farms have had savings to support their subsistence or other adults in the household who could bring in outside income.

The FUNDACEN has provided "subsistence" credit in addition to production credit so that families could buy food products during the initial period. This credit adds to the overall debt load and has contributed to abandonment (a familiar problem on agrarian reform farms). When new beneficiaries are found for an abandoned parcel, the price of the parcel for them includes not only the initial land price but also the accumulated debt attached to it. Subsistence credit also increases the up-front cost of the program for the FUNDACEN.

Paternalism, a problem often associated with government-directed land reforms, is also apparent in the FUNDACEN program. As the FUNDACEN has become more worried about the cash-flow problems and about the foundation's debt, its approach to the beneficiaries and to the farms has become increasingly paternalistic. The foundation is reluctant to allow government agencies or other NGOs to provide any services in the farm communities because it does not want any other entity to have any claims on the beneficiaries' income, time, or loyalties. More importantly, increasingly the FUNDACEN is attempting to control all aspects of the beneficiaries' lives and especially the income from crop production and credit repayment. As farms have come into production, the FUNDACEN has sold the harvest from the farms (without *campesino* participation) and deducted payments to the foundation for production credit and land payment before the *campesinos* have received any money from the sales. Until recently the foundation was arbitrarily deciding how much to deduct from the sale proceeds based on the FUNDACEN evaluation of how much a *campesino* family needed to survive. In other words, the FUNDACEN was controlling the level of consumption and the level of subsistence in order to guarantee repayment.

Finally, the FUNDACEN has also increased its control over land tenure. Instead of issuing fee-simple titles with a mortgage when *campesinos* enter the project, the foundation has proposed the issuance of certificates that guarantee title when all conditions to sale, as specified by the foundation, have been met, in the judgment of the foundation, by both

parties. As of July 1990, many beneficiaries of the project had no documentation of land purchase, neither title nor certificate.

Lessons to be learned from the FUNDACEN project, in progress, include the following: First, a broad program which includes land payments, technical assistance, and production credit is very expensive, as in any agrarian reform program. It is probably not possible for a landless *campesino* to absorb the total cost. Second, a private sector land-bank program may not be for everyone. Young families without additional adult labor and impoverished families without savings or other assets probably cannot survive economically. Third, program self-support and sustainability are very difficult in the short term. Outside financing is indispensable for a long period of time, at least ten or twenty years and probably longer. And fourth, cost issues are perhaps more critical for private sector land-bank programs than for government agrarian reform programs because, unlike the government, the private sector institutions must meet their obligations or go insolvent.

3. Honduras

In 1983, USAID agreed to provide $2 million (in U.S. dollars) in local currency funds to establish the Agricultural Land Sale Fund in the Central Bank of Honduras. The purpose of the fund was to set up a centralized land-financing mechanism through the commercial banking system by discounting mortgage loans from private banks for the sale of privately held agricultural land with fee-simple title to individual small farmers or to cooperatives.

An evaluation of the program carried out in late 1985 (Hernandez and Falck 1985; Zelaya 1985) showed that for the first few years, almost no interest was shown by the commercial banks: after two years, only two banks were participating in the program. The reasons given for a low response rate illustrate the difficulties inherent in this type of program. First, much of the cultivated land in Honduras is national or ejidal land, not held in fee-simple ownership, and therefore ineligible for the program. Second, the Banking System Law of Honduras stipulates that banks cannot authorize mortgage loans for amounts exceeding 60 percent of the reasonable value of the collateral; this means that purchasers must have substantial prior assets for paying 40 percent of the price in cash or for pledging as collateral, or they must get a cosigner with the additional collateral. As a result, the individual purchases financed by the program were generally not made by small farmers.

In 1985, three-fourths of the USAID money was withdrawn from the fund, but it was later restored and, by late 1989, slightly over half of the original monies had been disbursed. The balance together with loan repayments totaled approximately US$1,500,000.00 in local currency available for loans. The limited use of the fund, as well as informational problems between the Central Bank and the commercial banks, indicate some of the problems that this approach to land financing may encounter, especially the need to consider local banking regulations and practices and to monitor selection of program beneficiaries.

A more recent evaluation (Forster 1990) of this project concludes that this financing program has been generally unsuccessful in reaching small farmers, especially through individual sales. The majority of individual buyers were farmers who already controlled

significant amounts of capital and were middle-class urban dwellers. The evaluation also found that banks prefer dealing with their traditional clients and required additional collateral. There were, however, several positive outcomes from this project. It did contribute to the breakup of large properties and to the transfer of land to new producers. In addition, it resulted in more intensive agricultural production. Prior to sales, most of the land was used for grazing cattle. After sales, a significant proportion (30 percent) of the land was being cropped, mostly in food crops.

4. El Salvador

The Government of El Salvador, with USAID support, has been promoting the establishment of a land bank to act as an intermediary organization in the land market between buyers and sellers. As the armed conflict and rural insecurity in El Salvador continue, there are few private buyers for large farms. FINATA (the 1980 agrarian reform Phase III implementing agency) regularly receives offers of land for sale. Until 1989, the offers came principally from owners who were not quite convinced that the threat of expropriation under Phase II of the land reform was really over. Demand for large farms and land prices will probably increase when the war ends. An intermediary agency can help bridge the gap between the landless *campesinos* who wish to purchase small plots and the large landowners who wish to sell.

The demand for land among *campesinos* is clear. Phase III of the agrarian reform gave between 35,000 and 40,000 small tenants of typically marginal lands an opportunity to become individual owners of parcels averaging about 1 hectare. Significantly, about one-fifth of the ex-tenant beneficiaries of Phase III, according to a 1985 survey, have purchased or rented additional land on the market since the reform. In addition, applications from as many as 28,500 small tenants for land were not approved under Phase III. It can be assumed that these small tenants still wish to purchase land and are potential clients of a land bank (Strasma 1989b).

Legislation enabling FINATA to establish a land bank, the Voluntary Land Transfer Program, was passed in December 1987. Concurrent legislation created a Committee of Campesino Organizations (COC), composed of representatives of six organizations most involved in agrarian development, to locate land for purchase; to prepare, with FINATA, technical, legal, and financial studies of the properties offered, appraise them, and negotiate the terms of purchase; and to identify beneficiaries.

Although USAID agreed that the government set aside local currency funds for the land bank, USAID delayed disbursement in an effort to pressure FINATA into speeding up the issuing and registering of the remaining titles for beneficiaries of Phase III of the reform. This task still has not been completed.

The Cristiani government has decided to create a new land bank institution instead of working through FINATA. USAID has reserved approximately 30 million colones (US$4.65 million) to finance start-up of the bank as soon as the institutional structure is in place. Although FINATA began the new land financing activity in a small way in mid-1988,

with the purchase of several farms which were resold as production cooperatives, under the new bank only individual family parcels will be sold. The purchase/sale and financing mechanisms will be similar to those of the Penny Foundation project in Guatemala. The cost to purchasers will include the full cost of the land and of surveying and titling; buyers will be required to make a 5 percent down payment (Strasma 1989b; World Bank 1989). Strasma (1988a) has estimated that as many as 20,000 families could benefit from this market-impelled land bank over the next 5 years if bureaucratic and political impediments were removed and financing provided to maintain the revolving loan fund at an adequate level.

VI. CONCLUSIONS

A. SUMMARY

In spite of agrarian reform programs undertaken in many countries of Latin America and the Caribbean, land distribution in most of the region remains skewed. While agrarian reform has reduced somewhat the level of concentration in some countries (for example, Ecuador), other countries that have not undergone agrarian reform have actually experienced increased concentration (for example, Guatemala). Because most agrarian reforms have not achieved desired redistribution goals, there has been an expansion of policy options to include the land market as a means of redistributing land from the large-farm sector to the efficient small-farm sector. Government and international development agency policies have attempted recently to affect skewed land distribution by removing obstacles to participation in the land market by efficient land-poor and landless farmers. These reforms include land purchase and sale programs, land mortgage banks, reduction of inequitable subsidies, and land registration and titling programs.

This paper has emphasized the relation between land distribution and land markets. In general, increased land concentration in the hands of a reduced minority would portend a highly imperfect land market; and, as a corollary, a more egalitarian distribution of land would allow a more fluid or perfect land market. In the absence of research on land markets in the region, there has been a generalized belief that there is little activity in land markets, for two very different reasons:

> Large landowners, who have access to land and have the financial means to purchase it, are able to participate quite easily in the land market but do so infrequently.
>
> Small farmers and landless peasants do not generally participate in the intersectoral land market, unless they are forced to sell; they generally do not acquire land through purchase. The small parcels they do have are divided among the children, thus becoming even smaller parcels.

The research reviewed in this paper has uncovered a number of tendencies in how land markets function in the region. These tendencies challenge some of these beliefs. First, there are several types of land markets in the region, and they have developed differently. In Guatemala, for example, there is a land market for large landholdings which are exchanged primarily within a small group of owners. Seldom are these large landholdings subdivided into family-sized parcels and sold to small farmers. But research has discovered that in most countries there is also a market of small landholdings. In Ecuador, for example, there is a very active land market among smallholders. While small farmers do generally subdivide and pass their land on to family members, they also actively buy and sell land.

Most of the research reviewed focused on the small farm sector and on land transactions within that sector. Particularly where small farmers practice a highly commercial agriculture or have substantial nonfarm income, as in certain areas of Ecuador, they often are able to purchase small parcels of land. Small farmers, however, do not have access to enough land to buy; in other words, the demand for parcels of land on the part of the small farmer is higher than the supply. In addition, the size of parcels being bought by small farmers has been decreasing over generations as a result of a decreasing supply of land in the small-farm sector and the increasing price of land.

Small farmers and landless peasants do not have access to long-term credit to finance land purchases. Most purchases are financed through savings, an exceptionally good harvest, or family loans. It would appear that the poorest of the peasants is unlikely ever to have the capital to purchase land.

An interesting finding concerning these land transactions among small farmers is their informality. These transactions often are not legalized or registered in the appropriate land registry, and titles may not be updated when transfers occur. An important reason for this reluctance to register land sales is the cost in both time and money, a process which is often prohibitive for small farmers. It is hypothesized that nonregistered land or land with outdated titles has a lower value and is not as marketable as registered land.

There is evidence in Ecuador and Costa Rica that some land has moved from the large-farm to the small-farm sector. Studies undertaken in Ecuador show that modernization of the large haciendas, subdivision of large estates among heirs, and agrarian reform have resulted in land transfers down to the small farmer and the landless. While the agrarian reform in Ecuador did directly transfer some land through expropriation and adjudication, the threat of agrarian reform action also encouraged large landowners to sell part of their holdings. While it appears that much of this land was sold to relatives and close friends, many sales were in small parcels to resident laborers and other smallholders.

Modernization has also brought about land sales. Landowners wanting to modernize their farm operations often sell off the marginal areas of their holdings to their resident workers, in this way ending tenancy or usufruct labor relations with them and generating some capital for infrastructure investments.

Upon division of large estates, heirs will sometimes sell all or part of their parcels. If agriculture in the area is commercial, some *campesinos* may have accumulated enough capital to buy up this land. At times, when heirs attempt to sell their land to nonpeasants or outsiders, the local peasant families will apply pressure on them to reconsider.

Where small farmers can participate in highly commercial agriculture, such as vegetables or truck farming, they are able to take advantage of these situations when the large landowner sells pieces of a holding. Once again, though, the evidence seems to show that the supply of small parcels does not meet the demand for them by small and landless peasants.

Summarizing the research on land markets in the region undertaken during the last five years, it can be said that while there is ample evidence that certain sectors of small farmers and landless peasants do purchase land, many are unable to participate in the land market or find themselves severely constrained in their level of participation. The main obstacles to small farmers' and landless peasants' participation in the land market in Latin America are: (1) concentrated land ownership and distribution, which result in inelastic supply of family-sized parcels; (2) lack of financial credit for land purchases, which results in ineffective demand on the part of buyers; and (3) complex and expensive land transfer and registration procedures, which discourage both buyers and sellers of land from formalizing and legally registering land purchases and may even keep some land off the market.

A theoretical framework (section 4) has been proposed to guide additional empirical analysis of small farmers' access to land via the market. This theoretical framework examines how imperfect factor markets (such as labor and capital markets) affect landownership structure when property rights are marketable and land markets are active. The central hypothesis is that land market reform, in the context of multiple imperfect markets, will not necessarily promote a more efficient allocation of resources between large and small holdings, nor shift land to the resource-poor, but may in fact shift resources to farm sectors that already command access to resources and are therefore better able to expand in an active land market. The final section examined proposed land market reform policies and project evaluations using this theoretical framework.

B. POLICY OPTIONS

The goal of applied research of this type is to develop guidelines for project and policy implementation. The research and analysis suggest several specific considerations for the design and monitoring of land market activities.

Land market policymakers must recognize the limitations and biases that land concentration imposes on land market programs and market activities in general. Under conditions of a highly skewed distribution of land, it is likely that not just one but a range of options will be needed in order to shift land from the large farm sector to small farmers.

1. Legal framework

A careful consideration of the legal framework governing the operation of the land market is fundamental, particularly with regard to laws and regulations concerning agrarian reform-sector land and restrictions on the rights of landowners.

a. Coordination of the land reform programs. Land market programs should be coordinated with existing land reform programs. Land market policies will affect the pattern of consolidation and institutionalization following land redistribution. Land market projects might be used to target lands or population groups which were not reached by agrarian reform. Clear legal definition of lands subject to land reform is important to provide the security of tenure needed for land markets to operate.

b. Implications of the various regulations. The implications of the complex of laws governing the owning, buying, selling, and subdividing of land have to be considered. What type of title is required for those selling land? Can land be subdivided freely or is the authorization of some agency required? What are the restrictions on the private ownership of land, such as setback provisions for public roads, bodies of water, and rivers, exclusion of ownership within public parks and reserves, restrictions on owning larger than a specified area? What are the requirements and steps in formally registering land transactions? What are the banking and mortgage regulations relative to land financing? What are the provisions for the restrictions to group ownership of land?

The spectrum of regulations will have an impact on project design not only in relation to specific project components but also because it affects the extent and form of traditional land markets and the relationship of traditional land transactions with transfers to the formal system.

2. Land bank

A land bank program could be considered to overcome both supply and demand constraints. A land bank would acquire land, either through purchase of large farms or through foreclosure of those estates in arrears with their loans, and repackage the land for sale to small-scale producers, either individually or in groups. The design of an effective land bank should consider the following issues.

a. Eligible sellers. Who are the eligible sellers of land to the bank? Among the possibilities are: other banks with loans in arrears but with land pledged as guarantee, only individuals who offer a minimum amount of land, government agencies which might wish to dispose of land.

b. Eligible buyers. To whom can the land bank sell land? What constitutes landlessness or land-poverty? Are urban as well as rural residents, both agriculturalists and nonagriculturalists, eligible?

c. Price. How will the price of the land to be bought or sold be determined? Who will determine a fair price and negotiate with sellers? Does the land bank have sufficient staff to determine the market price for similar land, and do conditions in the country permit inquiry into market prices for land? Can the price be tied to potential production income? Can the tax valuation be used to set the price for land? How are improvements to be built into the purchase price (buildings, irrigation systems, fencing, and so forth)?

d. Group purchase. Will group purchases be allowed and, if so, what procedures will be used to negotiate a group purchase of land? How are the rights and responsibilities of each group member to be defined? What happens when a member of the group does not meet the payment requirements?

e. Terms of loan. What are the prevailing interest rates for long-term loans, periods for repayment, grace periods? What might past experience with these loans indicate for the formation of a land bank?

f. Capitalization. How can the capitalization of the land bank be assured? Ideally, financing of the land purchase fund is achieved by selling long-term bonds, with interest rates for such bonds approximating the interest rates charged to land purchasers. In most countries of the region, however, there is no long-term capital market. Can the land bank be capitalized through the national budget, property taxes, and/or international donors?

How can lack of payment by buyers be dealt with? In order to minimize default by buyers, programs that offer crop insurance or mortgage payment insurance could be established. Should land bank programs require a down payment or collateral from the buyers with foreclosure procedures included?

What means can be devised for dealing with the situation where inflation exceeds the interest rate of the financing provided to buyers? If the inflation rate in land prices rises higher than the interest rate for loans, the loan fund would shortly be unable to acquire land. Can buyer contracts have flexible interest rate provisions?

g. Restrictions. Can the land bank finance land purchases negotiated by others, or is it restricted to buying and selling land itself?

h. Responsibilities. What are the legal rights and responsibilities of the land bank? Does it come under the regulations of banks in general? What regulations apply for the setting of interest rates, down payments, length of mortgages, collateral, collection of bad loans?

i. Structure. What would be the institutional structure of the land bank, including the composition of its board of directors, its functional divisions, staffing requirements, need for regional offices, information management technologies, and the like?

j. Costs and benefits. The design of a land bank program should include a cost-benefit evaluation. Given the profiles of sellers and buyers of land, what changes in land use, input use, production, or employment might the land transfers bring about? Are the changes sufficient to justify the investment in the land bank?

3. Mortgage financing program

A mortgage financing program to facilitate purchases negotiated between land buyers and sellers is an option to overcome the small-scale producers' lack of capital. A special banking institution could be created or a mortgage guarantee fund established to underwrite the land purchase financing carried out by already existing banks. The design of such a program should address the same set of issues facing the land bank.

The attractiveness of a mortgage bank is its potentially low overhead costs—that is, it would not negotiate for the purchase of land, select beneficiaries, or collect mortgage payments. However, the experience in Honduras with the mortgage loan-guarantee program suggests that a mortgage guarantee fund in the central bank is not sufficient for achieving the land market reform goals of such a program.

a. Project management. A project management structure is required to oversee the functioning of the program and induce private banks to modify their lending procedures and coordinate with the land reform agency or other government units involved with land distribution policy. Such a structure should be analyzed as to its costs and benefits.

b. Potential beneficiaries. Mortgage bank programs have been most successful with medium-scale buyers who have equity or off-farm income to apply to the purchase. Thus it would appear that potential beneficiaries of a mortgage bank program would be farmers who already own land or buyers who earn a level of income above subsistence level. Policy options that would allow participation by rural families who do not meet these characteristics (for example, land-poor families who do not have substantial off-farm income sources) should be explored.

4. Land tax

A land tax could stimulate the offering of land for sale if owners consider sale more advantageous than continued possession and payment of the tax, as through a progressive tax rate based on size of property, a land tax tied to potential production capability, or a flat tax rate approximating the rental value of the land. Garzón-López (1988) suggests that a property tax system which taxes land more heavily than improvements may be redistributive.

Unfortunately, few effective land tax systems have been implemented in recent decades. Strasma et al. (1987) conclude that the use of agricultural land taxes for stimulating better land utilization and redistribution has not yet succeeded because land taxes are imposed at too low a rate to affect the decisions of property owners.

A land tax program whose objective is to encourage the transfer of land from the large-farm sector to the small-farm sector must be carefully designed. Several factors need to be considered:

a. Political acceptability. In order for a land tax to be politically acceptable and effective, it should replace other agricultural taxes based on actual production or income such as export taxes, marketing fees, and income taxes. These latter taxes often discourage investment.

b. Appropriate level. Land tax rates should be set high enough to be effective. Low tax rates will have no effect on land use intensity or investment. In addition, automatic adjustments for inflation should be included or tax levels will quickly become negligible.

c. Varied applicability. Land taxes may be overly onerous for farmers near the subsistence margin and force them to sell their land even if it is being efficiently used. This danger is especially worrisome if factors other than the productivity of land are predominant influences on land prices. An across-the-board land tax may, under such conditions, contribute to greater concentration of land.

d. Monitoring and evaluation. Careful monitoring and evaluation of land tax programs that measure their effect on land use, production, and sales and rentals should be

undertaken. Empirical studies which test the theory of the redistributive effects of land taxes are necessary for the future design and implementation of land tax programs. Such evaluations would contribute greatly to policy decisions regarding land tax systems.

5. Elimination of subsidies to agriculture

Structural adjustment policies—recommended by the International Monetary Fund, World Bank, and USAID—that eliminate subsidies to agriculture may favor the transfer of land to small-scale producers who generally do not benefit from such assistance. A number of studies (Binswanger 1987; de Janvry 1981; Adams 1971; Hecht 1985; Foy and Daly 1989; Thrupp 1989; Reydon and Paolino 1988) have shown that these subsidies favor large-scale producers and increase the market value of their land. This support system includes subsidized factor (input) prices, overvalued exchange rates, and income tax rates which are favorable to large landowners.

a. Supply of land. Careful monitoring of programs that eliminate subsidies would demonstrate whether they increase the supply of land by encouraging large property owners to offer their lands for sale. The monitoring should include information on who is buying the land put up for sale.

b. Price of land. The elimination of subsidies may lower the land values of large properties, thereby making land more accessible to small-scale producers (Clark 1973). These programs should include evaluations that monitor their effects on the price of land.

6. Titling and registration programs

Titling and registration programs that reform the legal and bureaucratic procedures associated with land rights and transfers may affect the land market.

a. Modernization of the property registry. The property registry and associated agencies are an essential part of the infrastructure of a formal capitalist land market. Modernization of this system should focus on improving the quality and scope of the information on the registry.

Accessibility, transaction costs, and perceived personal utility are factors which affect the property owner's use of the formal as opposed to the informal property system. The relationship of these factors to the behavior of small landowners deserves particular attention since smallholders are more likely to carry out their transactions outside the formal system than are large landholders.

Attention should be given to the benefits of the informal or customary property system in order to incorporate these benefits into the formal system, particularly with regard to communal, family, or group landholdings.

b. Effects of land titling. Land titling programs intended to increase tenure security for smallholders and incorporate them into the formal system may also affect land markets. The effect of such titling programs on land values should be monitored. Research suggests that land values may increase following titling because of changes in owners' perceptions of the

value of the title rather than changes in the productive potential of the land. If titling does in fact increase the market value of land, then the titled holders should be able to leverage more credit from banks as mortgaged loans. On the other hand, if prices rise excessively following titling, the land will become less accessible to the land-poor for purchase.

c. Land transactions and the land-poor. Titling and registration programs can stimulate land transactions in favor of the land-poor. To achieve this objective, however, supplementary measures are needed, including changes in the behavior and priorities of bank managers, local lawyers and judges, land surveyors, and the newly titled owners themselves. It does not appear that titling alone will affect farmers' behavior in terms of buying and selling land.

7. Future research on issues related to land markets

a. Supply and demand and the price of land. Systematic evaluative research is needed on how land market programs affect the factors which influence the supply of and demand for land and their subsequent effect on the price of land. The success of programs focused on influencing the land market will be conditioned by a variety of interacting factors. This interaction is summarized in the price of land. A better understanding of these forces is fundamental to the design and implementation of land market reform programs. Trends in land prices may signal increased or decreased competition for land, particularly by large-scale investors.

The competition between large-scale private investors and peasant land purchasers is influenced by the different conditions of the two types of market participants. Large-scale private investors estimate the relative profitability and risks associated with land investments in comparison with expectations and risks from investments in other activities, frequently outside of agriculture. Peasant purchasers of land have fewer options, since they must provide for the survival of their families at least in part from their use of the land. They calculate their investments from an estimate of the future productivity of the land itself. The model developed by Reydon and Paolino (1988) explores the processes underlying the interest of capital investors in land.

Rising and falling land prices affect the functioning of the land market programs, but the programs, in turn, may affect land prices. The policy implications of the interaction between land prices and land market programs are numerous. The **mortgage bank** and **land bank** options are limited by trends in the prices of land—rising land prices will increase the amount of financing required. A land tax program usually requires some assessment of land prices and a continual adjustment of that assessed value. Times of rapidly changing land values prove to be difficult challenges for maintaining a fair and functioning land tax system. Reduction of transaction costs, through the **modernization of the property registry system**, may have positive effects on the price of land while the elimination of subsidies to scale may lower the price of land.

Land titling may stimulate speculation in land, driving prices up and out of the reach of peasant buyers. On the other hand, land titling programs may introduce state regulation of land transactions which could inhibit market exchange and reduce the value of titled land. When prices rise rapidly, the market access of the peasantry will probably decline, whereas declining prices should increase their access, especially when supplementary programs are available to overcome additional barriers to peasant market participation.

b. Land markets and the agrarian structure. Research is also needed on the nature of land markets and their influence on the agrarian structure and performance. Theory identifies a number of competing forces which influence the ways in which land market reform policies affect the agrarian structure. Well-organized, cross-country, empirical work should examine these effects. Particularly unclear is the nature of the supply of land for sale and how this supply varies in response to economic circumstance, off-farm opportunities, and occasional shocks of drought or economic downturn. Peru and Chile offer important research opportunities because the experience with land markets has been radically different in the "decollectivized" agrarian reform sectors of these two countries (Carter 1989).

c. Agro-export strategies. Policy research is needed on the impact of the new agro-export strategies on land tenure patterns, agrarian structure, and income distribution. These strategies show tremendous potential to benefit smallholders, who in the past have often been by-passed by growth opportunities. But, again, a cross-country focus is important. An extensive research effort is currently under way in Guatemala. This study could be complemented by work in other countries—Chile, for instance, is rich in experience relevant to the rest of Latin America.

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ANNEX 1

ECONOMIC THEORY OF LAND MARKETS AND ITS IMPLICATIONS FOR THE LAND ACCESS OF THE RURAL POOR

by

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ECONOMIC THEORY OF LAND MARKETS AND ITS IMPLICATIONS FOR THE LAND ACCESS OF THE RURAL POOR

INTRODUCTION

Land, in contemporary rural Latin America and the Caribbean remains the fundamental factor of production, as well as the primary source of employment, a dominant repository of wealth and a principal determinant of power and status. Yet, the Latin American agrarian sector has long been characterized by a highly unequal "bimodal" land ownership distribution. Vast numbers of farm units, owning a small proportion of the land, coexist with a small number of farm units owning a very large share. This paper examines **theoretically** the consequences of a free and active land sales market[1] for the evolution of agrarian structure. Will active land markets transform highly concentrated land ownership distributions, increasing the possibilities for the landless and the land poor to gain access to land via market mechanisms? The interest in agrarian structure, and the impact of land markets upon it, reflects—in addition to equity concerns—the consensus in the literature that, in the imperfect "size sensitive" market environment characterizing these countries,[2] there is a strong and systematic relationship between farm size and land productivity. Berry and Cline (1979) present evidence collected from studies of agriculturalists throughout the Third World, confirming the generality of an inverse relationship between farm productivity per hectare and farm size rooted in massive cheap labor inputs on small holdings. On the other hand, Feder (1985), and especially Carter and Kalfayan (1989), develop the argument that capital constraints facing small farmers attenuate the inverse relationship. If—as a result of intrinsic market failures or policy-induced distortions—access to labor, land and capital markets and the effective prices in those markets are scale

1. Throughout this paper, we shall ignore land rental transactions as a means of access to productive land assets. Land rental markets—despite their predominance in South Asia and in Asian-oriented economics literature—seem not to have functioned in Latin America as a way to radically shift the operating farm distribution away from highly concentrated land ownership distribution. Transactions costs may be part of the explanation of this phenomenon. In addition, as Eswaran and Kotwal (1985) show, in a world of differential access to capital and technical information, large scale wage labor production may dominate rental arrangements.

2. A factor market is "size sensitive" if the effective or shadow price of the factor systematically varies with the size of the farm unit in equilibrium. Theories of labor monitoring suggest that effective cost of labor is increasing in farm size. Theories of capital rationing suggest that capital's shadow price decreases with farm size and wealth. Imperfect factor markets and their characteristics will be discussed in greater detail in section 3.

sensitive, then one might expect to observe pronounced size-related patterns of resource allocation and productivity, even in the face of scale-neutral technology. Such productivity-size relationships would indicate a potential for increased total production by transferring land from units of the production scale where the marginal productivity of land is low to holdings where it is high.[3]

The fundamental question motivating this research is to examine from a theoretical standpoint, how agrarian structure in imperfect market environments could evolve when property rights are marketable and land markets active.[4] More specifically, this question can be stated in terms of two competing hypotheses:

(1) Do active land transaction markets—as is presumed by the recent market activation policies adopted in several Latin American countries—tend, over the long term, to promote a more efficient allocation of resources between small and large holdings and transform the pattern of ownership holdings by shifting land to the resource poor? or,

(2) Will land market activation, in the context of **multiple** imperfect markets characteristic of these countries, instead, shift resources to other units of the production scale that are better positioned to expand in an active land sales market.

To explore these hypotheses, this paper offers a theoretical framework to analyze land markets and synthesize the impact of government market-oriented intervention policies on the operation of these markets. Section 1 presents a stylized characterization of land transfers and land markets in Latin America. Sections 2 and 3 sketch the main elements of the theoretical foundations which guide this research, focussing on the establishment of testable hypotheses. Assuming **perfect** markets, the Binswanger model (section 2) offers a novel explanation for the market's inability to autonomously shift land to the resource poor: the smallholder's inability to generate an economic surplus over subsistence requirements given the equilibrium price of land. In an extension of the Binswanger model to the **imperfect** market environment case, the Carter-Kalfayan model (section 3) analyzes land market activation policies in terms of the market expansion capacity of different producers and hypothesizes that the landless and the land poor are not best positioned to expand in an active land market. Readers interested in the conclusions but not in the details of the two models may prefer to skip these sections and pick up the thread of the argument in section 4 where the hypotheses derived from these models are restated. Section 4 also examines some of the larger issues concerning land markets. Section 5 uses insights offered by the theoretical framework presented here, to evaluate the potential impact of a number of land market intervention policies on the evolution of the land ownership distribution.

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3. In other words, they indicate a potential for improving static resource allocation.

4. That is, to examine the dynamic significance of the productivity-size relationship.

The paper concludes by emphasizing the need to investigate **empirically** some of the concerns that we derive and formulate **theoretically**.

1. LAND TRANSFERS AND LAND MARKETS IN LATIN AMERICA: THE STYLIZED FACTS

In addition to land sales, there are other **methods** of land transfers and transactions which alter land ownership. Such methods include direct land redistribution, foreclosures, gifts, transfers of communal land rights, and inheritances.

Inheritance is probably the most common form of gaining access to land. However, given traditions of partible inheritance, rapid population growth rates and the scarcity of rural employment, inheritance often does not provide a family with adequate land resources to generate even a subsistence level of living from agriculture or to reproduce itself across generations. Communal land rights, on the other hand, are disappearing very rapidly with the strengthening of private property institutions in developing countries.[5] Finally, prospects in the near future for government-sponsored restructuring of the agrarian sector through widespread expropriative land reforms, as a means of access to land for the resource poor, are politically very bleak in many of the contemporary Latin American countries (Binswanger and Elgin 1988). Moreover, expectations about the potential of such reforms to make land more accessible to the rural landless and land poor have often been unrealistically high in the past (Carter and Mesbah 1990). The disillusionment with and political cost of expropriative reforms have led both governments and donors, in most countries of the region, to view participation in local land markets as the most viable avenue for the landless or land poor to gain access to sufficient land resources in the bifurcated tenure structure characterizing most Latin American countries—in other words, to adopt a market-oriented response to the agrarian question.

However, the markets for buying and selling land in Latin America are characterized by their inactivity.[6] It is a widely accepted "stylized fact" of the rural development literature that: "Even with full property rights in land, the market for buying and selling of cultivable land is often rather inactive. Unless forced by extremely difficult circumstances, a resident villager does not usually sell his land" (Bardhan 1984:95). A number of micro-

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5. The increasing interest in privatization in developing countries proceeds from the "conventional" belief that private property rights—and private ownership of land in particular—are a necessary condition for the generation of economic wealth (Bromley 1989).

6. It ought to be clarified however, that unlike the market for full land rights, the rental market for land—even though it does not, in the Latin American context, tend to make operational holdings more equal than ownership holdings—is nevertheless far from inactive.

level studies—e.g., Seligson and Nesman (1989), Schweigert (1989), Forster (1989)—have corroborated this.[7]

It is, however, very important to define what is meant by "inactive land markets." Indeed for purposes here, it is useful to distinguish between two types of land transactions, intra-strata and inter-strata land transactions. Intra-strata transactions refer—as their name suggests—to transactions between agents from the same farm size strata. Inter-strata land transactions, on the other hand, occur between agents of different farm size strata. Smaller farm units are generally believed to trade more actively in land than larger units.[8] The "sub-market" for large farm units—which account for the majority of rural lands—is, however, less active. Moreover, when large holdings enter the market, *campesinos* are not eligible buyers.

In Latin America and the Caribbean, where these conditions continue to persist, both governments and international aid agencies have, in the 1980s, made land market activation their policy target, aiming specifically to promote land sales from larger to smaller owners, thus making land accessible to the rural poor. Various intervention policies have been attempted to increase land market efficiency and influence patterns of land access, including land financing programs, land taxation, land registration and titling. These land market activation policies target the barriers to opportunities for the rural poor to get land *via* the market, and presume that competitive market processes can be enlisted to break down a bimodal agrarian structure and shift land and economic security to the landless and the land poor.

2. THE BINSWANGER MODEL: THE FUNDAMENTAL FINANCING PROBLEM OF LAND PURCHASES FOR POOR PEOPLE IN PERFECT MARKETS

In a simple model assuming **perfect markets,** Binswanger (1987) models individuals' demand for land using a present discounted value approach to investment decisions. When an individual buys a unit of land he/she is in effect buying an expected stream of net revenues (that is, marginal revenue products) in future periods. In order to decide whether or not to purchase a unit of land, the individual will compute the present discounted value of this stream of net revenues.

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7. Such observations are echoed in the non-Latin American literature, e.g., Rao (1972) and Bliss and Stern (1982).

8. This may be reflected in greater transfer rates of parcels (percentage of parcels changing hands in a given time period) relative to transfer rates of acreage (percentage of acreage of rural lands changing hands in a given time period) (Wunderlich 1989).

2.1 Productive returns from the land in a perfect market environment

Binswanger first considers the case where the only revenue derived from the land is net farm income—the "productive returns" from the land—defined as:

$$p = Q - L - F \tag{1}$$

where: π = farm income,
Q = sales value of output,
L = wage labor costs,
F = other costs, e.g., fertilizer expenditure.

Binswanger makes the following implicit assumptions:

(1) the potential return on the land is the same in every year. The model, in other words, ignores stochastic variations in production and income levels.

(2) in an environment of perfect markets, the marginal revenue product from the land is identical for all producers. In other words, in Binswanger's model, land productivity is independent of the size of the farm.

2.2 The Equilibrium market price of land

Consider an individual in the process of deciding whether or not to purchase a unit of land. The maximum amount that this individual is able to pay for an incremental unit of land is given by the present discounted value of the net income stream that will accrue to him from owning that unit. This amount, as given by PV in equation (2) below, represents what Carter and Kalfayan have later called the "reservation demand price for land."

$$PV = \sum_{t=1}^{n} \Delta / (1+r)^t \tag{2}$$

where: Δ is the expected net marginal returns from one unit of land,
r is the market rate of interest.[9]

Under the assumption of perfect markets, the marginal revenue of land is identical across farm size strata, and all producers face the same effective price of capital as given by r. Therefore, the present discounted value of the income stream from a unit of land—or the reservation demand price for land—is identical for all potential buyers—irrespective of their initial farm size.

An individual will decide to buy a unit of land if the present discounted value of the stream of net revenues that will accrue to him/her from self-cultivation—his reservation

9. The market rate of interest r is myopically expected to persist into the future.

demand price—exceeds the cost of acquiring the land as given by the prevailing market price of land P^*. The land promises to return more than its prevailing price (even when the effects of the interest payments that the individual could have earned on its funds, had it not purchased the land, are taken into account). On the other hand, if P^*>PV, the individual would be better off to invest its funds in some alternative that promises a rate of return r. When account is taken of foregone interest, the land does not pay for itself.

Therefore, in a competitive market—and assuming that individuals seek to maximize returns from the land—the only equilibrium that would prevail is the price of land being equal to the present value of the expected income stream from the land, capitalized at the opportunity cost of capital.[10]

$$P^* = \sum_{t=1}^{n} \Delta / (1+r)^t \tag{3}$$

where: P^* is the market price for land.

2.3 The Fundamental financing problem of poor people

Given the above specifications, Binswanger argues that a poor farmer financing a land purchase (at the market price P^*) via a mortgage at the rate of interest r, will need the entire increment in his agricultural income from the extra unit of land to finance the interest charges on the loan.[11] However, the farmer's cash flow in each period is given by the sum of the net income from the farm and the imputed family labor income. The poor farmer's consumption expenditure as well as his repayment installments on the loan will therefore have to come entirely out of his imputed family labor income (valued at the market wage).

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10. Several important criticisms have been directed at this conventional present value technique. In particular Roberts (1989:66) points out: (1) many farmers produce for home-consumption which prevents the easy conversion of production into monetary terms and (2) people hold land for many purposes (prestige, housing as well as production) and this distorts the use value of the land. However Carter and Kalfayan (1989) argue, these present values can be more agnostically interpreted as measures of the **market expansion capacity** of different producers—that is, their economic ability to pay for additional land—rather than estimates of equilibrium land market prices.

11. A simple arithmetic example may help illustrate this point. Let us suppose that the real annual agricultural income from a unit of land is $100. Let us further suppose that the market rate of interest is 20%. The market price of land is, according to the above model, given by the discounted present value of the expected annual income stream of $100 received—for the sake of simplicity—to perpetuity.

$$P^* = \sum_{t=1}^{\infty} 100/(1+0.2)^t = 100/0.2 = \$500$$

An individual who purchases land at the market price P* financing it by a loan at the market rate of interest (20%) will face interest charges on the loan equal to r.P*, that is $100 exactly. In other words, the interest payments on the loan alone will exhaust the incremental income that will accrue to the producer from owning that additional unit of land.

Consequently, the consumption level of a poor farmer purchasing land at the market price, financing it via a loan at the market interest rate, will be considerably below what their labor income would be in the labor market. Binswanger therefore proposes the following hypothesis:

> *Hypothesis*: When agricultural income is the only income derived from possessing land, and when mortgage finance is available at the market rate of interest r, poor people will not be able to purchase land at market prices without curtailing consumption considerably below what their labor incomes would be in the labor market.

However, to the extent that subsistence and other living costs of family members approach the market wage, consumption may thus be curtailed below subsistence levels. It is therefore easily seen that "to buy land at market prices is only feasible for people who can buy it out of equity or who have substantial non-agricultural incomes available to finance the mortgage payments" (Binswanger 1987:11).

2.4 The Impact of an expected real appreciation of land

In addition to benefits derived from it as a productive asset, land is also held for its "speculative value," that is, for the capital gains generated from owning it. In a real world situation, with population growing and demand for land increasing, some of the expected future real appreciation of the value of the land is also, at equilibrium, capitalized into the current land price (Binswanger and Elgin 1988). The price of land, at equilibrium, will therefore be the capitalized value of both the net farm income *and* the capital gains accrued to the owner.

$$P^* = \sum_{t=1}^{n} \Delta/(1+r)^t + P_e/(1+r)^n \qquad (4)$$

where: P_e is the expected sale price of a unit of land at the end of a time period of n years.

The expected capital gains component of land income can be realized, not on a period by period basis, but by selling off the land. In other words, the real appreciation of the land does not generate an annual cash flow for the landowner. The larger the capital gains component of land price, the greater the interest payments of the small holder using credit to buy land. The farmer's cash flow in each period, however, is still given by the sum of his net farm income and his imputed family labor income. The farm income of a small landholder using credit (at market interest rates) to buy land at the price P^* will therefore not even cover the interest payment on his loan.[12]

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12. A simple arithmetic example may again help explain Binswanger's proposition more clearly. Let us suppose that a unit of land generates an annual stream of agricultural income of $100. The price of land at equilibrium is given by the capitalized value of the net income stream from the land over a period of n years and the capital gains generated from selling the land after the n year

Binswanger's ensuing hypotheses follow directly:

Hypothesis: The larger the expected capital gains components of land income and land price, the higher the share of equity required to buy land, or the higher the non-farm income required to finance consumption and mortgage payments.

Hypothesis: When the non-agricultural components of land income are large and cannot be realized on a period by period basis, ownership distributions cannot be equalized via private land market transactions.

Hypothesis: A land reform attempting to distribute land to landless and workers at near market prices and interest rates is unfeasible.

3. THE CARTER-KALFAYAN MODEL: THE RESERVATION PRICE FOR LAND AND THE POTENTIAL FOR STRUCTURAL EVOLUTION IN AN IMPERFECT MARKET ENVIRONMENT

Binswanger's (1987) proposed theoretical framework for the evaluation of land market-oriented policies—reviewed in the preceding section—rested on the assumption of perfect markets. In the **perfect market environment** characterizing that model, factor prices and intensities and, therefore, productivity are identical across farm size;[13] land productivity will not, in other words, be affected by the amount of land owned. Even under this simple assumption, Binswanger's model suggests the market's inability to autonomously shift land to the resource poor.

However, there is a wide consensus in the literature that in the **imperfect market environment** characterizing less developed countries, there is in fact a strong and systematic relationship between farm size and land productivity. In an extension of the

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period. Let us assume a planning horizon of n=10 years. Let us further assume that, 10 years from now, a unit of land will fetch a price of \$2000 on the market. The market price of land is therefore equal to

$$P^* = \sum_{t=1}^{10} 100/(1+0.2)^t + 2000/(1+0.2)^n = \$419 + \$323 = \$724$$

Consider an individual who takes out a loan at the market rate of interest of 20% to purchase a unit of land at the price P*. His interest payments on this loan will be rP*=\$148 which clearly exceed the increase in net annual income of \$100 from the unit of land.

13. In terms of the notations used in the Binswanger model, Δ and r are scale neutral.

Binswanger model, Carter and Kalfayan investigate the implications of imperfect markets for the land market access of poor people.

3.1 Productive returns from the land in imperfect market environments

One of the important themes in the rural development literature concerns the frequently cited, and often conflicting, empirical evidence on the systematic relation between farm size and land productivity. Using simulated values approximating production levels characteristic of contemporary Central American agriculture, Carter and Kalfayan (1989) have illustrated the farm productivity (output per unit of land) of different size farm units and have found it to be highly size-differentiated (figure 1).[14] There is a conventional inverse farm productivity-size relationship for **very small** farm units which is abruptly reversed at the farm size at which external credit becomes available. After this turning point, productivity **increases** with farm size to an inflection point after which it levels out.[15] In the face of scale-neutral technology,[16] such productivity-size relationships are systematically related to the presence of multiple market imperfections, caused either by **policy-induced distortions** or by **intrinsic market failures**.

A substantial literature addresses the problems of imperfect labor markets in developing countries. Rural labor markets, this literature maintains, are burdened by a number of characteristics that lead to farm-size related "effective" wage differentials and more intensive application of labor on small farms. In particular, family labor may be constrained in its access to off-farm employment opportunities because agricultural labor demand is both seasonal and spatially disperse.[17] The imperfect marketability of family labor **and** the high marginal utility of consumption[18] ("many mouths to feed") result in the low opportunity cost of family labor. For both these reasons, the shadow price of labor is

14. The parameters in Carter and Kalfayan's (1989) model are loosely calibrated on a farm level data set from the 1972 Nicaraguan agricultural census.

15. The productivity-size relationship levels out for the larger capitalist farms defined as those optimally employing hierarchical labor supervision (those units above 25 hectares in size in figure 1).

16. Carter and Kalfayan (1989) assume constant returns to scale.

17. Spatial dispersion of employment opportunities may impose significant transactions costs on job seekers.

18. Small—or more accurately, poor—farms with little land per consumer (and not much off-farm income) value each extra unit of farm income more than a richer family on a bigger farm and will therefore tolerate "drudgery" more (Chayanov 1966).

below the market wage,[19] but is correlated with farm size. A similar inverse relationship between farm size and shadow price of labor is maintained by a growing body of literature which assumes that the labor market exists but is burdened by principal-agent enforcement problems [cf. Eswaran and Kotwal (1985 and 1986), Feder (1985), and Carter and Kalfayan (1989)]. Because hired labor must be supervised (this is ultimately rooted in the particular nature of labor as a commodity[20]), the average and marginal cost of labor varies across family labor farms, farms which employ casual supervision and farms which employ hierarchical supervision (Carter and Kalfayan 1989). The common feature of these labor market imperfection theories is that "cheap labor is **unmarketably** locked up on small holdings"[21] creating incentives for land transfers in the direction of the cheap labor (Carter and Walker 1989:9).

Such structural tendencies created by cheap labor, however, are countervailed by the relatively high shadow price of capital faced by small farm units. More favorable access to credit enables the bigger farmers to modify or reverse the inverse relationship because it outweighs small farmers' advantage (Lipton 1989). This size-differentiated price may be the result of policy distortions such as those discussed by Binswanger (1987)—e.g., preferential government credit subsidies.[22] Alternatively, it may be the intrinsic result of information-based market failures (Feder 1985, Carter 1988). The perception of risk and of high transactions costs in the administration of loans to small farmers make formal lenders reluctant to offer credit to small farms. In other words, access to credit is stratified by farm size. Constrained access to credit severely limits small farmers' application of working capital in agricultural production, causing lower farm productivity. Moreover, "credit constraints may also shape production strategies through their effects on consumption security" (Blarel et al. 1989:75). In the environment of imperfect or missing risk markets in which poor farmers operate, credit is a close substitute for desired insurance in leveling a household's consumption stream between good and bad years (Binswanger and Rosenzweig 1986). Under these conditions, the choice of activity as well as the production technique used will also systematically vary with farm size. In this context, constrained credit may influence farmers' decision to produce food crops before shifting to more profitable commercial activities (Blarel et al. 1989).

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19. Hence, the intensive labor allocation in small farm cultivation, which, in the classic Chayanovian analysis, will force the marginal product of labor down beyond the "efficient level" where the MPL equals the market wage rate.

20. While commitment is assumed inherent in family labor, hired labor has no incentive to work hard, unless supervised closely. This is a moral hazard problem (Binswanger and Rosenzweig 1986).

21. That is, labor market imperfections prevent the transfer of cheap labor to larger holdings.

22. Large farm profitability is, under this "price distortions" hypothesis, artificially maintained by capital subsidies. There are, under this hypothesis, no intrinsic market failures which ultimately limit market efficiency.

The interplay between these market failures determines the nature of the productivity-size relationship (Figure 1).[23] It is the ability of different strata of producers to mediate labor and capital market imperfections and to exploit remunerative economic opportunity that explains differences in productivity by farm size, and more importantly—for purposes here—determines different producers economic potential and capability to expand.

3.2 The Reservation price of land

In a recent paper on the microeconomics of class and agrarian structural evolution, drawing on the economic theory of informationally imperfect markets, Carter and Kalfayan (1989) present an analysis of the land market expansion capacity of different producers. Building on the Binswanger model, Carter and Kalfayan (1989) propose to measure a producer's **economic potential** to purchase an incremental unit of land as a conventional discounted value of the expected optimal returns which will be gained from it over time (say, over a planning horizon of T years)[24]

$$P_i(H) = \frac{\sum_{t=1}^{T}\left[\Delta(H)\right]}{\left[1 + r(H+e)\right]^t} \qquad (5)$$

where: H is the initial size of the farm unit.

$\Delta(H) = [\pi^*(w,\rho_f,H+\varepsilon) - \pi^*(w,\rho_f,H)]/\varepsilon$ is the per hectare increase in farm household income which could **optimally** be realized—at a given wage rate w and price of purchased inputs ρ_f—if ε additional units of land were purchased by a farm of size H.[25] Income is defined as the sum of net crop income plus off-farm wage earnings less borrowing costs.[26] The expected economic returns are estimated as a function of producer i's current wealth (including his/her current farm size), market access, etc.

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23. Feder (1985) and Carter and Kalfayan (1989) analyze this interplay in formal models of agrarian structure.

24. In Carter and Kalfayan's (1989) model, it is assumed, for simplicity's sake, that investment choices are restricted to agricultural endeavors, i.e., investments in land or in the production process itself (say in the purchase of fertilizers).

25. $\Delta(H)$, in other words, represents marginal land revenue.

26. $\pi^*(w,\rho_f,H)$ is the optimum value function which states the maximum income that can be obtained by an individual with a land endowment H, given the wage rate w and price of purchased inputs ρ_f.

T is the time period.[27]

$\rho(H+\varepsilon)$ is the discount rate calculated as the shadow price of capital for producer i, specific to the size of the expanded farm unit.[28]

$P_i(H)$ represents the "reservation price" of land for individual i. Reservation prices merely reflect the economic **potential** for market expansion of different producers. They measure, not the actual market price of land —which would depend on the distribution of land across the different farm size groups—but, rather, the maximum amount that a producer i is able to pay for an incremental unit of land. In the context of the simple investment model presented above, a producer buying a unit of land at his/her reservation price would be made neither worse nor better off. If, however, producer i's reservation price exceeds the market price for land, he will be better off to buy an extra unit of land. On the other hand, any producer paying a price greater than that given by his/her reservation price would earn an implicit rate of return on capital below that which he can realize in other (on-farm) uses. The reservation prices, as defined above, clearly reflect the capitalized value of the labor and capital market imperfections which constrain the behavior of producers in low income rural economies.

3.3 Size-differentiated land "purchase prices"

In the context of imperfect markets, the market expansion capacities of producers—as given by their reservation prices—are clearly not identical; $P_i(H)$ is a function of $\Delta(H)$ and $\rho(H+\varepsilon)$ which vary across farm size. Using numerical values approximating production and income levels characteristic of a classical "bimodal" land ownership structure in contemporary Central America, Carter and Kalfayan (1989) have simulated "reservation land purchase prices" and have found them to be profoundly differentiated by size, clearly reflecting the size-differentiated factor intensities and prices and productivity levels in the context of imperfect markets. Figure 2 graphs the reservation price of land $P_i(H)$ against H.

In the bimodal agrarian structure depicted by Figure 2, farms larger than 17 hectares—in Carter and Kalfayan's model, capitalized family farms and hierarchical capitalist farms—would, theoretically, be able to pay up to $4500 (U.S. currency) per hectare of land. On the other hand, few of the labor abundant holdings—with the exception of the very smallest—would have the economic potential to outbid the labor-hiring classes for available land in the land market. In other words, the labor-abundant household's willingness to pay for land is severely limited by the capital constraints it faces at its

27. In the calculation of the reservation purchase price of land, current prices are assumed to persist into the future.

28. The shadow price of capital measures the real scarcity value of working capital. It can be interpreted as the marginal rate of return of capital on the farm, that is the increase in farm income generated by an additional unit of capital invested in the production process (e.g., in the purchase of fertilizers).

margin of expansion. This implies that, in the presence of free land markets, the larger farmers enjoy a substantial competitive advantage over smaller farmers for available land.

Moreover, even those very small farmers who would potentially be "willing to pay" more for land than the labor-hiring classes, are constrained in their ability to access the financial resources necessary to convert a desire to own land into effective land demand. Without assets to use as collateral, the landless and land poor do not have access to formal bank credit.[29] Furthermore, the potential small buyers are also constrained by the level of their self-generated savings. Even if, as is evident in figure 1, output per acre is highest on the very smallest farms, this does not necessarily indicate a capacity, on the part of these holdings, to generate a surplus over consumption needs. Large farmers, on the other hand, not only enjoy better access to capital in the rural capital markets, but they also may be better able than small farmers to produce and accumulate a surplus of savings out of their relatively high output per acre. Finally, "even those small farmers who could potentially outbid the labor hiring classes for land are tightly constrained in their ability to absorb land as indicated by the steep dropoff in the reservation price curve" (Carter and Kalfayan 1989:30). Thus any significant expansion of the small semi-proletarian farm sector via the land market would seem highly improbable in such an environment. We can therefore propose the following hypothesis:

> *Hypothesis*: In the presence of stylized imperfect capital and labor markets, holding prices fixed, it is the labor-hiring larger farms that are best positioned to expand through a market mechanism. This suggests that the agrarian structure under free and active land markets, may *potentially* be characterized by increasing concentration of land.

More specifically, further analysis of the reservation purchase prices in figure 2 shows that it is in fact the highly productive and profitable intermediate stratum of medium scale producers—identified as "capitalized family farms"—which is best positioned to outbid most other producers (including the hierarchical capitalist farms) for land.[30] The competitive advantage enjoyed by this stratum of agriculturalists rests on their ability, relative to small farmers, to access cheap quantity-rationed capital, as well as on their ability, relative to larger producers, to economize on expensive hired labor.[31] This proposition appears to confirm Lehmann (1982, 1986) and Scott's (1985) hypothesis that the so-called "capitalized family farm" (CFF) sector best mediates labor and capital market

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29. Moreover, high transactions costs involved in administering numerous small loans to vast numbers of small farmers would make formal lenders reluctant to make small farm loans.

30. The average "capitalized family farm"—defined momentarily—would be "willing to pay" almost 25% more per unit of land than would a hierarchical capitalist farm.

31. This stratum of producers is characterized, in the Carter and Kalfayan (1989) model, by its heavy reliance on cheap family labor and a "casual supervisory" mode (that occurs when family members assure hired workers' effort by working next to them in the fields) which economizes on expensive supervisory costs.

failures and is poised economically to acquire land and expand over time.[32] The CFF operates with substantial fixed and working capital ("capitalized") and uses little hired labor from outside the family ("family").[33] Lehmann (1982, 1986) labels this transition of the agrarian structure to a uni-modal structure where both area and farm unit distributions are concentrated at a intermediate stratum of capitalized family producers, the "Capitalized Family Farm path."

3.4 The Impact of an expected real appreciation of land

As pointed out earlier (section 2.4), in addition to its productive value as an agricultural factor, people also hold land for capital gains. Following the Binswanger model, we investigate the impact of capital gains on the expansion capacity of different producers. As defined by equation (6) below, the reservation purchase price of land is the capitalized value of both the production income from an additional unit of land [Δ(H)] and the capital gains to be realized from owning that unit.

$$P_i(H) = \frac{\sum_{t=1}^{T}\left[\Delta(H)\right]}{\left[1 + r(H+e)\right]^t} + \frac{P_e}{\left[1 + r(H+e)\right]^T} \qquad (6)$$

where: P_e is the expected sale price of a unit of land in period T.

Even under the assumption that the expected sale price of a unit of land is independent of the size of the transaction—as in equation (6) above—the higher shadow price of capital faced by small farmers would imply that the present value of the capital gains for the latter will be less than that of the larger farmers.

The capital gains component of land income thus further widens the gap between the reservation price of land for small and large farmers and therefore further deteriorates the competitive bargaining position, other things equal, of small farmers in the land market.

> *Hypothesis*: In a free and active land market, the greater the capital gains generated from the land, the greater the economic potential of large farmers to outbid small holders for available land.

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32. Attention to family farms as a viable structural alternative in Latin American agriculture originated in part from an impressive body of empirical evidence—reviewed in Scott (1985)—on the emerging dominance of medium-sized agriculture in Latin America.

33. The defining characteristic of the CFF is not size. The emphasis is on "family." According to Lehmann (1986b:611) the size criterion "can be adduced with the explicit proviso that its specification be left to the circumstances of each case," since the size of unit that can be operated without recourse to non-family labor will clearly depend on circumstance.

4. SUMMARY OF BASIC THEORY AND EXTENSIONS

Can competitive market forces break down and reform a bimodal tenure structure, shifting land to the landless and land poor? Confidence in this possibility has inspired land titling, land registration and other "land market activation policies."

Yet, even assuming ideal circumstances—**perfect** markets—Binswanger (1987) argues that the market will **not** autonomously shift land distribution: small and poor farmers cannot purchase land without curtailing their consumption below what they could earn in the labor market—because they have no equity. In a perfect market situation, the value of the land reflects the present value of agricultural profits, capitalized at the opportunity cost of capital. If the poor have to borrow money to purchase a unit of land at the market price, they will use the entire increase in their annual income from that unit to pay for the interest charges on the loan. The only income stream that they would have available for consumption expenditure **and** their repayment installments on the loan would be the imputed value of family labor. The consumption level of these individuals would therefore be considerably below what their income would be on the labor market.

The financing problem of land purchases for the poor is worsened, to the extent that, in a real world situation, the expected future real appreciation of the land price is also capitalized into its current market price, driving it above the capitalized value of the agricultural income stream. The expected capital gains component of land returns can not be realized on a period by period basis, but by selling off the land—clearly unfeasible for smallholders using credit to buy land at its present value.

Finally, extending the Binswanger model to **imperfect** market environments, Carter and Kalfayan (1989) analyze a producer's economic **ability** to purchase a unit of land using a conventional present value calculation of the returns or surplus the producer will realize from that unit of land. In an environment of imperfect markets, differences in choice of activity and in productivity within activities among different strata of producers (as reflected in figure 1) suggest that large farmers may be better able than small farmers to generate and accumulate a surplus over consumption needs. If land markets are active this implies that larger farmers enjoy a systematic capacity to outbid smaller farmers for available land, indicating the relative potential for expansion by the larger farm size group and, therefore, for increasing concentration in the ownership of land.

4.1 The Impact of transactions costs

The process of registering and legalizing land transfers can be a very complex, time consuming and costly one (Lambert 1989). These problems are exacerbated in Latin America and the Caribbean by the large proportion of the rural properties that have no registered title. In terms of the simple model presented above, an individual i will choose to purchase an extra unit of land only if the current value of the net returns that will accrue in future periods from that unit promises to exceed the costs of acquiring the asset, which

include both its prevailing market price **and** the transactions costs, TC, involved in purchasing it. In other words, the reservation demand price for land can be rewritten as:

$$P_i(H) = \frac{\sum_{t=1}^{T}\left[\Delta(H)\right]}{\left[1+r(H+e)\right]^t} - \frac{TC}{e} \tag{7}$$

Clearly, to the extent that such transactions costs are fixed irrespective of the size of the land transfers, the per acre costs of transactions would be radically different. In other words, the greater the number of land units purchased by an individual, the lower the value of transactions costs per unit of land purchased. Fixed transactions costs clearly imply, as is evident in equation (7) above, that potential buyers of large holdings will command a higher reservation demand price for land relative to small buyers. Thus it is hypothesized that:

> *Hypothesis*: Fixed transactions costs will work to the advantage of the potential buyers of large holdings and will therefore provide an additional potential force towards increased concentration of ownership holdings in the hands of the larger holders.

4.2 Distress sales of land

The Carter-Kalfayan model, as the Binswanger model before it, ignores stochastic variations in production and income levels; the potential returns from the land are, therefore, assumed constant over time. In real world situations, however, individuals face risks from many different sources—the production process, the market, health reasons, or depredation, among others—that threaten their normal income and consumption streams. In the absence of institutional sources of insurance, access to well-functioning capital markets, and more specifically, access to ex-post capital (borrowing against the expected future earnings of an agent) can serve to even out consumption streams over time (Carter 1990).[34] In general, we would expect access to ex-post capital to increase with wealth and farm size.[35] Therefore, when small, poor farmers cannot fully insure themselves nor freely borrow against their expected future income stream, stochastic shortfalls in realized production and income can induce distress sales of land—that is, the sale of land for the purpose of satisfying basic consumption needs (Cain 1981). The sale of land erodes the small farmer's productive capacity and diminishes the farmer's ability to recover in the post-crisis period.

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34. The differential access to capital which helps derive the reservation price relationship in figure 2 is ex-ante capital access in the sense that it refers to the capital obtained before production occurs and before realization of the stochastic factors which determine the returns from a given allocation of resources to production.

35. If for no other reason than access to one's own wealth as a form of non-intermediated capital.

5. THE IMPACT OF LAND MARKET INTERVENTION POLICIES

The microeconomic foundation of the land market activation policies currently being considered and—in a number of instances already—implemented in Latin America and the Caribbean are rooted in the conventional belief that market forces could be enlisted to bring about a more equal distribution of land and better access to land for the poor. Drawing on insights provided by the theoretical framework presented in previous sections, section 5 can now evaluate the potential impact of land market activation policies on the evolution of land ownership distribution.

Possible interventions policies that have been proposed to increase market efficiency and make land markets more accessible to the landless and rural poor have included:

- eliminating subsidies to scale,
- land taxation,
- modernizing land registration systems,
- land titling,
- land banks and mortgage banks.

Land market activation policies such as taxation (progressive in the size of the ownership holding), eliminating subsidies that favor large landowners, improving land registration, and titling can, in the spirit of the Carter-Kalfayan model, be easily analyzed in terms of their impact on the market expansion capacity of different strata of producers. Mortgage banks and land banks, on the other hand, must be examined in terms of their capacity to increase the rural poor's effective demand for land.

We shall attempt to explore these different policies and strategies in terms of their asymmetric impact on the incentives faced by different individuals to purchase land: the impact of land and mortgage banks on individuals' choice to buy land will potentially be greatest for individuals without equity to buy land; land registration and titling may have a greater impact on individuals to buy land in small quantities.

However, as will become clear, two or more of these measures will often be necessary to achieve the desired outcomes. Taxing larger units at higher rates will probably not expand land markets unless credit is also made available for land purchases. Land registration and titling might ease land transactions and provide greater incentive for more intensive land use, but in the absence of other measures to control the concentration of ownership, such programs could work to the disadvantage of the landless. Credit for land purchases will serve no purpose if land units of appropriate size are not offered for sale, or if the price at which land is sold to poor farmers exceeds the agricultural income streams that could accrue from it.

5.1 Eliminating subsidies to scale

One of the intervention policies proposed to activate land markets has been the elimination of subsidies. A notable example of such subsidies, in the past, has been the official

agricultural credit policies supplying credit to agriculturalists at negative real rates of interest. The benefits of such subsidies in the agricultural sector are, more often than not, captured by the large farmers who not only have better access, than small farmers, to the information and/or legal council needed to take advantage of such subsidies, but are also more likely to possess land titles that make them eligible for subsidies. Moreover, subsidized credit, in particular, is allocated to large farmers because even public lending institutions are reluctant to lend to small farmers given the greater risks and high lender transactions costs involved in processing and servicing these loans. Subsidies are therefore not equally available to different-sized farmers. "Subsidies for mechanization and for credit have provided impressive 'gifts' to large farmers" (Binswanger and Elgin 1988:13). The impact of this unequal access to subsidies by farm size is capitalized into the reservation purchase price for each individual i, through their effect on $\Delta(H)$ (for example, cheaper credit to large farmers increases their productivity from the land), and, through their effect on the shadow price of capital $\rho(H)$ for larger farmers (due, for example, to cheaper credit or subsidies to import machinery at negligible duty levels).

> *Hypothesis*: To the extent that poor people are less likely to have access to agricultural subsidies, an increase in government subsidies to the agricultural sector (in particular, credit subsidies) will potentially worsen the bargaining position of the landless and land poor in the land market. The reverse will hold when agricultural subsidies are reduced.

5.2 The Impact of land taxation

Land taxation is another policy option which could be explored as a means to promote the redistribution of agricultural land and the rural poor's access to land through the land market. Land taxation with progressively higher rates as land value and/or size of ownership holding increase will, it has been argued, provide large land owners with the incentives to sell parts of their land in order to escape the higher tax rates. Under a progressive taxation structure, the capitalized value of the expected income stream to be realized from one additional unit of land will now contain a component corresponding to the size differentiated tax provisions. In other words, tax burdens are capitalized in the reservation price for land. We can therefore write:

$$P_i(H) = \sum_{t=1}^{T} \Delta(H) \Big/ \left[1 + r(H+e)\right]^t + P_e \Big/ \left[1 + r(H+e)\right]^T - \sum_{t=1}^{T} T_i(H) \Big/ \left[1 + r(H+e)\right]^t \quad (8)$$

where: $T_i(H)$ is the value of the tax burden to individual i, and is a positive and increasing function of H.

Equation (8) thus captures the differential impact of the land tax on the reservation prices of the various classes of owners. Equation (8) clearly implies that, other things equal, the preferential treatment of small farmers under a progressive tax structure increases the latter's reservation price for land relative to that of the large farmers.

> *Hypothesis*: land taxes, if sufficiently severe and progressive, should other things equal, improve the bargaining position of the small farmers on the land market and improve their access to land.

However, progressive tax rate structures have been very difficult to implement and enforce in practice. Moreover, under a progressive taxation structure, necessary regulations must be designed to guard against "paper subdivision" of large estates that continue to be operated as single units. This type of evasion is very difficult to detect and penalize. For all these reasons, Dorner and Saliba (1981) argue, a heavy fixed cost tax burden (which involves far less complexity in implementation and enforcement) may be preferred: as a fixed cost, a flat tax rate (at **significant** levels) can, they argue, potentially encourage landowners to either use their land more productively or sell it to people who will.[36] However, in the absence of any significant empirical evidence on the volume of sales from large estates that might be expected to result from taxation, the most certain benefit from taxation is the increased revenue generated that may be used to finance loans to potential buyers.

5.3 Land registration

One important constraint that affects the operation of land markets in rural Latin America has been the complex, expensive and excessively bureaucratic nature of the land transfer process and registration procedures (AID 1989). As a result, many transfers among small holders are completed with private documents without the benefit of formal registration. As already pointed out, to the extent that such transactions costs are independent of the size of the transaction, their per acre costs will be greatest for small transfers of land and they will worsen the relative bargaining position of small farmers in the land market.

Moreover, high transactions costs are incurred by both sellers and buyers, and to the extent that they are fixed irrespective of the size of transactions, they may help explain a feature of rural land markets in Latin America that has constrained their efficient operation, namely, the frequently observed inconsistency in the size of farm plots offered by sellers and wanted by buyers. In other words, high transactions costs may help explain, in part, the inelastic nature of land markets in the large farm sector: that is, why large landowners are unwilling to divide their holdings to sell to numerous small farmers.

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36. Alternatively, if land rental markets are functioning well (or if credit is not available for would-be purchasers) some farmers may wish to rent their underutilized lands to tenants, instead of using it more productively. The incentives would only imply a worsening of the operational holding distribution and not necessarily of the ownership distribution. However, as pointed out by Dorner and Saliba (1981), these arrangements may, in the absence of fair rental regulations, produce conditions more inequitable than those before the tax.

Hypothesis: If transactions costs could be reduced by improving land transfer processes and registration procedures the competitive position of small farmers in land markets would improve.

Hypothesis: A reduction in transactions costs will potentially increase the willingness of the large landowners to divide their holdings and sell to numerous small holders.

5.4 Land titling

Increasing attention has been devoted in recent years, by the World Bank and other international development agencies to the institution of land titling as a means of stimulating land markets and making land more accessible to landless and small farmers. Much of the rationale behind this new emphasis in policy is based on a recent and widely cited microeconometric analysis of the farm-level impacts of land titling conducted in Thailand by Feder et al. (1988). The provision of land titles, they argue, reduces the uncertainty over the entitlement of an owner to maintain or transfer his/her land rights and this in turn affects the price and scope of land transactions. More specifically, they hypothesize that higher security of ownership causes higher farm productivity and that as a result the market value of land—reflecting in part the productive potential of the land—will be higher for titled land than for an identical tract of land that is not securely owned.

Titled land ⟶ *Higher output per acre* ⟶ *Higher land prices*

Following the theoretical approach adopted by Feder et al., the direct effects of land title provision can be divided into demand and supply effects. Demand effects occur when the acquisition of land title increases the farmer's security and certainty that he/she will be able to maintain possession of the land and benefit from investments improving the productive capacity of his/her farm. Increased security is hypothesized to enhance investment incentives and increase the demand for capital and variable inputs complementary to capital, and, thereby, increase agricultural productivity on titled parcels. Supply effects result when provision of secure and legal land title improves a farmer's access to cheaper, longer-term, and more extensive institutional credit because land can be pledged as collateral for loans.[37] Output on securely owned parcels is consequently expected to be greater than on untitled farms.[38] The combined demand and supply effects,

37. The function of collateral in lending is discussed by Binswanger and Rosenzweig (1986): with a fixed rate of interest, the amount of the loan is expected to increase as the value of the collateral increases, other things being equal. As Binswanger and Rosenzweig have noted, land has several attributes that make it a desirable collateral.

38. Lower credit constraints with the provision of land titles not only may increase farmers inputs of capital and other variable production factors, but also may affect cropping patterns on titled farms: greater access to capital may yield a shift to more capital-intensive crops.

it is thus hypothesized, cause higher farm productivity on securely owned—that is, titled—land. This implies further that land which is securely owned would command a higher price.

In the spirit of the theoretical model offered by Carter and Kalfayan (1989), it can be hypothesized that land title provision will increase the reservation demand price of land because investment incentives are enhanced [leading to an increase in $\Delta(H)$] and access to cheaper credit is facilitated [causing an increase in $\Delta(H)$ and a decrease in $\rho(H)$]. This would imply further that the bargaining position of small farmers in the land market would be increased by the provision of secure and legal titles to their land.

The Feder et al. rationale for land titling, however, ignores a number of factors—other than title—which shape farm productivity and which may condition the security-induced demand effects and credit supply effects of land titling and thus affect the desired outcomes of such programs. In particular, Stanfield (1985) argues, in addition to ownership security, farmers' investment decisions are affected by a number of factors that are ignored in the basic rationale for land titling described above. These include, among others, alternative investment opportunities, the accessibility of production inputs, the farmer's present debt structure,[39] his/her perception of how secure the title is, as well as the objective and subjective favorability of farm production which, in turn, affects the overall profitability of farming and the availability of investible capital. The strong presence or absence of any of these factors could overshadow the desired effects of granting a secure title. Moreover, the assumption that credit is available must also be seriously questioned. In an environment of imperfect capital markets, small farmers access to credit is rationed and a title to land may not overcome the obstacles to getting access to institutional credit. Finally, a factor which could mitigate against demand effects is that provision of land titles itself can induce additional insecurity.

> If titled land operates as collateral as Feder et al. indicate, then foreclosure and land loss is a real possibility. Threat of land loss is of course supposed to mitigate moral hazard problems associated with credit contracts. But in a stochastic agricultural environment which lacks insurance markets, the farmer faces a genuine exogenous probability of loss of titled and mortgaged parcels (Carter 1990:217).

Under these circumstances, the impact of land title on individual investment incentives and productivity—and therefore, on reservation price levels—is likely to be greater for well endowed farmers with size and wealth levels which leave them favorably situated with respect to market access—particularly capital and insurance markets. For less advantaged small-scale farmers, its potential benefits are likely to be overwhelmed by market access problems, leaving little incentive for title acquisition.[40] In other words, the increase in the

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39. "The more a farmer owes, the less likely a title will help him get more" (Stanfield 1985:12).

reservation demand price of land resulting from titling would asymmetrically favor larger and wealthier farms that enjoy better market access. "Within this imperfect market environment, the impact or potential impact of land title is likely to be differentiated across producers" (Carter, Wiebe, and Blarel 1989:31–32).

Finally, the basic rationale for land titling does not consider the dynamics of property systems and the longer term structural consequences of these programs.[41] However, as suggested by Carter et al. (1989), integrating the analysis of land titling with considerations of market structure and other factors that condition the effects of titling programs, may shed some light on the potential of these programs for increasing the concentration of ownership in the long term. If as was suggested above, land titling programs widen the gap in the reservation demand price of land between economically well-endowed farms and poorly endowed farms, the bargaining position of the small farmers in the land market is likely to be worsened by titling programs. Land titling may thus have the unintended consequence of increasing the economic potential of the already well-endowed to acquire more land.

In the environment of imperfect or missing capital and insurance markets in which poor farmers operate, communal land tenure systems can act as important substitutes for those markets (Stanfield 1985, Carter 1990). The significance of the elimination of capital and risk markets for determining who loses and wins in a stochastic growth process are difficult to predict (Carter 1990). Where public lands, communal or group tenure forms have been extinguished by private land titling, unless strong credit and technical support are also provided, Stanfield (1985) predicts, the tendency will probably be for the newly titled to sell their land in times of stress.

5.5 Mortgage banks and land banks

The majority of the landless and land poor, as has already been argued, do not have savings nor access to the financial resources required to convert an economic desire to own land into effective demand. The poor majority of the rural population are constrained by the level of their self-generated savings. Moreover, commercial banks and financial institutions do not lend for land purchases. They cannot, Stringer (1989) argues, afford to tie up their capital, raised largely through short-term deposits, in the type of long-term loans required for farmland purchases. Also, most banks, even public credit institutions are unwilling or unable to provide mortgage credit to the landless and small farmers because of the high lender transactions costs involved in trying to process and service large numbers of such

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40. This suggests, therefore, that the possession of land titles is likely to be systematically related to market access.

41. To date, studies suggesting the important benefits from secure land titles—including Feder et al. (1988)—have mainly been based on cross-sectional analysis comparing titled farms to untitled farms, and have mostly failed to consider the longer-term impact of land titling on land transfers and, possibly, land concentration. For an exception, see Seligson and Nesman on Honduras.

loans (Dorner and Saliba 1981). This lack of resources severely restricts land-market entry for the landless or land poor and constrains their bargaining power in the land market. Under these circumstances, establishing land financing systems may represent a viable institutional mechanism to promote the participation of the resource-poor in land markets.

Modeled on successful farmland mortgage systems in industrialized countries, land financing programs have recently gained attention in some Latin American and Caribbean countries. In particular, mortgage banks and land banks have been established, in a number of countries, to finance peasant purchases of land on a pilot basis.[42] Mortgage banks make loans to individual peasants, or groups of peasants, to finance the purchase of land. Land banks, on the other hand, acquire rights to land and distribute it to peasant producers. Land banks purchase large estates which they then either resell to groups of peasants or cooperatives, or subdivide into family-sized farm units that are resold to landless and or land-poor families as freeholds.[43] Land banks may also finance the sale of the land to these selected beneficiaries, who are responsible for a minimum down payment, with the remaining cost to be paid over a certain number of years.

> *Hypothesis*: By removing a major barrier to poor people acquiring land in the land market—namely their lack of capital—it is hypothesized that mortgage and land banks will increase their participation in the land markets and enhance their bargaining position.

Mortgage banks supplying credit for land purchases will, however, serve no purpose if land units of appropriate size are not offered for sale. Large landowners are often reluctant to divide their expansive holdings to sell to numerous small buyers because of the uncertainties, as well as, the large transactions costs involved. On the other hand, under land bank purchasing programs, sellers handle the transaction with just one buyer, the land bank, in whom they have more confidence, rather than dealing with a group of buyers to whom they may be less reluctant to sell (Stringer 1989). Moreover, by purchasing large estates and subdividing them among the landless or land poor, land banks improve the latter's access to these lands. Land banks may thus help resolve the inconsistency in the size of farm plots offered by sellers and wanted by buyers.

However, a review of the designs and performances of land financing programs currently being considered or implemented in Latin America and the Caribbean leads to a number of concerns that could potentially mitigate against the desired outcome of such programs. The first concern is the availability of funds for the projects. Unlike the

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42. Cf. section 5 of this paper for an account of the Penny Foundation program in Guatemala and the land purchase financing program set up by the Central Bank in Honduras. See also Stringer's (1989) account of Ecuador's Fondo Ecuatoriano Populorum Progressio (FEPP), a small private development foundation which established a rotating credit fund for land purchases in the mid-1970s.

43. The Penny Foundation in Guatemala is an AID-funded private agency engaged in such an effort (cf. section 5).

industrialized countries, where well-developed capital markets allow land financing institutions to raise the cash necessary to finance farmland transactions,[44] in developing countries, such options are not available to lending institutions, which, instead, must rely on depositors and international donors to raise funds for land purchase financing. Unless these institutions dispose of very large quantities of capital, their land purchase funds will deplete very rapidly (after only few land purchases), leaving them unable to finance any more transactions until those funds are replenished by borrowers (Stringer 1989). Lack of funds seriously limit the scope of such programs.[45]

Second, the continued success of these programs closely depends on the beneficiaries ability to service their debt. The lending institution's assessment of the value of the farm property for which a loan is to be issued, the interest rate charged on the loan, the required down payment by the beneficiaries as well as the length of the loan are critically important in determining the borrower's ability to repay his loan. Clearly, if the land price contains any premiums reflecting non-agricultural income streams—that is, if the cost per unit of the land exceeds its agricultural capacity—*campesino* beneficiaries will not be able to pay for the land and will default (Binswanger 1987, Binswanger and Elgin 1988).[46] Moreover, the clients of the land banks would be those *campesinos* who have enough resources for a down payment.

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44. Unlike commercial banks which depend on savings deposits for their funds, financing institutions in industrialized countries issue longer term mortgage bonds and other securities or receive capital resources from the government. In the United States, for example, the Federal Land Banks issue large denomination bonds which are purchased by institutional investors such as commercial banks and insurance companies. These bonds are competitive, offering an interest rate 0.5% higher than Treasury bonds.

45. Careful and pressing attention must be paid to developing long-term financial mechanisms for these land purchase-sale programs if they are not simply to peter out when the grants run out (Dorner and Saliba 1981; Stringer 1989)

46. See Binswanger's model above. See the main body of this paper for a review of the empirical studies on the economic ability of small farmers to repay land mortgages at current commercial interest rates.

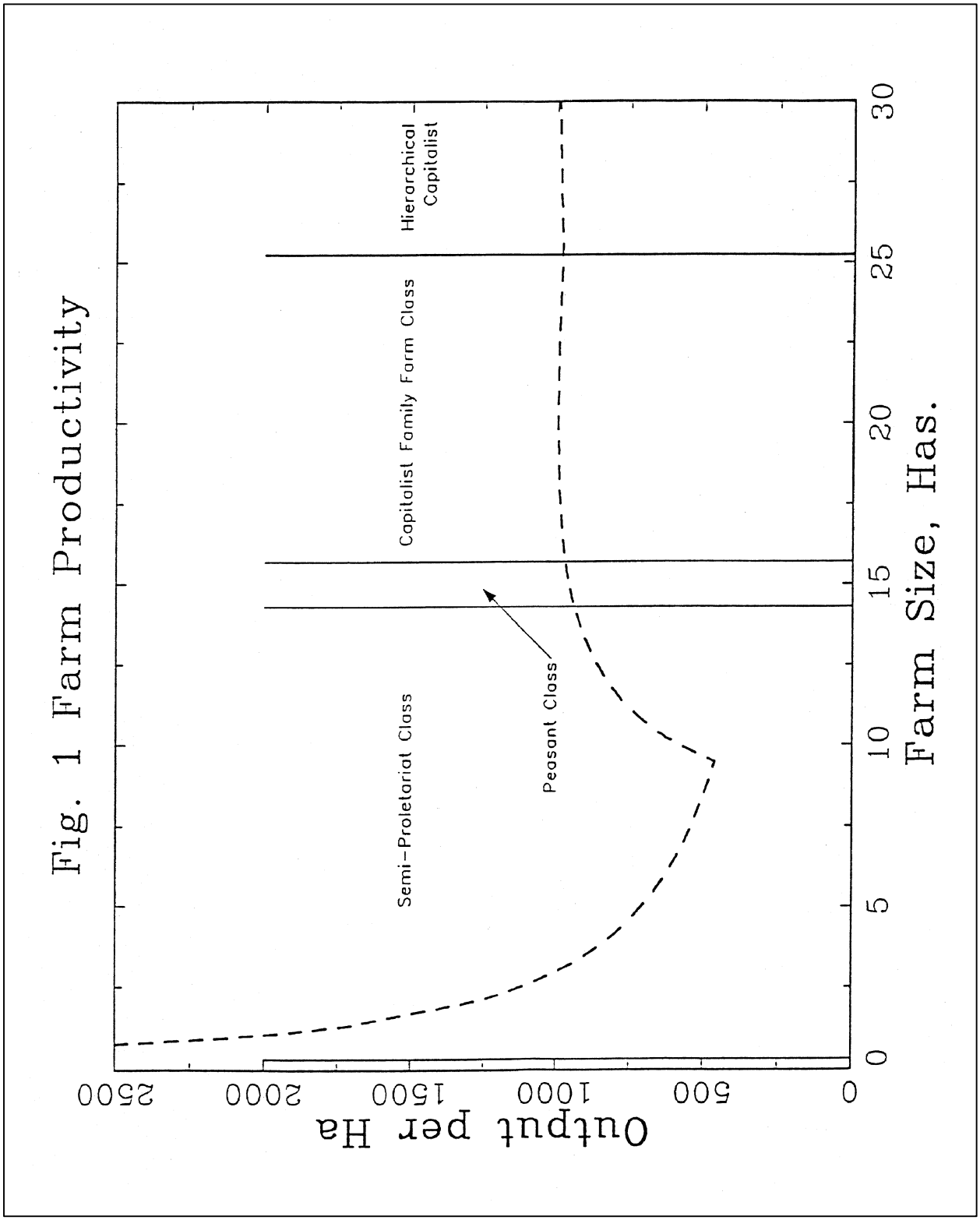
Fig. 1 Farm Productivity
Output per Ha
0
500
1000
1500
2000
2500
Farm Size, Has.
0
5
10
15
20
25
30
Semi-Proletariat Class
Peasant Class
Capitalist Family Farm Class
Hierarchical Capitalist

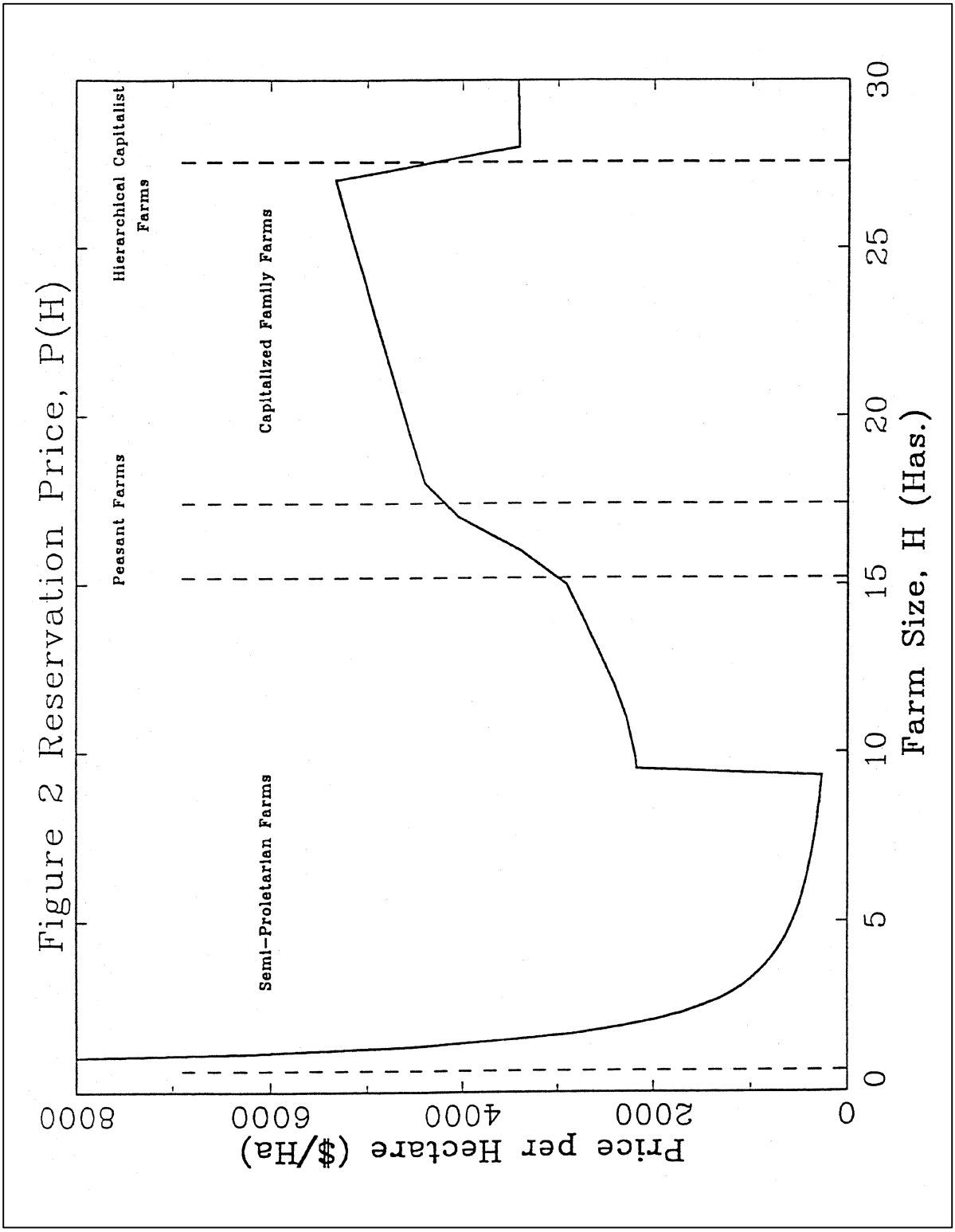
Figure 2 Reservation Price, P(H)
Price per Hectare ($/Ha)
8000
6000
4000
2000
0
0
5
10
15
20
25
30
Farm Size, H (Has.)
Semi-Proletarian Farms
Peasant Farms
Capitalized Family Farms
Hierarchical Capitalist Farms

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