LAND MARKETS, EMPLOYMENT AND RESOURCE USE IN THE PERI-URBAN GREEN ZONES OF MAPUTO, MOZAMBIQUE: A CASE STUDY OF LAND MARKET RIGIDITIES AND INSTITUTIONAL CONSTRAINTS TO ECONOMIC GROWTH

by

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GLOSSARY OF TERMS

APIE. Government agency in charge of renting residential properties nationalized at independence.

Administrador do Distrito (do Posto). The District Administrator. The highest authority at the district level. Maputo is divided into eight administrative districts, each having its own District Administrator.

Associações de produtores. Peasant producer associations.

Banco Popular de Desenvolvimento. The Peoples Development Bank.

Bairro. Neighborhood. The geographic/political division below the district level. Each of the 8 urban districts in Maputo has over 10 separate *bairros*. Each *bairro*, in turn, may be subdivided into as many as 70 *quarteirões* or blocks.

Camara Municipal. Pre-independence term for municipality.

Caixa de Crédito. One of the now-defunct financial lending institutions.

Casa Agrária. The office housing the extension agents of the *Gabinete das Zonas Verdes*. There are 4 *Casas Agrárias* in Maputo, one in each of districts IV to VII, which provide extension services in the districts. Agricultural inputs are also sold. *Casas Agrárias* are found outside of Maputo as well, but are administered by the Ministry of Agriculture.

Chefe do Quarteirão. The political leader responsible for a single block subdivision within a *bairro*. His or her immediate superior is the *Grupo Dinamizador*.

Chefe das terras. Head of lands. This is a position at the block level responsible for ensuring that the occupation of land and housing conforms with the law. The *Chefe* cannot grant title. S/he may be involved in resolving residential disputes but rarely agricultural disputes.

Colono. The Portuguese farmers that were granted land concessions by the Portuguese government in the colonial era.

Concelho Executivo. Executive Council. The political/administrative authority at the municipality level. Officials within the Executive Council are all FRELIMO party members. The *Direcção de Construção e Urbanização* within the Executive Council is responsible for land-use zoning and titling.

Conservatôrio de Registo Predial. Custodian of property registry.

Conto (informal). One thousand meticais (2.2 contos=$1 U.S. in December 1991).

Dinageca. The Cadastral Office of the Ministry of Agriculture

Direcção de Construção e Urbanização (DCU). Sometimes referred to as the *Concelho Executivo*, it is the office within the Executive Council responsible for land-use zoning and titling of both residential and agricultural lands within the city of Maputo.

Direcção Distrital de Agricultura. District office of the Ministry of Agriculture. Has no jurisdiction within the city of Maputo.

Direcção Provincial de Agricultura. Provincial office of the Ministry of Agriculture. The administrative post connecting each rural district to the Ministry of Agriculture.

Entrega das quintas. Process in the early 1980s of granting a concession for a peri-urban *quinta* to an individual(s) presenting an official development plan.

Estrutura de base. Base organization, usually referring to the *Grupo Dinamizador*.

Estrutura local. Same as the *Grupo Dinamizador*.

Ficha de occupação de terreno. Form requesting occupation of land.

Gabinete das Zonas Verdes. Green Zones Office. An institution created in 1980 to promote the organization and increased efficiency of agricultural production within the green zones of the city of Maputo.

Grupo Dinamizador. Political/administrative institution at the *bairro* level responsible to the Urban District Administration, and through this agency to the City Council. It is composed of a full-time Secretary, who directs the *Grupo Dinamizador*, a full-time assistant for administration called a *Permanente*, and several voluntary *responsaveis* who direct a variety of social programs, including security, women's affairs, health, housing, and farm extension. There is also a *Tribunal Popular* or local court, which is part of the *Grupo Dinamizador* (see Jenkins 1991: 128). Its role and function has inherent contradictions: it is supposed to be a forceful and critical representative of popular concerns, yet it may be required to represent unpopular state initiatives, as the lowest tier of the state structure (see Pinsky 1985: 301).

Guevas. Marketing intermediaries who are usually women. *Guevas* buy farm produce (principally lettuce and kale) directly at plot level or farm-gate. Often they cut the produce themselves, then take it to the market where they either deliver it to their employer or sell it themselves.

Instituto Nacional de Planeamento Físico. National Physical Planning Institute.

Lei de Terras. The land law in the latest Constitution.

Machamba. Farm or agricultural plot.

Palhotas. Traditional straw or reed building.

Posto Administrativo. The building in which the offices of the *Administrador do Distrito* are housed.

Privado. Private farmer or operator.

Quinta. A demarcated plot, usually larger than 0.5 hectare, in the peri-urban area. These estates were primarily owned by Portuguese settlers before independence.

Quintaleiros. Owners of the *quintas*.

Régulo. Traditional, pre-independence authority serving as the link between the colonial government and the local population. In the peri-urban areas their authority was greatly diminished if not replaced by the *Grupo Dinamizadores* after independence.

Responsável. The individual responsible for the daily labor allocation, production and marketing decisions on the agricultural plot.

Terrenos. Parcels or plots.

Título Precário. Precarious, renewable one-year concession;

Título Provisôrio. Provisional, renewable five-year concession; and,

Título Definitivo. Definitive, permanent concession.

Secão do foral. Land registry of the municipality.

Tombo Geral da Propriedade. Municipal property registry in colonial times.

União Geral das Cooperatives Agro-pecuárias de Maputo. General union of agricultural cooperatives of Maputo.

União geral das associações. General union of producer associations of Maputo.

Zonas Verdes. Areas of agricultural production within the limits of Maputo city.

EXECUTIVE SUMMARY

Land Policy

(1) As Mozambique moved toward independence in 1975 the country was beset by political and economic turmoil. Portuguese settlers, fearing the power of a new regime hostile to colonial and private interests, began to abandon their land, homes and businesses in large numbers. As many Portuguese fled, they destroyed on a massive scale what they could not take along. Moreover, the Portuguese practice of hiring expatriates for nearly all skilled and semi-skilled positions, deprived Mozambique of the essential skills needed to immediately and effectively operate the vacated farms and factories.

(2) According to the 1979 land law and subsequent regulations, all land is owned by the state. Land cannot be sold, ceded, rented, mortgaged, or in anyway privately transferred, although land improvements may be mortgaged. A concession may be held by any individual or collective with legal identity, and may be perpetual or temporary (limited in the original statute to 5-15 years, although a recent amendment permits a lease up to 50 years). Leasehold rights are transferable only by inheritance, or on the death of the holder, to heirs according to the terms of civil law. The holder must utilize the land rationally, and in conformity with an authorized development plan. Any family who leaves non-lease land idle for over 2 years without justification, may have its right to the land revoked without compensation.

(3) The constitution and law confer to the state a strong interventionist role in the use and transmittance of land. The state has divested these powers among various agencies comprising the state apparatus in urban areas. At the time of independence, central control over urban land use and transfers was granted to the Ministry of Construction and Water, National Planning Commission, and the National Institute of Physical Planning (NIPP). At the municipal level, the Executive Council (EC) was assigned principal responsiblity for land use and distribution. Some 13 other institutions also received land allocations, including inter alia the Minsitries of Agriculture, Education and Interior, and APIE. In addition, the *grupo dinamizadors* and *bairro* organizations were granted authority over land allocations at the local level. In the early 1980s, the Department of Construction and Urbanization (DCU) was created as a department within the EC and assigned responsibilities for issuing titles throughout Maputo city, including the peri-urban agricultural areas. This dispersion of responsibilities among multiple institutions has resulted in complex and diffuse institutional arrangements governing land tenure.

Maputo Peri-Urban Green Zone Settlement

(4) Immediately after independence in the late 1970s, demand for arable land in the green zones came mainly from urban workers or ex-farm laborers within the city. Several factors helped to sharply increase land pressures in the 1980s, and contributed to new groups of people from outside Maputo seeking land. These factors, including (1) closure of the South African mines to

Mozambican laborers, (2) drought and a severe drop in agricultural exports, and (3) civil war, led to massive migrations into Maputo of people seeking employment, land, and security. The rapid in-migration of people that ensued in the period from about 1982 to 1987, caused a rapid outward expansion of settlement. By 1987, most of the best agricultural land in districts IV to VIII had been claimed. The period 1987 to the early 1990s has mostly involved settlement of dryer lands surrounding the green zones, although irrigated areas have also been shrinking with the intrusion of population settlement.

(5) Before independence, most agricultural production for market was done by Portuguese settlers who had been granted small farms (*quintas*) in demarcated areas surrounding Maputo. The massive immigration into Maputo, and the haphazard occupation of these demarcated areas following independence, created a situation of unclear and contradictory land rights that continues to the present day. Moreover, the legal framework that vests all land rights to the state, has created a system is which land rights are limited and uncertain, land allocation decisions appear arbitrary, responsibilities for administering land are onerous and dispersed among multiple agencies, and too few resources are budgeted to effectively administer the land administration system proposed.

Green Zone Policies

(6) The concept of green zones was officially created with the aim of absorbing unemployed urban residents, increasing food security in the urban areas, and preserving the ecology of the low-lying areas. The Green Zones Directorate was created in May 1980 with responsibilities for coordinating farm production, investigating land use and farm infrastructure, absorbing marginalized urban populations, and guaranteeing the supply of agricultural inputs to producers. Extension offices (*Casa Agrárias*) were created in each district to carry out these goals on the ground, including redistributing inefficiently used land, and participating in land concessions (along with the *grupo dinamizador*, district administration, and the DCU.)

(7) In an attempt to curb declining food security, the government in 1983-4 undertook a policy of "parcelization" aimed at transferring "under-utilized" former *quintas* to private farmers who demonstrated the means and capacity to best use the land. The spontaneous occupation of *quintas* which occurred after independence was declared illegal, and many of the occupants were displaced by state functionaries, merchants, and urban elites with capital and/or political influence. In 1985 specific areas of Maputo were officially declared green zones, and were divided into three types: (a) permanent green zones, which contain the highest quality agricultural land (including demarcated zones corresponding to the former *quintas* that were officially registered before independence, and non-demarcated zones that were never surveyed or registered); (b) provisional green zones, which include land more suited for urban occupation (producers are allowed to cultivate, but must leave without compensation when urban development begins); and (c) zones of urban-expansion, which include peripheral areas of the city.

(8) The central union of producer associations was officially formed in 1988, although individual associations have operated in the peri-urban zone

since independence. Following independence, the producer associations carried out activities previously performed by labor gangs, e.g. cleaning irrigation ditches. Beginning around 1985, their emphasis began to shift toward providing members with commercial inputs. Since 1989, they have turned their attention to problems of land conflicts, in particular, to problems of outsiders with "certificates" claiming the lands of smallholders. The principle goal of the central union presently is to become a legal entity that would enable it to register the land of its members via group registrations. However, the DCU has no administrative procedure for granting group titles for agricultural land.

(9) Only land within demarcated areas of the permanent green zones is eligible for registration with the DCU, although individuals have recently begun hiring topographers to conduct surveys outside these areas. Three types of titles may be issued: precarious (one-year concession); provisional (5-year concession); and definitive (permanent concession). Precarious concessions were designed for areas planned for future urban expansion, or for landholders lacking potential to develop the land. The provisional category is intended to result in definitive title once capacity is demonstrated to develop the land.

Survey Methodology

(10) Between September and December 1991, the research team surveyed 121 households in the peri-urban green zones, 51 registered and 70 non-registered, and 68 in district IV and 53 in district VI. Titled households in the sample were randomly selected from registration lists compiled from records in the Maputo and Matola land registries. Unregistered households in the sample were randomly selected from lists provided by the *Casa Agrárias* and producer associations. A two-tier interview process was employed. A one-round questionnaire was administered to the *responsavel* of each irrigated *machamba* held by the household at the site of the land holding. A second-round interview, inquiring about household-level characteristics, was administered to the household head, spouse(s), and adult workers at the place of residence.

(11) The plot-based questionnaire inquired about the *responsavel's* farm management experience, land rights, settlement history, mode of land acquisition, plot characteristics, improvements, land use, land value, output, production costs, family and hired labor, and income. The second-round interview inquired about household demographics, wage- and self-employment, household decision-making, political status, migration and remittances, and land histories of all plots ever held by household members. Data are disaggregated in the analysis according to location (district IV versus district VI), gender (male- versus female-headed households), tenure status (households with at least one registered plot versus those without), and the overall sample.

Household-Level Analysis

(12) Of the 121 households in the survey, 28% have at least one family member living outside Mozambique, although very few households reported receiving remittances. Household heads on average have resided in the Maputo area for 30 years, and for 21 years in their current *bairro* of residence.

Compared with the general population, which is in a high state of flux from refugee settlement, this sample of producers has had a long history of residency in the study area.

(13) Households tend to own multiple plots of land in rainfed and irrigated areas. Households on average farm 2.2 *machambas*, including 1.3 irrigated plots, and 0.9 rainfed plots. Irrigated *machambas* average 0.41 ha in size, while rainfed plots average 0.52 ha. However, these data mask important variations. Registered households on average hold 1.7 plots versus 2.6 for unregistered households, due to fewer holdings of rainfed land, and also have larger total irrigated holdings (1.01 versus .21 ha) and larger irrigated *machambas* (0.75 versus 0.16 ha/plot) than the unregistered group. Although female-headed households have fewer dependents (18% fewer residents), their irrigated land holdings are roughly one-third (.21 versus .58 ha) the size of male-headed households.

(14) Only 7% of households on average have one or more members who belong to a cooperative, and 65% who belong to a producer association. Non-registered households have higher rates of membership in producer associations (90% versus 29%) than registered households, while rates of membership between male-headed and female-headed households are nearly equal. Those families belonging to a cooperative tended to join for reasons of gaining access to farm inputs, obtaining produce to sell in the market, increasing access to land, or for marketing assistance. Those families with membership in a producer association tended to join to increase security of land rights, and to acquire farm inputs. Increasing security of land rights was a more important factor in joining for non-registered households than registered households.

(15) Registered households (compared with non-registered households) have more intensive land use, whether measured by total revenue (1,012 versus 640 mt/m^2), chemical inputs applied (89 versus 60 mt/m^2), or net revenue (747 versus 520 mt/m^2). Productivity of female-headed households is the lowest of any strata, and compared with male-headed households exhibit very low revenue (437 versus 836 mt/m^2), chemical inputs (32 versus 76 mt/m^2), and net revenue (358 versus 644 mt/m^2).

(16) Males have higher rates of participation and earnings, than females, in formal wage-employment. Fewer adults reported self-employment relative to wage-employment (80 versus 133), but net monthly incomes from self-employed activities are considerably higher. Almost 20% of all income earners reported having multiple non-farm activities. The average total income of female-headed households in 1991 was 739,000 mt ($336) versus 4,445,000 mt ($2,020) for male-headed households. Even after adjusting for differences in household size, the per-capita total income of female-headed households (123,000 mt, $56) was still only 21% of that reported for the male-headed category (596,000 mt, $271). Registered households have substantially higher total income than non-registered households (7,473,000 mt versus 1,610,000 mt/household), demonstrating the economic power of private (titled) farms in the economy.

(17) On average, crop activities contribute 59%, livestock activities 16%, and non-farm activities 25%, to total household income. Non-registered

households (37%) and female-headed households (35%) place the greatest emphasis on non-farm employment, lending weak support for the hypothesis that these groups, because of limited land access, are turning to non-farm sources of employment. Conversely, registered households place the least emphasis on non-farm income (21%).

(18) Overall, the analysis reveals that agricultural producers in district VI with the least effective state administration rely to a greater degree on cooperatives and producer associations to gain access to land and production inputs. Female-headed households, usually divorced, widowed or with husbands abroad, are severely disadvantaged, whether measured by land access, employment opportunities, or income levels. Registered households possess larger farm sizes, wealth and income than non-registered households, due to differences in human capital, property rights, and market access.

Plot-Level Analysis

(19) Land acquisition in the peri-urban green zones has involved two principal sources: spontaneous settlement, and official allocation by local and central authorities. Of the 162 irrigated plots in the sample, 29% were acquired through *bairro* authorities, 15% through spontaneous occupation, 11% from the DCU or executive council, 11% from producer associations, 3% from the traditional village chief (*regulo*), 2% from the green zones office, and 1% from the Ministry of Agriculture. A lower percentage were acquired through non-administrative mechanisms--6% through inheritance, 9% purchases, 12% borrowing, 1% through eviction of a former tenant, and 1% renting-in. No households claimed to have rented-out land.

(20) The importance of the various processes used to acquire land has changed over time. Spontaneous occupation, which represented 35% of land acquisitions over the period 1950-74, had become one of the least important modes by 1986-92 (8%). Administrative allocations by *bairro* authorities were important during the post-independence era (1975-80) when they assisted urban residents in settling vacated lands, but also since 1980 when they helped allocate land to refugees on humanitarian grounds. Land allocation by the DCU has increased in importance over time, from 0% over the period 1950-1974, to 21% in 1981-1985. Granting of concessions by producer associations has also increased over time, from 0% before independence to the predominant source since 1986 (24%). Land purchases, once common before independence, virtually ceased between 1975-1985 due to legal restrictions. Purchases since 1986 have rebounded (18%), despite periodic decrees notifying the public that private transfers are illegal. Borrowings have remained an important means of land acquisition over time, ranging from 10% to 15% of acquisitions. Rentals have become more important since 1986, but still represent only 3% of acquisitions.

(21) A total of 34 plots of land were alienated by the sample sometime in the past. In 65% of the cases, the landholders were evicted, losing land to private farmers, government, and producer associations. Less than 12% of landholders in these cases received compensation. Besides landholdings in the peri-urban area, 42 households (35% of sample) still retained land holdings in

outlying areas or places of origin. The majority of these respondents know whether and by whom these lands are being farmed. Only 22% indicated that the entire household would one day return to these lands, suggesting that prospects for returning to rural areas are not likely for most sample households.

(22) Despite periodic decrees by the Executive Council banning private transfers, land sales and rentals are occurring. Sellers and buyers often get around this ban by claiming only improvements are being transacted. Nominal and real land prices have rapidly risen over time, leading to sizable gains in wealth for existing landholders, but also creating a formidable barrier to entry into farming. Respondents in 1991 were quoting prices of $2,500 to $15,000 per hectare in actual transactions. These amounts are very high, especially when considering that the average annual income of non-registered households is around $732, and $336 for female-headed households.

(23) Most managers feel they have the right to plant vegetables and fruit trees, invest in permanent infrastructure, and bequeath land to heirs. However, more than 55% feel they do not have the right to rent or sell land. Although the law does not explicitly grant men greater transfer rights than women, male-headed households appear to have greater rights of rental and sale than female-headed households, in spite of legal restrictions. Growing vegetables or fruit trees can generally be done freely without involving the authorities. However, permission is normally needed on matters pertaining to permanent constructions and transfers. Registered households normally seek approval from the DCU or executive council, while non-registered households normally seek the permission of producer associations.

(24) Despite some progress made in market reforms since 1985, the vast majority of households would still turn to administrative mechanisms to acquire additional land. Of the 38% of households who would like to acquire more land, a high percentage would turn to the *grupo dinamizador* for an allocation, especially in district VI. Purchasing would be more common in district IV, and among male-headed households. Female-headed households would tend to rely more heavily on producer associations and *Casa Agrárias*. Surprisingly 11% would attempt to rent-in land, reinforcing the view that the rental market is becoming more important in the peri-urban area, despite legal restrictions.

(25) Over 70% of households are worried about losing land, and 57% feel that disputes have recently become more serious. In district IV, the major sources of disputes in declining order of importance are: "outsiders" claiming land with concession papers issued by the DCU, and neighbors; only 12% indicated disputes are not a problem. In district VI, the major sources are individuals from outside the *bairro*, neighbors, *bairro* officials, and ex-landowners, while 22% felt that disputes are not a problem. Twenty-five households reported having had a land dispute sometime over the period 1973 to 1991. Over 44% of the conflicts have arisen since 1989, and 64% since 1986. The principal causes included, in declining order of importance, conflicting title claims (multiple titles issued for the same plot, or overlapping registrations), private farmers expanding their holdings, projects claiming land, border disputes with neighbors, and ex-landholders claiming land.

(26) In general, possession of registration is perceived to increase tenure security, investment incentives, and credit access. Female-headed households perceive fewer benefits than the male-headed category, due to their disadvantaged access to information about land registration, and to formal credit. Land registration, by increasing exposure to government scrutiny, also appears to be increasing the risk of engaging in sales or rental activity, complicating the benefit-cost equation; i.e. households seeking greater tenure security for investment or credit must weigh the benefits against increased probability of land being expropriated from engaging in private transfers.

(27) Considering the perceived positive effects of land registration, the question remains why more households do not register land? Registered households (referring to lack of registration by unregistered households), tend to place higher weight on land not being demarcated, small farmers not interested, and process too long and expensive, while unregistered landholders actually feel more constrained by lack of knowledge, inability to understand procedures, and a general perception that the producer association should take care of it. Only 4% of households expressed no interest in having their land registered, suggesting a strong latent demand for registration. Registration procedures in practice were far from uniform. Many registered households did not complete all the necessary steps, and many unregistered households started the process then stopped for reasons of time, costs, or false perceptions that all necessary steps had been completed.

(28) Registration cannot normally be granted unless the land has been demarcated. Surveying fees for extra-legal demarcations exceed the means of most smallholders. DINAGECA, which has the surveying capacity, has a mandate to carry out registration only in rural areas outside Maputo province. The green zones office which has jurisdictional authority, lacks surveying capacity and resources. The DCU, with an urban focus and limited budgets, tends to allocate its scarce resources to the registration of urban properties. The DCU and DINAGECA, which once had adequate funding for a much lower volume of land services, are in effect now levying user fees to make up for budgetary shortfalls. Such requirements as submitting a bank account, salary statement, or development plan, while perhaps applicable to capitalized farms, are ill-suited to land holdings in the family sector. Institutions at all levels have been involved in granting land allocations, leading to multiple or overlapping concessions (formal and informal). Smallholders, in addition to lacking the knowledge, resources or influence to acquire title, must also incur the risk of losing land to "outsiders" who do possess the means.

(29) Plot manager's in the study were asked to state the price that they would be willing to pay for a plot identical to their current holding (reservation price), and the price they would be willing to accept in disposing of the same plot (offer price). The average reservation price is 45,966,810 mt/ha ($20,894), and the offer price is 31,218,177 mt/ha ($14,190). When respondents were asked to justify the seemingly "exorbitant" land prices being reported, they emphasized the high future demand for, and value of, land that would exist in the green zone areas, and their intention to capitalize on this trend. The mean price difference is 32% of the reservation price--a very high figure compared with real estate costs of around 6-10% in western markets.

(30) Land price determination models are developed that link plot and household characteristics with land price perceptions by plot managers. Plot size, quality, and physical improvements (access road and buildings) are found to be significant and positive determinants of both the reservation and offer price. Asymmetries in information and unequal bargaining position among households, that one might expect to distort price signals in a land market characterized by administrative allocations, show either inconsistent or weak effects. Further regression models link price differences (transaction costs) with household level attributes. Farm size tends to have a negative effect on the price difference due to reluctance of small landholders to dispose of land for income security reasons, or their difficulty in bidding for land due to lack of purchasing power. A negative relationship between income and transaction costs, and a positive relationship between income and land prices indicate potential for small farms to exit agriculture, and wealthier farms to expand their holdings, with improvement in employment opportunities. Land registration tends to increase transaction costs due to greater risk of detection, and loss of land, from engaging in "illegal" transfers. Gender has no direct influence on transactions costs per se, but gender biases are apparent through differences in tenure status and farm size attributes.

Conclusions

(31) Eighteen years of socialism in Mozambique has left a legacy of uncertain land rights, high transaction costs, and proliferate institutional involvement by central and local authorities in land policy. Although land rentals and purchases are becoming more frequent, the government continues its attempts to control land allocation and use. The economic costs of land market restrictions are difficult to enumerate, but are widely apparent in the frequent occurrences of land disputes, land expropriation by the DCU and local authorities, encroachment by refugees and private farmers, absence of fair compensation, tenure insecurity, and onerous procedures in acquiring title under the statutory system.

(32) There is no doubt that property reforms are needed and wanted by smallholders and large holders alike, and that the combination of nationalization and civil strife has seriously undermined security of land rights in the green zones. Yet the alternative tenure arrangement (registration) provided by government is a poor substitute. Land registration, for all but the initiated and influential, comprises an onerous set of requirements and procedures that exceed the abilities of smallholders, and are inappropriate to the needs of agriculture. Smallholders are unsuccessfully turning to producer associations for protection of land rights, a solution not without its own problems. The de facto situation of vesting powers of land policy among multiple bodies with inadequate staff and resources has created a situation of too many parties with a voice in land policy, none of which have sufficiently clear responsibilities and resources to perform their tasks effectively. Individual ownership rights and unrestricted markets may not be the best solution. Yet, it is difficult to see how Mozambique's market reforms can take hold without a land policy more geared to serving private interests.

SUMÁRIO EXECUTIVO

Política de Terras

(1) Desde que Moçambique se tornou independente em 1975, o país tem sofrido uma violenta instabilidade política e económica. Colonos portugueses, ora residentes em Moçambique, temendo o poder do novo regime hostil aos interesses coloniais e privados, abandonaram as suas terras, habitações e inúmeros negócios. Muitos dos portugueses, enquanto fugiam, destruiam maciçamente tudo o que não podiam levar consigo. Além disso, a prática comum dos portugueses de recorrer à mão de obra estrangeira para quase todas as posições qualificadas e semi-qualificadas, privou o país de quadros capazes de operar imediata e efectivamente as propriedades agrícolas e fábricas abandonadas.

(2) De acordo com a lei de terras de 1979 e regulamentos subsequentes, toda terra é propriedade do estado. A terra não poderá ser vendida, cedida, alugada, hipotecada ou em nenhuma circunstância transferida de forma privada, embora beneficiações às terras pudessem ser hipotecadas. Por outro lado, a concessão poderá ser cedida a qualquer indivíduo ou colectivo com identidade legal, e poderá ser perpétua ou temporária (limitada no estatuto original por 5-15 anos, embora uma recente emenda permita contratos até 50 anos). Os direitos do titular são transferíveis somente por herança ou na morte do mesmo aos herdeiros de acordo com os termos da lei civil. O titular deverá utilizar a terra racionalmente e em conformidade com um plano de desenvolvimento autorizado. Qualquer família que abandone um terreno, sem contrato, e sem justificação, por mais de dois anos, poderá ter o seu direito à terra revogado e sem compensação.

(3) A constituição e a lei conferem ao estado um forte papel intervencionista quanto ao uso e herança de terras. O estado tem cedido esses poderes a várias entidades estatais. Esta descentralização do poder combinada com o facto de estas responsabilidades terem sido designadas a muitas instituições, em diferentes circunstâncias, tornou o processo de administração de terras bastante complexo e difuso. Após a independência, o poder do uso de terras, a nível nacional, foi outorgado ao Ministério de Construção e Águas, Comissão Nacional do Plano (CNP), e ao Instituto Nacional de Planeamento Físico (INPF). A nível do município, o Conselho Executivo foi nomeado principal autoridade para o uso e distribuição de terras. Contudo, para além das entidades mencionadas, outras 13 instituições autónomas também receberam alguma autoridade sobre as terras, incluindo o Ministério de Agricultura, Ministério de Educação, Ministério do Interior, e APIE. Além disso, autoridades locais--Grupos Dinamizadores e outras organizações a nível do bairro--foram também envolvidas no processo de atribuição de terras. Alguns anos mais tarde, no princípio de 1980, o Departamento de Construção e Urbanização (DCU) foi criado dentro do Conselho Executivo. O DCU é o actual responsável pela emissão de títulos de terras na cidade de Maputo, incluíndo as zonas agrícolas peri-urbanas.

Constituição das Zonas Verdes na Zona Peri-Urbana de Maputo

(4) Imediatamente a seguir a Independência, nos finais dos anos 70, a procura de terras aráveis nas zonas verdes provinha principalmente dos trabalhadores urbanos, ou ex-trabalhadores agrícolas residentes na cidade. Muitos são os factores que contribuiram para a abrupta subida da pressão sobre as terras nos anos 80, e que fizeram com que novos grupos populacionais oriundos de zonas distantes de Maputo procurassem terras em Maputo. Esses factores, tais como: (1) encerramento das minas Sul-africanas aos trabalhadores Moçambicanos, (2) seca e severa quebra nas exportações agrícolas e (3) guerra civil, originaram migrações maciça(s) para Maputo de pessoas a procura de emprego, terra e segurança. O fluxo migratório, que se acentuou entre 1982 a 1987, resultou num aumento descontrolado da densidade populacional. Até 1987, a maior parte das terras com melhor aptidão agrícola dos distritos IV a VIII já tinham sido consignadas. Por outro lado, essas áreas têm também reduzido devido à expansão das áreas residenciais, resultante do incremento da densidade populacional. Nos anos seguintes até ao presente, a ocupação das terras ocorreu nas zonas de sequeiro.

(5) Antes da independência, uma parte considerável da produção agrícola comercializada, era feita por colonos portugueses a quem tinham sido atribuídas quintas, na periferia de Maputo. Após a independência, a imigração maciça(s) para Maputo, e a ocupação desorganizada dessas áreas agrícolas demarcadas originou uma situação indefinida e contraditória no que diz respeito aos direitos da terra, conflito que ainda hoje persiste. Além disso, a estrutura legal que confere ao estado todos os direitos da terra, criou um sistema em que os direitos da terra são limitados e duvidosos, as decisões de atribuição de terras parecem arbitrárias, as responsabilidades na administração de terras são complexas e dispersas em várias instituições e poucos recursos são alocados para uma administração efectiva das terras segundo o modelo proposto.

Política das Zonas Verdes

(6) O conceito de zonas verdes foi oficialmente criado com o objectivo de absorver residentes urbanos desempregados, aumentar a segurança alimentar nas áreas urbanas e preservar a ecologia das zonas baixas. O gabinete das zonas verdes foi criado em Maio de 1980 com a função de coordenar a produção agrícola, investigar a utilização das terras e infraestruturas das propiedades agrícolas, absorver populações urbanas marginalizadas, e garantir o fornecimento de meios de produção (insumos) aos produtores. Casas agrárias foram criadas em cada distrito urbano para levar a cabo os objectivos definidos, incluindo redistribuição das terras ineficientemente usadas, e participação nas concessões de terras (em coordenação com o grupo dinamizador, administração do distrito e DCU).

(7) Numa tentativa de controlar o declínio da segurança alimentar, em 1983-84 o governo adoptou a política de "parcelização", que consistia em transferir as antigas quintas sub-utilizadas a agricultores privados que possuam meios e capacidade para um melhor uso das terras. A ocupação espontânea das quintas, verificada após a independência, foi declarada ilegal. Muitos dos ocupantes foram substituídos por funcionários do estado,

comerciantes, e elite urbana com capital e/ou influência política. Em 1985, algumas áreas específicas de Maputo foram oficialmente declaradas zonas verdes, e foram divididas em três tipos: (a) Zonas verdes permanentes--áreas de melhor qualidade agrícola (incluíndo zonas demarcadas, correspondentes as antigas quintas que foram oficialmente registadas antes da independência, e zonas não-demarcadas, onde nunca foi feito levantamento topográfico ou não registadas); (b) Zonas verdes provisórias--áreas mais apropriadas para ocupação urbana (nestas áreas os agricultores são permitidos a cultivar, contudo o terreno deve ser abandonado sem compensação em caso de necessidade para desenvovimento urbano; (c) Zonas de expansão urbana--áreas da periferia da cidade.

(8) A União Central da Associação dos Produtores foi oficialmente formada em 1988, embora associações individuais já existissem nas zonas peri-urbanas desde a independência. A seguir a independência, as associações dos produtores conduziam actividades que eram anteriormente realizadas por equipes de trabalho, como por exemplo, limpeza de canais de irrigação. A partir de 1985, a união passou a dar maior ênfase ao fornecimento de meios de produção (insumos) aos seus membros. Desde 1989, o problema do conflito de terras tem recebido especial atenção, em particular problemas de estranhos com "certificados" exigindo a terra aos pequenos proprietários. Hoje, o principal objectivo da união central é o de se tornar uma entidade legal capaz de poder registar a terra dos seus membros via grupos de registo. Contudo, o DCU não possui nenhum procedimento administrativo para concessão de títulos de terras agrícolas a grupos.

(9) Somente as áreas demarcadas das zonas verdes permanentes são eligíveis de registo pelo DCU, todavia recentemente, certos indivíduos têm contratado topógrafos para conduzir levantamentos fora destas zonas. Existem três tipos de títulos: "precário" (concessão de um ano); "provisório" (concessão de cinco anos) e "definitivo" (concessão permanente). As concessões precárias foram designadas para áreas planificadas para futura expansão urbana, ou para proprietários de terra sem potencialidade de desenvolver a terra. A categoria provisória poderá resultar em título definitivo uma vez demonstrada capacidade de utilizar a terra.

Metodologia de Levantamento

(10) Entre Setembro e Dezembro de 1991, a equipe de investigação inquiriu 121 agregados familiares nas zonas verdes peri-urbanas, dos quais 51 eram registados e 70 não-registados, 68 pertenciam ao distrito IV e 53 ao distrito VI. Os agregados familiares com títulos de terra (os registados) foram casualmente selecionados em listas de registos de Maputo e Matola, e os não-registados a partir de listas fornecidas pelas casas agrárias e associações de produtores. O processo de entrevista consistiu de duas fases. Na primeira ronda o inquérito foi administrado aos responsáveis dos talhões agrícolas irrigados, e este decorreu na própria propriedade agrícola. Na segunda fase pretendia-se obter informação sobre o agregado familiar, tendo para tal sido administrado um inquérito ao/à chefe do agregado familiar, esposo(a), e adultos trabalhadores. Este inquérito foi realizado no local de residência do agregado familiar.

(11) O questionário feito ao responsável do talhão debruçou-se sobre a sua experiência de gestão, direitos da terra, formas de adquisição da terra, características dos talhões, desenvolvimento, uso da terra, valor da terra, produção, custos de produção, trabalhadores familiares e contratados, e salários. Na segunda ronda do inquérito pretendia-se obter dados demográficos da família, salário e trabalho por conta própria, tomada de decisão no agregado familiar, posição política, migração e remessa de dinheiro, e história dos terrenos dos membros do agregado familiar. Na análise, os dados foram desagregados de acordo com o distrito (distrito IV versus distrito VI), sexo (chefe do agregado familiar do sexo feminino contra o chefe do sexo masculino), posse de terra (agregados de família com pelo menos um talhão registado contra os que não possuem nenhum), e a amostra total.

Análise Baseada no Agregado Familiar

(12) Dos 121 agregados de família inquiridos, 28% tem pelo menos um membro da família vivendo fora de Moçambique, embora muito poucos tenham revelado receber remessas. Em média os chefes de família inquiridos residem na área de Maputo há 30 anos, e há 21 anos nos seus actuais bairros de residência. Comparado com a população em geral, na sua maioria refugiados de guerra, esta amostra de produtores tem tido uma longa história de residência na área em estudo.

(13) Em geral, as famílias possuem múltiplas parcelas de terra localizadas em áreas irrigadas e de sequeiro. Os agregados têm em média 2,2 propriedades agrícolas, das quais 1,3 estão em área irrigada e 0,9 em sequeiro. A área média das machambas irrigadas é de 0,41 ha e as de sequeiro 0,52 ha. Contudo, estes dados ocultam importantes variações. As famílias com parcelas registadas possuem em média menor número de talhões do que as famílias não registadas (1,7 versus 2,6 talhões). Esta situação resulta do facto de as famílias não registadas possuirem maior número de talhões de sequeiro. Todavia, os registados possuem maior área total irrigada (1,01 versus 0,21 ha). Por outro lado, a área da parcela irrigada dos registados é maior (0,75 versus 0,16 ha/talhão). Embora os agregados com chefe do sexo feminino tenham menos dependentes (18% a menos), as suas áreas irrigadas são aproximadamente um terço do tamanho das áreas com chefe de família do sexo masculino (0,21 versus 0,58 ha).

(14) Em média, 7% dos agregados tem um ou mais membros pertencentes a cooperativa, e 65% a determinada associação de produtores. A proporção das famílias não-registados afiliadas as associações de produtores é superior a das registadas (90 e 29% respectivamente), enquanto que a proporção das famílias afiliadas cujo chefe é do sexo feminino é aproximadamente igual a das famílias com o chefe do sexo masculino. As famílias que se afiliaram às cooperativas fazem-no por diversas razões, dentre elas o acesso aos meios de produção agrícola, facilidades de colocação dos produtos no mercado, aumento do acesso a terra, e/ou assistência nas vendas. As famílias que se afiliam a associação dos produtores fazem-no para aumentar a segurança dos seus direitos a terra, e obter meios de produção agrícola. O factor mais importante que leva as famílias não-registadas a se afiliarem a associação de produtores é o aumento da segurança dos direitos da terra.

(15) O uso da terra das famílias registadas é superior a das não-registadas, seja a nível do rendimento total (1,012 versus 640 mt/m), aplicação de tratamentos químicos (89 versus 60 mt/m), ou rendimento líquido (747 versus 520 mt/m). A productividade das famílias cujo chefe seja do sexo feminino é inferior a qualquer extracto social. Os seus rendimentos são também muito inferiores a das famílias cujo chefe seja do sexo masculino (437 versus 836 mt/m), assim como os químicos empregues (32 versus 76 mt/m) e rendimento líquido (358 versus 644 mt/m).

(16) A taxa de participação e salários dos homens em empregos formais é superior a das mulheres. Poucos adultos fizeram referência ao emprego por conta própria no concernente aos rendimentos (80 versus 133), contudo os rendimentos líquidos mensais das actividades por conta-própria são consideravelmente altos. Aproximadamente 20% dos inquiridos referiu que os seus rendimentos são de múltiplas origens, que não são só provenientes de actividades agrícolas. Em 1991 a média do rendimento total das famílias com o chefe do sexo feminino foi 739.000 mt ($336) versus 4.445.000 mt ($2.020) com chefe de família masculino. A diferença nos dois tipos de família verificou-se mesmo depois de ajustamentos ao tamanho da família, o rendimento total per-capita das famílias com chefe feminino (123.000 mt, $56) foi sómente 21% do relatado no segundo tipo de família (596.000 mt, $271). As famílias registados têm substancialmente maior rendimento total comparado ao dos não-registados (7.473.000 mt versus 1.610.000 mt/agregado familiar), o que ilustra o poder econômico das entituladas propriedades agrícolas privadas na economia.

(17) Em média, o rendimento total da família provém de actividades agrícolas (59%), pecuárias (16%) e as não-agrárias (25%). As famílias não-registadas (37%) e famílias com chefe do sexo feminino (35%) dão maior ênfase a empregos não-agrários. Esta informação evidencia moderadamente a hipótese de estes grupos se dedicarem mais a empregos não agrários, pressupostamente devido ao acesso limitado à terra. Contrariamente, as famílias registadas dão menos ênfase ao rendimento não-agrário (21%).

(18) No global, a análise demonstrou que os agricultores do distrito VI, o menos efectivo administrativamente, confiam nas cooperativas e associações de produtores devido as facilidades de acesso a terra e aos meios de produção (insumos). Os agregados com o chefe do sexo feminino, geralmente divorciadas, viúvas ou esposo no estrangeiro, estão altamente em desvantagem, seja em relação ao acesso a terra, oportunidades de emprego, ou níveis de rendimento. As famílias registadas possuem maiores áreas de cultivo e rendimentos do que os não-registados, devido a diferenças no capital humano, direitos de propriedade, e acesso ao mercado.

Análise Baseada na Parcela

(19) A adquisição de terra nas zonas verdes peri-urbanas tem sido feita sob duas formas principais: ocupação espontânea, e alocação oficial por autoridades locais e centrais. Dos 162 talhões da amostra 29% foram obtidos via autoridades do bairro, 15% ocupação espontânea, 11% do DCU ou Conselho Executivo, 15% das associações de produção, 3% do regulado, 2% do gabinete das

zonas verdes, e 1% do Ministério da Agricultura. Uma pequena percentagem foi obtida a partir de mecanismos não-administrativos, dos quais 6% por herança, 9% compra, 12% empréstimos, 1% oferta do antigo proprietário e 1% explora terreno arrendado. Nenhuma família declarou ter alugado o seu terreno a outros.

(20) A importância dos vários processos usados na adquisição da terra tem sofrido mudanças com o tempo. A ocupação espontânea que representava 35% das aquisições de terras no período 1950-74, tornou-se a forma menos importante no periodo 1986-92 (8%). As atribuições administrativas das terras abandonadas por autoridades de bairro foram importantes durante o período pós-independência (1975-80), e desde 1980 predominaram as alocações de terras a refugiados de guerra. As alocações de terras pelo DCU foram-se tornando importantes ao longo do tempo, tendo variado de 0% no período 1950-1974 a 21% em 1981-1985. As concessões atribuídas pelas associações de produtores têm aumentado ao longo dos anos. Desde a sua criação, nos meados de 1986, esta tem sido a forma predominante de concessão de terras (24%). As compras de terra, que eram comuns antes da independência cessaram completamente entre 1975-85. Uma subida notória de compras verificou-se por volta de 1986 (18%), apesar dos decretos periódicos de notificação ao público da ilegalidade do acto de venda de terras. Os empréstimos têm sido uma forma importante de adquisição de terras, oscilando entre 10 a 15% das aquisições. Os arrendamentos tornaram-se importantes a partir de 1986, mas representam somente 3% das aquisições.

(21) Vinte e oito famílias revelaram ter tido pelo menos uma das suas parcelas alienada. Os resultados do estudo demonstraram que um total de 34 parcelas de terra foram alienadas. Em 65% dos casos, os proprietários dos terrenos foram retirados das suas terras, e substituídos por agricultores privados, governo ou associações de produtores. Nesses casos, menos de 12% dos originais donos dos terrenos recebeu compensação. O inquérito também demonstrou que 42 proprietários (o correspondente a 35% da amostra) apesar de possuirem terrenos na área peri-urbana também possuem outros terrenos nas áreas demarcadas ou nos seus locais de origem. A maioria dos inquiridos conhece a situação actual dos terrenos, se estão a ser cultivados e quem os explora. Alguns dos inquiridos (somente 22% da amostra) acham que os originais donos dos terrenos poderão um dia regressar e apoderar-se dos mesmos. Este dado indica que a maioria das famílias não tem intenção de regressar as suas áreas rurais de origem.

(22) Apesar dos decretos periódicos emitidos pelo Conselho Executivo banindo transferências privadas de terras, é frequente a compra e arrendamento das mesmas. Frequentemente, os compradores e vendedores para contornarem o problema argumentam que só se está a transacionar as beneficiações. Os preços nominais e reais têm estado a aumentar drasticamente com o tempo, o que torna o "negócio" bastante lucrativo para os actuais proprietários de terras, e por outro lado cria uma barreira para se entrar no sistema. De acordo com o inquérito realizado em 1991 os actuais preços das transações variam entre $2,500 a $15,000 USA por hectare. Estas quantias são bastante elevadas, em particular se se considerar que o rendimento médio anual das famílias não-registados é aproximadamente $732, e o das famílias com o chefe do sexo feminino é $336.

(23) Muitos dos gestores acham que têm o direito de cultivar hortícolas e árvores de fruta, investir em infraestruturas permanentes e legar a terra em testamento a seus herdeiros. Contudo, mais de 55% dos inquiridos acha que não tem o direito de arrendar ou vender a terra. Embora, explicitamente, a lei não outorgue direitos particulares aos homens, aparentemente homens chefes de família possuem mais direitos de arrendar ou vender a terra do que as mulheres chefes de família, apesar de todas as restrições legais. Em geral, o cultivo de hortícolas e árvores de fruta pode ser feito sem o envolvimento das autoridades, contudo, construções permanentes e transferências normalmente requerem autorização. As autorizações às famílias registados são normalmente cedidas pela DCU ou pelo Conselho Executivo, e para as não-registadas pelas associações de produtores.

(24) Apesar de alguns progressos nas reformas de mercado iniciados em 1985, a maioria das famílias usa mecanismos administrativos para adquisição de mais terra. A maioria dos 38% das famílias inquiridas, especialmente no distrito VI, gostaria de ter mais terra, e para tal, acha que dirigiria o pedido de concessão ao grupo dinamizador. A compra seria mais comum no distrito IV, e em famílias com o chefe do sexo masculino. As mulheres chefes de família têm a tendência de confiar mais nas associações dos produtores e casas agrárias. Curiosamente, 11% tentaria arrendar a sua terra. Este dado reforça a opinião sobre o aumento da importância do mercado de rendas nas áreas peri-urbanas, apesar de todas as restrições legais.

(25) Acima de 70% das famílias receia perder a terra, e 57% acha que o conflito de terras se está a agravar. As principais causas de disputa no distrito IV, em ordem decrescente são: estranhos reivindicando terrenos com contratos emitidos pelo DCU, e problemas com os vizinhos. No distrito IV, 12% das famílias acha que as disputas não constituem problema. No distrito VI, as principais causas são: indivíduos que não pertencem ao bairro, vizinhos, oficiais do bairro, e ex-proprietários das terras. Neste último distrito, 22% é de opinião que as disputas não são problema. Vinte e cinco famílias revelaram ter tido conflitos de terras durante o período 1973-1991. Acima de 44% dos conflitos surgiram em 1989 e 63% em 1986. As principais causas incluem, em ordem decrescente de importância, conflitos de títulos (títulos múltiplos emitidos para o mesmo talhão, ou sobreposição de registos), expansão das propriedades dos agricultores privados, projectos exigindo terras, disputa entre vizinhos e ex-proprietários exigindo terras.

(26) Em geral, o registo destina-se a aumentar o seguro de posse da terra, incentivar investimentos e facilitar o acesso aos créditos. As famílias com o chefe do sexo feminino gozam de menos benefícios, devido ao limitado acesso a informação sobre o sistema de registo de terras e ao crédito formal. Apesar de o registo de terras melhorar o controle do governo sob as terras, aparentemente o mesmo aumenta o risco de engajamento em actividades de venda ou arrendamentos. Esta situação complica a equação benefício-custo, ou seja famílias procurando maior segurança de investimentos ou créditos devem avaliar o peso dos benefícios contra a probabilidade de a terra lhes ser expropriada.

(27) Considerando os efeitos positivos resultantes do registo de terras, a questão do porquê da fraca aderência das famílias ao processo de registo

permanece. As principais preocupações das famílias registadas são: os terrenos não demarcados, os pequenos agricultores não interessados, e o elevado custo e morosidade do processo. Por outro lado, as famílias não-registadas sentem-se mais constrangidas pela falta de conhecimentos, incapacidade de compreender os procedimentos, e uma percepção generalizada de que a associação dos produtores deve cuidar do assunto. Somente 4% dos inquiridos demonstrou falta de interesse em registar as suas terras. Esta informação sugere uma forte procura latente do registo de terras. Na prática, os procedimentos de registo são bastante variados. Muitas famílias registadas não completam todos as etapas necessárias e muitas não-registadas começaram o processo mas não continuaram por falta de tempo ou falsas percepções de terem concluído.

(28) O registo é normalmente feito a terras demarcadas. As taxas dos levantamentos topográficos das demarcações extra-legais excedem os meios financeiros da maioria das famílias. A DINAGECA, instituição com capacidade técnica de conduzir levantamentos topográficos só pode executar registos em áreas fora da Província de Maputo. O gabinete das zonas verdes apesar de ter autoridade jurídica de fazer registos de terras agrícolas, não possui nem recursos nem capacidade técnica. O DCU, vocacionado em assuntos urbanos e limitado financiamento, tende a disponibilizar os escassos recursos ao processo de registo de propriedades urbanas. O DCU e a DINAGECA, embora já tenham tido fundos adequados para o volume de serviços então prestados, neste momento a situação financeira dessas entidades é precária. Para proprietários de terras do sector familiar certos requisitos não são aplicáveis, tais como submeter uma conta bancária, folha de salários ou plano de desenvolvimento. O envolvimento de muitas instituições na alocação de terras conduziu a múltiplas ou concessões sobrepostas (formal e informal). Proprietários de pequenas áreas, agravado pela insuficiência de conhecimentos, recursos ou influência para adquisição de títulos, poderão estar em risco de perder as suas terras, em vantagem daqueles que possuam meios adequados.

(29) Os responsáveis pelos talhões em estudo foram questionados acerca do preço de reserva (o disposto a ser pago pelo responsável para um talhão idêntico ao que possua actualmente), e do preço de oferta (o aceitável em caso de oferta do seu talhão). O preço médio de reserva é 45.966.810 mt/ha ($20.894), e o de oferta 31.218.177 mt/ha ($14.190). Os inquiridos ao justificarem os preços dos terrenos, aparentemente "exorbitantes", tendem a dar ênfase ao alto valor e procura de terras que existirá nas áreas das zonas verdes num futuro próximo; e a sua intenção de capitalizarem neste facto. A diferença entre o preço de reserva e o de oferta é 32% do preço de reserva, valor bastante elevado comparado a diferença de preços para terrenos nos mercados ocidentais (6-10%).

(30) Os modelos desenvolvidos de determinação dos preços de terras relacionam o talhão e as características da família, com percepções do preço das terras pelo gestor do talhão. Observou-se que o tamanho do talhão, qualidade, e melhoramentos físicos (acessos a estrada e construções) são determinantes significativos e positivos nos preços de reserva e de oferta. Informações contraditórias e ofertas desiguais entre as famílias, que em princípio poderiam deturpar os sinais dos preço no mercado da terra,

caracterizado por alocações administrativas, mostram efeitos inconsistentes ou fracos. Por outro lado, modelos de regressão relacionam diferenças de preços (custos de transação) com as características das famílias. O tamanho da propriedade agrícola demonstrou ter um efeito negativo na diferença de preço, devido a relutância dos proprietários de pequenas áreas de alienar os seus terrenos por razões de segurança alimentar ou dificuldade em propor ofertas. Uma relação negativa entre o rendimento, e custos de transação, e uma relação positiva entre o rendimento e os preços de terras são potenciais indicadores de êxito para os pequenos agricultores, para expansão dos seus títulos, e melhorias nas oportunidades de emprego. O registo de terras tende a aumentar os custos de transação devido ao aumento do risco de ser detectado, o que pode induzir à perda do terreno. O factor sexo não tem uma influência directa nos custos de transação, mas os preconceitos ligados ao sexo são aparentes através das diferenças na posse de terra e tamanho das propriedades agrícolas.

Conclusões

(31) Os dezoito anos de socialismo em Moçambique criaram um estado de conflito em relação aos direitos da terra, altos custos de transação e proliferação do envolvimento institucional por autoridades centrais e locais na Política de terras. Embora os arrendamentos e compras de terra estejam a tornar-se mais frequentes, o governo continua as suas tentativas para controlar o uso e a alocação de terras. Os custos econômicos resultantes das restrições do mercado de terras são difíceis de serem quantificados, mas são aparentes nas frequentes disputas de terra, expropriação da terra pelo DCU e autoridades locais, invasão pelos refugiados e agricultores privados, ausência duma compensação honesta, insegurança na posse da terra e procedimentos complicados de adquisição de títulos sob o sistema estatutário.

(32) Não há dúvidas de que as reformas de propriedade são necessárias, e importantes tanto para pequenos como para grandes proprietários de terras. A combinação das nacionalizações e conflito civil tem influenciado negativamente a segurança dos direitos da terra nas zonas verdes. A actual alternativa do sistema de registo de terras implementado pelo governo tem provado não ser a mais adequada. O registo de terras é bastante complicado, com requisitos e procedimentos que excedem as capacidades dos pequenos proprietários, e são também inadequados para as actuais necessidades da agricultura. Os pequenos proprietérios procuram pelas associações de produtores para protecção dos seus direitos à terra, solução que tem também os seus problemas. De facto, a distribuição dos poderes da política de terras entre múltiplas instituições com pessoal e recursos inadequados tem criado uma situação bastante turbulenta sem clareza nas responsabilidades e recursos para uma realização efectiva das actividades. Os direitos individuais de propriedade e o mercado livre aparentemente não são a melhor solução. Todavia, é difícil visualizar como as reformas do mercado moçambicano podem ter lugar sem uma política de terras mais dirigida aos interesses privados.

CHAPTER 1

INTRODUCTION

The peri-urban areas of Maputo have experienced dramatic changes over the past two decades. The low-lying areas beyond the old cement city that were once occupied by Portuguese plantations and wetlands, prior to independence, are now fully settled by family and private farms engaged in intensive vegetable and horticultural production. The green zones underwent rapid settlement following independence, first by un- and under-employed urban residents and former farm workers occupying abandoned Portuguese farms, and later after 1980, by refugees fleeing drought and war.

The civil war has had a tumultuous effect on people's welfare, settlement, employment, as well as government's ability to govern. Rural families have been uprooted from their traditional lands and have experienced devastating losses of property and life. While fear, drought and economic deprivation have pushed rural populations off the land, urban residents have seen their cities overrun by refugees and squatters. Massive immigration from the countryside and lack of employment opportunities within the secure zone of the city have resulted in a rapidly expanding belt of squatter housing and poverty at the city's fringe. Petty trade and low-wage employment has burgeoned as formal sector employment has declined, but the informal sector, far from exhibiting dynamic growth, is providing little more than subsistence livelihoods (Little and Baptista 1992). The population explosion of greater Maputo is exceeding the state's meagre means to regulate land use, or even to adequately monitor the demographic and economic changes that are occurring.

Maputo today is a dual city. The tree lined avenues and southern cape architecture on the hilltops overlooking the sea still retain some of the beauty of old. Yet the skeletal remains of skyscrapers continue to dot the city skyline eighteen years after independence. Beyond the old city limits, pushing into the agricultural green zones, is the now vast area of temporary housing and squatter settlement with limited or no access to water, electricity or sewage (DeGroot 1989). Poverty is pervasive. Long-term residents reveal a sense of "pain" when talking about the city's decline. While the city has rebounded somewhat in recent years, the deterioration is clearly seen and felt throughout the city. As noted by Jose Forjas of the faculty of architecture and planning (personal communications), one has in effect witnessed the ruralization of Maputo.

Since 1985, the economy of Mozambique has slowly been undergoing a transformation, from one centrally planned and guided by socialist principles, to one involving less state control and greater reliance on private market forces. Considerable headway has been made in price liberalization as indicated by the widespread presence of vegetables on streets and items in stores that were absent only a few years ago. Yet, institutional rigidities remain that continue to impose a drag on the economy. Land still cannot legally be sold, rented, leased, or transferred without authorization from an ever-changing set of authorities. A dynamic informal land market is emerging, but transaction costs remain high due to weak security of property rights, and

onerous time requirements involved in negotiating transfers. Economic hardships have left most ministries and departments dealing in land policy with only meagre resources for day-to-day operations, effectively constraining government's capacity to provide essential surveying and registration services.

The foundations of any economy rest on clearly defined and certain property rights. Four questions are pertinent to the operation of the land market in the Maputo peri-urban area. Do people have sufficient rights to ensure adequate incentives to invest and improve the land resource? Are the rights of adequate duration? Are they secure? Can they be transferred at "reasonably" low cost? Negative responses to these questions would imply high costs for economic activity, with the effect of dampening the response of aggregate output to pricing reforms.

Research Project

Beginning in January 1991, the U.S. Agency for International Development (USAID) began funding a series of studies on land, employment, and financial markets in the peri-urban areas of Maputo. This research was conducted by three cooperative agreements of the Science and Technology Bureau of USAID under the rubric of the Peri-Urban Economic Growth in Africa project: the Land Tenure Center (LTC) of the University of Wisconsin; Ohio State University (OSU); and the Institute of Development Anthropology (IDA). Funding for the research was provided by the USAID bureau of Science and Technology, Africa bureau, and the Mozambique mission. Research under the project has encompassed various dimensions including a baseline survey of economic activity, migration patterns, food security, financial market activity, land access and use (Graham et al. 1991); the relationship between the legal framework, land disputes and processes of land dispute resolution (Boucher et al. 1992); the dynamics of petty trade and household survival strategies (Little and Baptista 1992); and formal and informal financial market linkages (Graham and Francisco (1993), all in the same peri-urban zone as this study of land markets.

Beginning in September 1991, a land market survey involving 121 households and 162 plots of land was administered in two peri-urban green zones of Maputo--districts IV and VI. Households were queried about their land settlement histories, mode of land acquisition, terms and conditions of transfers, land rights, size of holdings, perceptions of tenure security, land use practices, commercial input use, hired labor, agricultural sales and revenues, non-farm employment and earnings, and general demographic information. The survey in district IV was administered in October and November, and later extended to district VI in November and December, 1991. While for the most part, the surveys went according to plan, the research activity in district VI was shortened by 2 weeks due to an escalation of violence in November.

Outline of Paper

This study reports the findings of this land market survey and the many interviews held with producers, buyers and sellers of land, local authorities, and district and national officials in Maputo and the surrounding peri-urban green zones. Chapter 1 is introductory. Chapter 2 covers the legal foundation of land tenure, and describes the various authorities and agencies responsible

for setting and enforcing land policy in the peri-urban area. Chapter 3 explains the research design and sampling frame used to select households and landholdings for the study, choice of strata, survey instruments, research questions, and data limitations. In Chapter 4, data are presented that provide a statistical profile of the household economy. Chapter 5 examines processes of land settlement, land acquisition, types and sources of land disputes, and registration benefits. Economic and political factors are linked with land prices in Chapter 6 to help explain the determination of "reservation" prices and "offer" prices of land, and to evaluate the influence of market factors, and possible asymmetries in information and bargaining position, on land price perceptions.

CHAPTER 2

LAND LEGISLATION, ADMINISTRATION AND SETTLEMENT

A complex legal history emphasizing concession agriculture and serving European (mainly Portuguese) colonial interests dates back to the mid-18th century. This full history is both difficult to trace and exceeds in scope and pertinence this present study. Nevertheless, this chapter focuses on the legal framework and processes of land administration that define land policy in Mozambique and the peri-urban area of Maputo. Following independence, from 1975 to around 1987, a combination of initially political and economic forces and later civil war led to the rapid settlement of the peri-urban green zones. This chapter describes in detail these forces and characterizes the failures in land policy that are presently undermining security of land rights and income from farming.

Land Policy and Land Legislation in Mozambique

Pre-Independence Land Policy[1]

Land legislation enacted in 1918 (Decree of 16 March) subdivided the country's land base into three land tenure categories, the third being "reserves" for native Africans.[2] Outside the reserves, land classified as "vacant" was available for acquisition through public sale. In principle, African "progressive" farmers could obtain up to 2 hectares of land conditional upon demonstration of financial capability and land demarcation by survey. As is still the case in Mozambique, the process of demarcation (Chapter 5) was prohibitively expensive and complicated. The combination of land partitioning, prohibitively high demarcation costs, and the privileges and economic advantages held by the colonial immigrants in land acquisition, led to the displacement of native Mozambicans from large areas of the country's best lands.

International pressure on Portugal to redress these problems of unequal land access by native "Africans" resulted in the enactment of a new Statute of Native Agriculture (Decree No. 43897) of 6 September 1961. This new Decree

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1. This and the following section draw heavily on Bruce (1990), Land Policy and State Farm Divestiture in Mozambique, Land Tenure Center Research Paper, April.

2. "Africans" as used during the colonial era shall be used here to designate indigenous (i.e. non-Europeans) Mozambicans for lack of a more precise and inoffensive alternative. This is in no way intended to imply that Mozambicans of European ancestry may not be considered "African" as well.

partitioned Mozambique's land base into three tenure categories: (1) land for towns and settlements, including their outskirts; (2) land reserved for common ownership by Africans to be utilized in accordance with their customs; and (3) all other vacant lands not covered under classes (1) and (2). The decree contained no formal recognition of indigenous land rights for individuals or families, but allowed Africans access to land under statutory tenure in limited cases:

- The local administration under art. 226 of the 1961 decree could grant concessions for permanent farms from class 2 (reserve) land to residents in the administrative jurisdiction, subject to the authorization of the district governor, and to the consent of the local administrator's advisors; and,

- Local residents under arts. 229 and 231 could enter into rental or tenancy contracts with the local administration for available class 2 lands, but not for areas in excess of 50 ha, unless resources and capability justifying a larger hectarage could be proved.

Land rights acquired through these channels could be transferred only with the governor's authorization, although the rights were safe from government appropriation, and the land could be used to secure loans. Ultimately, a native Mozambican could acquire land rights comparable to those of a Portuguese settler only by irrevocably abandoning his or her African status, and becoming assimilated into the Portuguese political structure.

Post-Independence Land Policy

As Mozambique moved toward independence in 1975 the country was beset by political and economic turmoil. Portuguese settlers, fearing the power of a new regime hostile to colonial and private capital interests, began to abandon their lands, homes and businesses in large numbers. As many Portuguese fled, they destroyed on a massive scale what they could not take along (Hanlon 1990, Isaacman and Isaacman 1983). Moreover, the Portuguese practice of hiring expatriates for nearly all skilled and semi-skilled positions, deprived Mozambique of the essential skills needed to immediately and effectively manage and operate the vacated farms and factories.

The new post-independence land policy had to strike a balance between a rising tide of socialism fueled by the felt need to avoid or redress past inequities in political and economic structures, a modernist ideology by those coming to power that future growth would need to depend on large state and corporate structures, and practical concerns of maintaining and improving the farm and business infrastructure left behind by the departing Portuguese. A land policy built on "socialist" principles and state ownership is firmly rooted in the 1975 independence constitution (art. 8) which states (English translation) that "All land and natural resources in the soil and subsoil belong to all people through the state", and land may be either "state or cooperative property". An internal debate on property rights within FRELIMO followed in 1975 and 1976 against the background of a hardening official ideology along Marxist-Leninist lines. The reality of abandoned properties being left in the wake of the Portuguese exodus precipitated a two-pronged strategy enunciated at the Third Congress of FRELIMO in February 1977:

reorganization and operation of "intervened" medium and large plantations and other commercial production schemes such as state farms; and development of communal villages involving cooperative production, modeled on Tanzania's ujamaa villages.[3]

While the legal framework was decided by 1977, it was not until 1979 that a new Land Law (*Lei de Terras*) (Law No. 6/79 of 3 July) was enacted, one described in the presentation speech to the People's assembly as "a weapon in the struggle to build socialism." The law, and subsequent land regulations enacted in 1987, reconfirmed the principle that all land is owned by the state, but held by four classes of right holders--the state, cooperatives, "private (title) holders", and "families". Little space is devoted to state enterprises, which is a matter for administrative law, or cooperatives which are governed by separate legislation, Law No. 9/80. The law instead focuses on private title holders and families. The following legal provisions refer to the law unless otherwise indicated to be part of the regulations.

According to the law, land cannot be sold, ceded, rented, mortgaged, pawned, or in anyway privately transferred (art. 1), although a subsequent provision permits land improvements to be mortgaged (art. 2). Title or "license", which is in effect a lease of use rights from the state, can be held by all single individuals or collectives (of persons) with legal identity (art. 4).[4] The state promises to defend that title (art. 5), although title does not grant unconditional use rights. The holder must utilize the land rationally, and in conformity with an authorized plan of exploitation or development (art. 6). No fees are payable for use by the state, state agencies, or families, but fees are to be charged to private title holders (art. 9).

The distinction between private holders and family farms follows the conventional Marxist distinction: family farms employ no wage labor, while private farms do (art. 15).[5] The land rights of family producers are guaranteed by their occupation of the land (art. 8). Integration of such farms

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3. It is curious that the settlement of former Portuguese estates in the peri-urban green zones of Maputo took neither path, as will be seen shortly, despite being in close proximity to the central government.

4. According to Bruce (1990), the term "license" used in the law is a more limited interest than implied by this schedule, thus the more conventional term--lease--is used from this point forward.

5. As Myers and West (1993, p. 5) observe, this artificial dichotomy is neither realistic nor sufficiently flexible to accommodate the continuum of farming enterprises in Mozambique: "By government definition, the private sector is made up of farmers who employ wage labor, have access to credit, and produce for the market. By extension they are seen as having "greater capacity" to exploit resources (i.e., land, capital, labor) than the family sector. The family sector, by definition, is made up of farmers who do not employ wage labor (but rather exploit family labor), have little capital, and do not produce for the market. [In fact,] [m]any private sector farmers...have little capital, do not employ wage labor, and consume much of what they produce. [While] [a]t the same time, most family sector farmers produce for the market and many hire limited wage labor to augment the family work force."

into cooperative structures is also encouraged (art. 16). Compensation is to be paid when agricultural development causes damage to family holdings (art. 13), which as Boucher et al. (1993) have documented, has rarely been implemented or enforced (see also chapter 5).[6]

While any individual or group may apply for a title concession under the 1987 regulations (article 55), only private producers are required by law to file for title. Their rights under the law must originate in a lease from the state (art. 8) and fees are payable (art. 9). A lease may be perpetual or temporary. In the original statute, "temporary" is limited to between 5 and 15 years, but a recent amendment (Law No. 1/86) allows a lease to be given for as long as 50 years. While titles for individuals and private entities are subject to this limit, it does not apply to mixed private/state enterprises, in which case use is guaranteed for the life of the enterprise (art. 10). Should use be interrupted for reasons beyond the control of the operator, the terms of the lease cease to run for that period (art. 21 of the regulations). Leasehold rights are transferable only by inheritance, on the death of the holder, to his or her spouse and heirs according to the terms of civil law (art. 32). The land in such cases may be sub-divided, but only if productivity is not impaired (art. 16, regulations). Heirs cannot transfer the land, but can transfer improvements with prior authorization of the leasing authority, although the state has a preferred right to purchase such improvements should it choose to do so (art. 33).

Leases may be terminated by either expiration of term, renunciation by the holder, or revocation by the state (art. 34). However, the regulations (art. 20) permit a lease to be automatically renewed for the same or shorter periods, and a lease no longer simply expires, but must be renounced or revoked in order to terminate. In the event of termination, all improvements revert to the state (art. 35). Revocation may be caused by non-fulfillment of the development plan, except if caused by force majeur, or by the state's need to use the land for other purposes, in which case (the latter) just compensation is required (art. 36). Article 19 of the regulations stipulates 6 months notice for revocation, except in cases of urgency. The person or entity to whom the land is assigned is responsible for paying the value of those improvements which cannot be removed, and for all losses suffered. Rights to land and details of their use and capability must appear in the National Land Register (arts. 37, 38), and it is obligatory to register the creation, termination and transmission of such rights (art. 39).

The 1987 regulations further set out the process for cadastral survey, titling of land, and responsibilities for issuance. A provincial government may grant rights to use land for agricultural production, livestock, or forestry in areas less than 250, 500, and 1,000 hectares, respectively. Leases for larger areas must be approved by the Minister of Agriculture. The Council

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6. Unlike land in residential or commercial uses, where improvements on the land may have considerable value, it is most difficult to apply this provision to agricultural holdings. Thus, officials can legally intervene and expropriate land without compensation in instances where the landholder has not made apparent or documented land improvements.

of Ministers must approve the setting aside of land as a protected zone. Within municipalities, the municipal Executive Council has the responsibility of approving leases.

The regulations further seek to regulate family production. A family farm need not have a lease, but can apply for one (art. 55). A family is defined as the extended rather than the nuclear family. Formal marriage is not required; the key criterion is "a community of material and affective life." Occupation of land by families is not subject to taxation (art. 47). Areas of occupation are limited; a family's holding cannot legally exceed (per family member) one-quarter hectare of irrigated land and one-half hectare of rainfed land. If shifting cultivation is practiced, the family may hold additional land not to exceed 10 hectares. Each family is entitled to common pasture for its livestock. If these areas cannot be supported because of land scarcity, the amount can be reduced by local authorities taking into account the social, economic, and cultural realities of the region. In the event that a family must vacate the land they occupy, an explicit declaration of explanation is required (art. 50). In such cases, compensation for improvements on the land must be paid in advance before the move, and new land of similar value must be provided. Those being moved should be able to view the new land before they move (art. 52), implying a right of refusal. If a family leaves the land idle of its own volition for over 2 years without justification, its right to the land terminates and all improvements on the land revert to the state without compensation. Even in the event of cancellation, the family may reoccupy the land if no one else has begun to use it (art. 60).

Urban Land Tenure

The constitution and land law confer to the state a strong interventionist role in the management, use and transmittance of land. The state in turn has divested these powers among various departments, agencies and Ministries comprising the state apparatus in urban areas (Garcia 1989).

The Ministry of Construction and Waters (MCW) has broad responsibilities for, and a strong history of intervention in, granting licences for construction works (General Urban Construction Regulations), authorizing the alienation of land for buildings and rights of occupation (art. 12 of Decree Law No. 5/76 of 5 February), and for developing and approving construction plans (art. 5 of Ministerial Diploma No. 25/87 of 21 January). The National Planning Commission (NPC) (art. 5 of the Regulation of the Land Law and art. 11 of P.D. No. 34/86 of 24 April) is responsible for developing and elaborating urban plans, implementing the regulations governing physical space, developing regional and local plans for residential use, general urban planning, and support to local authorities in developing partial and detailed urban plans. However, it is the National Institute of Physical Planning (NIPP), an institute subordinate to the NPC, that is in effect responsible for the elaboration and promotion of urban plans (art. 2 of Ministerial Diploma No. 61/88 of 11 May) and the establishment of regulations governing the occupation of urban land.

At the local level of governance, it is incumbent on the provincial governments to issue lease concessions (art. 8, regulation of the land law), on the executive councils to issue leases in areas within urban plans, and on the executive councils and respective People's Assemblies to collaborate with the

NIPP and superior agencies in the elaboration of local urban plans (first meeting of the city and communal residential areas of February/March 1979). Local offices of the MCW, NPC and NIPP are also responsible for coordinating and executing urban development plans in accordance with the general plans defined at the central agency level, protecting and maintaining immovable state property, and developing housing policy. Although, the land law assigns the responsibility of governing land use for residential areas to the Executive Councils, the Department of Construction and Urbanization (*Direcção de Construção e Urbanização*) (DCU), who issues concessions in Maputo city, is actually responsible for issuing titles for urban property in the perimeter of the city, including agricultural land.

A complex web of overlapping responsibilities is the outcome, one that defies easy description or interpretation. In addition to the above central and local authorities--Ministry of Construction and Waters, the National Planning Commission, the Institute of Physical Planning, the Executive Councils, and the People's Assemblies--land grants were made to at least 13 different autonomous agencies at the time of independence, including inter alia the Ministry of Agriculture, Ministry of Education, Ministry of Interior, and APIE (the parastatal responsible for vacated apartments and housing). As noted by Garcia (1989, p. 7,8), this dispersion and overlap of responsibilities combined with constantly changing legal rules and responsibilities has created an environment of arbitrary and uncertain land rights, lack of certainty over who is responsible for leases, a proliferation of urban technicians, dilution of scarce resources, and a fundamental disrespect for rules and regulations by administrative officers and citizens alike.

Maputo Peri-Urban Green Zone Settlement

Pre-Independence Period

Before independence, most agricultural production for market was done by Portuguese settlers who had been granted small farms (*quintas*) in the areas surrounding Maputo. These farms, ranging from 1 to 100 ha, produced for home consumption and supplied an important part of urban demand, especially for fruits and vegetables. The majority also had infrastructure for raising small animals (chickens, ducks, and pigs). The *quintas* were located in the lower, naturally irrigated areas well suited for intensive vegetable production. The higher rainfed areas, with sandy soils and no irrigation, were used by urban families, and the wage laborers and sharecroppers of the *quintas*, to produce subsistence crops (peanuts, manioc, and maize). Thus, the best land and the most productive infrastructure were almost exclusively held by the Portuguese until independence.

Post Independence Period (1975-1979)

The withdrawal of the Portuguese at independence resulted in a partial collapse of agricultural production for market as well as urban industrial activity. The economic recession that followed caused a large and abrupt increase in unemployment and falling real wages. Spontaneous and unorganized occupation ensued of the agricultural lands abandoned by the Portuguese. There was no official policy, during this period, regarding either agricultural production or land occupation in the green zones. The occupation that took

place mainly involved ex-wage laborers and sharecroppers of the colonial *quintas*, and urban workers seeking alternative employment in response to falling incomes and living standards. The previous demarcations were largely ignored by these occupations. In most cases, multiple families occupied a single demarcated plot of land.

New Crises, 1980-1987

The 1980s brought new pressures upon the city of Maputo and, consequently, upon the green zones.

First, the Republic of South Africa (RSA) restricted the access of Mozambicans to jobs in South African mines causing a monetary crisis for Mozambique and a rural unemployment crisis for many Mozambicans. These jobs were crucial both to foreign exchange earnings of the Mozambican state, as well as to the maintenance of large numbers of households in southern Mozambique. This restriction came at a time when there were record numbers of Mozambicans in the mines--over 115,000 according to Francisco (1987).

Second, a series of severe droughts plagued southern Mozambique in the early 1980s, forcing an uprooting of many rural households.

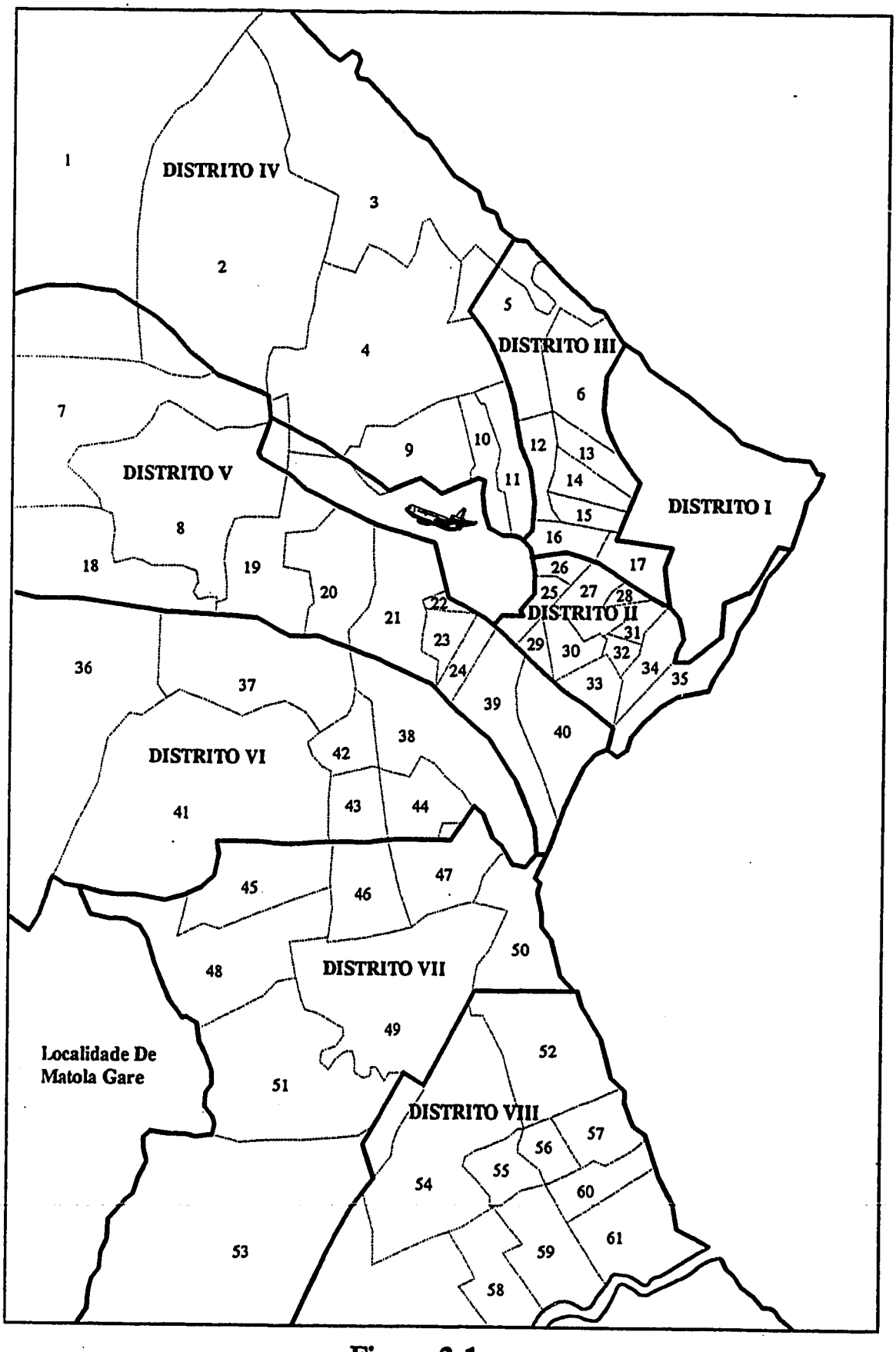
Third, armed attacks by former Rhodesian and South African backed forces began to intensify. This accelerated the economic deterioration in the countryside, disrupted food supply lines to urban areas, and marked the beginning of a massive influx of people into Maputo that continued into the early 1990s.

These factors collectively led to an acceleration of the spontaneous and unplanned land occupation that began at independence. The source of many current land conflicts in the peri-urban area stem from the unorderly occupation of previously demarcated land during this period.

Green Zones Settlement

The settlement of lands in the peri-urban green zones following independence was thus the culmination of multiple factors (personal interviews; see also Graham et al. 1991, Pinsky 1985, and Boucher et al. 1993.) First, the exodus of the Portuguese at independence sharply reduced the supply of skilled and semi-skilled personnel in the workforce. The severe economic depression that ensued resulted in an outmigration of people from the city's center to outlying areas seeking farmland for employment (see figure 2.1 for the administrative boundaries of districts and bairros, and figure 2.2 for a land use map showing the demarcations of the peri-urban green zones of Maputo and Matola cities.) Second, the government adopted an "open-arms" policy after independence, by extending an invitation to the rural population to occupy the apartments, houses and shops abandoned by the Portuguese. While primarily urban in purpose, the proclamation by attracting the flow of people into the cities, no doubt also led to settlement of peri-urban areas as well, particularly as the supply of vacant properties grew scarce. Third, while Mozambicans working in the mines of the RSA has been a common and important source of employment going back to the latter half of the 19th century, the closing of the mines to Mozambicans, the repatriation of earnings that

Maputo, Mozambique: 1993



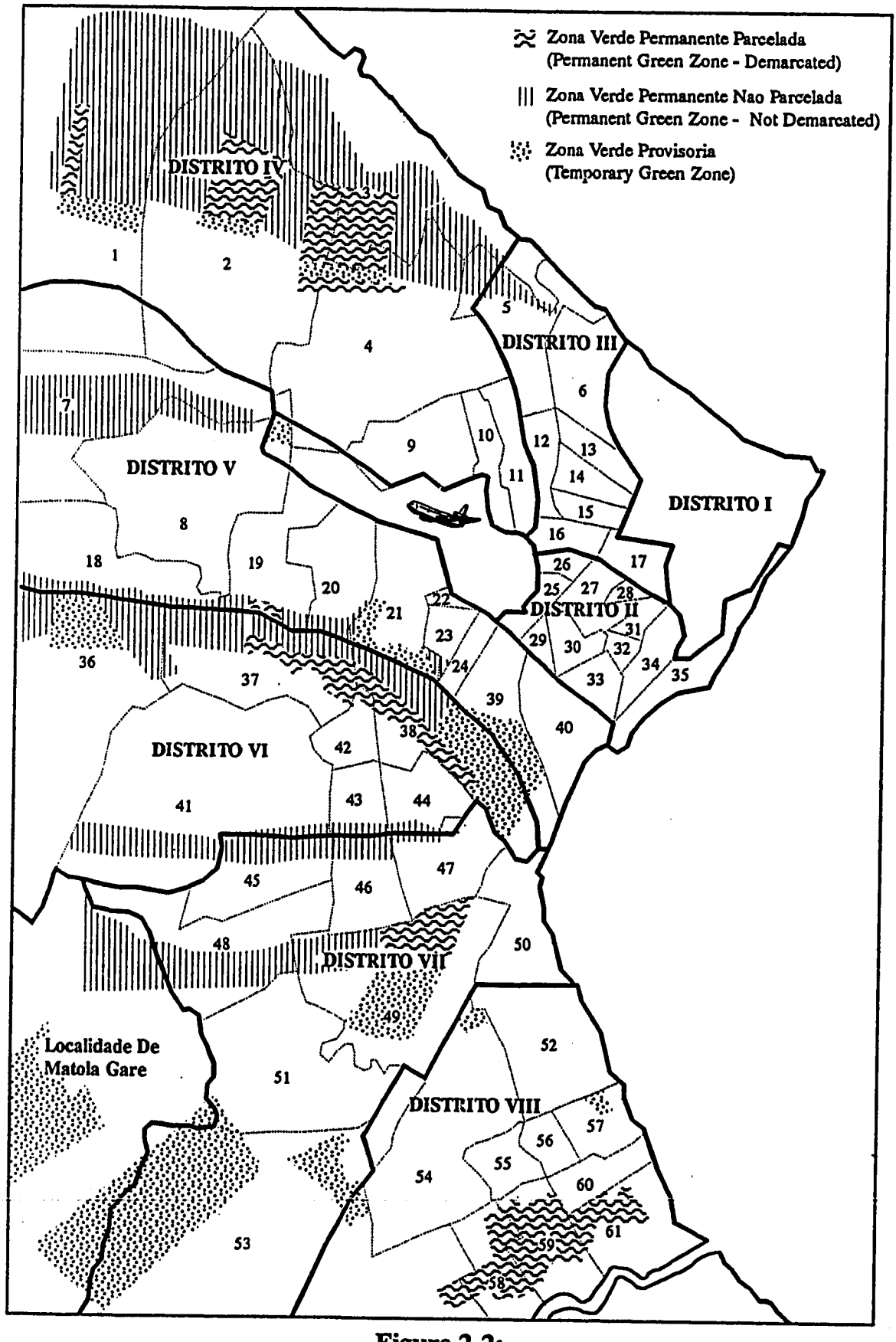
Bairros:

25 De Junho (21)
Acordos De Lusaka (44)
Aeroporto A (26)
Aeroporto B (25)
Albazine (1)
Bagamoio (20)
Bunhiça (51)
CFM (35)
Chamanculo A (31)
Chamanculo B (32)
Chamanculo C (33)
Chamanculo D (30)
Cingatela (48)
Costa Do Sol (3)
FPLM (11)
Fomento (52)
Hulene (9)
Ingavela (41)
Inhagoia A (23)
Inhagoia B (24)
Jardim (39)
Jorge Dimitrov (19)
Kongolote (36)
Laulane (4)
Liberdade (54)
Luis Cabral (40)
Machava (49)
Mafalala (17)
Magoanine (7)
Mahotas (2)
Malanga (34)
Malhazine (8)
Matola B (60)
Matola C (61)
Matola D (59)
Matola F (57)
Matola G (56)
Matola H (55)
Matola J (58)
Mavalane (10)
Maxaquene A (15)
Maxaquene B (14)
Maxaquene C (13)
Maxaquene D (12)
Micajuine (28)
Nsalene (22)
Patrice Lumumba (46)
Polana Caniço A (6)
Polana Caniço B (5)
S. Damaso (45)
Trevo (50)
Tsalala (53)
Unidade 7 (29)
Unidade A (47)
Unidade D (43)
Urbanizaçao (16)
Vale Do Infulene (38)
Xipamanine (27)
Zimpeto (18)
Zona T-3 (42)
Zona Verde (37)

Figure 2.1:
Administrative Map of the Urban and Peri-Urban Districts and Barrios of Maputo.

Map Produced By:
Anna Storkson, 1993
Anna*Graphics*, Madison, WI

Maputo, Mozambique: 1993



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Urbanizaçao (16)
Vale Do Infulene (38)
Xipamanine (27)
Zimpeto (18)
Zona T-3 (42)
Zona Verde (37)

Figure 2.2:
Land Use Map Showing the Peri-Urban Green Zones (Agricultural Gardens) of Maputo

Map Produced By:
Anna Storkson, 1993
Anna*Graphics*, Madison, WI

13

followed, and the departure of the Portuguese, provided Mozambicans with both the rationale, opportunity, and the means to acquire land (which heretofore Mozambicans faced restrictions in acquiring). Fourth, the impact of drought (and severe drop in agricultural exports and incomes in the countryside) combined with civil war, particularly from 1980 onward, led to rural-urban migration on a massive scale of people seeking employment, land, and security. Finally, the elimination of price controls on fruits and vegetables in 1985-86, and the structural adjustment program (the PRE) which relaxed restrictions on other types of trade in 1987, effectively increased incomes from horticultural production, and improved the profitability of private horticultural trade by 1989 (Little and Baptista 1992).

A baseline survey of 330 households in 1991 revealed the following settlement characteristics of households in the peri-urban areas of Maputo (Graham et al. 1992): 32% of the total sample population were migrants, having moved to districts I-VIII of Maputo province sometime in the past; 66% of household heads were migrants, but many had children who were born in Maputo, and were therefore counted as non-migrants (thus the reason for the lower percentage reported for the total sample population); and 3% (household average) had resided in the area for < 5 years, 11% between 5-9.9 years, 28% between 10-14.9 years, and 58% for ≥ 15 years. Thus, while 67% of household heads were migrants, only 42% appeared to have moved to the peri-urban area since independence. Between 1971 and 1980, the primary motives (over 80% of valid responses) given for migration to the peri-urban area included in declining order of importance: economic motives, other family reasons (wife joining husband), and came as a dependent. However, beginning in 1981, war became the single most important motive for migration, a trend that held through 1990.

In summary, from 1975 to 1982, most of the occupation of land in the green zones was undertaken by former urban dwellers and farm workers. Although, the peri-urban zone today is densely settled, the boundaries of the city in early 1980 were still mostly limited to the old cement city. Some smallholders in the course of interviews vividly recalled the humid lands in 1975 as being mostly unutilized and available for the taking. However, the rapid in-migration of people uprooted by war that ensued in the period from about 1982 through 1987, caused a rapid outward expansion of residential settlements (except the lowlands which were unsuited for residential construction). By 1987, most of the best agricultural land in districts IV to VIII had been claimed and was being intensively farmed in vegetables. The period 1987 to the early 1990s has mainly involved the subdivision and reallocation of irrigated lands, and the settlement of rainfed lands in surrounding areas. Population data, due to the political transition at independence and war-related migration, are understandably scarce and unreliable. Nevertheless, the rate of growth in Maputo's population has by most crude estimates been extremely rapid, growing from around 250,000 in 1975 to around 800,000 by 1980 (Pinksky 1985) to around 1.7 to 2.0 million by 1990. Although the most intense demand for land is for residential use on drylands, the green zones have also been shrinking with the intrusion of population settlement.

The massive scale of immigration into Maputo, and the haphazard occupation of previously demarcated land that ensued, created a situation of unclear, overlapping, and contradictory land rights (see Box 2.1). This situation partially stems from the environment of political and economic turbulence within which the land policy was implemented. However, the legal framework

Box 2.1:

The Pressures of Urbanization, An Environment Conducive to Land Disputes

"The four largest cities (Maputo, Beira, Nampula, and Quelimane) have modern core areas of office buildings, hotels, and apartment blocks, along with expansive residential areas that were once reserved for the settler population. The rapid growth of these so-called cement cities in the 1960's and early 1970's produced enormous speculative profits for the landowners (or their corporate heirs), the largest of whom had acquired their holdings when the land around the cities was ceded for agricultural purposes. The owners cashed in as the city expanded and the land was converted to urban use; some even sold it back to the municipal government, as when land was acquired for the airport and a second railway station in Lourenço Marques. Despite laws to the contrary, city officials were often financially involved in these deals and the direction of growth was undoubtedly determined in part by personal interest.

Expanding urban development added to the misery of the 75 to 80 percent of the population that lived precariously in the shanty-towns surrounding the cement cities. Since Mozambicans were not permitted to own land, many families were forced to occupy illegally land unsuitable for building or public and private land slated for future development. Some rented tiny plots from the land-owners, and many were subject to periodic flooding or were bull-dozed out of their homes at the whim of speculators and government bureaucrats.

At independence most of the shantytown areas lacked water, sanitation, and community services, despite the start in the early 1970's of a "psychosocial" program, a last-gap attempt to culturally integrate the urban population, and not so coincidentally to develop a more skilled and loyal workforce...

The enormous problem of improving living conditions in the growing shantytowns was made even more difficult by the collapse of local government as the professional and administrative staff abandoned the country. Originally created to serve only the cement city, the "camaras municipais" (city councils) combined inefficiency and corruption with an inability to finance the enormous infrastructural works that were needed to match the level of building activity. The colonial division of local government responsibility further confused the situation. Not considered part of the city, most shantytown areas were under a separate administration, usually the rural district administration..."

Pinsky, Barry. 1985. "Territorial Dilemmas: Changing Urban Life." In: A Difficult Road: The Transition to Socialism in Mozambique (John S. Saul, ed.). New York: Monthly Review Press, pp. 286-7.

that vested all land rights to the state, and land administration to state agencies, created a system ripe for corruption, where land rights are too limited or too uncertain, land allocation decisions appear arbitrary, responsibilities for administering land are onerous and broadly dispersed among multiple agencies with overlapping responsibilities, and too few resources are spread too thinly to effectively administer the legal and land administration system proposed.

Green Zone Policies

In response to declining agricultural production and the increasingly unstable economic situation following independence, the government officially created the concept of green zones in the peri-urban areas in 1980. The green zones policy was aimed at absorbing the rising pool of un- and underemployed urban residents, increasing agricultural production to meet the growing food needs of Maputo, and preserving the ecological balance.

To meet these goals, the Green Zones Directorate (*Gabinete das Zonas Verdes*) was created in May of 1980 with duties of coordinating production activities of all producers in the green zones, investigating the existing situation of land occupation, conducting an inventory of existing agricultural infrastructure, creating and maintaining recreational areas, absorbing as much of the marginal urban population as possible, and guaranteeing the supply of agricultural inputs and marketing for green zones producers (*Gabinete das Zonas Verdes* 1989). Administratively, the Green Zones Directorate follows the concept of "double subordination" (GZV 1989). The Directorate is subordinated vertically to the Ministry of Agriculture and horizontally to the Executive Council of Maputo.

The Green Zones Directorate was initially assigned responsibility for the outlying districts of Marracuene, Manhica, Matutuine and Boane as well as abandoned *quintas* within districts I to VIII. However lack of resources and increased security problems in the outlying areas, forced the Directorate to scale back its activities to districts I-VIII, Catembe and Matola. Districts III-VIII have remained their principle areas of concentration, as Catembe and Matola continued, until only very recently, to suffer from security problems.

To carry out these goals on the ground, extension offices (*Casas Agrárias*) were created in each district within the green zones to work with family, private and cooperative farms. They are responsible for extending and teaching basic production techniques (an important function as many farmers had little or no experience in farming or vegetable production prior to settlement), selling farm inputs, monitoring land utilization, evicting and redistributing land if it is not being used efficiently, and participating in the issuance and reallocation of land concessions (along with local administrative structures (*grupo dinamizador*) (GD) at the *bairro* level, the district administration, and the Directorate of Construction and Urbanization (*Direcção de Construção e Urbanização*) (DCU) within the Executive Council of Maputo.)[7]

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7. *Grupo dinamizadors* were initially used by FRELIMO forces to mobilize the peasantry for rural reconstruction activities. As noted by Pinsky (1985, p. 288) "As a guerrilla movement,...FRELIMO relied on the active support of the rural population during the struggle for independence. In the liberated rural

The process of assigning land concessions had become very controversial by 1984 to 1985. Due to the worsening economic crisis within the city, the government decided to emphasize private sector farming to increase food production. The previously demarcated *quintas* were surveyed to assess land use efficiency and utilization, and to assess the level of infrastructural development. The process of granting concessions (*entrega das quintas*) began, with the objective of reallocating the "unutilized" or "under-utilized" *quintas* to those individuals who demonstrated the means (and capacity) to best use the land. This redistribution created many new conflicts. The spontaneous occupation of many *quintas* after independence was declared "illegal". In many instances the occupants were displaced by state functionaries, merchants and urban dwellers from the cement city, or by those green zones residents with capital or political influence. The redistribution might have been innocuous had demand for land been slack. But strong demand for land was also coming from migrants returning from South Africa with foreign exchange, refugees and itinerants.

When the redistribution of the *quintas* began in 1983/84, the ultimate authority for granting and registering agricultural concessions was transferred from the Green Zones Directorate to the DCU. This marked the beginning of the decline of the powers of the Green Zones Directorate. Currently the Green Zones Directorate plays at most a token role in the granting of land concessions. Its principal role is agricultural extension and supplying agricultural inputs.

It was not until 1985 that specific areas of Maputo were officially declared green zones. The official designation came within the 1985 Structural Plan (*Plano de Estrutura*) elaborated by the National Institute of Physical Planning (*Instituto Nacional de Planeamento Físico*) and the Executive Council of Maputo. In this plan, three types of green zones were defined--permanent green zones, provisional green zones, and zones of urban expansion (Table 2.1).

Permanent Green Zone Areas

These areas, totalling 5,230 ha (Plano de Estrutura 1985), contain the best quality agricultural land for intensive vegetable production based on soil

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areas, committees of FRELIMO militants organized collective agricultural production, as well as people's stores, schools, and health posts....Numerous meetings helped people become involved in solving their everyday problems, and the practice of "people's power" gradually developed....A similar strategy was attempted in the urban areas. FRELIMO members and FPLM forces moved quickly into the cities and towns after September 1974, helping to organize the selection of *grupos dinamizadors* ("dynamizing groups," or GDs) in neighborhoods, factories, institutions, and sections of the bureaucracy. GD members were sometimes militants known to FRELIMO from under-ground activities, but more often they were active individuals with some sense of organization and engagement; all were then confirmed in their posts at public meetings. Paralleling the committees in the liberated areas, the GDs undertook the massive task of mobilizing and organizing the transition to independence in hundreds of urban areas..."

Table 2.1:

Area of Green Zones, 1985

District	Permanent Green Zones		Provisional Green Zones (ha)	Total Area (ha)
	Demarcated (ha)	Not Demarcated (ha)		
District III	-	140	-	140
District IV	598	1,650	300	2,548
District V	8	1,000	110	1,118
District VI	164	500	185	849
District VII	120	750	1,800	2,670
District VIII	300	-	180	480
Total	1,190	4,040	2,575	7,805

Source: Plano de Estrutura, 1985.

quality and access to irrigation. The permanent areas were further subdivided into two types of land--demarcated and non-demarcated--based on cadastral status from the colonial period.

The demarcated permanent green zones (1,190 ha) include areas which were demarcated and officially registered with the municipality before independence. They correspond to the former Portuguese *quintas*. Most have a residence on the plot as well as productive infrastructure (pig sties, warehouses, or cement wells). Most were already partially or fully occupied by 1985, although these occupations rarely corresponded to the former demarcated boundaries. They are mainly located in the Infulene Valley and District IV. Only in the demarcated areas does a semi-formal and legal registration process exist. These areas have been characterized by intense land disputes caused by the redistribution of *quintas* described above, and higher demand for demarcated land stemming from their superior land quality and formal tenure security.

The non-demarcated permanent green zones (4,040 ha) contain similar quality land but were never surveyed or formally registered during colonial times. All occupation in these areas after independence was spontaneous and unorganized. After 1985, attempts have been made to organize families working in these areas into producer associations (*associações de produtores*).

Provisional Green Zones

According to the five-year plan, these areas, amounting to 2,575 ha, are less suitable for intensive agriculture and more suited for urban uses, including residential expansion, industrial parks, and schools. Rainfed agriculture is permitted on condition that the producers must leave without compensation when the development of urban projects begin.

Zones of Urban Expansion

These are peripheral areas of the city where no formal occupation is planned within the horizon of the 1985 plan. Rainfed agriculture and sparse residential occupation exist in these outlying areas.

The land quality within the permanent areas is not uniform. According to one study (DANIDA 1987), of the almost 8,000 ha defined as green zones, only about 2,000 have "significant development potential" (DANIDA 1987, p. 48). The majority of land area is excluded because of poor soil quality and lack of consistent irrigation. The zones identified as having high potential include about 680 ha in the Infulene Valley and 1,270 ha in district IV.

Producer Typology

No state farms exist within the peri-urban area of Maputo. However, three categories of producers--(a) cooperatives, (b) family farms and (c) private farms--are present, two of which (b and c) are included in the sample frame in Chapter 3. A fourth category, producer associations, are beginning to represent an important political force in the peri-urban green zones, and comprise members primarily from categories (a) and (b).

Cooperatives

Following the 3rd Frelimo Congress of 1975, the government emphasized agricultural cooperatives to facilitate the "modernization" of Mozambican agriculture, and as a means to assist the poor and disadvantaged in gaining access to land.[8] The Mozambican Womens' Organization strongly embraced and supported the cooperative movement, as reflected by the large number of women managers and women members that currently work on cooperative farms. Approximately 200 cooperatives covering roughly 1,000 ha operate within the peri-urban zone. They are organized and managed under the General Union of Cooperatives (*União Geral das Cooperatives Agro-pecuárias de Maputo*). The cooperatives' "peasant" orientation and philosophy emphasize collective participation and self-help work in agricultural enterprises, artisanry and crafts. Historically, they have provided an important means for poor families, unwed mothers, widows, and divorced wives and children to become engaged in farming.[9] While the cooperative sector within the Maputo green zones has

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8. For a more complete discussion of cooperatives in the Maputo green zones see 1) Roberto Tibana "*Pequena Produção Familiar e Cooperativas das Zonas Verdes de Maputo: Que Caminhos?*", Universidade Eduardo Mondlane, Maputo 1986; 2) Gabinete das Zonas Verdes "*Relatório Sócio-Econômico do Movimento das Cooperativas de Maputo*", Maputo, 1986; 3) Antônio Francisco, "*A Produção e a Comercialização de Hortifruticolas da Zona Suburbana para a Cidade de Maputo*", Tese de Licenciatura, Universidade Eduardo Mondlane, Maputo, 1987.

9. Many household heads in the cooperatives are women, a fact explained by a number of factors. Some women have husbands working in the mines of South Africa, and women support themselves through remittances and employment on cooperative farms. Also, a large number of men have been drafted into the military. Finally, a clear sub-division of labor has emerged in Maputo, whereby men seek formal wage employment, while women produce the food and undertake petty trade in the informal sector (Little and Baptista 1992).

experienced more success than cooperatives in the rest of the country, the sector's performance has come under increased scrutiny as land pressures have tightened. A number of factors since 1985 have begun to force changes in the their orientation and structure:

First, the General Union of Cooperatives in recent years has begun to aggressively register the land of its member cooperatives as a precaution against government expropriation. Of the 200 cooperatives in the peri-urban area, about 86 had been registered by 1991.[10] According to officials in the Union of Cooperatives, small families (not in the Cooperatives) have been losing land to government employees using donor funds intended for development projects. Smallholders, who lack influence or the means to defend themselves, are either told to leave, or are moved by force. The cooperatives, recognizing the inevitability of residential occupation of the green zones, and fearing similar land expropriation, have been using their political might to register the land of their members.[11]

Second, while the cooperatives have historically provided the disadvantaged and poor with access to land, recent rumblings of discontent within government about low productivity of the cooperatives have forced the Union to "rethink" its orientation and structure. Until recently, all land use decisions were centrally managed by an elected body of members of the cooperative, the land was operated collectively, and profits were divided among members. However, by late 1991, the cooperatives were considering experiments aimed at individualizing the land holdings of their members to minimize "free-rider" problems, and to increase productivity. As indicated in figure 2.3, individual members (indicated by A...Z, a...p) of the cooperative that collectively made the decisions prior to 1992, are under the new model, allocated individual plots to farm on their own.[12] Profits are individually retained, while a fee is to be paid to the cooperative for general services (input procurements, marketing, and land registration).

New problems are emerging as a result of attempts to instill greater incentives for private initiative within the cooperative model. First, individual members are now facing illiquidity and cash flow problems as they are increasingly being asked to bear production costs (the cooperative still provides assistance with input purchasing, but price and ability to pay now play a greater role in input allocation among cooperative members). Second, members that once never had to work are now increasingly being asked to "pay their own way," creating internal dissension. Third, in attempting to resolve the "free rider" problem, vulnerable groups--the disadvantaged, elderly and ill--risk experiencing greater economic hardship, posing a moral dilemma for management who continue to see the role of cooperatives in assisting the

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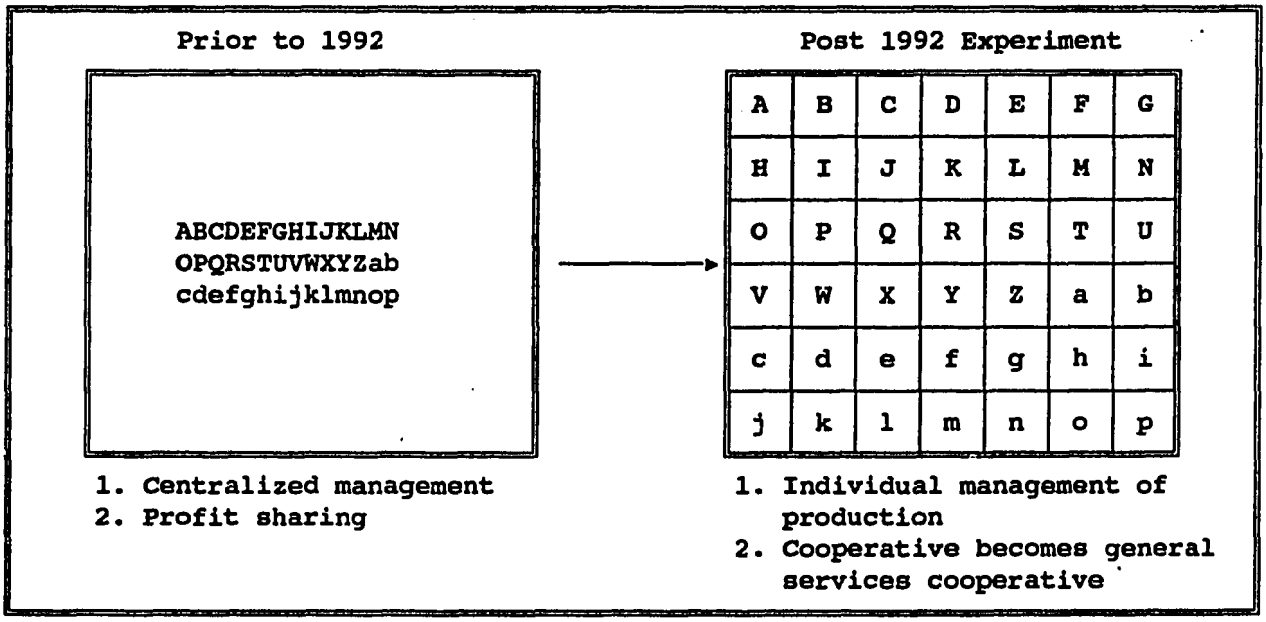
10. Communications with Prosperino Gallipoli, Advisor, General Union of Cooperatives.

11. Note that the producer associations of Maputo have adopted a similar strategy, although with less success since they do not yet have official legal status.

12. No information is available on the extent to which this plan has been implemented, or its success.

Figure 2.3:

Proposed Restructuring, Cooperatives



economically disadvantaged as their most important raison d'etre. To little time has passed to determine the degree of success of these experiments, but the cooperatives clearly see their future structure shifting toward a general services approach, and toward placing greater emphasis on economic initiative and performance.

Family Sector

The family sector in the peri-urban area of Maputo differs from the family sector in rural areas in two principal ways: (1) they employ greater numbers of wage laborers; and (2) they have higher marketed surplus. Whereas most family farms in the countryside produce principally for home-consumption or barter, many of the family *machambas* in the peri-urban zone are dedicated principally to sale.[13] Several reasons help explain the frequent use of both permanent and temporary wage laborers and the higher degree of market orientation by family farms in the green zones.

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13. Those family farmers, who produce mainly for sale, usually have access to irrigated plots. Those families having access only to rainfed land produce primarily for home consumption. Since this study focused on the irrigated areas, the empirical data presented in later sections pertains to a fairly specific segment of family producers.

- **Surplus of extremely cheap labor.** The influx of war refugees (*deslocados de guerra*) and economic migrants has increased the supply of farm labor and driven down monthly farm wages, far below the official minimum wage. Typical monthly wages for migrants range from 10,000 to 20,000 *meticais* (1991: 2,100 mt = $1.00), while the official minimum wage is approximately 35,000 *meticais*.

- **Near proximity of producers to urban job opportunities.** With greater off-farm possibilities, the opportunity cost of on-farm labor is higher for peri-urban family producers than for their counterparts in the countryside. Farming usually represents only one income earning activity (although an important one) within a highly diversified income strategy.

- **High degree of monetization.** Compared to rural areas, monetary transactions in peri-urban areas are much more prevalent. Family sector households have greater access to urban wage opportunities and cash sales, thus providing greater liquidity for hiring wage-labor.

- **Higher urban demand for vegetables.** The principal marketed output of peri-urban family farms are lettuce and kale. These are not traditional foods nationwide, rather they are unique to the consumption patterns of large urban centers. As they are very perishable and ill-suited to transportation over a long distance, peri-urban producers have a comparative geographic advantage in producing them (Little and Baptista 1992).

- **Price liberalization.** The higher prices received by producers for vegetables resulting from the economic liberalization program begun in 1985 have provided a strong incentive for all producers in the peri-urban area to increase marketed surplus.

Private Sector

The private sector in the peri-urban zone conforms more closely to the general definition in the land law. However, the dividing line between private and family producers in the peri-urban zone is more diffuse than in rural areas. Private sector farms are distinguishable from their rural counterparts in three principle ways: labor relations, market production, and land registration.

Private farmers in the peri-urban zone use a mix of family and wage labor, ranging from principally family labor to almost exclusively wage laborers with family members filling managerial roles.

Production is primarily, if not exclusively, for market sale. A distinction must be made between the *quinta* owners (*quintaleiros*) and other private producers. The former occupy the farms (*quintas*) abandoned by the Portuguese colonists (*colonos*). Their unique feature is that the family resides on the farm. The *quinta* is a self contained unit, typically having very diversified production including vegetables for market, subsistence crops, fruit trees, as well as small animal production. In contrast, private producers not occupying a *quinta* do not reside on their farms. Their production is more specialized, subsistence crops are rarely produced, and

production is almost exclusively for market. Labor is almost exclusively hired, any they normally use more capital intensive production techniques (e.g. mechanized irrigation and tillage) than the *quintaleiros*. Further, many *privados* own their own trucks, allowing them to directly market their produce. Conversely, many *quintaleiros* depend, like family farmers, upon intermediaries who buy their crops at the farm gate.

In theory, private farmers are obligated to register their land. In peri-urban Maputo, however, this is problematic. As explained in greater detail below, there is only a limited geographic area within the peri-urban zone within which land can be officially registered; i.e. the *quintas* occupied and demarcated by the Portuguese before independence. There is no administrative mechanism for registration outside these areas. Consequently, the majority of producers in the private and family sectors are currently unable to obtain title.

Producer Associations

The central union of producer associations (*união geral das associações*) was officially formed in 1988, although individual producer associations (PAs) have operated in the Maputo peri-urban zone since independence. The PAs have, with the support of the Green Zones Directorate, organized themselves with a structure parallel to that of the Cooperative movement. There is a centralized body which is responsible for coordinating efforts among the different associations which operate at the *bairro* level. Some 74 PAs operate in districts IV through VIII (Table 2.2). According to PA officials, three factors influenced the decision to seek official standing: (1) the spontaneous emergence of PAs to do work requiring collective action (see below); (2) the success of cooperatives in providing technical support, procuring inputs and other services for their members; and (3) the influence of the Green Zones director in organizing producers.[14]

In the early days following independence, the producer associations organized themselves around activities previously carried out collectively by labor gangs, e.g. cleaning irrigation ditches. Beginning around 1984/85 through 1989, the emphasis of the producer associations began to shift toward providing members with commercial inputs. Inputs were, and continue to be, sold by the *Casas Agrárias*, but could not be purchased in "small" amounts (i.e. part of a bag of fertilizer or part of a can of pesticide) by an individual producer. The *Casa Agrária*, for budgetary reasons, purchases inputs only once or twice during the year. Small producers reportedly want to buy fertilizer but lack the financial resources to buy sufficient quantities in advance for the three or more vegetable seasons annually. In the meantime, private producers with better knowledge of input arrivals, and with better capital

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14. There is a widespread feeling among smallholders in Maputo that without the assistance of a larger organization with political influence (i.e. a cooperative or producer association), there is little chance of gaining access to inputs, getting credit, or protecting land rights.

Table 2.2:

Number of Producer Associations by District

District	Number of Producers Associations
District IV	10
District V	11
District VI	12
District VII	31
District VIII	10
Total	74

Source: Archives of the general union of producer associations.

endowments, would purchase the entire stock.[15] Producer associations are now assisting members in purchasing inputs in bulk from the *Casas Agrárias*, constructing small warehousing facilities for storing inputs, and in developing and maintaining accounting procedures to record purchases and payments. They are further attempting to import inputs directly without state intermediation.

Since 1989, the PAs have shifted their attention to problems of land disputes and conflicts stemming from the government policy, in particular outsiders with official documentation claiming land ownership.[16] The principle goal of the *união geral* is currently to gain status as a legal entity in order to register land for its members (a process similar to what the cooperatives are doing). Without such status, the PAs can have no formal relationship to the state nor can they hope to obtain formal land registration.

Land Registration

Colonial Times

Registration of a concession before independence, while not simple, was more expedient than present day processes, in part because of lower demand for

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15. The *Casa Agrária* cannot replenish its stocks on a regular basis because it has last priority within the government budget. The scarce foreign exchange needed to import inputs was at the time of this study rationed to the highest priority sectors, which excluded the GZV.

16. In district V, for example, there are reportedly many cases of individuals bringing papers with claims to land. In most cases, producers with the backing of the PAs have refused to leave. The dispute rather than ending, is stuck in limbo. Landholders still retain their title certificates, while PAs enforce the rights of smallholders. Land disputes, according to the PAs, are not declining, rather people with certificates have momentarily halted their pursuit of claims for fear of confronting the PAs.

registration services. A letter from the producer had to be written to the municipality (*Camara Municipal*), which included a cadastral map (formally requested from the municipality) indicating the desired plot. A representative of the municipality (*secão do foral*) was then supposed to visit the plot to determine whether or not it was occupied. After having his or her land rights verified, the applicant was then required to pay a small fee to the municipality for stamps, title, and administrative costs, after which, the occupation was provisionally authorized and published in the official gazette. The occupation became permanent if no objections were filed within 30 days, after which an annual fee was assessed on a square footage basis, payable to the municipality.[17] Copies of the title were then delivered to the landholder and the municipal property registry (*Tombo Geral da Propriedade*).

Agricultural or Rural Land

Bruce (1990) outlines the steps required to currently register a concession of land in rural areas. An application must be made to the provincial cadastral office (*Direcção Nacional de Geografía e Cadastro*) (DINAGECA) of the Ministry of Agriculture if the plot is less than 250 ha, or to the central office in Maputo if greater than 250 ha. The provincial office is then responsible for investigating the suitability of the plot for the land use specified in the development plan submitted by the applicant, and the availability of the plot for a concession. Once suitability and availability are ascertained, provisional occupation is granted, the plot is surveyed by DINAGECA, and occupation is authorized. The lease is then sent to DINAGECA's central office where the title is issued and sent for filing to the Custodian of Property Registry (*Conservatôrio de Registo Predial*). The entire process should take approximately 4 months, although a year or more is commonly required.

Peri-Urban Zone, Maputo

The design of the current process of registration in the green zones, initiated around 1983/1984, coincided with two events: the redistribution of *quintas* described earlier, and the creation of the DCU within the Executive Council of Maputo. The redistribution of *quintas* by the government sought to delineate land rights through demarcation within the former *quintas*, ostensibly to stimulate aggregate production. The DCU was created to implement the municipality's urban plans, including such responsibilities as land use zoning, provision of topographical and cadastral services, and registration. It also houses the land registry of Maputo, including residential, industrial, commercial and agricultural concessions.

Until recently, only land in the demarcated areas of the permanent green zones (i.e. those areas demarcated and registered in colonial times) were effectively eligible for registration.[18] However, in recent years, extra-legal exceptions have arisen. Individuals with money and connections hire

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17. For example, a concession granted in 1972 in Matola carried an annual fee of 12.5 escudos (data collected from DCU archives of Maputo and Matola).

18. No formal process of registration existed between 1975 and this date.

topographers from the DCU or DINAGECA to survey and demarcate areas outside the demarcated permanent green zones. Although no formal administrative or legal framework exists, interviews with members of the Green Zones Directorate, district administration offices, GDs, and the DCU all confirmed that this process is becoming more frequent.

The current registration process involves a series of steps whereby applicants can officially obtain one of three types of concessions:

(A) Precarious (*Precário*) title, a renewable one year concession;

(B) Provisional (*Provisôrio*) title, a renewable 5 year concession; and,

(C) Definitive (*Definitivo*) title, a permanent concession.

Precarious and provisional concessions were originally conceived as subdivisions of temporary titles. Precarious concessions were intended for landholdings in areas planned for urban expansion projects, or for landholders lacking clear and strong potential to develop the land. Rather than leading to definitive title, which it could not, precarious titles were meant instead to temporarily provide land rights until such time that the landholder is asked to vacate the property. The provisional category was intended to lead to a definitive title once the individual demonstrated the capacity and willingness to develop the land.

Much confusion both among municipal officials and farmers has been caused by the terminology used. All three categories are referred to simply as "title" in the application forms, only the latter of which is considered a permanent concession. A title is actually officially granted only after the concession has been filed with the Custodian of Property Registry (*Conservatôrio do Registo Predial*). However, green zone producers often believe that they hold title even though only precarious or provisional registration was approved. In some cases, a definitive concession is granted, but the landholder failed to obtain the title certificate. Several producers with provisional or definitive concessions communicated in the course of interviews their interest in obtaining the title certificate from the Custodian of Property Registry, but lacked a clear understanding of procedures for doing so.

The following steps are supposed to be followed regardless of type of concession:

- The applicant acquires an occupation request form (*ficha de occupação de terreno*) from the DCU, which requests demographic information on the individual, plot location, and occupation.

- The applicant must obtain a written declaration from the GD of the individual's *bairro* of residence, confirming that s/he lives in that *bairro*.

- The applicant must obtain a written declaration from the GD of the *bairro* in which the plot is located confirming that the plot being registered indeed exists and is not already occupied.

- The applicant must obtain a written declaration from the individual's employer confirming his/her employment and salary level, or the applicant must obtain a written declaration from the bank documenting the individual's savings balance (not both).

- The applicant must submit with the application a written plan describing how s/he plans to develop the plot.

- The applicant must obtain a written declaracion from the *Casa Agrária* of the district in which the plot is located confirming the appropriateness of the plot for the activities specified in the development plan.

- A topographical map of the plot must be produced.

- After the above documents are assembled, the file is forwarded to the district administrator (*Posto Administrador do Distrito*), who after giving his or her consent, must forward a written approval along with other documents to the DCU.

- The *foral* (land registry archive) section of the DCU checks the topographical map to insure that it coincides with their own cadastral maps. A member of the field brigade of the DCU (i.e. members responsible for confirming land occupations and seeing that development plans are executed) then visits the plot to again confirm that the land is not occupied.

- Assuming approval of all previous steps, a concession is granted and fees are assigned for registration services rendered.

- Upon payment of fees, the concession is registered in the *foral* of the DCU, at which point a written document certifying the registration may or may not be given to the producer.

- An announcement must be made in the official gazette giving 30 days for the filing of any objections to the concession.

After these steps are completed, the applicant is given 6 months to prepare a detailed project plan. If it is approved, the applicant is given 2 more years to complete the investments specified in the plan. In cases where the landholder fails to make investments in the two-year time frame, the concession may be terminated, a serious problem for projects requiring long investment horizons--i.e. buildings. Assuming that the stated land use conditions have been met, the applicant is permitted to make an application for title with the custodian of property (*Conservatôrio do Registo Predial*), which issues the definitive title certificate to the producer, a step rarely followed by green zone producers.

<u>Registration Problems, Private Landholders</u>

The registration process as currently designed imposes significant limitations on landholders in general, and smallholders in particular. First, the terms and conditions associated with each type of concession--precarious, provisional and definitive--are generally unknown or ambiguous to applicants

and concession holders alike. Second, the application process, especially the conditions stipulating bank accounts and employers salaries, is heavily biased toward capital-intensive residential or business investments, not to farm investments (excluding livestock sheds or mechanical processing facilities) that are mainly labor-intensive. Third, the registration process is far from transparent. The above steps were compiled from long interviews with personnel in the DCU; booklets or pamphlets describing in full the registration process do not exist. Rumors and speculation of registration procedures and terms thus abound leading to mis-information and uncertainty.

In addition to constraints in the registration process, a number of problems are inherent in the way registration procedures are implemented:

- **Limitation on plots eligible for registration**. According to the land law, private producers are required to register their land; family sector producers, although not required, may register if they choose to do so. There are many private producers outside the demarcated areas who cannot register a concession without first surveying and demarcating the land through extra-legal means. Family sector producers have no means of acquiring an official concession since they are located outside the demarcated areas and lack both the financial resources and social status necessary for acquiring an extra-legal concession.

- **Lack of uniformity in registration process**. While the above mentioned steps are formally required for registration, certain steps are bypassed. The GD is the local authority most aware of land occupation in the *bairros*. One major source of conflicts reported by individuals is the failure of the DCU to check with *bairro* authorities to determine whether a requested plot is vacant, with the outcome that concessions are sometimes granted to land already occupied. This problem is exacerbated by understaffing and lack of resources within the DCU, resulting in infrequent checks of occupation.

- **Lack of clarity of terms of concession**. Even in demarcated areas, producers with concessions are unsure of their registration status. They seldom know whether their concessions are automatically renewable, or whether the registration process must be completed anew upon expiration. Many do not know the duration of the lease associated with the concession they have been granted. This uncertainty is compounded by the variable terms issued by the DCU. Based on a sample of concessions drawn from records in the DCU, some producers were granted definitive concessions with a 5-year term, others with a 10-year term, while still others had no term specified.

- **Lack of uniformity in fees**. Application fees are not uniformly applied in practice. Many producers are charged either nothing or a very nominal fee for topographical services because this service usually involves only cross-checking to verify that the plot coincides with the demarcations made before independence. However, other landholders are less fortunate. One landholder in the study was charged 315,000 *meticais* ($155) for topographical services that, while never performed, nonetheless had to be paid to obtain the concession. Local authorities report that such fees, virtually unheard of in the early 1980s, are becoming more common as the

DCU staff become more overextended and underpaid, and as operating budgets have tightened. Having been granted a concession, most producers are unsure of their tax obligation. Producers complained that taxes were being applied arbitrarily by members of the DCU, despite the fact that the DCU has no responsibility for tax collection.

- **Administrative split of districts VI, VII, and VIII**. In 1989, districts VI, VII, and VIII were administratively transferred from Maputo to the city of Matola. The files containing all registration documents were loaded onto a truck and transported to Matola's new Executive Council building, where they were placed in a corner of one of the building's back offices. Employees were told not to touch them without authorization from Maputo. For producers in the green zones of the affected districts, any portion of the registration process not finished by 1989 effectively became frozen. Requests by applicants for access to the documents for inheritance or conflict resolution are denied. It is only within the past year that the DCU of Matola has re-initiated registration in the green zones. Whereas over 500 concessions had been granted in district V prior to the move, less than 15 had been granted between 1989 and December of 1991 under the administration of Matola.

- **Multiple institutions granting concessions**. Since independence, institutions at all levels have been involved in granting concessions for agricultural and residential purposes. Besides the DCU and various government ministries (e.g. Ministry of Agriculture), the neighborhood (*quarteirão*) authorities have been especially conspicuous in granting land for residential purposes (and sometimes selling plots for housing), while *bairro* level authorities (GDs in particular) are granting concessions to agricultural land. While some local authorities act out of greed, others feel compelled to assist the landless, particularly refugees who arrive destitute (Boucher et al. 1993). Under the latter situation, local authorities can ill afford to wait for solutions from the DCU. However, conflicts sometimes arise when concessions are granted by the local authorities and a concession is later issued to another party by the DCU who has failed to verify claims at the local level.

Group Registration

Leaders of the producer associations (PAs) are taking a different strategy to register the land of its members--"group" title. A number of the PAs on several instances visited the DCU to acquire a "group" title on behalf of their members. They were informed by the DCU that the PA must be a legal entity, then on later visit told to undertake the following steps to register the land (as reported by representatives of the PA): (a) the entire area encompassing all members of the PA must be surveyed and measured; (b) the area of private farms and cooperatives must be subtracted (requiring further surveying); (c) the remaining area would belong to the PA, effectively shifting legal rights in property from the individual to the PA; and (d) any landholders not wanting to have their land registered in the PA must individually register their land to be excluded.

Two obstacles have impeded the process of group registrations as outlined. First, the PAs have not yet achieved official legal status. Currently, the

major efforts of the *união geral* are in developing a charter and set of statutes for the movement. At the time of this study, leadership from the *união geral* were systematically holding debates in each PA on the proposed statutes, a process expected to last through the end of 1992. Second, there is no legal or administrative procedure defined for the DCU to grant block titles for green zone land. An ongoing effort is being made by the Executive Council to define an official procedure for granting block titles for residential areas. As of September 1992, no procedure had yet been defined (personal communications, Paul Jenkins).

Even if the PAs are able to gain legal status, there are a number of problems with the above registration process. First, not all farmers belong to, or care to belong to, a producer association. While an individual producer could visit the DCU to register his or her land in order to be excluded from the group title, this leaves the onus on the individual to seek title and to bear the survey and registration costs. Second, the PA must bear the surveying cost of resurveying private farms and cooperatives. Third, the lingering question remains of the suitability of group title. When some respondents were presented with the hypothetical issue of preferences (individual versus group registration), a strong preference for individual rights was usually stated, along with their willingness to pay for it. But if for reasons of cost and procedure this was not possible, group registration was considered a "second-best" option.

Conclusions

At the time of independence in 1975, much of the area now known as the green zones was either demarcated into Portuguese estates, or covered by bush, woods or grass. The period of 1975 to 1982 witnessed some settlement of the former *quintas* by former urban dwellers and farm workers, along with some expansion into lowland and upland areas not previously in use. However, it was the immigration of refugees in the period from about 1980 through 1987 that led to the rapid expansion of residential settlements, and claims to agricultural land that one observes in Maputo today. By 1987, most of the best agricultural land in districts IV to VIII had been claimed, and is being farmed in vegetables. Although the most intense demand for land at the beginning of the 1990s was for residential use on upland areas, the green zones have also been shrinking with the intrusion of population settlement.

The massive scale and rapid rate of immigration into Maputo, and the haphazard occupation of previously demarcated land that ensued, created a fertile environment for contradictory land claims. The existing land policy rather than creating a secure legal framework for ascertaining and defending land rights, instead created a system ripe for corruption, where land rights are limited or uncertain, the allocation process tends to favor those with wealth and influence, the onerous task of administering land is broadly dispersed among multiple agencies with overlapping responsibilities, too few resources are spread too thinly to effectively administer the legal and land administration system proposed, and the high costs of demarcation (a key impediment to expansion of registration services) constrain private registration demand.

The causes associated with land disputes in the green zones in one way or another seem to point to the DCU. While it was given jurisdictional authority

only for the cement city, its responsibilities and powers have been expanded over time to now include the much larger area of greater Maputo. Further, at the time of independence, land was allocated to at least 13 different autonomous agencies. Local authorities have also been involved in land allocations. Institutional arrangements governing land access have thus become more diffuse, to such an extent that even the DCU expresses dismay at the complexity. Because the DCU has an urban mandate, it understandably lacks an interest in registering agricultural lands, and further lacks the resources to effectively fulfill its responsibilities in all the areas assigned. DINAGECA, which has the surveying capacity and a mandate to carry out registration activities in rural lands, is free to operate only in rural areas beyond districts I-VIII, comprising the urban and peri-urban zones. Compounding this problem, the turnover of office staff is considerable; the DCU had three different directors between March and September 1991.

Viewed from the perspective of landholders, particularly the cooperatives and smallholders, staff from the DCU are often accused of being corrupt and abusing their power, particularly in situations where registration fees and land expropriations are involved. While these assertions contain some element of validity, tight budgets have forced many government departments to levy fees to augment revenues; DINAGECA is hiring out survey teams, and the DCU is enhancing revenues through concession fees. The combination of low salaries, land market restrictions, and administrative land allocations act to accumulate power in the hands of a few technocrats, an environment conducive to rent-seeking behavior. A companion study by Boucher et al. (1993) describes in considerable detail the effects of the current land policy on creation of land disputes and tenure insecurity. The remainder of this paper, analyzes the impact of the current land policy on land markets and land distribution.

Chapter 3

RESEARCH METHODOLOGY

Eighteen years after independence, and nearly as many years of civil war, Mozambique appears to have finally reached the threshold of a peaceful settlement. Issues of post-war rural restructuring, resettlement, land rights, agrarian reform, food security, and market access have taken on a new sense of urgency as policy options are considered and debated. The war has taken a devastating toll on people's lives, as well as the well-being of institutions that once provided public services. Record keeping systems once dutifully kept have slipped into dysfunctional use. Collection and reporting systems for most types of data came to a halt for lack of resources, security concerns, and instability in both urban and rural areas. Only a few years ago, a dearth of hard data existed at all levels, including the most basic data on the dynamics of household production and consumption, technology growth, operation of factor and product markets, property systems, and market access. This land tenure study, within a larger project of collaborative research on the operation of factor markets, was one study among others funded by the U.S. Agency for International Development to reduce the information gap between data availability and policy needs. This chapter describes research objectives, methods, procedures, and limitations. Subsequent chapters present empirical data generated by the research design.

Peri-Urban Economies in Africa Project

The project, "Economic Growth in Peri-Urban Areas of Africa," is a collaborative effort among the Land Tenure Center (LTC) of the University of Wisconsin, the Institute for Development Anthropology (IDA), and the rural savings cooperative agreement of Ohio State University (OSU). The project seeks to gain a better understanding of processes of, and constraints to, growth in the dynamic areas surrounding principal and secondary African cities. It further seeks to gain a more detailed understanding of the operation of land, labor and capital markets, and their inter-market linkages, in transitional settings. Peri-urban economies provide a better setting for studying the impacts of policy reform, official and informal market interactions, factor market constraints, and policy failures, than rural areas characterized by relatively abundant factor endowments, "thin" or "disconnected" markets, and more limited employment opportunities. Research under the project has encompassed various sector's and/or dimensions including a baseline survey of economic activity, migration patterns, food security, financial market activity, land access and use (Graham et al. 1991); the relationship between the legal framework, land disputes and processes of land dispute resolution (Boucher et al. 1992); the dynamics of petty trade and household survival strategies (Little and Baptista 1992); and formal and informal financial market linkages (Graham and Francisco (1993), all in the same peri-urban zone as this land markets study.

The collaborative project was originally intended to be administered in two phases. In phase I, a household survey was to be administered to a sample of households in the peri-urban area of Maputo (Graham et al. 1991), defined as the area between the cement city (and urban neighborhoods beyond) and the end of the security zone, roughly 20-25 km from downtown Maputo (figures 2.1 and 2.2). In phase II, follow-up case studies and topical surveys were to be undertaken using subsets of households in the baseline survey, identified on the basis of pre-determined socio-economic criteria (e.g. presence of land disputes for the study by Boucher et al. 1993). However, in the course of implementing the research design, insurgency problems in the peri-urban area forced the implementing institution to scale-back on the sample size, and to undersample households in the more outer reaches of the security zone (Annex A). This combination--smaller baseline sample and under-sampling of the green zone population--effectively resulted in too few households of green zone producers being identified for further statistical surveys. A new sample frame was thus designed, one that for all intents and purposes is non-connected to the original phase I research methodology. As the two sampling frames are structurally different (land markets sampling frame based on access to an agricultural holding, while the baseline is based on population), statistical results are not generally comparable.

Pre-Research Visits

A preliminary reconnaissance trip was made to Maputo in March 1990. Discussions were held with green zone producers and members of two agricultural cooperatives, 'Primeiro DeMaio' and '16 de Junho'. Interviews were also held with officials of the Bank of Mozambique, Green Zones Directorate, Centre of African Studies, the Faculty of Agronomy and the Faculty of Architecture and Planning of Eduardo Mondlane University, Ministry of Construction and Water, National Agency for Geography and Cadastre (DINAGECA), The World Bank, UNICEF, USAID, and World Vision. These visits provided preliminary information on key land market issues in the urban and peri-urban environment of Maputo city (Graham and Roth 1990a).

A second planning visit was made in August 1990 to develop the sampling frame for the phase I baseline survey, and to collect further information, inter alia, on legal statutes, property institutions, customary land rights, land use, land conflicts, and the operation of land markets in the green zones. Meetings were held with the Bank of Mozambique, Banco Popular de Dessenvolvimento, Centre for African Studies, DINAGECA, Europa Agencias, the Faculty of Letters of Eduardo Mondlane University, the Remote Sensing and Mapping Unit of FAO, Standard Totta Bank, Ministry of Construction and Water, Ministry of Labor, Faculty of Architecture and Planning, National Department of Statistics, and World Vision. A tour of the peri-urban residential zones was arranged by the Urban Development and Housing Programs Office of the Ministry of Construction and Water. Reconnaissance visits were again made to the green zones to meet with producers and to select future research sites for the phase II land markets work (Graham and Roth 1990b).

A third visit in August and September 1991, laid the groundwork for the final design of the land markets research activity. Informal interviews were held with producers in districts IV and VI. Meetings were also held with local officials, including representatives of the *Casas Agrárias* (extension offices)

in districts IV and VI, DINAGECA, the Farmers' Training Center within the Ministry of Agriculture, the Provincial Agricultural Office for Maputo Province, selected producer associations in district IV, Department of Construction and Urban Affairs, the Legal Advisor and General Counsel to the Minister of Agriculture, Green Zones Directorate, and the Union of Cooperatives. The following sections on land issues, research objectives, and survey design were developed based on these reconnaissance visits.

Research Issues and Objectives

Land Market Efficiency and Distributional Consequences

Although land ownership is vested in the state, both official and informal land markets operate in the Maputo peri-urban area. Legal restrictions on land markets combined with inconsistent enforcement by the state appear to be causing widespread tenure insecurity, while the layers of bureaucracy created by multiple agencies with powers and responsibilities over land allocations are resulting in high transactions costs and conflicts. Land purchasers experience lingering concerns over their ability to retain land rights, while potential lessors are reluctant to rent-out land for fear of not having it returned. Land uncultivated or unused risks defacto settlement by refugees or allocation by officials. Although land cannot legally be transferred without government authorization, private land markets are robust, involve considerable administrative oversight and involvement, and exhibit complex contractual arrangements. The agricultural restructuring now underway raises a number of important land market questions:

- Land resource allocation. Are legal provisions and administrative allocations resulting in an inefficient allocation of land resources where land access is restricted to the highest valued use and user? Are legal provisions, administrative transfers and onerous regulations resulting in "unreasonably" high transactions costs, distorted prices, or land rationing that constrain land transfers?

- Distributional consequences. How are the land market and administrative allocations affecting agrarian structure? Who are the buyers and who are the sellers? To what extent are private and administrative transactions increasing land concentration, land grabbing, or landlessness? Was the sale of land voluntary on the part of the landholder? Was compensation received? Did the transfer result in welfare improvement for "buyer" and "seller" or did the person disposing of land lose wealth and employment?

- Land value. To what extent are prices determined by economic factors of space, location and productivity, rather than socio-political factors reflecting asymmetric information and bargaining position among buyers and sellers? Are land prices sufficiently determinate, and transactions costs sufficiently low, to provide secure collateral value? To what extent does the land market either facilitate or impede access to credit through formal intermediaries and how is this credit being used?

Registration Costs and Benefits

Land registration in districts I to VIII is handled by the municipality. Registration in rural areas, starting with the outer limit of districts I-VIII,

is handled by DINAGECA. Cooperatives and producer associations, foreseeing urban expansion, have aggressively been seeking to register their land to guard against squatting and state expropriation. The titling process appears to be benefiting political, administrative and economic elites at the expense of others. Although the rights of families with long-term demonstrated use rights are legally guaranteed, little has been written about the effects of registration on the family sector in practice. Data on the total number and area of registrations in Maputo and surrounding areas is unavailable. Based on discussions with officials of the district *Casas Agrárias*, definitive titles for agricultural use are rarely issued. Most farmers who have title hold either a one- (precarious) or five-year (provisional) concession.[19] A provisional concession would offer superior benefits, if for no other reason than transactions costs for renewal are lower. A precarious concession would seem to confer little security, yet the fact that farmers appear to be renewing their concessions annually suggests that it is conferring tangible benefits. The existence of both titled and untitled producers and plots in the Maputo peri-urban area raises a number of important research questions:

- Characteristics of concession holders(ings). What are the characteristics of household members acquiring concessions (titles) and plots being registered? Does access depend on farm-scale and political status? Are landholders commercial entrepreneurs demanding greater security of land rights than is possible under the indigenous system? What forces are increasing purposeful demand for title and what factors are constraining access to registration in practice?

- Distributional consequences. To what extent has registration been sought to increase security of land rights versus a means to gain access to land through official channels? To what extent has land registration created landlessness or redistributed land rights within the household and community? Who are the beneficiaries and who are the losers? How has the registration process affected land market transactions and the structure of land holdings in the peri-urban area?

- Costs and benefits of title. What benefits accrue to land registration in the long run? Does land registration increase tenure security, and for whom? Does title reduce the uncertainty of land sales and rentals?[20] Does it increase incentives for fixed-place investment? Does it increase land holders demand for credit and formal lenders' security of repayment?

Migration and Land Sharing

Landholders in interviews express reluctance to rent-out land to persons other than close neighbors or family. Legal provisions in the law contain

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19. As the current process of registration in the green zones has been in place only since 1983-4, very few producers who were granted a 5 year provisional concession would have had sufficient time to fulfill the development plan and request definitive title. It is also possible that the DCU is reluctant to issue definitive titles to agricultural land for fear of curtailing future urban expansion.

20. Theoretically, this would not be expected due to legal restrictions on transfers in the land law.

prohibitions on renting and stipulate that land not cultivated for two consecutive years is subject to expropriation by the state. Lessees can and have used both provisions to occupy rented land permanently. Local authorities, may arbitrarily side with the lessee, reasoning that land rented-out is not needed by the lessor's family. Families, while reluctant to give land or rent land to outsiders, appear willing to grant land to migrant kin. The massive influx of refugees has nonetheless seriously strained family and social relations, eroded quality of life through expansion of squatter settlements, and placed heavy demands on limited state resources. The city is uncertain whether to invest in urban infrastructure should migrants in the post-war era return to home areas. As Boucher et al. (1993) note, most land disputes are rightfully or wrongfully attributed to the refugee problem and most long-term residents look forward to the time when migrants return home. Whether refugees have put down permanent roots in peri-urban areas or remain only loosely attached has important implications for urban planning and development. A number of important questions emerge:

- Rental markets and land sharing. How common are land rentals and what is the impact of the current legal framework and administrative land allocation on land rental markets? To what extent are land sharing arrangements (land temporarily allocated to close family) used as a substitute for rental transactions? Land sharing arrangements serve what primary purpose(s)--help provide livelihood to the refugee population; demonstrate land use to prevent expropriation; or increase labor supply, productivity and income of the lessor household? How permanent or transitory is land sharing? To what extent does land sharing help the migrant family acquire a foothold in the area, from which families move on to other lands or sources of employment?

- Post-War Intentions. To what extent do migrants maintain claims to land in rural areas? How are these land holdings managed and land rights protected in the family's absence? How mobile are migrant families or family members in monitoring land claims in rural areas? To what extent do migrant families, or family members, plan to stay in Maputo following the war? What will happen to the land upon which they are currently operating?

Regional Differentiation

The green zones in district IV are ostensibly less vulnerable to residential encroachment due to the limited availability of land suited for housing. Land in district VI is more suited for housing construction; the city apparently has plans to convert land use from agriculture to residential use, although this information could not be verified. Government support services (registration and input supply) are also better organized in district IV than VI. Conflicts between residential and agricultural use are most severe on dry lands surrounding the green zones and on outlying areas of dispersed settlement at the fringe of the city. District V (mainly rainfed upland areas separating the irrigated green zones of districts IV and VI) is reportedly experiencing rapid population settlement and severe land conflicts between residential and farm use. Refugee populations settling on outlying lands are the most vulnerable. Refugees face the least resistance in settling the rainfed areas, although it is these same areas that will eventually come under the most pressure from housing expansion. Also, lacking long-term customary rights to

the land and the financial resources to strengthen their claim through investment, they face the highest risk of having land expropriated by administrative allocations. These differences--potential threat of residential settlement and extent of government services--raise two fundamental questions:

- Quality of local administration. How have differences in local level administration and land use pressures affected land allocations, land disputes, and tenure security in districts IV and VI? Is commercial input use higher in district IV, suggesting that commercial firms (in district VI) face difficulties with market access in the absence of government assistance?

- Residential demand for land. How is urban expansion affecting farmer perceptions of tenure security among titled and non-titled groups? Does registration reduce fears of losing land? Does it increase fears of non-title holders who lack the means to register land, yet see the registration process used by elites to acquire land?

Survey Design

As indicated earlier, the baseline survey in phase I yielded insufficient observations on peri-urban land transactions and registration of agricultural holdings in areas of dispersed settlement (Annex A). A distinct and separate sampling frame was thus designed, one including households operating in the two principle green zones of Maputo--districts IV and VI. In order to be included in the study, a household had to possess at least one plot of irrigated land. The theoretical survey design is illustrated in figure 3.1. With regard to tenure categories (columns in figure 3.1), a target number of households (20 to 30) possessing the following characteristics were to be interviewed: those possessing at least one plot with definitive title (A,G), five-year provisional title (B,H), one-year provisional title (C,I), no title (D,J), households having sold at least one plot (E,K), and those having bought at least one plot (F,L). Viewed regionally, the sampling frame was to include households equally divided between district IV (ABCDEF) and VI (GHIJKL). A priori, one would expect tenure security to decrease from left to right (AG > BH > CI > EK > DJ = FL, and from top down (ABCDEF > GHIJKL), all else constant. A number of problems were encountered that forced researchers to reconfigure the research design.

First, the plan to identify and randomly select households with different forms of title possession proved to be impractical. Registry records generally failed to distinguish the type of registration held (i.e. definitive, provisional or precarious). Only after reviewing the registration documents (not certificates as these often were never acquired) of the respondent in the course of administering questionnaires could the type of registration be ascertained.

Second, both land "sellers" and "buyers" were extremely reluctant to report details of transactions or even to admit that the transaction took place. Due to government statutes banning transfers without the government's approval, land sellers risk having the proceeds heavily taxed or the sales receipts appropriated if the sale is discovered. The buyer risks having the land expropriated or reallocated by the state. A case study approach was adopted instead, one based on intensive interviews with a more limited number

Figure 3.1:

Green Zones Land Market Survey, Theoretical Research Design

	Definitive Title	Five-Year Provision-al Title	One-Year Precarious Title	No Title	Land Sellers	Land Buyers
District IV	A (20)	B (20)	C (20)	D (30)	E (20)	F (20)
District VI	G (20)	H (20)	I (20)	J (30)	K (20)	L (20)

A: Households with primary *machamba* in district IV with at least one *machamba* held under definitive title.
B: Households with primary *machamba* in district IV with at least one *machamba* held under five-year provisional title.
C: Households with primary *machamba* in district IV with at least one *machamba* held under one-year precarious title.
D: Households with primary *machamba* in district IV, no *machambas* titled.
E: Households with primary *machamba* in district IV having ever sold at least one *machamba*.
F: Households with primary *machamba* in district IV having ever bought at least one *machamba*.
G: Households with primary *machamba* in district VI with at least one *machamba* held under definitive title.
H: Households with primary *machamba* in district VI with at least one *machamba* held under five-year provisional title.
I: Households with primary *machamba* in district VI with at least one *machamba* held under one-year precarious title.
J: Households with primary *machamba* in district VI, no *machambas* titled.
K: Households with primary *machamba* in district VI having ever sold at least one *machamba*.
L: Households with primary *machamba* in district VI having ever bought at least one *machamba*.

of households (15) that reported a purchase or sale transaction in the baseline survey (Graham et al. 1991) or the land market survey (figures 3.2 and 3.3).

Third, violence caused by insurgents escalated with random shootings and theft in November and December 1991, particularly in district VI. The survey was initiated in district IV in October and November 1991, then extended to district VI in November and December. While research operations in district IV went smoothly, the research activity was terminated for 2 weeks in district VI due to escalation of violence. The research activity was terminated in December 1991 because of financial and security concerns, resulting in fewer households sampled in district VI than district IV.

To circumvent these problems, the research team settled upon the simpler research design depicted in figures 3.2 and 3.3. A total of 121 households

Figure 3.2:

Green Zones Land Market Survey, Actual Household Observations

	Unregistered/Untitled Households	Registered/Titled Households	Total Households
District IV	A (40)	B (28)	C (68)
District VI	D (30)	E (23)	F (53)
Total Households	G (70)	H (51)	I (121)

A: Households in district IV with no *machambas* registered.
B: Households in district IV with at least one *machamba* registered.
C: Households in district IV regardless of registration status.
D: Households in district VI with no *machambas* registered.
E: Households in district VI with at least one *machamba* registered.
F: Households in district VI regardless of registration status.
G: Households in districts IV and VI with no *machambas* registered.
H: Households in districts IV and VI with at least one *machamba* registered.
I: Total number of households in the survey.

(excluding defective or incomplete questionnaires) were surveyed in the peri-urban zone, 68 in district IV and 53 in district VI. Fifty-one households of the 121 have at least one registered plot, and 70 are unregistered. Of the unregistered households, 40 (57% of registered total) are located in district IV and 30 (43%) in district VI. Of the registered households, 28 (55% of registered total) are located in district IV and 23 (45%) in district VI. The 121 households in the survey held a total of 162 irrigated plots of land, 92 located in district IV, and 70 in district VI. Of the total plots held, 19 (12%) had definitive title, 32 (20%) had provisional title, 7 (4%) had precarious title, and 104 (64%) were not registered.

Sample Design

The government distinguishes two types of farm operators--private sector and family sector--based on definitions that are only partially useful in practice. Private sector farms generally possess title and operate on lands demarcated in colonial times. The family or peasant sector generally operate smaller holdings and hold land under indigenous tenure arrangements. Different sampling procedures were used in districts IV and VI to select the sample of registered (private sector) and unregistered (family sector) households.

District IV

The green zones of district IV consist of four *bairros*--Costa do Sol, Laulane, Mahotas, and Albazine, listed sequentially from nearest to city to

Figure 3.3:

Green Zones Land Market Survey, Actual Plot Observations

	Definitive Title	Provisional Title	Precarious Title	No Title	Total Plots
District IV	A (14)	B (16)	C (3)	D (59)	E (92)
District VI	F (5)	G (16)	H (4)	I (45)	J (70)
Total Plots	K (19)	L (32)	M (7)	N (104)	O (162)

A: Number of plots registered with definitive title in district IV.
B: Number of plots registered with provisional title in district IV.
C: Number of plots registered with precarious title in district IV.
D: Number of plots not registered in district IV.
E: Total number of plots surveyed in district IV.
F: Number of plots registered with definitive title in district VI.
G: Number of plots registered with provisional title in district VI.
H: Number of plots registered with precarious title in district VI.
I: Number of plots not registered in district VI.
J: Total number of plots surveyed in district VI.
K: Number of plots registered with definitive title regardless of district.
L: Number of plots registered with provisional title regardless of district.
M: Number of plots registered with precarious title regardless of district.
N: Number of plots not registered regardless of district.
O: Total number of plots surveyed regardless of district.

furthest out (figure 2.1 and 2.2). The *Casa Agrária* (extension office) responsible for Laulane and Costa do Sol was able to provide a current list of 1,500 irrigated *machambas* and their managers in the two *bairros*. The other two *bairros* are situated further out in the peri-urban area; Albazine borders the outer limits of the security zone. The *Casa Agrária* responsible for Mahotas and Albazine was unable to provide a comparable population list.

Under the DCU's registration procedures, each approved concession is issued an index card and filed in the archives of the DCU. The index cards are stacked by *bairros* and by land use category--agricultural and residential. Based on a review of these records, 336 agricultural registrations were identified in all four *bairros* of district IV.

Each of the four *bairros* has multiple producer associations to which the majority of producers belong. The associations in Laulane and Costa do Sol

provided membership lists containing 921 names.[21] The associations in Mahotas and Malhazine provided membership lists containing 779 names. The two lists combined provide a reasonably representative population of non-registered farmers operating in district IV of the peri-urban green zone.[22]

Unregistered households in district IV were randomly selected from the membership lists provided by the *Casas Agrárias* and producer associations. The registered households were selected from the DCU's index of registrations. Names on both lists were assigned a unique identification number. A random number generator was then used to randomly select households. In the event that a given name was chosen twice, or that duplicate names existed on the two lists, the selections were dropped and another name drawn. More households were selected by this procedure than were actually interviewed in case households proved difficult to locate. However, only 5 of the first 30 households selected no longer resided in the area or could not be located, suggesting that the lists were fairly current and/or the population was fairly stable.

District VI

The green zones of district VI also contain four *bairros* (listed sequentially from nearest to city to furthest out): Vale do Infulene, T-3, Zona Verde, and Kongolote. Compared with the *Casa Agrária* in district IV, the *Casa Agrária* in district VI was poorly organized. While it was able to provide a partial list of registered farms, it did not have a list of non-registered farmers. The nine producer associations that operate in the four *bairros* provided membership lists totalling 2,155 members. Although researchers felt that the lists were less comprehensive than those of district IV, they nonetheless provided a fairly current list of producers working in the peri-urban zone.

Identifying registered land holders proved to be especially difficult. In 1989, at the time the index card system was being instituted in Maputo city, all the files of registered owners (about 226) in district VI were transferred to the government of Matola city. Lacking office facilities, the files were stacked in a storage room in the municipality (*Conselho Executivo*). Since 1989, only 12 registrations had been begun and completed by the city of Matola. Researchers had a great deal of difficulty gaining access to the storage room, and once access was approved, organizing files took a long-time. Piles were first organized according to land use categories (agricultural and residential), and then into sub-piles according to registration status (approved and non-approved). Names associated with the approved agricultural concessions were then assembled, and a random number generator used to randomly select households.

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21. While neither list is complete, these data suggest that 61% (921/1500) of agriculturalists in the green zones belong to producer associations.

22. Very few members of the producer associations held registered title to their land. The difference between the two lists in Laulane and Costa do Sol--576 (1500-921) persons--included those households with title and non-titled land. Also, based on personal observations, most of the registered plots (i.e. 336) were located in Laulane and Costa do Sol, indicating that the vast majority of unregistered households belong to a producer association.

Implications

As a result of these sampling methods: (1) names of titled households were obtained from records in the land registry; (2) names of unregistered households were obtained from producer association lists (and the lists provided by the *Casa Agrária* in district IV); and (3) all households included in the sample have access to at least one irrigated plot in the green zones. Some households also produce on rainfed land located in other peri-urban areas.

With regard to registered households, the location of the plot was known from registry files, hence researchers could visit the plot, find the operator, and then inquire about other landholdings. However, unregistered households proved more difficult to locate, because neither the address of the person nor location of plot were known to the research team. Both the survey instruments and interview process were specifical , designed to address this constraint.

Survey Instrument and Methods

Interview Process

Extension agents (*monitores/tecnicos*) of the *Casas Agrárias* in both districts IV and VI were used to locate the *machamba* managers selected from the above population lists. The extension agents work closely with the producer associations, are closely acquainted with individual producers in the district, and have a very good knowledge of plot locations. If the extension agent did not know either the location of the plot or the *responsável*, the producer association was then contacted to determine the whereabouts of the person in question. Once the *responsável* was located, a date for the interview (usually the following day) was scheduled at the site of the *responsável's* principal irrigated *machamba*. The *monitores* were also very knowledgeable about other irrigated plots held by the *responsável* and by other members of the *responsável's* family. In the case of two or more *responsáveis* per household, both were asked to be present for the interview on the scheduled date.[23]

Agricultural activities on the *machambas* normally take place from early morning to early afternoon. A two-tier interview process was thus employed. The research team and the extension agents would visit the sampled *machamba* in the morning to obtain plot-specific data. Once the interview for that plot was completed, enumerators would then visit the second plot of the *responsável*, or the irrigated plots of other *responsáveis* in the family. An attempt was made to visit as many irrigated plots as possible to verify data. For the irrigated plots not visited, enumerators had to rely on respondent recall. A smaller set of questions were asked with regard to rainfed plots as well, but these were generally not visited due to security concerns.[24]

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23. In the event that a second or third *responsável* of the same family could not attend the interview, which was rare, plot level questions for the absent member's plot(s) were addressed to those who did attend. As plot managers frequently work on the plots of all family members, the absence of one *responsável* did not seriously undermine data quality.

24. Rainfed plots were generally located far away from the irrigated perimeters, in many cases in "insecure" zones.

At the time of the first visit to the household's *machambas*, information was obtained on the location of the household's place of residence. A second interview was then arranged for the following day to administer a second-stage household-level survey to household members. Each evening following the plot-level interviews, cost and revenues were calculated for each plot. In case of any discrepancies or inconsistencies, the points in question were raised with the respondent the following day.

Survey Instruments

Each household was administered a two-round questionnaire, written in Portuguese. Round one involved plot-level questions administered to the *responsáveis* at the site of the irrigated *machambas*. When the *responsável* was not the owner (e.g. a male who works in the city while his wife works on the *machamba*), the owner was also asked to attend the interview if possible. For each irrigated *machamba* held by the household, a round-one questionnaire was administered to the *responsável* concerned inquiring about his or her farm management experience, land rights held, settlement history, and mode of land acquisition. Also, the respondent was queried about his or her plot(s) physical characteristics, fixed-place investments, current land use, and land value ("offer" price if the *responsável* were to buy, and "reservation" price if s/he were to sell the same plot). And for the preceding year, detailed questions were asked on production mix, output, marketed surplus, production costs, family labor time spent on the *machamba*, wage labor and costs for both permanent and temporary workers, and income.

The second-round interview inquired about household demographics; language proficiency; type and earnings of all non-farm wage-employment; non-monetary benefits received in association with salaried employment; type, revenue and costs of all non-farm self-employment activities; household decision-making; participation in associations and political structures; household assets; credit use; migration and remittances; and land histories of all plots ever alienated by the household, those still held outside the security zone, and plots currently held by household members. The questionnaire was administered to the household head and principal spouse(s). Any other household members with non-farm activities were asked to attend the interview as well. Letters authorizing the absence of household members from work in order to attend the interview were prepared and signed by the Director of the National Directorate of Statistics.

Data Entry

Questionnaires were duplicated in Maputo, and one copy was left with the Department of Economics, Eduardo Mondlane University (names and addresses of respondents erased). The original set accompanied the LTC field researcher to the U.S. in December 1991. Data entry and editing took place in Madison over a period from March through August 1992, and a preliminary version of this report was published in November 1992. Further data analysis on land price regressions along with revision of statistics in the November report resumed in June and extended through November 1993.[25]

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25. This study containing corrected data and new land price regressions supersedes the previous report.

Research team

The research team comprised one researcher from the Land Tenure Center, and one research supervisor and nine students (as enumerators) from the Departments of Anthropology and Economics, Eduardo Mondlane University. A number of working sessions were held to thoroughly review and discuss the questionnaire. Pre-testing the questionnaires with students helped to standardize interview techniques, and indicated questions or areas where respondents had difficulty answering.

Implications and Limitations

This chapter described the research issues, objectives, and methods associated with a land markets survey of 121 producers in the peri-urban green zones of district IV and VI. Despite the lack of accessible and up-to-date population lists (unregistered sample) and registration records (particularly in district VI), and the risk of insurgency in the study area, a reasonably comprehensive and randomized sampling frame was developed and implemented, albeit with considerable time and difficulty. The data generated by the questionnaires administered within this sampling frame form the basis of the empirical analysis in subsequent chapters.

The survey, despite having generated extensive data of high quality, faced a number of problems in the course of execution, with important implications for data analysis and reporting:

First, language was a minor problem. Nearly all operators of registered plots could speak Portuguese. The students acting as enumerators spoke the mother tongue of the respondent in about 75% of the interviews. In the remaining cases, the extension agent could always speak the mother language. There is nonetheless risk of some information loss from respondent to extension agent to enumerator to researcher.

Second, respondents in general had difficulty recalling data on revenue and costs, amount of vegetables sold, prices received, and other price-related information. As many as 8 cycles of lettuce or kale may be produced during the year, and the *machamba* manager may grow as many as 12 types of vegetables. Prices vary considerably from month to month. Rather than attempting to calculate month by month sales, the respondent was instead asked for average income from a bed, minimum and maximum incomes, the average size of bed, and the number of beds grown. This procedure, greatly facilitated recall, but is not as precise as monthly level data collection, which was infeasible due to time and resource constraints. Nevertheless, the approach proved to be substantially superior to the more aggregated approaches (including the baseline) previously used in other studies.

Third, respondents had difficulty disaggregating input use by plot. Chemical inputs and labor wages were paid (independently of any given plot) without detailed records kept (i.e. with payments by plot). If detailed applications of farm chemicals and seeds by plot could not be recalled, the enumerator was instructed to record whether the input was applied to the plot or not. For those plots receiving applications of an input, input use per ha was prorated among plots based on plot size. However, that fact that commercial input use proved low and most households held only 1-2 plots, greatly minimized the significance of this problem in practice.

CHAPTER 4

GENERAL HOUSEHOLD AND PLOT CHARACTERISTICS

Selected data are presented and analyzed in this chapter on political and socio-economic characteristics of green zone producers including household demography, land holdings, language skills, political status, household decision-making, physical assets, non-farm employment, and farm and non-farm income. Data are disaggregated according to seven categories of households reflecting different degrees of political and institutional status: quality of state administrative structures (district IV versus district VI), gender (male versus female-headed households), tenure status (registered vs non-registered), and the overall sample. The analysis reveals that agricultural producers in district VI with the least effective state administration rely to a greater degree on cooperatives and producer associations to gain access to land and production inputs, and to secure land rights. Female-headed households, usually divorced, widowed or with husbands abroad, are severely disadvantaged, whether measured by resource access, employment opportunities, or income levels. Registered holdings possess larger farm sizes, wealth and income than non-registered households, due to differences in human capital, property rights, market access, and non-farm employment status among households.

Household Strata

Household-level data are reported in this and subsequent chapters for seven primary strata of households:

A. households whose primary irrigated *machamba* is located in district IV (most but not all plots are located in the same district) (n=67);

B. households whose primary irrigated *machamba* is located in district VI (most but not all plots are located in the same district) (n=54);

C. households headed by a male adult (n=109);

D. households headed by a female adult (n=12 or 13)[26];

E. households with at least one plot registered (n=51);

F. households with no plots registered (n=70); and,

G. the aggregate sample of households (n=121).

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26. Partial information available for one female-headed household.

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Table 4.1:

District of Primary Residence

	District IV		District VI		Overall Sample	
District of Residence	Non-Registered Households	Registered Households	Non-Registered Households	Registered Households	Total Households	Percent (%)
I	1	3	1	1	6	4.9
II	1	-	-	-	1	.8
III	10	6	-	-	16	13.1
IV	27	19	-	-	46	37.7
V	1	-	4	2	7	5.7
VI	-	-	25	20	45	36.9
VII	-	-	-	-	-	-
VIII	-	-	-	-	-	.8
Total	40	28	30	23	121	100.0

Of the 68 households in the survey with the family's primary *machamba* located in district IV, only 67.6% (46/68) reside in the same district (table 4.1).[27] The percentage of households in district VI with the primary *machamba* and place of residence in the same district is higher at 84.9% (45/53). This indicates a fair degree of commuting between place of residence and site of agricultural work, particularly for district IV land holdings.

Strata C and D distinguish between the presence or absence of a male adult (or female adult) as the primary decision-maker and provider for the household. Questions at the household level were addressed to the principal elders, usually the oldest male adult or his first son, and the first and second principal women in the household. Other household members with non-farm activities were asked to be present during the employment section of the survey. The above data indicate a preponderance of households headed by male adults (90.1%) compared with female-headed households (9.9%). As will be seen shortly, these data underestimate the importance of women in household decision-making. Women had a tendency to defer to a male adult as the household head, even in some cases where the husband may have been gone for most months of the year due to military obligations or work abroad. Strata D, then, primarily includes women who are divorced, unmarried, or widowed.

Registration status is indicated by Strata E and F. Of the 121 households in the survey, 51 (42.1%) possess at least one plot confirmed by researchers to

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27. Household plot managers were asked to identify the "primary" *machamba*, i.e. the plot generating the largest share of total household farm income.

have been registered as a precarious, provisional or definitive concession, and 70 (57.9%) possess no registered land.

Household Demography and Migration

Selected household indicators on family size, residency, age, and education are reported in table 4.2. As expected, female-headed households, for which a husband (male adult) is normally absent, possess the smallest average family size (8.0 residents). Households tend to be smaller in district IV (8.9) than in district VI (10.7). Registered households have the largest average household size (10.8) relative to the overall mean (9.7). Female-headed households have a comparable number of female adults as male-headed households (2.5 vs 2.6 persons), but have fewer children (3.8 vs 4.7) and fewer male adults (1.7 vs 2.6).

A small but important number of households have close family members living abroad. For the sample as a whole, 28.1% of households have at least one family member living outside Mozambique. The figure is higher in district VI than district IV (37.0% vs 20.9%), and is highest for female-headed households (46.2%). However, very few households, including female-headed households, reported receiving remittances from abroad, suggesting that non-resident family members are usually children, cousins or dependents living with close kin, rather than husbands working in the Republic of South Africa.[28] The lower income earnings of female-headed households also limit the number of dependents they are able to support.

With the exception of the lower age of male adults in female-headed households (26.8 years vs 33.7 for the sample average), there is very little difference among strata in age of adult family members. Male adults tend to be slightly older than female adults on average, but the age of female adults and male adults tend to be remarkably uniform among strata.

Male adults (those greater than 15 years of age), on average, tend to be better educated than female adults, although adults in general hold less than a primary level of education. On average, male adults had 4.8 years of public education vs 3.4 years for female adults. The one noticeable difference, the higher education of males in female-headed households relative to other strata, mainly reflects the absence of an older adult male who tends to be more poorly educated than sons or younger siblings.

Despite the high rates of immigration experienced by the population at large, households in the green zones have resided in their current place of residence for a relatively long period of time. As measured by years of residency of the household head, households on average have been established in the Maputo area for 30.1 years, and for 20.8 years in the current *bairro* of residence.[29] Female-headed households have been in residence in greater Maputo longer than male-headed households (36.2 years vs 29.4 years in Maputo),

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28. Of the 121 households in the survey, only 11 (9.0%) received remittances, and of these 11, only 4 involved cash remittances in 1991 (1 for 5 rand, 1 for 54 rand, 1 for 200 rand, and 1 for 500 rand).

29. One or more moves may have taken place in the interim.

Table 4.2:

Mean Household Level Demographic Characteristics by Sample Strata, Peri-Urban Green Zones, Maputo

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of households (hh):	67	54	109	13	51	70	121
Family size and migration:							
Total no. of hh members	8.9	10.7	9.9	8.0	10.8	8.9	9.7
No. children (≤15 yrs)	4.3	5.1	4.7	3.8	5.4	4.1	4.6
No. female adults (>15 yrs)	2.3	3.0	2.6	2.5	2.8	2.4	2.6
No. male adults (>15 yrs)	2.4	2.7	2.6	1.7	2.6	2.4	2.5
No. family members abroad	0.3	0.6	0.4	0.7	0.5	0.4	0.4
Percent hh w/ 1+ members abroad	20.9	37.0	26.6	46.2	29.4	27.1	28.1
Age (years):							
Female adults (>15 yrs)	32.7	33.7	33.2	32.6	32.6	33.7	33.2
Male adults (>15 yrs)	33.5	33.9	34.2	26.8	33.2	34.1	33.7
Public Education (years):							
Female adults (>15 yrs)	3.3	3.6	3.4	3.5	3.6	3.3	3.4
Male adults (>15 yrs)	4.7	4.9	4.7	5.5	4.8	4.8	4.8
Household Head:							
Age (years)	48.3	51.4	49.9	46.2	48.2	50.7	49.6
Public education (years)	3.3	3.6	3.7	1.6	3.8	3.2	3.5
Resided in Maputo (years)	29.3	31.2	29.4	36.2	29.9	30.4	30.1
Resided in current bairro (yrs)	21.1	20.4	20.8	19.8	20.9	20.7	20.8
Percent hh w/ non-farm job	60.0	56.0	61.0	23.0	47.0	66.0	58.0
Land:							
Number of machambas:	2.1	2.4	2.2	2.4	1.7	2.6	2.2
Irrigated	1.4	1.3	1.3	1.4	1.3	1.4	1.3
Rainfed	0.7	1.1	0.9	1.0	0.4	1.2	0.9
Farm size (ha):							
Irrigated and rainfed land	.65	.96	.84	.29	1.24	.46	.79
Irrigated land	.50	.60	.58	.21	1.01	.21	.55
Rainfed land[b]	.15	.36	.26	.07	.23	.25	.24
Mean plot size:							
Irrigated (ha)[a]	.28	.57	.44	.13	.75	.16	.41
Rainfed (ha)[c]	.44	.59	.56	.10	.89	.38	.52

a. Mean plot <u>size</u> is calculated on a smaller number of machambas than referred to in the <u>number</u> of irrigated machambas because certain machambas were not visited for measurement.

b. Mean rainfed land including non-measured plots counted as having zero area.

c. Most rainfed plots could not be visited (hence measured) due to security risk. Estimates of mean size include only those plots whose area measurements were taken at the time of the site visit.

although time of residency in the current *bairro* is nearly the same (19.8 vs 20.8). Aside from sex of household head, very little variance in means is observed among strata in length of residency.

Land Holdings

Households tend to own multiple plots of land in rainfed and irrigated areas for residential and agricultural use. Households on average farmed 2.2 *machambas*, 1.3 in irrigated zones, and 0.9 in rainfed zones. Irrigated *machambas* averaged 0.41 ha in size (entire sample), while rainfed plots averaged 0.52 ha.[30] However, these data mask three important variations.

First, the number of holdings varies according to registration status. The registered strata on average holds 1.7 plots versus 2.6 for unregistered households. However, as the number of irrigated *machambas* is relatively similar (1.3 vs 1.4 plots) between the two groups, the difference is mainly due to the greater holdings of rainfed plots by the non-registered strata (1.2 vs 0.4).[31] This difference partially reflects non-uniform employment access and income strategies. Registered households tend to have larger total irrigated holdings (1.01 vs .21), produce high-income crops for market, and depend more heavily on self-employment earnings (table 4.9). Conversely, unregistered households have smaller irrigated holdings, and tend (perhaps need) to supplement their comparatively lower urban wages and farm income (table 4.9) with earnings from rainfed plots.[32]

Second, there is considerable variation in size of irrigated farming units. The total area of irrigated *machambas* held by female-headed households (.21 ha) is less than that of male-headed households (.58 ha). Registered households with 1.01 ha/farming unit, greatly exceed in relative terms, the size of irrigated land holdings by the unregistered group (.21 ha/farming unit).

Third, despite the smaller number of holdings by the registered strata, registered households have larger irrigated *machambas* (0.75 ha/plot vs 0.16

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30. Rainfed and irrigated hectarages are not directly comparable. All plots in irrigated zones were measured and all families had at least one irrigated *machamba*. Rainfed *machambas*, which tend to be located further out in less "secure" areas, were generally not measured by researchers. While some farmers were able to estimate the size of their rainfed holdings, others were unable to do so. The area reported for rainfed *machambas* is thus based on a small sample of rainfed *machambas* for which respondents were able to estimate plot sizes, albeit with larger errors (relative to the more precise measurements taken for irrigated plots).

31. Whereas irrigated land is very scarce and difficult to acquire, "idle" land in rainfed areas is still available, but with higher risk of violence.

32. It could be argued that the difference in holdings in rainfed plots reflects a difference in residency status, i.e. earlier settlers on demarcated areas were able to claim sufficient land for a livelihood, while those migrants who arrived later were forced to turn to outlying areas for subsistence. The data for residency status in the current *bairro* (21.1 vs 20.4 years) would not support this hypothesis.

ha/plot) than the unregistered group. While female-headed households have slightly fewer dependents (18% fewer residents) to feed based on family size, their irrigated land holdings are roughly one-third the size of male-headed households (.13 ha vs .44 ha).

Fourth, rainfed holdings tend to be more important in district VI (1.1 vs 0.7 holdings and .36 vs .15 ha/farm on average), a finding that is consistent with the view that the best irrigated land is concentrated in district IV.

Language Skills

Portuguese is the official language for government administration and services in Maputo. Government forms, school books, government pamphlets, and registration records are written in Portuguese. All billings, invoices and receipts are handled in Portuguese as well. The ability to read and write Portuguese is necessary for engaging in commercial and legal activities, particularly those involving official channels.

However, language capabilities are not uniform. Both the household head and spouses in the survey were asked to provide information on their mother language and their Portuguese speaking and reading ability. Their responses are tabulated in table 4.3. Xichangana and Xironga are the most common languages spoken, representing collectively 70.2% and 63.0% of household heads responding, respectively, in districts IV and VI. Less than 3.0% of the household heads in each district spoke Portuguese as a mother tongue. However, 83.6% of the household heads in district IV and 85.2% in district VI said they were fluent in speaking Portuguese, and 77.6% and 79.6%, respectively, said they were able to write in Portuguese.

The strata comprising female household heads is the notable exception. Only 38.5% reported being fluent in speaking Portuguese, 23.1% a fair ability, and 38.5% poor ability. Further only 30.8% indicated an ability to write in Portuguese. When the principal spouse, normally a woman, was asked about Portuguese reading and writing ability, their responses mirrored those of women household heads (except for female-headed households, in which case the principal spouse is normally a brother or son who in all cases said they were fluent in both speaking and writing). Only 59.3% (44.1%) of spouses indicated an ability to speak (write) Portuguese fluently in district IV and 56.0% (38.0%) in district VI. Spouses in registered households tended to be more fluent in Portuguese than non-registered households (75.5% vs 43.3% speaking and 53.1% vs 31.7% writing).

Political Status and Corporate Membership

As reported in Chapter 2, members of cooperatives and producer associations, ostensibly join to increase access to farm inputs and to secure land rights. Having a family member with official status in government would theoretically improve access to government services (e.g. titling) through better knowledge of government bureaucracy, and the ability to use official position as leverage to gain action. Information on political status and corporate membership were elicited from each household head through three sets of questions: whether any family member belongs to a cooperative, whether any family member belongs to a producer association, and whether any family member

Table 4.3:

Language Skills

		District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Mother language, household head (%):[a]								
Xichangana		46.3	46.3	47.7	38.5	47.1	45.7	46.3
Xironga		23.9	16.7	18.3	38.5	23.5	18.6	20.7
Xicopi		6.0	25.9	15.6	7.7	7.8	20.0	14.9
Bitonga		10.4	3.7	7.3	7.7	9.8	5.7	7.4
Xitshwa		6.0	5.6	5.5	7.7	3.9	7.1	5.8
Portuguese		3.0	1.9	2.8	-	3.9	1.4	2.5
Macua		3.0	-	1.8	-	3.9	-	1.7
Other		1.5	-	.9	-	-	1.4	0.8
Portuguese fluency (household head) (%):								
Speaking	Fluent	83.6	85.2	89.0	38.5	90.2	80.0	84.3
	Fair	10.4	9.3	8.3	23.1	7.8	11.4	9.9
	Poor	6.0	5.6	2.8	38.5	2.0	8.6	5.8
Able to write	Yes	77.6	79.6	83.5	30.8	88.2	71.4	78.5
Portuguese fluency (principal spouse) (%):								
Speaking	Fluent	59.3	56.0	57.0	100.0	75.5	43.3	57.8
	Fair	16.9	10.0	14.0	-	6.1	20.0	13.8
	Poor	23.7	34.0	29.0	-	18.4	36.7	28.4
Able to write	Yes	44.1	38.0	40.2	100.0	53.1	31.7	41.3

a. Question also asked for principal spouse, but no significant difference.

holds a position within the *bairro* organization, GD, DCU, Executive Council, and provincial or national government. Responses are summarized in table 4.4.

Only 6.6% of household heads (and households) on average had one or more members who belonged to a cooperative. The lower percentage reported for family members (0.7% of family adults responding that they themselves are members) indicates that membership is held by only 1 or 2 members of the family, not the entire family workforce. Membership of cooperatives tends to be more prevalent in district VI compared with district IV (13.0% vs 1.5%, household heads reporting). Non-registered households tend to have higher rates of membership than registered households (8.6% vs 3.9%), while rates of membership between male-headed and female-headed households are nearly equal (6.4% and 7.7%, respectively). On average, for the entire sample, 37.5% of

Table 4.4:

Participation in Cooperatives and Producer Associations

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Household head membership:							
Member of a cooperative (% yes)	1.5	13.0	6.4	7.7	3.9	8.6	6.6
Member of an association (% yes)	55.2	75.9	63.3	76.9	29.4	90.0	64.5
Family membership:							
Member of a cooperative (% yes)[a]	0.2	1.2	0.6	1.0	0.4	1.0	0.7
Member of an association (% yes)[b]	7.2	7.8	7.3	9.6	3.1	11.4	7.5
Motives for joining a cooperative (% members responding yes):							
Acquire farm inputs	100.0	28.6	42.9	-	100.0	16.7	37.5
Obtain produce to sell	-	42.9	42.9	-	-	50.0	37.5
Gain access to land	-	14.3	14.3	-	-	16.7	12.5
Assistance w/ marketing	-	14.3	-	100.0	-	16.7	12.5
Motives for joining association (% members responding yes):							
Increase security of land rights	45.2	44.4	46.2	30.0	25.0	49.3	44.8
Acquire farm inputs	45.2	37.8	41.0	50.0	56.3	38.0	41.4
Machamba within area of association	9.5	11.1	10.3	10.0	12.5	9.9	10.3
Gain access to farm land	-	4.4	1.3	10.0	-	2.8	2.3
Acquired plot from owner who belonged to the association	-	2.2	1.3	-	6.3	-	1.1
Official Status:[c]							
Grupo Dinamizador	10.4	18.5	14.7	7.7	13.7	14.3	14.0
Neighborhood organization	11.9	13.0	12.8	7.7	7.8	15.7	12.4
DCU/Executive Council	1.5	1.9	1.8	-	2.0	1.4	1.7
Provincial/national government	1.5	1.9	1.8	-	2.0	1.4	1.7

a. Cooperatives in which members belong: 25 de Junho, 8 de Maro, 3 de Fevereiro, Acordo do Incomali, and Francisco Manjanja.

b. Associations in which members belong: Kongolote, T-3, Vale do Infulene, Zona Verde, Mario Machunga, Massacre de Moinhe, 19 de Outubro, Samora Machel, Eduardo Mondlane, Albazine, Tomas Sankara, Costa do Sol, Massacre de Buizini, and Jaulane.

c. Percentage of households that report having a member holding a position in the respective institution.

those families belonging to a cooperative joined to gain access to farm inputs, 37.5% to obtain produce to sell in the market, 12.5% to gain access to land, and 12.5% to acquire assistance with marketing. However, these motives varied among household strata. Increasing access to farm inputs was most important in district IV (100%) and by registered households (100%). Obtaining produce to sell was more important in district VI (42.9%), by male adult households (42.9%), and by non-registered households (50.0%). Female-headed households indicated general assistance with marketing as their principal motive for joining (100%), which includes both gaining access to farm inputs and products to sell.

Membership in a producer association was more prevalent, partially due to the fact that producer association listings were used as the basis to select the non-registered household sample in the research area, particularly in district VI.[33] About 64.5% of households in the overall sample had one or more members involved in a producer association. However, the fact that only 7.5% of all household members mentioned themselves as being members of an association indicates that membership is effectively limited to 1-2 members per joined family. Membership is higher in district VI than district IV (75.9% vs 55.2%), higher among female-headed households than male-headed households (76.9% vs 63.3%), and higher among non-registered households than registered households (90.0% vs 29.4%). Various motives were mentioned for joining a producer association, including in descending order of importance, increasing security of land rights (44.8%), and acquiring farm inputs (41.4%). The fact that 10.3% of association members stated that they did so because the land was located within the association implies that, in addition to associations being perceived as organizations comprised of members, they are also perceived by some as autonomous land controlling entities. Increasing security of land rights was a more important factor for non-registered households than registered households (49.3% vs 25.0%).[34] Increasing access to farm inputs was the most important factor for female-headed and registered households (50.0% and 56.3%), respectively.

Official status, in table 4.4, includes two levels of authority in land allocation: local-level authorities, including neighborhood (*bairro*) organizations and the GD, and central authorities including the DCU, executive council, and provincial and national government. Surprisingly, 14.0% of households in the overall sample reported having a family member with a position in the GD, the principle decision-making body responsible for land allocations at the local level. Whether this reflects the political power and status of land holding groups in the sample, extended positions within the GD, or a broad interpretation of "position" by respondents in the sample cannot be ascertained from the data. Conversely, very few households (less than 2% in all categories) have family members who hold positions within the offices of

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33. Lists of green zone producers maintained by the *Casas Agrárias* in district IV were also used.

34. The figure 25% implies that title alone is not sufficient for increasing security of land rights, although it is possible that registered households acquired registration after becoming members of the producer association.

central authorities. Rates of official status for all positions are relatively uniform across categories with the exception of registered households which tend not to participate in neighborhood organizations, and female-headed households that have low official representation in both local and central offices.

Decision-Making Authority

The conventional usage of "household head", implying a single decision-maker, has come under severe criticism in the development literature for failing to recognize the decision-making responsibilities of other household members. In this study, the principal male adult and female adult in the household were asked to jointly respond to five separate activities requiring management decisions, specifically: who is primarily responsible for overall labor allocation within the household; who is primarily responsible for making farm labor allocation decisions; who makes the primary decisions on farm investments; who makes the principal decisions on marketing of farm produce; who decides how to spend farm income; and who decides how to spend non-farm income?[35] Possible responses include: household head (normally male with the exception of the female-headed household category) solely makes the decision; the principal spouse (normally female) solely makes the decision; both household head and principal spouse jointly make the decision; and someone other than the household head and his or her principal spouse solely make the decision. Decision responses are ranked in table 4.5 (from top to bottom) according to decreasing authority of the household head, and increasing authority of the principal spouse.

With regard to farm investments and destination of farm produce, decisions tend to be undertaken solely by household heads, and to a lesser extent solely by the principal spouse (59.5% vs 28.9% and 58.7% vs 27.3%, respectively). This tendency is particularly strong for household heads in the registered (74.5% vs 17.6% and 78.4% vs 13.7%) and female-headed (84.6 vs 15.4% and 76.9% vs 15.4%) categories, respectively. Despite the fact that many *machamba* managers are women (table 5.1), the decisions concerning which family members work on the plot tend to be made by the head of household (normally male, 50.4% vs 28.9%) (the notable exception is female-headed households in which 84.6% of the household heads make the decision).

The gender gap, however, begins to shrink with regard to decisions involving overall labor allocation and income expenditure. The principal spouse (compared with the household head) either individually or jointly with

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35. Addressing questions to both adults simultaneously forced a consensus response. Asking both separately would have permitted respondents more flexibility in offering dissenting views, but would have required a separate round of questioning. It is still possible that the presence of a domineering household head might have prevented the principal spouse from revealing his or her "true" decision-making role within the household. However, the fact that women reported at least a joint involvement in 38.0% to 53.7% of all decisions, depending on the activity, suggests that this problem was not widespread or debilitating.

Table 4.5:

Decision Making Authority

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Making farm investments:							
Household head makes decision	58.2	61.1	56.9	84.6	74.5	48.6	59.5
Principal spouse makes decision	25.4	33.3	30.3	15.4	17.6	37.1	28.9
Both	11.9	5.6	10.1	-	7.8	10.0	9.1
Other	4.5	-	2.8	-	-	4.3	2.5
Destination of farm produce:							
Household head makes decision	58.2	59.3	56.9	76.9	78.4	44.3	58.7
Principal spouse makes decision	29.9	24.1	28.4	15.4	13.7	37.1	27.3
Both	9.0	14.8	11.9	7.7	5.9	15.7	11.6
Other	3.0	1.9	2.8	-	2.0	2.9	2.5
Farm labor allocation:							
Household head makes decision	52.2	48.1	46.8	84.6	49.0	51.4	50.4
Principal spouse makes decision	23.9	35.2	31.2	7.7	33.3	25.7	28.9
Both	22.4	13.0	19.3	7.7	15.7	20.0	18.2
Other	1.5	3.7	2.8	-	2.0	2.9	2.5
Spending of farm income:							
Household head makes decision	47.8	45.3	42.6	84.6	64.7	33.3	46.7
Principal spouse makes decision	32.8	30.2	33.3	15.4	13.7	44.9	31.7
Both	19.4	24.5	24.1	-	21.6	21.7	21.7
Other	-	-	-	-	-	-	-
Overall labor allocation (%):							
Household head makes decision	46.3	42.6	40.4	84.6	54.9	37.1	44.6
Principal spouse makes decision	35.8	40.7	40.4	15.4	27.5	45.7	38.0
Both	14.9	16.7	17.4	-	17.6	14.3	15.7
Other	3.0	-	1.8	-	-	2.9	1.7
Spending of non-farm income:							
Household head makes decision	44.4	39.6	41.5	54.5	55.2	34.8	42.2
Principal spouse makes decision	22.2	26.4	25.5	9.1	10.6	33.3	24.1
Both	23.8	28.3	26.4	18.2	27.7	24.6	25.9
Other	9.5	5.7	6.6	18.2	8.5	7.2	7.8

their husbands or wives are involved in 53.7% (60.3%) of the decisions concerning overall labor allocation, 53.4% (68.4%) of farm income expenditures, and 50.0% (68.1%) of non-farm income expenditures. In the case of female-headed households, decisions regarding overall labor allocation (84.6%), farm income expenditures (84.6%), and non-farm income expenditures (54.5%) tend to be made solely by the female head. Finally, household heads in the registered category who are usually male tend to take greater responsibility for household decisions (excluding the female-headed category) than those in other categories.

Assets and Physical Infrastructure

Information on access to physical services, quality of housing materials, and ownership of physical assets are reported in table 4.6 as indicators of household wealth. Information on financial assets are noticeably lacking. Attempts were made in early rounds of the questionnaire to elicit this information, but respondents were generally reluctant to disclose such data.

Compared with most rural economies in Africa, households in the green zones appear relatively wealthy. About 9.0% of households in district IV and 25.9% in district VI own an automobile or truck, a color television 22.4/11.1%, a VCR 20.9/9.3%, a refrigerator 40.3/31.5%, and a gas or electric stove 49.3/53.7%. Registered households appear the wealthiest in terms of asset accumulation. The registered group, compared with the non-registered group, has the highest percentage of households with a color television (27.5% vs 10.0%), VCR (23.5% vs 10.0%), refrigerator (52.9% vs 24.3%), and an automobile or truck (29.4% vs 7.1%). Conversely, female-headed households compared with male-headed households are relatively disadvantaged in asset holdings: color television (0% vs 19.3%), VCR (0% vs 17.4%), refrigerator (15.4% vs 38.5%), gas or electric stove (30.8% vs 53.2%), and an automobile or truck (0% vs 18.3%).

The advantaged position of registered households and disadvantaged position of female-headed households hold as well with respect to physical services and quality of housing. On average, 38.0% of households in the overall sample have access to electricity, and 59.5% to piped water or a private well. Households in districts IV and VI have similar access to electricity, but only 38.8% of households in district IV have access to piped water or private well versus 85.2% in district VI. While 40.4% (60.6%) of male-headed households and 49.0% (68.6%) of registered households have access to electricity (piped water), only 15.4% (46.2%) of female-headed households have the same luxury. While 74.4% of homes in the overall sample are constructed of cement blocks, registered households (86.3%) and households in district VI (81.5%) are above this mean, and non-registered households (65.7%) and female-headed households (53.8%) are below. Female-headed households in turn have the highest percentage of homes constructed of reeds (15.4%) and reinforced reeds (23.1%).

Economic Activity

Heads of households, spouses, and other adults with at least one wage- or self-employment activity were asked to provide information on type of activity, wage level, and non-wage benefits for all non-farm employment activities in which they were involved. Wage employment is defined as those activities in which remuneration is paid on a periodic basis by an employer. Self-employed

Table 4.6

Assets and Physical Infrastructure

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Access to physical services (% yes):							
Electricity	38.8	37.0	40.4	15.4	49.0	30.0	38.0
Piped water or private well	38.8	85.2	60.6	46.2	68.6	52.9	59.5
Construction material of house (%)							
Reeds	14.9	9.3	11.9	15.4	7.8	15.7	12.4
Reinforced reeds	7.5	1.9	2.8	23.1	-	8.6	5.0
Wood	4.5	5.6	5.5	-	3.9	5.7	5.0
Cement blocks	68.7	81.5	77.1	53.8	86.3	65.7	74.4
Wood/cement mix	4.5	-	1.8	7.7	-	4.3	2.5
Zinc sheets	-	1.9	.9	-	2.0	-	.8
Assets: (% households with):							
Color television	22.4	11.1	19.3	-	27.5	10.0	17.4
VCR	20.9	9.3	17.4	-	23.5	10.0	15.7
Refrigerator	40.3	31.5	38.5	15.4	52.9	24.3	36.4
Gas/electric stove	49.3	53.7	53.2	30.8	58.8	45.7	51.2
Bicycle	13.4	13.0	13.8	7.7	17.6	10.0	13.2
Motorcycle	9.0	7.4	9.2	-	9.8	7.1	8.3
Automobile/truck	9.0	25.9	18.3	-	29.4	7.1	16.5

activities are those in which monetary income is earned or lost from an activity's profit or loss. Almost 20% of income earners had multiple income earning activities. Earnings are standardized in order to compute average monthly salaries and annual earnings for the period January through December 1991.[36] In the case of self-employed activities, monthly and annual earnings were computed from data collected on monthly gross revenues and costs (labor, materials, transportation, taxes, and goods and services), and the number of months worked in the past year.

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36. The respondent was asked for his or her average salary earnings during the past year per standard pay period (day, week, month, year). Earnings were converted to monthly totals using the conversion factors of 30 days or 4 weeks per month. Data were also collected on the number of periods worked in the past year to calculate total annual earnings. However, the amount of time worked (hours) per month per activity was not uniformly collected, making it difficult to compare salaries among individuals (e.g. a female adult and male adult could earn the same monthly salary (30,000 mt/month), but the male adult may also work fewer hours during the month giving him higher real earnings).

Table 4.7:

Average Monthly Wages, Formal Sector[a]

Occupation Category	Females			Males			Overall	
	Mean Income (000 mt	Range 000 mt)	n	Mean Income (000 mt	Range 000 mt)	n	Mean Income (000 mt)	n
Construction/industry	36.1	28-50	8	49.8	23-80	46	47.8	54
Service/admin	49.3	10-108	6	73.6	15-326	23	68.6	29
Cleaning/guard	27.5	15-40	2	48.9	20-100	23	47.2	25
Restaurant/hotel	46.7	30-75	3	36.0	36-36	1	44.0	4
Commerce	27.0	20-34	2	47.5	45-50	2	37.3	4
Transportation	25.0	0-50	2	40.0	30-50	2	32.5	4
Education	41.0	32-50	2	44.7	35-54	2	42.9	4
Other	-	-	0	47.6	10-105	4	47.6	4
Health	50.0	50-50	1	45.0	40-50	2	46.7	3
Ag. wage labor	25.0	25-25	1	32.0	32-32	1	28.5	2
All activities	38.5		27	54.0		106	50.8	133

a. One individual may have multiple activities.

Formal Sector Wage-Activities

Average monthly wages for all males and females within the household who reported having wage-employment in the past year are reported in table 4.7 by job category. Many of the activities are part-time positions, some consuming several weeks per month, others several full months per year. Multiple activities are sometimes worked by one wage-earner. Several points stand out in the data. First, the construction/industry and service/administration sectors were the most significant sources of wage employment for both males and females. Second, males participate to a much higher degree than females in formal wage employment. While the number of adult males and females in the sample is approximately equal (table 4.2), female labor represented 20.3% (27/133) of formal sector activity (months worked) while time worked by men accounted for 79.7%. Third, women earn less than men in formal sector activities. Only within the restaurant/hotel sector and health sector did women earn higher average monthly wages than men. In all other categories, monthly wages for males were 9.0% to 77.8% higher than those for women. Further, the average monthly wage across activities is 38,500 mt for women versus 54,000 mt for men. However, without standardizing wage rates (monthly wages divided by hours or days worked per month), for which information is not uniformly reported, and without adjusting wages for differences in age, education, or training, it is difficult to calculate rates of wage discrimination.

Self-Employment Activities

With the liberalization of Maputo's economy, self-employment, particularly petty trade, has become an important part of household income strategies (Little and Baptista 1992). In addition to conventional activities in the artisan, service and commercial sectors, self-employment activities listed in table 4.8 also include agricultural industry, i.e. raising of animals for sale, fishing, and milling. These activities were not included in farm income because the activity takes place away from the *machamba* on the coast (fishing) or at the place of residence (livestock, milling). Although fewer adults reported self-employment relative to wage-employment (80 vs 133), net monthly incomes from self-employed activities are considerably higher. The overall average monthly wage for self-employment is 166,200 mt per worker compared with 50,800 mt per worker for wage-employment.[37] Average net monthly income was the highest for poultry, fishing, grocery stores, and transportation, all earning over 300,000 mt per month.

Clear market segmentation is apparent in self-employment activities. Men tend to work in all sectors. Women are principally engaged as petty traders in the central and peripheral markets of the city. Of the 33 women reporting self-employed activities, 28 worked in sales of manufactured items, agricultural goods and food, compared with 3 of 47 male adults in the same activities. Further, the earnings of women are much lower than those of men. The average monthly earnings of men is 232,900 mt versus 48,100 mt for women. As with formal wage employment, earnings from self-employment were not standardized for time worked; thus potential causes for the wage gap--e.g. discrimination, unequal access to employment opportunities, lack of resources or time constraints--are difficult to determine from the data.

Why would household members work in wage-employment given the higher earning potential of self-employment activities? Part of the answer lies with other benefits offered along with wages in formal sector employment (table 4.9). On average, 52.1% retirement benefits, 49.6% of households received medical benefits through participation in wage-employment, 33.9% received credit assistance, 28.1% assistance with transportation, and 25.6% food subsidies. These benefits vary widely among strata, but the category of female-headed households is most noticeable for lack of access. Only 7.7% of female-headed households had access to medical benefits, 7.7% retirement, and 84.6% received no benefits whatsoever.

Household Income

Non-Farm Income

Data on mean household earnings for non-farm jobs, and total wage- and self-employment activities in 1991 are reported in table 4.9. Adults within the household on average held 1.1 salaried positions, and worked on 0.4 self-employment activities. The number of self-employment activities was fairly constant across activities. However, the number of formal salaried jobs ranged from 1.3 jobs/hh for non-registered households to 0.8 jobs/hh and 0.5

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37. Monthly salaries are difficult to compare as figures are unadjusted for hours or days worked per month (see footnote 37).

Table 4.8:

Average Monthly Income, Principle Self-Employed Activity[a]

Employment Activity	Males (000 mt)	Males n	Females (000 mt)	Females n	Overall (000 mt)	Overall n
Services:						
Gardener	300.0	1	-	-	300.0	1
Tailor	35.0	1	-	-	35.0	1
Carpenter	350.0	1	-	-	350.0	1
Seamstress	-	-	22.5	2	22.5	2
Electrician	-	-	50.0	1	50.0	1
Mechanic	60.0	2	-	-	60.0	2
Mason	150.0	2	-	-	150.0	2
Painter	250.0	1	-	-	250.0	1
Shoemaker	18.0	1	-	-	18.0	1
Other	30.0	1	-	-	30.0	1
Agricultural industry:						
Pigs	38.4	13	50.0	1	39.2	14
Chickens	428.3	11	-	-	428.3	11
Beekeeping	42.5	1	-	-	42.5	1
Miller	-	-	72.0	1	72.0	1
Fisherman	612.5	2	-	-	612.5	2
Commerce:						
Grocery store owner	302.0	3	-	-	302.0	3
Vendor of manufactured goods	70.0	1	66.9	10	67.3	11
Vendor of agricultural goods	-	-	46.2	14	46.2	14
Vendor of food	37.8	2	26.0	4	29.9	6
Chapa 100 owner[b]	482.5	4	-	-	482.5	4
All activities	232.9	47	48.1	33	166.2	80

a. Individual may have multiple activities.
b. Urban transport service, usually a minivan.

jobs/hh for registered and female-headed households, respectively. Mean annual non-farm earnings for the entire sample of 121 households was 801,000 mt. Self-employment activities represented 69.5% of this total, and wage-earnings 30.5%. Female-headed households earned 292,000 mt in 1991 or approximately $132 ($1.00=2,200 mt) compared with an average of 854,000 mt ($388) for male-headed households. Registered households had the highest absolute level of non-farm income of any category. Compared with non-registered households, the non-farm income of registered households in 1991 averaged 985,000 mt (vs 667,000 mt), of which 47.1% (93.7%) came from wage-employment, and 52.9% (6.3%) from self-employment activities. These data indicate both the vulnerable

Table 4.9:
Farm and Non-farm Income and Expenses, 1991

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Crop income and expenditures (000):[a]							
Total revenue	2,494	4,694	3,803	506	6,964	934	3,476
Wages	525	327	477	65	892	105	436
Chemical inputs	211	290	269	38	462	89	246
Other costs[b]	23	59	43	2	84	6	39
Total expenses	759	676	790	105	1,439	199	722
Net income	1,735	4,018	3,013	401	5,526	735	2,754
Crop income and expenditures per m^2:[a]							
Total revenue	804	788	836	437	1,012	640	797
Wages	128	69	108	46	164	57	102
Chemical inputs	68	76	76	32	89	60	72
Other costs[b]	7	8	8	2	12	4	7
Total expenses	203	153	192	79	265	120	181
Net income	601	635	644	358	747	520	616
Number of non-farm jobs:							
Non-farm jobs/family (no.)	1.5	1.6	1.6	1.1	1.2	1.8	1.6
Formal jobs (no.)	1.0	1.2	1.2	.5	.8	1.3	1.1
Self-employed jobs (no.)	.5	.4	.4	.6	.4	.5	.4
Farm and Non-farm income (000 mt):							
Net farm income	2,519	4,223	3,591	447	6,488	943	3,280
Crops	1,735	4,018	3,013	401	5,526	735	2,754
Livestock	784	205	578	46	962	208	526
Non-farm income	768	842	854	292	985	667	801
Formal sector income	552	564	597	176	464	625	557
Self-employed income	216	278	257	116	521	42	244
Total farm and non-farm income	3,287	5,065	4,445	739	7,473	1,610	4,081
Total income/capita (000 mt)	531	572	596	123	977	238	549
Per-capita income by sector (%):							
Net crop income	44.6	74.8	58.7	60.0	63.3	44.9	58.7
Net livestock income	28.0	3.1	16.7	5.4	15.8	18.2	16.4
Total non-farm income	27.4	22.1	24.6	34.6	20.9	36.9	24.9
Hhlds w/ access to other social benefits (%):[c]							
Medical benefits	50.7	48.1	4.1	7.7	33.3	61.4	49.6
Credit assistance	31.3	37.0	37.6	-	33.3	34.3	33.9
Retirement	47.8	57.4	56.9	7.7	41.2	60.0	52.1
Food subsidy	20.9	31.5	28.4	-	23.5	27.1	25.6
Transportation	19.4	38.9	31.2	-	27.5	28.6	28.1

a. Excludes family labor costs.
b. Taxes, farm implements, and machinery rental services.
c. Households with at least one member with non-wage benefits.

position of women in the formal economy, and the stronger economic and social position of registered households relative to non-registered households.

Farm Income and Expenditures

Income and expenditures for irrigated plots in the sample are presented in table 4.9 for the total area of irrigated holdings and per square meter.[38] The non-farm income gap between male-headed and female-headed households in the previous section would theoretically be reduced if women earned a disproportionately greater share of household income from farming. The data, however, do not support this hypothesis. The annual net farm income (crop and livestock activities) of female-headed households is 447,000 mt, 89.7% of which came from crop activities, and 10.3% from livestock farming on the *machamba*. Comparable figures for male-headed households are 3,591,000 mt, 83.9% from crop income, and 16.1% from livestock activities. Registered households have the highest annual net farm income of any strata (6,488,000 mt), in part due to larger farm size.

Registered households (compared with non-registered households) also appear to make more intensive use of the land resource, whether measured by total revenues (1,012 vs 640 mt/m^2), wages paid (164 vs 57 mt/m^2), chemical inputs applied (89 vs 60 mt/m^2), or net revenue (747 vs 520 mt/m^2). The productivity of female-headed households is the lowest of any strata, and compared with male-headed households, they exhibit very low revenues (437 vs 836 mt/m^2), wages paid (46 vs 108 mt/m^2), chemical inputs (32 vs 76 mt/m^2), and net revenue (358 vs 644 mt/m^2).

Total Income

Total household income including farm and non-farm activities is reported in table 4.9. The income gap between female-headed and male-headed households reveals the severe vulnerability of female-headed households to economic fluctuations. The average total income of female-headed households in 1991 was 739,000 mt ($336) versus 4,445,000 mt ($2,020) for male-headed households. Even after adjusting for differences in household size between the two strata, the per-capita total income of female-headed households (123,000 mt, $56) was still only 21% of the level reported for the male-headed category (596,000 mt, $271). Households in districts VI have incomes 53.9% higher than in district IV (5,065,000 vs 3,287,000 mt), but per capita incomes are similar (572,000 vs 531,000) due to a greater number of residents/household in district VI (table 4.2). Registered households have substantially higher total and per capita income levels than non-registered households (7,473,000 mt vs 1,610,000 mt/household and 977,000 and 238,000 mt/capita), further demonstrating the economic power of private (titled) farms in the economy.

On average, crop income contributes 58.7% to total household incomes across categories. The contribution of crop income is highest in district VI

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38. Rainfed plots are almost exclusively used for home consumption and in reciprocal in-kind trade among extended family and neighbors. As output could not be recalled with any reasonable degree of accuracy, output and inputs on rainfed plots were excluded from income calculations.

(74.8%), and for registered households (63.3%) and female-headed households (61.7%), and lowest in district IV (44.7%) and for non-registered households (44.9%). Non-registered households (36.9%) and female-headed households (34.6%) place the greatest dependence on non-farm employment, lending weak evidence to the hypothesis that these disadvantaged populations, because of limited land access and weak property rights, are turning to the non-farm sources of employment. Conversely, registered households place the least emphasis on non-farm sources of income (20.9%), indicating the combined effect of both greater farm sizes, and greater security of property rights.

Conclusions

Selected data were presented and analyzed in this chapter on political and socio-economic characteristics of green zone producers including household demography, land holdings, language skills, political status, household decision making, physical assets, non-farm employment, and farm and non-farm income. Data are disaggregated according to seven categories of households reflecting different degrees of political and institutional status: quality of state administrative structures (district IV versus district VI), gender (male versus female-headed households), tenure status (registered vs non-registered), and the overall sample.

The analysis shows that, of the 121 households in the survey, a sizable number have at least one family member living outside Mozambique, although very few households reported receiving remittances. Also, compared with the general population, which is in a high state of flux from refugee settlement, the household sample has had a long history of residency in the study area. Households tend to own multiple plots of land in rainfed and irrigated areas, although registered households hold fewer but large plots than unregistered households, due to fewer holdings of rainfed land. Female-headed households are particularly disadvantaged; while they have fewer dependents (18% fewer residents), their irrigated land holdings are roughly one-third the size of male-headed households.

Only 7% of households on average have one or more members who belong to a cooperative, and 65% who belong to a producer association. Non-registered households have higher rates of membership in producer associations than registered households, while rates of membership between male-headed and female-headed households are nearly equal. Those families belonging to a cooperative tended to join for reasons of gaining access to farm inputs, obtaining produce to sell in the market, increasing access to land, or for marketing assistance. Those families with membership in a producer association tended to join to increase security of land rights, and to acquire farm inputs. Increasing security of land rights was a more important factor in joining for non-registered households than registered households.

Registered households also make more intensive use of the land, whether measured by total revenue, chemical inputs applied, or net revenue. Productivity of female-headed households is the lowest of any strata, and compared with male-headed households exhibit very low revenue and net income. Males have higher rates of participation and earnings than females in formal wage-employment. The average total income of female-headed households in 1991 was 739,000 mt versus 4,445,000 mt for male-headed households. Even after

adjusting for differences in household size, the per-capita total income of female-headed households was still only 21% of that reported for the male-headed category. Registered households have substantially higher total income than non-registered households, demonstrating the economic power of private (titled) farms in the economy.

Overall, the analysis reveals that agricultural producers in district VI with the least effective state administration rely to a greater degree on cooperatives and producer associations to gain access to land, security of land rights, and access to production inputs. Female-headed households, usually divorced, widowed or with husbands abroad, are severely disadvantaged, whether measured by resource access, employment opportunities, or income levels. Registered holdings possess larger farm sizes, wealth and income than non-registered households, due to differences in human capital, property rights, market access, and non-farm employment among households. The next chapter compares land market transactions, land rights, land disputes and settlement histories among the various household strata, before turning to land price determination in Chapter 6.

CHAPTER 5

LAND SETTLEMENT AND LAND MARKETS

The land market in the peri-urban zone is characterized by intense competition, land conflicts, high transactions costs, and complex interactions between administrative modes of land allocation and informal transactions. Land is the principal means of economic livelihood for the majority of green zone producers. For female-headed households, land is the safety net separating subsistence existence from none at all. For registered households, land has been an asset that has provided farm incomes far above the combined farm and non-farm incomes of non-registered households. For urban residents, it is a place away from the city, for a home and the opportunity to engage in part-time gardening. For refugees, the green zones has meant a home and a new life, or a home away from home until political and economic stability in the countryside is restored. Regardless of the group, land has important social and economic value. The land market based on administrative allocations or otherwise determines the process by which land is transferred among alternative uses and users. This chapter examines the structure and operation of the land market in the peri-urban green zones of Mozambique using survey data and case study methods. It examines the nature of land transactions in the peri-urban zones, intermediaries involved, transaction costs, and performance in terms of certainty of land rights, credit access through collateral enhancement, and land distribution. The combined impact of physical and economic factors on estimated land prices via regression methods is reserved for a final chapter.

Settlement and Land Acquisition

As indicated in chapter 4, the 121 households in the survey controlled 161 plots of land. These plots were managed by 124 managers (*responsávels*). On average, a household has access to 1.3 *machambas* of irrigated land and 0.9 *machambas* of rainfed land. Irrigated plots averaged 0.41 ha in size, while rainfed plots averaged .52 ha. However, plot sizes of female-headed households are considerably smaller (0.13 ha and 0.10 ha, respectively), while those of registered households are considerably larger (0.75 ha and 0.89 ha).

Settlement

The vast majority of plot managers in the survey migrated to Maputo from rural areas outside districts I to VIII, then over time moved outward to their current *bairros* in the peri-urban area. However, when migrants arrived in Maputo prior to 1975, Maputo was a much smaller city (mainly comprising the cement city) than it is today. Residents may have in fact settled at the fringe of then Maputo city, before moving out with the expansion of the peri-urban fringe in subsequent years.

For the 124 plot managers in the survey, table 5.1 contains key data on date of immigration to Maputo, and date of last change of residency to the current *bairro* of residence (note, other moves may have taken place in between). On average, 12.9% of the respondents indicated that they immigrated to the greater Maputo area (mainly the cement city) prior to 1950. The vast majority (74.2%) arrived in the period 1950 to 1973 just before independence. Roughly 12.1% immigrated to greater Maputo during the immediate post-independence era (1974-1980), 0.8% between 1981-1985, and none thereafter. The high cost of living constitutes a formidable barrier to settlement, partially explaining the decline in recent years. However, the rapid expansion of the peri-urban zone beyond districts I-III (and thus beyond Maputo city) also means that immigrants for reasons of cost are now establishing their roots first in the outer districts (IV to VIII).

After the initial period of settlement, all the respondents by definition (dictated by their current place of residence in the green zones) moved outward from Maputo, through one or more stops, to their current *bairro* of residence. As indicated in table 5.1, an initial surge (51.2%) took place over the period 1950 to 1973, but 35.8% of the overall sample moved between 1974 and 1980, corresponding to the period of economic decline following the departure of the Portuguese. The population, since 1980, has been remarkably stable. Only 9.8% of respondents reported moving to their current *bairro* sometime during the period 1981 to 1992. This settlement pattern appears remarkably similar for households in districts IV and VI and between registered and unregistered groups, although plot managers of female-headed households appear to have arrived later than their male counterparts. Compared with the general population in the peri-urban area, which is in a high state of flux from refugee settlement, this sample of green zone producers has had a long history of residency and land access in the study area.

The green zones also have had a long history of vegetable production. Years of experience growing vegetables is a good indicator of farming experience, and length of cultivation.[39] Of the 124 plot managers in the survey, 36.3% have been growing vegetables for at least 16 years, 23.4% between 11 and 15 years, 27.4% between 6 and 10 years, and 12.9% between 0 and 5 years. The widespread belief that an insurgence of vegetable producers entered agriculture following the price liberalization of 1985 appears to be inconsistent with these data. At least 59.7% of *machamba* managers were producing vegetables prior to 1982.[40] The price reforms, no doubt, encouraged some entry of producers into the vegetable sector, but most of the surge in vegetable production that has taken place since 1985 has come from the expansion of area, or more intensive production, by then existing producers.

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39. Many elders recall that, prior to 1975, much of the land now known as the green zones was low-lying areas covered in grass and brush. Another question--years of experience in farming in peri-urban irrigated green zones--produced a similar set of responses.

40. For those respondents reporting having grown vegetables for between 6 and 10 years (27.4%), some would have been engaged in vegetable production prior to price liberalization.

Table 5.1:

Migration and Plot Level Mode of Land Acquisition

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of plot managers	67	57	112	12	53	71	124
Total number of plots	92	70	104	58	57	105	162
Sex of plot manager (% female)	40.3	49.1	38.4	100.0	24.5	59.2	44.4
Year plot manager first immigrated to Maputo:							
< 1950	13.4	12.3	10.7	33.3	15.1	11.3	12.9
1950 to 1973	74.6	73.7	75.9	58.3	77.4	71.8	74.2
1974 to 1980	10.4	14.0	12.5	8.3	7.5	15.5	12.1
1981 to 1985	1.5	-	0.9	-	-	1.4	0.8
Year plot manager arrived in current bairro:							
< 1950	3.0	3.5	2.7	8.3	5.8	1.4	3.3
1950 to 1973	53.0	49.1	51.4	50.0	51.9	50.7	51.2
1974 to 1980	31.8	40.4	37.8	16.7	34.6	36.6	35.8
1981 to 1985	6.1	1.8	3.6	8.3	3.8	4.2	4.1
1986 to 1992	6.1	5.3	4.5	16.7	3.8	7.0	5.7
Years experience growing vegetables:[a]							
0 to 5 years	11.9	14.0	11.6	25.0	13.2	12.7	12.9
6 to 10 years	26.9	28.1	27.7	25.0	30.2	25.4	27.4
11 to 15 years	22.4	24.6	23.2	25.0	28.3	19.7	23.4
16 to 20 years	25.4	19.3	22.3	25.0	15.1	28.2	22.6
> 20 years	13.4	14.0	15.2	-	13.2	14.1	13.7
Mode of plot acquisition:							
Concession from bairro (GD)	37.4	18.3	29.7	23.5	28.8	29.2	29.0
Spontaneous occupation	18.7	11.3	13.8	29.4	6.1	21.9	15.4
Lent-in or borrowed	13.2	11.3	12.4	11.8	10.6	13.5	12.3
Concession from DCU/exec council	8.8	14.1	11.7	5.9	27.3	-	11.1
Concession from producer assoc.	2.2	21.1	9.0	23.5	1.5	16.7	10.5
Purchased	12.1	4.2	9.0	5.9	10.6	7.3	8.6
Inherited	4.4	8.5	6.9	-	9.1	4.2	6.2
Concession from regulo[b]	2.2	4.2	3.4	-	-	5.2	3.1
Concession from green zones office	-	4.2	2.1	-	3.0	1.0	1.9
Rented-in	1.1	-	0.7	-	-	1.0	0.6
Concession from Ministry of Ag.	-	1.4	0.7	-	1.5	-	0.6
Concession obtained after having evicted tenant	-	1.4	0.7	-	1.5	-	0.6

a. Another question--years of experience farming in peri-urban irrigated green zones--produced a similar set of responses.

b. Regulo was the village chief installed by the colonial Portuguese government.

Mode of Acquisition

Land acquisition in the peri-urban green zones has historically involved two principal sources: spontaneous settlement and official allocation by the district and national government. As indicated in table 5.1, 29.0% of the currently held *machambas* were acquired through *bairro* authorities, 15.4% through spontaneous occupation, 11.1% from the DCU or executive council, 10.5% from producer associations, 3.1% from the village chief installed by the colonial Portuguese government (*régulo*), 1.9% from the green zones office, and 0.6% from the Ministry of Agriculture. A lower percentage of land holdings were acquired through non-administrative mechanisms--6.2% through inheritance, 8.6% through purchases, 12.3% through borrowing, 1.1% through eviction of a former tenant, and 0.6% renting-in. No households claimed to have rented-out land, which is not surprising given the risk that lessors face in having land expropriated either by the state or local authorities.

Concessions by the *bairro* administration and producer associations are the lowest level of administrative mechanisms for acquiring land, and for most intents and purposes, can be combined as the two institutions work closely together. However, producers do perceive a difference. The *bairro* authorities in district IV tended to allocate concessions to producers directly (37.4% vs 18.3%). In 1984/85, the producer associations in district VI sought the assistance of families in cleaning the irrigation canals; a concession was offered in exchange for labor, thus the higher allocation by producer associations in that district (21.1% vs 2.2%). Spontaneous settlement tends to be more common among non-registered households (21.9% vs 6.1%). As expected, registered households tend to rely more heavily on concessions from the DCU (27.3% vs 0%). Purchases and borrowings tend to be fairly evenly distributed among strata. However, of the 58 plots managed by female-headed households in the sample, none were inherited (vs 6.9% for male-headed households) suggesting de facto constraints on womens access to land under customary inheritance law in Mozambique.

The importance of the various processes used to acquire land has changed over time. Spontaneous occupation, which represented 34.8% of land acquisitions over the period 1950 to 1974 when land was abundant, had become one of the least important modes of acquisition by the period 1986 to 1992 (7.9%) (table 5.2). This collaborates the prevalent view that land in most areas of the peri-urban green zones had become fully settled or occupied by 1987. Administrative allocations by the *bairro* authorities were particularly important during the post-independence era (1975 to 1985), when local authorities had the official responsibility of settling vacated lands, but also since 1980, when they were confronted with the moral responsibility of aiding refugees through land allocations. Conversely, land allocation by the DCU or executive council has been increasing in importance over time, from 0% in the period 1950-1974, to 20.8% in 1981-1985, then declining in recent years. Granting of concessions by producer associations has also increased over time, from 0% before independence to the predominant source since 1986 (23.7%). Land purchases, common before independence, virtually ceased over the period 1975 to 1985 due to legal provisions banning sales. Purchases since 1986 have rebounded (18.4% of acquisitions over this period), despite periodic decrees notifying the public that private transfers are not permissible (see below). Borrowings have remained an important means of land acquisition over time,

Table 5.2:

Plot Mode of Acquisition by Year of Acquisition

	1950-1974	1975-1980	1981-1985	1986-1992
Total acquisitions	23	53	48	38
Mode of acquisition:				
Spontaneous occupation	34.8	17.0	10.4	7.9
Inherited	13.0	1.9	4.2	10.5
Concession from bairro (GD)	17.4	35.8	37.5	15.8
Concession from DCU/exec council	-	7.5	20.8	10.5
Purchased	17.4	5.7	-	18.4
Lent-in or borrowed	13.0	15.1	10.4	10.5
Rented-in	-	-	-	2.6
Concession from regulo	4.3	7.5	-	-
Concession from producer association	-	1.9	14.6	23.7
Concession from green zones office	-	5.7	-	-
Concession from Ministry of Ag.	-	-	2.1	-
Eviction of tenant	-	1.9	-	-

ranging from 10.4% to 15.1% of acquisitions, depending on the period. Rentals have become more important since 1986, but still represent less than 3% of acquisitions.[41]

The incidence of inheritance will increase with the aging of the current population. However, whether private market transactions--purchases, borrowing and rentals--will continue to increase, in the absence of legal reforms aimed at liberalizing land transfers, is far from clear. As indicated by one recent circular (July 8, 1992) issued by the Executive Council of the City of Maputo, published in the daily newspaper Noticias, the government has firmly emphasized its authority and control over land ownership and allocation:

> "1. The general public is advised that, according to constitutional principles, the state controls all land. It is also the state which is responsible for determining the conditions of land use and exploitation. This is made explicit in Law 6/79 of July 3. This is the Land Law (*Lei de Terras*), whose details were passed by Decree number 16/79 on July 15.

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41. From independence to present, land rental markets would have been suppressed by the same legal restrictions as affected sales. The recent growth in rental markets, as with purchases, illustrates the growing willingness of households to contravene or ignore these legal restrictions.

2. In particular, within the city of Maputo, the Executive Council is the authority responsible for granting concessions for the use and exploitation of land. This is stated in Article 29 of Law 6/79 on line c) of Article 9 of this regulation. This also conforms with article 16 and the articles following 16 of Law 7/78 of the 22nd of April.

3. The DCU is the body responsible for carrying out the above mentioned responsibilities, and therefore makes it known that it does not recognize the practice of selling properties (*terrenos*). Any such sale implies consequences for the property's legal registration status.

We alert the citizens so that they do not involve themselves in illegal acts of this nature." (Portuguese translation by the authors).

Alienated Land

Over the period 1967 to 1991, households in the sample reported having disposed of, or having lost, 34 plots of land (table 5.3). The *machambas* were widely dispersed among 12 different *bairros*, although a particularly large number (cumulatively 67.7%) appear to have been located in Costa do Sol, Laulane, Zona Verde, Albazine, and Khongolote. Most of the plots had been alienated since 1982: 26.5% over the period 1982-86, 23.5% between 1987-89, and 32.4% in the recent two-year period, 1990-91. Both registered households (17.5%, 10 plots alienated out of 57 currently held) and non-registered households (22.9%, 24/105) had similar rates of dispossession (Table 5.1 and 5.3).

Unlike *machambas* currently still held (which were primarily acquired through administrative transactions), most of the alienated plots were acquired through spontaneous occupation (32.4%), gift by family (17.6%), inheritance (14.7%), or purchase (11.8%). Most striking, however, is the mode of alienation. In 64.7% of the cases, the landholders were evicted; eviction rates were highest in district VI (75.0% vs 55.6%) and among female-headed households (80.0% vs 62.1%). Land was given to family in 20.6% of the cases, and 8.8% on average were abandoned most probably due to war-related violence. Family members (20.6%) obviously gained control of the land in the cases where it was given to family. However, in the remaining instances where land was alienated (primarily by eviction), private farmers gained land in 38.2% of the cases, government 20.6%, producer associations 5.9%, and other 14.6%. Evicted registered farmers tended to lose their land primarily to the Government (30.0%). Evicted non-registered land holders tended to lose land to private farmers (50.0%) through concessions issued by government. In only 11.8% of the cases of alienated land was any form of compensation received by the landholder, a percentage that is reasonably constant across strata. Female-headed households stand out in two regards; the majority (80%) lost their land through eviction; and none received compensation.

Data on authorizations in table 5.3 provide some indication of the agencies responsible for evictions. No authority was involved in 50% of cases of land being alienated; 26.5% were authorized by the *bairro* structure, 11.8% by the *Casas Agrárias*, and 2.9% each by producer associations, the DCU/executive council, district administration, and the housing parastatal, APIE. These data clearly indicate that refugees entering the city since 1982 resulted in many local authorities (*Casas Agrárias* and *bairro* structures) expropriating land for refugee settlement.

Table 5.3:

Plot Histories, Alienated Land

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of plots alienated	18	16	29	5	10	24	34
Bairro location of alienated land:							
Costa do Sol	27.8	-	13.8	20.0	10.0	16.7	14.7
Laulane	27.8	-	13.8	20.0	10.0	16.7	14.7
Zona Verde	-	31.3	17.2	-	40.0	4.2	14.7
Albazine	22.2	-	13.8	-	10.0	12.5	11.8
Khongolote	-	25.0	10.3	20.0	-	16.7	11.8
Vale do Infulene	-	18.8	6.9	20.0	10.0	8.3	8.8
Mahotas	11.1	-	6.9	-	10.0	4.2	5.9
T-3	-	12.5	6.9	-	-	8.3	5.9
Maxaquene A	5.6	-	3.4	-	-	4.2	2.9
Ndhavela	-	6.3	-	20.0	-	4.2	2.9
P. Lumumba	-	6.3	3.4	-	-	4.2	2.9
Catembe	5.6	-	3.4	-	10.0	-	2.9
Time period plot alienated:							
1967 to 1970	5.6	6.3	6.9	-	-	8.3	5.8
1977 to 1980	11.1	12.5	13.8	-	20.0	8.3	11.7
1982 to 1986	22.2	31.3	27.6	20.0	30.0	25.0	26.5
1987 to 1989	22.2	25.0	27.6	-	50.0	12.5	23.5
1990 to 1991	38.9	25.0	24.1	80.0	-	45.9	32.4
Mode of acquisition:							
Spontaneous occupation	27.8	37.5	37.9	-	30.0	33.3	32.4
Given by family	22.2	12.5	17.2	20.0	10.0	20.8	17.6
Inherited	11.1	18.8	13.8	20.0	20.0	12.5	14.7
Concession from bairro structure	16.7	6.3	6.9	40.0	10.0	12.5	11.8
Purchased	16.7	6.3	10.3	20.0	20.0	8.3	11.8
Concession from DCU	-	12.5	6.9	-	10.0	4.2	5.9
Lent by family	-	6.3	3.4	-	-	4.2	2.9
Concession by regulo	5.6	-	3.4	-	-	4.2	2.9
Mode of alienation:							
Evicted	55.6	75.0	62.1	80.0	60.0	66.7	64.7
Given to family	16.7	25.0	20.7	20.0	20.0	20.8	20.6
Abandoned	16.7	-	10.3	-	10.0	8.3	8.8
Sold	5.6	-	3.4	-	-	4.2	2.9
Plot was nationalized	5.6	-	3.4	-	10.0	-	2.9
Compensation paid (% no)	88.9	87.5	86.2	100.0	90.0	87.5	88.2

(continued)

Table 5.3:

Continued

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of plots alienated	18	16	29	5	10	24	34
Who gained control of plot:							
Private farmer	38.9	37.5	41.4	20.0	10.0	50.0	38.2
Family	11.1	31.3	20.7	20.0	20.0	20.8	20.6
Government	16.7	25.0	13.8	60.0	30.0	16.7	20.6
No one	16.7	-	10.3	-	20.0	4.2	8.8
Producer association	5.6	6.3	6.9	-	10.0	4.2	5.9
Church	5.6	-	3.4	-	10.0	-	2.9
Army	5.6	-	3.4	-	-	4.2	2.9
Transfer authorized by:							
No one	66.7	31.3	55.2	20.0	50.0	50.0	50.0
Bairro structure	22.2	31.3	24.1	40.0	40.0	20.8	26.5
Casa Agraria	5.6	18.8	13.8	-	-	16.7	11.8
DCU/Executive Council	-	6.3	-	20.0	-	4.2	2.9
APIE	-	6.3	3.4	-	10.0	-	2.9
Producer association	5.6	-	-	20.0	-	4.2	2.9
District administration	-	6.3	3.4	-	-	4.2	2.9

Land Claims Beyond the Peri-Urban Zone

Besides holdings of irrigated and rainfed land in the peri-urban area, 53 households or 43.8% of the sample believed that they still retained land rights to plots in areas beyond districts I-VIII of Maputo province. As indicated in table 5.4, the largest number (22.6%) of these *machambas* are located in Inhambane, followed by Chibuto (9.4%), Chokwe (9.4%), Manhica (9.4%), Manjacaze (7.5%), and then some 13 other districts or regions. In the majority of cases, war or security problems constituted the primary reasons for leaving the plot behind (43.4%), followed by the need to seek employment (30.2%), and to join one's family in Maputo (15.1%). War and security problems was a more serious problem for families in district VI (50.0%) than in district IV (36.0%). Members of female-headed households were more inclined to leave land behind to join family in Maputo (50.0%), or due to natural disasters (33.3%).

In the majority of cases, the land left behind was 5 ha or less (76.1%), although 7.2% reported leaving land behind in excess of 50 ha. These holdings outside the peri-urban area (and security zone) are either currently being guarded or farmed by close family (39.6%), distant family (1.9%), neighbor's (3.8%), or not used at all (49.1%). The very fact that respondents indicated no knowledge of land use in only 5.7% of the cases is rather surprising given the war situation. The majority of households (66.0%) one day expect to occupy

Table 5.4

Land Holdings Outside the Urban and Peri-Urban Areas of Maputo

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of households	25	28	48	6	24	29	53
District of plot or farm:							
Inhambane	20.0	25.0	22.9	33.3	20.8	24.1	22.6
Chibuto	12.0	7.1	10.4	-	12.5	6.9	9.4
Chokwe	16.0	3.6	10.4	-	16.7	3.4	9.4
Manhica	16.0	3.6	8.3	16.7	8.3	10.3	9.4
Manjacaze	12.0	3.6	8.3	-	8.3	6.9	7.5
Gaza	4.0	7.1	6.3	-	-	10.3	5.7
Chadenguele	4.0	7.1	2.1	33.3	4.2	6.9	5.7
Bilene	8.0	3.6	6.3	-	-	10.3	5.7
Homoine	-	7.1	2.1	16.7	-	6.9	3.8
Zavala	-	7.1	4.2	-	4.2	3.4	3.8
Maxixe	-	7.1	4.2	-	8.3	-	3.8
Moamba	-	3.6	2.1	-	4.2	-	1.9
Chongoene	-	3.6	2.1	-	-	3.4	1.9
Boane	-	3.6	2.1	-	4.2	-	1.9
Namaacha	-	3.6	2.1	-	4.2	-	1.9
Palmeira	-	3.6	2.1	-	4.2	-	1.9
Marracuene	4.0	-	2.1	-	-	3.4	1.9
Xai-xai	4.0	-	2.1	-	-	3.4	1.9
Motive for leaving plot:							
War/security	36.0	50.0	45.8	16.7	41.7	44.8	43.4
Seek employment	32.0	28.6	33.3	-	33.3	27.6	30.2
Join family in Maputo	20.0	10.7	12.5	50.0	12.5	17.2	15.1
Transferred by employer	8.0	3.6	6.3	-	8.3	3.4	5.7
Natural disaster (drought)	4.0	3.6	-	33.3	-	6.9	3.8
Lacked resources in countryside	-	3.6	2.1	-	4.2	-	1.9
Area of land left behind:							
0 to 1 ha	21.7	15.8	15.8	50.0	-	36.4	19.0
1 to 5 ha	60.9	52.6	57.9	50.0	55.0	59.1	57.1
5 to 10 ha	8.7	10.5	10.5	-	15.0	4.5	9.5
10 to 50 ha	4.3	10.5	7.9	-	15.0	-	7.1
50 to 100 ha	4.3	-	2.6	-	5.0	-	2.4
> 100 ha	-	10.5	5.3	-	10.0	-	4.8
Plot currently utilized by:							
Close family	44.0	35.7	37.5	50.0	41.7	37.9	39.6
Do not know	8.0	3.6	4.2	16.7	4.2	6.9	5.7
Neighbor	4.0	3.6	4.2	-	8.3	-	3.8
Distant family	-	3.6	2.1	-	4.2	-	1.9
Plot currently unused	44.0	53.6	52.1	33.3	41.7	55.2	49.1

Table 5.4:

(Continued)

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Hhlds member expects to return (% yes)?	64.0	67.9	70.8	33.3	70.8	62.1	66.0
Who would return?[a]							
Entire household	28.0	17.9	25.0	-	25.0	20.7	22.6
Only head of household	12.0	17.9	16.7	16.7	20.8	10.3	15.1
Only the parents	8.0	7.1	8.3	-	12.5	3.4	7.5
Alternate members	4.0	10.7	6.3	16.7	12.5	3.4	7.5
Only the children	8.0	3.6	6.3	-	-	10.3	5.7
Only spouse of household	4.0	3.6	4.2	-	-	6.9	3.8
Only head of hh and spouse	-	7.1	4.2	-	-	6.9	3.8
No one will return	36.0	32.1	29.2	66.7	29.2	37.9	34.0
Reasons for wanting to return:							
Agricultural production	81.3	63.2	70.6	100.0	68.8	73.7	71.4
Not accustomed to urban life	12.5	10.5	11.8	-	12.5	10.5	11.4
Recover house	-	15.8	8.8	-	12.5	5.3	8.6
Return to ancestral lands	6.3	10.5	8.8	-	6.3	10.5	8.6

a. Following the war or once security in the countryside improves.

or reoccupy the land; male-headed households are more inclined to return than female-headed households. However, in only 22.6% of the cases, on average, did respondents indicate that the entire household would return. In the remainder of cases (43.4%), one or more members of the family would return, while others would stay behind. Combined with the other 68 households who did not have land in rural areas, these data suggest that agricultural households have formed strong roots in the peri-urban area, and that prospects for returning to rural areas are not likely for most.

Land Market Processes

Land Buyers and Sellers

The survey design, including the OSU baseline survey and the LTC land markets survey, identified a number of households that reported buying and selling (mainly buying) agricultural land. Special follow-up interviews were arranged with willing participants, using case study methods, to inquire about land market processes, amounts transacted, land price determination, and land use. The case studies reveal a considerable array of land market arrangements and contracts, formal and informal.

Case Study 1

The buyer (respondent), a farmer, is a descendant of a Portuguese family that settled in 1949 in a neighboring *quinta*. He supervises the farm labor, and sells the produce to restaurants and the central market. His father is responsible for raising livestock (cattle, hens and pigs), while his mother supervises the farm workers, and the marketing of produce sold at the *machamba* level and to intermediaries. In 1991, his family earned a net income of more than 10 million mt, mainly from selling kale, lettuce and chickens. In addition to working with his parents he hires sixteen workers whom he pays 35 to 40 *contos*, and two *milicianos* and two guards, each of whom receives a salary of 50 *contos*.

In 1983, the buyer entered into an agreement to buy a plot (about 1 ha) from a Portuguese owner who had decided to return to Portugal. The buyer wanted the land to expand his own *quinta*, and to construct corrals for raising livestock. A formal contract was agreed upon, whereby the Portuguese owner would be paid 23,500,000 mt, half in *meticais*, the other half in escudos and payable in Portugal with a check. The secretary of the GD witnessed the transaction, including the filing and completion of all documents.

In 1989, the buyer ran into financial difficulties. Attempts to obtain credit through the green zones cabinet failed. He then learned about a military officer who was going to receive money from the BPD (*Banco Popular de Desenvolvimento*), and who was seeking land to buy. The respondent sold another of his plots to the military officer to raise cash for investing in his remaining plots. The value of the *quinta* was set at 45,000,000 mt, including the land, a cement block house, a truck, an electric pump, pig stalls, 60 pigs, 168 piglets, 16 goats, and mango trees. Due to the military officer's lack of agricultural experience, the contract also stipulated that the respondent would provide technical assistance for three months following the transaction. This arrangement has been terminated. According to the respondent, the military officer has not shown any interest in farming. He now wishes he had not sold the plot, but nonetheless needed to sell the land at the time to raise capital. The GD, the *Casa Agrária* and a district administrator all oversaw the transaction, the district administrator being the last person to confirm the cancellation of the previous owner.

Case Study 2

The buyer (respondent) refers to himself as a war refugee. He recently left his homeland, Manjacaze, due to the worsening security situation. He was settled (by district authorities) in a zone reserved specifically for war refugees, and decided to purchase the plot to profit from his living near the agricultural zone. In 1991, he learned that another man wanted to sell his *machamba* in order to return to his homeland. He contacted a neighbor, a miner and family member who works in the Republic of South Africa, to determine his interest in buying the *machamba* with him. The neighbor accepted.

The *machamba* was bought for 150,000 mt, including sugar cane plants, vegetables and wells. The former owner informed the chief of the *quarteirão* of the purchase price. The secretary of the GD witnessed the transaction and signed a declaration verifying the transferal to the new owners. The *machamba* is not registered because it is located in a zone that was never demarcated. The zone "belongs" to a producer association named "Tomas Sankara", in honor of

the late president of Burkina Faso. Initially, when the sale transaction became known, the association's president objected, but the conflict was later resolved when the buyer clearly explained the purpose of the transaction to the authorities. He and his partner currently hope to invest in the land, and to obtain secure land rights through title ownership.

Case Study 3

In August 1991, a relative of a priest who owned a *quinta* adjacent to the house of the seller (respondent), proposed buying four lots, each about 30x50 meters, then hiring the seller to work for the buyer. The buyer, a Portuguese man, wanted to reside in Maputo. The seller agreed to sell only one of the lots for 1,500,000 mt. He received half this amount, together with an IOU for the remainder once the buyer returns to the country. Why sell? According to the seller, he had already had one plot taken from him by the GD for the establishment of the Association of Small Animal Raisers (*Associaçao de pequenos criadores de animais*). He sold the land out of fear that people would steal his land, leaving him with neither land nor money. He is now considering selling his remaining lots as well. This would provide him a monthly salary, and prevent his being kicked off the land like a "stray dog". The contract with the Portuguese man was oral; no individuals were involved in witnessing the transaction, although the buyer has the intent of registering his occupancy with the GD, the district administration, and the DCU upon his return to the country.

Case Study 4

The buyer (respondent) is a major in the Mozambique army. In 1989, he received a loan for 15,000,000 mt from a fund designated for former veterans and distributed by the BPD. He bought a *quinta* (1 ha) in 1989 that had pig stalls, corrals for rabbits and birds, wells, an electric pump, a storehouse, and banana and papaya trees. The purchase was arranged with a formal contract. The seller lacked financial resources to operate the farm. He too is now facing a financial crisis. He has applied for another loan from the BPD to renovate the decaying infrastructure and to begin production, but the loan had not yet been granted at the time of the interview. His second concern is the inability to find a trustworthy and qualified person to manage his *quinta*. He must continue to work in the Army which requires a lot of travel. When he bought the *quinta*, he hired two technicians, but when he last left to go abroad on a service mission, both technicians damaged the installations and sold the animals. He is also concerned about not yet receiving definitive title to the property. He has been granted a permit of temporary occupation, but anxiously awaits the formal title from the DCU where documents are pending.

Case Study 5

Until 1983, the buyer (respondent) was a worker in a Mozambican firm. He currently is the owner of a photocopying business. His wife has long worked on the *machambas* that they own. They mainly produce vegetables and raise chickens and pigs. In 1982, when the food crisis was worsening throughout the country, he and his wife asked and received from the GD a plot of land in Albazine. Seven years later in 1989, the couple acquired their second plot (5000 m^2) after hearing of a man wanting to sell because of financial problems. The plot is located on the border between Albazine and the district of Marracuene, a violent zone where frequent armed attacks take place. The owner was thus

willing to lower the price, and agreed to accept 1,000,000 mt. Following the purchase, they began the process of acquiring title. All documents have been compiled and have been delivered to the DCU where they are pending. The plot is currently being worked. The couple hire four workers who receive wages of 12,500, 15,000, 18,000 and 20,000 mt per month, respectively. They cultivate mainly kale, lettuce and onions, bananas, oranges, mangoes, papayas and sugar cane. However, they are currently having difficulty selling the produce; they lack a truck to transport the goods to market, and market women are reluctant to visit the plot for fear of being caught in the violence.

Case Study 6

The buyer (respondent) heard about the possible sale of a *machamba* through a third person, and then contacted the seller. The seller was forced to sell the plot, because of a dispute he was having with neighbors. According to the buyer, the seller's son had become sick, due to a spell placed on him by a woman living nearby. The transaction took place in 1990. A price of 1,500,000 mt was negotiated for 5,000 m^2, including pig stalls, and banana and avocado trees.

Case Study 7

The buyer (respondent) used to be a driver for the Mozambique National Airline until 1984. He later became the owner of two warehouses in Hulene, where he sells construction materials. He acquired his first *machamba* in 1986, a big *quinta* formed of plots which had formerly belonged to four small producers. The owner of the biggest of the four plots contacted him one day to test his interest in buying the plot. The seller had tired of agriculture and wanted money to start a new business and to renovate his house. A price was negotiated for 2,500,000 mt, and an informal agreement signed. After beginning farming, he decided to enlarge the *quinta* to two ha. Over the next six months, he arranged to buy out the three remaining smallholders, one for 200,000 mt, the second for 800,000 mt, and the third for 400,000 mt. All told, the buyer paid 3,900,000 for the two ha of land.

A second *machamba* (1 ha) was purchased in 1987 for 3,000,000 mt, with no written formal contract.

His third *machamba* in Boane district was acquired without purchase. He presented an application to the GD requesting a *machamba*. He received their approval through a declaration addressed to the *Direcção Distrital de Agricultura da Namaacha*, asking them to support the buyer's application. Although a rainfed plot, it is considered very productive for manioc, maize and garlic.

His most recent plot, measuring 4 ha is located in Costa do Sol. He acquired it through the GD. The plot was located in a zone not previously settled. In order to acquire it, he first contacted the GD in person, and then formally submitted an application for the plot. The GD sent its consent to the administrator of the district, who granted final approval.

In the case of the latter two acquisitions, the buyer indicates that he did not spend any money to facilitate the above procedures. His only expense

were the stamps needed to register the signature of the documents (which were minimal at the time of the purchase). However, based on hearsay evidence, the DCU is now charging from 103,000 mt to 108,000 mt per title for these services. The buyer currently wants to open irrigation wells, build water tanks, breeding stalls for animals, and an electric pump for the plot in Boane. He has never had trouble getting money from the bank, as he has always been able to meet the bank's requirements.

Land Administration[42]

Following the departure of the Portuguese, large areas of land in districts IV through VIII were left idle. However, by 1979, problems arising as a result of spontaneous occupation began: drought and political violence uprooted the population in the countryside; miners with capital were forced to return from South Africa; the economy had fallen into a state of severe recession; and a general policy of "occupying the land", in part to meet the needs of a growing urban population, and partly to provide employment for the expanding pool of unemployed.

Initially the settlement involved families from inner Maputo, and former farm workers. Later with the insurgency in the 1980s, refugee families began settling directly in the peri-urban zone. Families felt obligated to accept incoming migrants, particularly family members. By 1987, the agricultural areas had become nearly completely occupied, densely settled, and heavily sub-divided. In 1985, the government officially stopped its occupation policy, and prices of vegetables were liberalized, effectively resulting in a sharp increase in real vegetable prices. Since 1986, according to certain district administrators, land renting has become more common, but nearly always to family members or "close" friends to avoid having the plot "claimed" by the renter. These transfers are undertaken between families with little or no involvement on the part of district authorities.

Bairro officials are still intimately involved in land purchases, despite the apparent legal restrictions against such transfers. There are a number of ways that a land purchase may be arranged as indicated by the above case studies:

1. Someone, perhaps a miner returning from South Africa, approaches the local (*bairro*) authorities, and inquires about the availability of idle land, and idle land is available (this process would have been more common prior to 1987). If the applicant has no money, he or she is likely told that no land is available. If the applicant has money, the local authorities will negotiate "a fee"[43], the land is allocated, money is transacted, maps are drawn, testimonials are written, and the district authorities send the necessary documents to the DCU. No information could be obtained on the amount of fees negotiated, mainly because these types of transactions have become rare with the tightening supply of land in the peri-urban zone.

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42. Based on discussions held with officials in the DCU and *Casas Agrárias*.

43. Effectively a price, although a price is legally not possible, since land is administratively reallocated by the state free of charge.

2. Someone with money, perhaps a miner returning from South Africa, approaches the local (*bairro*) authorities inquiring about land. Local authorities have a good knowledge of unutilized land that is available (now rare), of households with land beyond their current needs, or of individuals wishing to sell land. These individuals are the potential sellers. As intermediaries, the district authorities contact a seller, bring the buyer and seller together, a price is negotiated, and money exchanges hands. Legally, the land cannot be sold, but investments in land can be transacted. The district authorities thus appear to be reallocating land on the basis of improvements being traded, and sign documents stating so accordingly. The current holder must then submit the documents to the DCU, along with a statement indicating that the seller or seller's family does not need the land. The purchase thus takes the form of an administrative transaction. Presumably, both district and DCU authorities receive "gratuities" to facilitate the transfer, but no information could be obtained on amounts.

3. Finally, someone interested in buying a plot locates a seller, negotiates a price for the land and for fixed improvements. The district authorities are then contacted, and the plot is officially transferred through the process in '2' above.

In principle, land sales are not legal, although a seller and buyer are able to legally buy and sell investments on the land including buildings, corrals, animals and so forth. The prices being transacted, however, far exceed the value of investments, and thus can only be considered as including an economic value for the land as well. The district authorities and the DCU, now recognizing that land has value, are seeking to capture a portion of these economic rents. The district authorities presumably capture part of the land price through "gratuities" at the time of the transaction. The DCU captures its "rents" through surveying fees (for services which may or may not be actually done) or through title fees,[44] which appear to vary widely from case to case.

Land Prices

Those respondents reporting buying plots were asked for information on price paid. However, three problems resulted in widely varying price estimates: only 15 households reported ever having purchased land; prices were paid over the period 1950 to 1992, and unreliable price data in Mozambique exacerbate attempts to standardize prices for a uniform point in time; and the price includes not only land but also infrastructure on the land which can vary widely from purchase to purchase.

Nevertheless, the data in the preceding section and the data in table 5.5, provide two important insights into the land market of peri-urban Maputo. First, the nominal (and probably the real) land price has been rapidly rising over time. Second, the rising price of land has sharply increased the value of

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44. These fees sometimes are levied on a per hectare basis, and at other times per title. In one case study, the respondent's nephew was charged 4,500,000 mt for registering 8.5 ha. Two other persons whom he personally knew, were charged 300,000 and 600,000 mt for two lots that were of the same size (1,500 m^2).

Table 5.5

Land Prices, Peri-Urban Land Market Survey

(meticais/ha)

	1950-1974		1975-1980		1986-1992	
Land Purchase	Not Titled	Titled	Not Titled	Titled	Not Titled	Titled
1.	50					
2.	521					
3.			833			
4.	2,215					
5.			2,778			
6.				21,000		
7.		46,667				
8.			50,000			
9.					350,000	
10.						473,333
11.						652,173
12.						1,100,000
13.						2,500,000
14.						4,761,905
15.						5,000,000

wealth of most smallholders holding irrigated land, but is also creating a formidable barrier to potential entrants to farming. Using the 1991 exchange rate of *meticais* to the U.S. dollar (2,200 mt = $1.00), and prices of 5,000,000 to 32,000,000 mt per ha of irrigated land, the value could fall in the range of $2,273/ha to $14,545/ha.[45] Smallholders (in personal interviews) in 1991 were quoting prices of around $2,500 per plot being paid in actual transactions of irrigated land, an amount equivalent to roughly $6,250/ha (based on mean of .4 ha/plot in table 4.2). These prices are very high, especially when considering that the average annual income of non-registered households is around $732, and $336 for female-headed households.

Management Rights and Land Rights

The earlier analysis of household decision-making asked the head of household and principal spouse about their involvement in decisions concerning

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45. One respondent reported that a group of Koreans in 1989 offered him 10 million mt for his 60x30 m plot. A women holding an adjacent plot did sell in 1990--16,000,000 mt/ha for 0.5 ha. Both plots are considered prime irrigated land because of their superior water access, and because they are located next to a gravel road. The road substantially adds value as it permits hauling of vegetables by truck.

investment, labor allocation, marketing, and spending decisions (table 4.5). Questions concerning land rights in table 5.6 were asked to the person or persons primarily responsible for managing the *machamba*. The 121 households in the study contained 124 *machamba* managers. Rarely did there appear to be any form of ambiguity over who controlled the *machambas*. With regard to the overall sample, 64.5% of managers were the household head (mainly a male adult), and 33.1% the principal spouse (normally a female adult). In the case of female-headed households, all (100%) management decisions are made by the household head. Principal and secondary spouses are more directly involved in *machamba* management decisions in non-registered households (45.1%) compared with households in the registered group (20.8%).

Each manager of a *machamba*(s) was asked whether he or she possessed each of five specific land use rights and three land transfer rights. Land use rights included (a) the right to grow vegetable crops, (b) the right to plant fruit trees, (c) the right to build a storehouse, (d) the right to build a cement wall, and (e) the right to build a house. Transfer rights included (f) the right to bequeath the *machamba* to an heir; (g) the right to rent-out the plot; and (h) the right to sell the plot. Respondents were also asked if they felt they had the right to refuse to vacate land if so dictated by the government. The responses, tabulated in table 5.6, indicate a number of important points.

First, the *machamba* managers with few exceptions universally feel that they have the right to plant vegetables and plant fruit trees, i.e. activities that involve putting the land to productive use in agriculture.

Second, the percentage of households feeling that they have the right to invest in long-term permanent infrastructure (building a storehouse, a cement wall or a house) is low relative to cultivation rights. On average, only between 68.9% and 79.5% of households depending on the investment felt that they had these rights. The percentages were highest for registered households (83.1% to 93.8%, respectively) and lowest for female-headed households (58.8% to 76.5%, respectively). These data might suggest either or both of two conclusions: respondents are concerned that irrigated land is neither suited for such investments nor a good use of cultivable land; or local authorities, feeling that permanent investments increase the security of people's claims to land, are reluctant to let people establish permanent structures.

Third, considerable ambiguity exists in people's minds regarding rights of transfer. The majority of households regardless of strata perceive the right to bequeath land to heirs (83.2% for the overall sample). Yet, fewer households feel they have the right to rent-out (45.3%) or sell a plot (43.5%), at least partially reflecting legal restrictions on private transfers. While registration seems to increase people's perceptions of the right to invest in permanent structures, it does not seem to alter perceptions of the right to transfer land. Only 55.4% of households in the registered strata felt that they have the right to rent-out or sell a *machamba*. Although the legal framework does not explicitly give men greater transfer rights than women, the de facto perception, based on custom, is that male-headed households (47.2%, 45.1%) have greater rights of rental and sale than female-headed households (29.4%, 29.4%), respectively.

Table 5.6:

Family Relationship of Machamba Managers and Land Rights Perceptions

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of machamba managers	68	56	71	53	52	72	124
Number of plots	90	71	144	17	65	96	161
Relationship of machamba manager to household head:							
Household head	70.1	57.9	60.7	100.0	79.2	53.5	64.5
Principal spouse	28.4	38.6	36.6	-	18.9	43.7	33.1
Second spouse	-	3.5	1.8	-	1.9	1.4	1.6
Cousin	1.5	-	0.9	-	-	1.4	0.8
Machamba manager perceives[a] right to (% yes):							
Plant vegetables	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Plant fruit trees	96.7	97.2	96.5	100.0	98.5	95.8	96.9
Build a storehouse	82.2	76.1	79.9	76.5	92.3	70.8	79.5
Build cement wall	72.2	67.6	70.8	64.7	93.8	54.2	70.2
Build house	68.9	69.0	70.1	58.8	83.1	59.4	68.9
Bequeath to family	82.2	84.5	83.3	82.4	83.1	83.3	83.2
Rent-out plot	52.2	36.6	47.2	29.4	55.4	38.5	45.3
Sell plot	58.9	23.9	45.1	29.4	55.4	35.4	43.5
Refuse to vacate if required by government	28.9	45.1	34.7	47.1	49.2	27.1	36.0
Permission from authorities needed to exert rights (% yes)							
Plant vegetables	-	-	-	-	-	-	-
Plant fruit trees	1.1	1.4	1.4	-	1.5	1.0	1.2
Bequeath plot	9.9	8.5	10.3	-	10.6	8.3	9.3
Rent-out plot	12.1	9.9	11.7	5.9	13.6	9.4	11.1
Build storehouse	14.3	15.5	14.5	17.6	13.6	15.6	14.8
Sell plot	15.4	18.3	17.9	5.9	28.8	8.3	16.7
Build wall	18.7	16.9	17.2	23.5	12.1	21.9	17.9
Build house	19.8	16.9	19.3	11.8	18.2	18.8	18.5

a. Alternate responses were 'no' or 'I don't know'.

Table 5.6:

Continued

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of machamba managers	68	56	71	53	52	72	124
Number of plots	90	71	144	17	65	96	161
Whose permission is needed to plant trees:							
Producer Association	100.0	-	50.0	-	100.0	-	50.0
Other	-	100.0	50.0	-	-	100.0	50.0
Whose permission is needed to build a wall:							
Producer Association	52.9	63.6	50.0	100.0	25.0	70.0	57.1
DCU/Executive council	29.4	18.2	29.2	-	62.5	10.0	25.0
Casa Agraria	5.9	-	4.2	-	-	5.0	3.6
Grupo Dinamizador	11.8	9.1	12.5	-	12.5	10.0	10.7
Other	-	9.1	4.2	-	-	5.0	3.6
Whose permission is needed to build a house:							
Producer Association	44.4	50.0	42.9	100.0	8.3	72.2	46.7
DCU/Executive council	33.9	41.7	42.9	-	83.3	11.1	40.0
Casa Agraria	5.6	-	3.6	-	-	5.6	3.3
Grupo Dinamizador	11.1	-	7.1	-	8.3	5.6	6.7
Other	-	8.3	3.6	-	-	5.6	3.3
Whose permission is needed to rent-out a plot:							
Producer Association	45.5	57.1	47.1	100.0	-	100.0	50.0
DCU/Executive council	54.5	28.6	47.1	-	88.9	-	44.4
Casa Agraria	-	14.3	5.9	-	11.1	-	5.6
Whose permission is needed to sell a plot:							
Producer Association	35.7	30.8	30.8	100.0	5.3	100.0	33.3
DCU/Executive council	50.0	61.5	57.7	-	78.9	-	55.6
Casa Agraria	7.1	7.7	7.7	-	10.5	-	7.4
Grupo Dinamizador	7.1	-	3.8	-	5.3	-	3.7

Finally, in the event that people are told to vacate the property by government, do they feel they have the right to refuse?[46] The majority (64.0%) feel they do not have the right. The porception of right of refusal was lowest in district IV (28.9%) where the control of local authorities is stronger, and among non-registered landholders (27.1%). Conversely, perceptions of right of refusal were highest in VI (45.1%) and among registered landholders (49.2%).

For those *machamba* managers affirming the possession of a land right, they were asked in addition if permission from authorities is needed to exert that right, and by whom. Growing vegetables or fruit trees can generally be done freely without the involvement of authorities. However, on matters pertaining to permanent constructions (building a wall, house or storehouse), permission is normally needed, or believed to be needed, in 14.8% to 18.5% of cases, and transfers, 11.1 to 16.7% of cases. Very little difference is observed between districts, male- and female-headed groups, or tenure status. The authorities involved (depending on the case) include, inter alia, the producer associations, the DCU, executive council, *Casa Agrária*, and GD. Registered households normally seek approval from the DCU or executive council, while non-registered households normally seek the permission of producer associations.

Land Access

Despite considerable market reforms (not land reforms) since the mid-1980s, the vast majority of households would still first turn to administrative mechanisms to acquire additional land (table 5.7). On average, 38.0% of households would like to acquire more land, a figure that is nearly equal across districts and gender categories, but is higher for registered households (47.1% vs 31.4%). A high percentage of all households would turn to the GD (34.8% on average) for a land allocation, especially in district VI (47.4% vs 25.9%). Purchasing would be more common in district IV (25.9% vs 5.3%), and among male-headed households (18.0% vs 0.0%), while tenure status appears to have no measurable impact. Female-headed households compared with male-headed households tend to rely more heavily on the producer associations (50.0% vs 2.3%) and *Casas Agrárias* (25.0% vs 16.3%) for a land allocation. Surprisingly 10.9% (overall average) would attempt to rent-in land in the future, despite legal restrictions.

Land Disputes and Conflicts

In general most land holders are very worried about losing their land. As indicated in table 5.8, 70.3% of households feel either very worried or a little worried about losing land. The majority (57.0%) also felt that disputes had become more serious or much more serious in recent years, although this perception was stronger in district IV (67.1%) than district VI (44.4%). The recent intrusion of housing northward along the coast is one principal source of disputes in district IV.

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46. The responses to this question might also be interpreted as whether land holders feel they have the power to refuse.

Table 5.7:

Land Access

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Percent hh interested in acquiring more land (%)	40.3	35.2	39.4	30.8	47.1	31.4	38.0
Most likely source for acquiring new land (%):							
Wait for new distribution	-	5.3	2.3	-	-	4.5	2.2
Borrow from own family	-	5.3	2.3	-	-	4.5	2.2
Rent	11.1	10.5	11.6	-	8.3	13.6	10.9
Purchase	25.9	5.3	18.6	-	16.7	18.2	17.4
Casa Agraria	14.8	15.8	16.3	25.0	20.8	9.1	15.2
Producer association	11.1	-	2.3	50.0	4.2	9.1	6.5
Grupo Dinamizador	25.9	47.4	34.9	25.0	29.2	40.9	34.8
DCU	7.4	5.3	7.0	-	12.5	-	6.5
District Administrator	3.7	5.3	4.7	-	8.3	-	4.3

The source of disputes also depends on the region. In district IV, the major sources of disputes in declining order of importance are: individuals from outside the *bairro* coming with concession papers issued by the DCU (55.2%) and neighbors (14.9%); only 11.9% indicated disputes were not a problem. In district VI, the major sources are individuals from outside the *bairro* (35.2%), neighbors (13.0%), *bairro* officials (13.0%), and ex-landowners (9.3%), while 22.2% indicated that disputes were not a problem. A large percentage of households have first-hand knowledge of "outsiders" claiming land with official documents (41.3%), or producers being evicted for land underutilization (24.8%).

Land holders widely feel that there is considerable risk if land is rented-out. Based on the overall sample, 33.1% feel that renting land out is very risky, while an additional 19.8% feel that some risk is involved. However, registering land seems to reduce the incidence of risk; over 70% of households across strata (slightly lower for female-headed households) feel that it would be impossible to lose the plot from renting it out, if the plot were registered.

Of the 121 households in the survey, 25 disputes were reported sometime over the period 1973 to 1991 (multiple disputes per household possible) (table 5.9). Over 44.0% of the conflicts have arisen since 1989, and 64.0% since 1986. The conflicts were reportedly caused by a variety of factors including in declining order of importance: conflicting title claims (multiple titles issued for the same plot, or overlapping registrations) (30.4%), private farmer trying to expand holdings onto the owners land (26.1%), a project expanded onto

Table 5.8:

Perceptions of Land Disputes[a]

		District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Degree landholder is worried about losing land:								
Very worried		49.3	68.5	59.6	38.5	49.0	64.3	57.9
A little worried		14.9	9.3	11.9	15.4	17.6	8.6	12.4
Not at all worried		34.3	20.4	26.6	46.2	31.4	25.7	28.1
No opinion		1.5	1.9	1.8	-	2.0	1.4	1.7
Frequency of land disputes in last 3 years (% hh):								
Much more serious than before		50.7	29.6	40.4	46.2	37.3	44.3	41.3
More serious		16.4	14.8	16.5	7.7	15.7	15.7	15.7
Less serious		26.9	40.7	32.1	46.2	39.2	28.6	33.1
Land disputes never a problem		4.5	11.1	8.3	-	7.8	7.1	7.4
No opinion		1.5	3.7	2.8	-	-	4.3	2.5
Principal source of land dispute:								
Neighbors		14.9	13.0	11.9	38.5	9.8	17.1	14.0
Bairro officials		4.5	13.0	7.3	15.4	3.9	11.4	8.3
Individuals from outside bairro		55.2	35.2	47.7	30.8	51.0	42.9	46.3
Ex-landowners		-	9.3	4.6	-	5.9	2.9	4.1
Land disputes not a problem		11.9	22.2	16.5	15.4	15.7	17.1	16.5
Private producers		1.5	1.9	1.8	-	-	2.9	1.7
Members of government		3.0	-	1.8	-	2.0	1.4	1.7
DCU		3.0	-	1.8	-	3.9	-	1.7
Producer association		4.5	-	2.8	-	2.0	2.9	2.5
No opinion		1.5	5.6	3.7	-	5.9	1.4	3.3
Respondent has first hand knowledge of (% yes):								
Outsiders claiming land w/ official documents		38.8	44.4	40.4	46.2	35.3	45.7	41.3
Producers evicted for land underutilization		19.4	31.5	25.7	23.1	31.4	20.0	24.8
Risking of losing land (% yes):								
If rented out and unregistered	Lot of risk	32.8	33.3	31.2	46.2	31.4	34.3	33.1
	Some risk	20.9	18.5	20.2	15.4	23.5	17.1	19.8
	No risk	25.4	24.1	25.7	15.4	23.5	25.7	24.8
	No opinion	20.9	24.1	22.9	23.1	21.6	22.9	22.3
If rented out and registered	Impossible	70.1	85.2	78.9	61.5	78.4	75.7	76.9
	Possible	17.9	7.4	13.8	7.7	13.7	12.9	13.2
	Very possible	6.0	5.6	3.7	23.1	7.8	4.3	5.8
	No opinion	6.0	1.9	3.7	7.7	-	7.1	4.1

Table 5.9:

Land Conflicts[a]

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Number of disputes	14	11	22	3	10	15	25
Period conflict began:							
1973 to 1979	7.1	18.2	13.6	-	20.0	6.7	12.0
1980 to 1985	21.4	27.3	27.3	-	30.0	20.0	24.0
1986 to 1988	7.1	36.4	18.2	33.3	20.0	20.0	20.0
1989 to 1991	64.3	18.2	40.9	66.7	30.0	53.3	44.0
Source of conflict:							
Conflicting title claims	23.1	40.0	30.0	33.3	60.0	7.7	30.4
Nationalization during transition to FRELIMO	-	10.0	5.0	-	-	7.7	4.3
Private farmer expanded onto land	15.4	40.0	25.0	33.3	-	46.2	26.1
Ex-landholder claimed land	7.7	10.0	10.0	-	-	15.4	8.7
Project expanded onto land	30.8	-	15.0	33.3	20.0	15.4	17.4
Border dispute with neighbor	23.1	-	15.0	-	20.0	7.7	13.0
Conflict with whom:							
Private farmer	28.6	63.6	40.9	66.7	30.0	53.3	44.0
Agricultural cooperative	7.1	-	4.5	-	10.0	-	4.0
Bairro structure	7.1	18.2	13.6	-	-	20.0	12.0
Family member	-	9.1	4.5	-	10.0	-	4.0
Small family sector	14.3	9.1	13.6	-	20.0	6.7	12.0
CETA (construction company)	7.1	-	4.5	-	-	6.7	4.0
Church	7.1	-	4.5	-	10.0	-	4.0
Producer association	14.3	-	4.5	33.3	10.0	6.7	8.0
Member of government	14.3	-	9.1	-	10.0	6.7	8.0

a. Based on 25 actual conflicts in the survey.

the owner's land (17.4%), border dispute with neighbors (13.0%), and ex-landholders claiming land (8.7%).

The parties involved in creating disputes varied among categories. Private farmers encroaching onto land or reclaiming land were purportedly the major culprits causing land disputes in district VI (63.6%); in district IV, however, private farmers were the cause of only 28.6% of disputes, followed in descending order of importance by other small farmers (14.3%), producer associations (14.3%), members of government (14.3%), and 7.1% each for various local authorities (agricultural cooperatives, *bairro* structure, a construction company, and a church). In the case of registered households, private farmers (30.0%) were less important, and local level institutions--small farmers

(20.0%) and various local authorities (cooperatives, churches, producer associations, and government officials) (10.0% each)--were more important contributors to disputes. Not surprisingly, disputes reported by non-registered farmers tended to be caused by more influential groups--private farmers (53.3%) and local *bairro* authorities (20.0%).

Land Registration

Previous data suggest positive benefits to land registration in terms of improved incentives for making permanent improvements in the land, and in terms of enhanced tenure security. Respondents in the survey were asked to rank the importance of land registration in improving the likelihood of four theoretical benefits of land title: increased tenure security, increased willingness of landholders to rent-out land, increased willingness of landholders to sell land, increased credit access through increasing the land's collateral value, and increased incentives to invest in the land resource. The categorical ranking for likelihood included as possible answers: much more likely, more likely, indifferent, less likely, and much less likely. The responses are tabulated in table 5.10.

In general, possession of registration is perceived to increase tenure security (74.6% much more, 14.9% more), incentives to invest in the land resource (72.7% much more, 18.2% more), and access to credit (62.8% much more, 21.5% more). However, these data disguise two underlying trends. First, households in district IV perceive higher benefits across the board than households in district VI, partly reflecting the poorer organization of government services in district VI. Second, female-headed households perceive fewer benefits to registration than men, particularly for credit benefits. Compared with female-headed households, registration to male-headed households is much more likely to increase security (77.1% vs 53.8%), invest in land (75.2% vs 53.8%), receive credit (67.0% vs 30.8%), rent-out land (33.9% vs 7.7%), and sell land (32.1% vs 7.7%). Part of the lower response for women can be attributed to their disadvantaged access to information about land registration, and to their disadvantaged access to institutional forms of credit.

As expected, legal restrictions in the law acted to suppress farmers willingness to rent-out or sell land compared with perceived benefits of tenure security, investment and credit enhancement. Only 31.4% (29.8%) of households on average were much more willing to rent-out land (sell land), compared with increasing tenure security (74.4%). A surprisingly large number of households on average (24.0% and 31.4%) were much less likely to rent-out or sell land, respectively. Both sets of data suggest that land registration, by increasing exposure to government scrutiny, increases the risk of engaging in illicit sales or rental activity. It further complicates the benefit-cost equation; households seeking greater security of land rights for investment and credit enhancement must weigh the benefits against increased costs of compliance with the law, or risk of land loss (via state expropriation) from engaging in private transfers.

If households, at least male-headed households, perceive important benefits to land registration, why do households not register land? The data presented in table 5.11 show the following reasons in declining order of

Table 5.10:

Perceptions of Registration Benefits[a]

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Increase security of using land:							
Much more likely	85.1	61.1	77.1	53.8	78.4	71.4	74.4
More likely	6.0	25.9	14.7	15.4	17.6	12.9	14.9
Indifferent	9.0	13.0	8.3	30.8	3.9	15.7	10.7
Willingness to invest in land:							
Much more likely	83.6	59.3	75.2	53.8	78.4	68.6	72.7
More likely	7.5	31.5	17.4	23.1	15.7	20.0	18.2
Indifferent	9.0	9.3	7.3	23.1	5.9	11.4	9.1
Ability to receive credit:							
Much more likely	73.1	50.0	67.0	30.8	70.6	57.1	62.8
More likely	13.4	31.5	18.3	46.2	11.8	28.6	21.5
Indifferent	11.9	18.5	13.8	23.1	17.6	12.9	14.9
Less likely	1.5	-	.9	-	-	1.4	.8
Willingness to rent-out land:							
Much more likely	35.8	25.9	33.9	7.7	49.0	18.6	31.4
More likely	16.4	22.2	17.4	30.8	15.7	21.4	19.0
Indifferent	20.9	24.1	19.3	53.8	11.8	30.0	22.3
Less likely	1.5	5.6	3.7	-	7.8	-	3.3
Much less likely	25.4	22.2	25.7	7.7	15.7	30.0	24.0
Willingness to sell land:							
Much more likely	37.3	20.4	32.1	7.7	45.1	18.6	29.8
More likely	10.4	13.0	10.1	23.1	9.8	12.9	11.6
Indifferent	19.4	27.8	20.2	46.2	17.6	27.1	23.1
Less likely	3.0	5.6	4.6	-	3.9	4.3	4.1
Much less likely	29.9	33.3	33.0	23.1	23.5	37.1	31.4

a. Percent households in strata responding much more, more, indifferent, less and much less.

importance: unaware of registration process (28.4%), belief that the producer association will take care of it (23.5%), the landholder does not understand registration procedures (13.6%), and plot has not yet been demarcated by the DCU (12.3%). Surprisingly, cost or having to wait too long for the DCU to issue documents was the major reason stated by only 7.4% of households. Only 3.7% of households expressed no interest whatsoever in having their land registered, suggesting a strong latent demand for registration benefits. However, important differences are evident among strata. In district IV,

Table 5.11:

Registration Procedures and Constraints[a]

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Reasons for not registering land:							
Unaware of registration	10.6	52.9	30.0	16.7	6.3	33.8	28.4
Producer Association taking care of it	27.7	17.6	21.4	33.3	18.8	24.6	23.5
Does not understand registration	14.9	11.8	12.9	25.0	6.3	15.4	13.6
Plot in area not yet demarcated by DCU	14.9	8.8	12.9	8.3	25.0	9.2	12.3
Process too long and expensive	12.8	-	8.6	-	12.5	6.2	7.4
Not interested	8.5	-	4.3	8.3	18.8	1.5	4.9
Told by DCU could not receive individual title	4.3	2.9	4.3	-	-	4.6	3.7
Producer farming only temporarily	-	5.9	2.9	-	12.5	-	2.5
Other	4.3	-	2.9	-	-	3.1	2.5
Afraid ex-landholders will return and evict them	2.1	-	-	8.3	-	1.5	1.2
Steps completed in registration process (% completed):							
Statement of bank account	25.3	23.9	26.9	5.9	57.6	2.1	24.7
Employer salary statement	14.3	5.6	11.7	-	22.7	2.1	10.5
Plot map provided	44.0	36.6	44.1	11.8	69.7	20.8	40.7
Written authorization from Casa Agraria	41.8	45.1	44.8	29.4	71.2	24.0	43.2
Written authorization from Grupo Dinamizador	57.1	52.1	57.9	29.4	89.4	31.3	54.9
Written authorization from the DCU/Executive council	37.4	36.6	40.0	11.8	87.9	2.1	37.0
Precarious title granted	1.1	8.5	4.8	-	10.6[a]	-	4.3
Provisional title granted	15.4	25.4	20.7	11.8	47.0[a]	1.0	19.8
Definitive title granted	19.8	4.2	14.5	-	31.8[a]	-	13.0
Registered in property registry	2.2	4.2	3.4	-	7.6	-	3.1

a. Figures do not sum to 100% due to some applications still in process and title status not yet having been defined by the DCU.

households tended to say that the producer associations should take care of it (27.7% vs 17.6%), while households in district VI were generally unaware of registration (52.9% vs 10.6%). Registered households (referring to lack of registration by unregistered households), tended to place higher weight on land not being demarcated (25.0% vs 9.2%), small farmers not interested (18.8% vs 1.5%), and process too long and expensive (12.5% vs 6.2%), while smallholders actually felt more constrained by lack of knowledge (33.8% vs 6.3%), inability

to understand procedures (15.4% vs 6.3%), and a general perception that the producer association should take care of it (24.6% vs 18.8%).

Clearly certain producers lack a general awareness of the registration process, or do not understand registration procedures, but this situation may arise from either clearly delineated procedures that are not well advertised, ambiguous rules, or arbitrary implementation. It was alluded to in Chapter 2, that respondents often did not know, or were mistaken in their knowledge, whether title was actually held. Respondents were asked which steps they had completed in the registration process to determine the uniformity and scope of implementation, the results of which are presented in table 5.11. Compared with non-registered households, only 57.6% (vs 2.1%) of the registered group submitted a statement of bank account, an employer bank salary statement (22.7% vs 2.1%)[47], provided a plot map (69.7% vs 20.8%), submitted written authorization from the *Casa Agrária* (71.2% vs 24.0%), submitted written authorization from the GD (89.4% vs 31.3%), and submitted written authorization from the DCU (87.9% vs 2.1%). The majority of registered households were issued provisional leases (47.0%), followed by definitive leases (31.8%), precarious leases (10.6%), and unsure (10.6%). Finally, only 7.6% of all registrations made their way entirely through the process to registration in the property registry (only after which can a title certificate be issued). In summary, many registered households did not complete all the necessary steps, and many non-registered households started the process then stopped either for reasons of imperfect knowledge, time, costs, or perceptions that all the necessary steps had been completed.[48]

Smallholders are caught in a trap. Titles cannot be granted because the land in most areas has not been demarcated. Surveying fees for extra-legal demarcations greatly exceed the means of most smallholders. DINAGECA has been stepping in to assist the green zones office. While it has jurisdictional authority only over land registration in districts III to VIII, the green zones office (which lacks surveying capacity) has at least in one instance paid DINAGECA topographers to undertake a new 2-stage demarcation process of the green zone areas in district IV and the Infulene Valley.[49] The DCU which is

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47. No doubt, the fact that registered households had the lowest formal sector employment of any category (table 4.9), severely restricted household's ability to comply with this provision.

48. In fact, a number of households having made only the initial visit and providing a plot map felt they held title to the property.

49. The first step is a new overall demarcation of permanent green zone areas, with the immediate goal of impeding residential encroachment. This stage was, at the time of the study, completed in the Infulene valley but had stalled due to lack of resources in district IV. The fee for the first stage was around 5,000,000 mt. Stage 2, projected for the future, is to be a detailed demarcation of individual plots, both to demarcate the areas currently non-demarcated, and to adjust the colonial demarcations to correspond with present-day land occupations. No fee had yet been agreed upon for the stage-two surveys, and the green zones cabinete was still attempting to raise funds within the government and donor community (personal communications with the director of the GZV and topographers at DINAGECA).

responsible for registration in the peri-urban area has an urban focus, and understandably is less concerned with enhancing land rights on irrigated lands. Such requirements as submitting a bank account, employer salary statement, or a development plan are perhaps applicable to the commercial nature of capitalized private farms, but are ill-suited to land holdings in the family sector. The DCU, with its urban interests, tight staffing and limited budgets has every incentive to allocate its scarce resources to the registration of urban properties. Smallholders, in addition to lacking the knowledge, resources or influence to acquire title, must also suffer the consequences of higher tenure insecurity stemming from "outsiders" claiming unregistered land who do possess the means.

Credit Access

Increasing lenders' security through collateral enhancement, and increasing the derived demand for credit by potential investors are important theoretical benefits of enhanced property rights. These benefits also depend on unrestricted transferability of land that permit formal lenders to foreclose and liquidate property. Respondents in the survey were asked the number, amount, terms and conditions of all loans received by the household in the past 5 years to assess credit use. Of the 121 households in the sample, 25.5% of registered households and 17.1% of unregistered households made use of credit facilities (table 5.12). Despite similar frequencies among strata, registered households on average borrowed 9,511,100 mt/loan versus 139,200 mt/loan for unregistered households. Registered households tended to borrow from family and formal sources--*Banco Popular de Desenvolvimento* (46.7%), family (26.7%), *Banco de Mozambique* (6.7%), and the *Caixa Central de Cooperação Economica* (6.7%). Non-registered farms tended to rely more heavily on family (23.1%), employer (30.8%), and friends (38.5%).

Credit uses also varied between the two tenure groups. Registered households, relative to unregistered households, tended to use credit for financing non-farm business (26.7% vs 15.4%), building or repairing a house (13.3% vs 7.7%), and purchasing a truck (13.3% vs 0%) or windmill (13.3% vs 0%). Conversely, non-registered households tended to give greater weight to the use of credit for consumer goods and services (consumer durables, clothes, food, medical bills and funeral expenses) (38.5% vs 26.8%), farm inputs (23.1% vs 6.7%), and land purchases (15.4% vs 0%). No collateral was offered in the case of non-registered farms. However, in the case of registered farms, only 26.7% of loans involved collateral on the *machamba* and fixed place investments, house (20.0%), and vehicles (13.4%).

Conclusions

Eighteen years of socialism in Mozambique has left a legacy of legal uncertainty, high transactions costs, and proliferate institutional involvement by local authorities and the state in land allocation. Although land rentals and purchases are becoming more frequent, the government continues its attempts to control land allocation and use, and periodically issues decrees prohibiting transfers without state authorization. The economic costs of land market restrictions are difficult to enumerate, but are nonetheless widely apparent in the frequent occurrences of land disputes, land expropriation by the DCU and local authorities, encroachment by refugees and private farmers on irrigated

Table 5.12:

Credit Access

	District IV	District VI	Male Household Head	Female Household Head	Registered Households	Non-Registered Households	Overall Sample
Percentage of households having received credit in past five years (%)	22.4	18.5	21.1	15.4	25.5	17.1	20.7
Number of loans (no):	16	12	26	2	15	13	28
Total amount of loans (000 mt):	8,462.3	756.6	5,552.7	52.5	9,511.1	139.2	5,159.9
Source of credit received (%):							
Banco Popular de Desenvolvimento	31.3	16.7	26.9	-	46.7	-	25.0
Family	18.8	33.3	19.2	100.0	26.7	23.1	25.0
Friends	31.3	8.3	23.1	-	6.7	38.5	21.4
Employer	-	41.7	19.2	-	6.7	30.8	17.9
Banco de Mozambique	12.5	-	7.7	-	6.7	7.7	7.1
Caixa Central de Cooperacao Economica	6.3	-	3.8	-	6.7	-	3.6
Principle reason for obtaining credit:							
Non-farm business	31.3	8.3	19.2	50.0	26.7	15.4	21.4
Purchase farm inputs	12.5	16.7	15.4	-	6.7	23.1	14.3
Build or repair house	6.3	16.7	11.5	-	13.3	7.7	10.7
Purchase clothes/food	6.3	16.7	11.5	-	6.7	15.4	10.7
Pay funeral expenses	6.3	16.7	11.5	-	6.7	15.4	10.7
Pay medical bills	-	16.7	7.7	-	6.7	7.7	7.1
Purchase truck	6.3	8.3	7.7	-	13.3	-	7.1
Purchase land	12.5	-	3.8	50.0	-	15.4	7.1
Build windmill	12.5	-	7.7	-	13.3	-	7.1
Purchase consumer durables	6.3	-	3.8	-	6.7	-	3.6
Collateral Offered:							
None	56.3	83.3	65.4	100.0	40.0	100.0	67.9
Machamba and fixed-place investments	25.0	-	15.4	-	26.7	-	14.3
House	12.5	8.3	11.5	-	20.0	-	10.7
Vehicle	-	8.3	3.8	-	6.7	-	3.6
Boat	6.3	-	3.8	-	6.7	-	3.6

land, encroachment by urbanites seeking land for residential use, absence of fair compensation, tenure insecurity, deteriorating incentives for long-term investment, high transfer costs under indigenous tenure systems, and onerous procedures in acquiring title under the statutory system.

The administrative system of land allocation served societal interests well in the years between 1980 and 1987 when the massive influx of refugees poured into the city. Local *bairro* authorities and the GDs assisted in locating and reallocating land to refugee families and other disadvantaged populations, albeit at the sacrifice of existing land holders. With the insurgency coming to an end, it has become more difficult to overlook the inefficiencies of the system, the political influence that it has favored, and the corruption that has sometimes resulted.

There is no doubt that enhanced property rights are needed and wanted by smallholders and large holders alike, and that the combination of nationalization, intrusion of refugees, and housing demand has seriously undermined security of land rights in the green zones. Yet the alternative tenure arrangement provided by government is a poor substitute. Land registration, for all but the initiated and influential, is shrouded in uncertainty, and comprises an onerous set of requirements and procedures that exceed the abilities of smallholders, and are inappropriate to the needs of agriculture. Smallholders who largely feel abandoned by the registration process, are unsuccessfully turning to producer associations for protection of land rights, a solution not without its own problems. Registration programs are never easy to implement, nor are registration programs cheap, however simple. Yet the de facto situation of vesting powers of land policy among multiple bodies with inadequate staff and resources has created a situation of too many parties voicing land policy, none of which have sufficiently clear responsibilities and resources to perform their tasks effectively.

The socialist principles that once governed land policy now seem out-of-sync with the demands of the modern economy surfacing in Mozambique. The administrative structure that served the colonial government well has now been turned on its head. The DCU and DINAGECA, which once had adequate funding for a much lower volume of land services, is in effect privatizing operations to make up for low salaries and budgetary shortfalls. Rumors of corruption abound. Smallholders lack the resources and knowledge needed to acquire registration. Until registration procedures are greatly simplified and made more transparent, or a suitable model of group registration is discovered, political influence and economic wealth will prevail as the driving forces selecting title status.

In the current transformation from a socialist state to a more market oriented economy, the government has not yet determined the appropriate role of the land market, or the degree to which market principles ought to govern resource allocation. Clearly, there are some who favor state control over land ownership and land market restrictions as a way to protect the resource base and societal interests. An unfettered land market based on private ownership rights is not without problems of its own. Yet, it is difficult to see how Mozambique's market reforms can take hold without a land policy more geared to serving private interests.

CHAPTER 6

LAND PRICE DETERMINATION

Land price determination models are developed and evaluated in this chapter that link plot and household characteristics with land price perceptions by plot managers. Plot size, plot quality, and physical improvements (access road and buildings) are found to be significant determinants of both the reservation and offer price of land. Asymmetries in information and unequal bargaining position among households, that one might expect to distort price signals in a land market characterized by administrative allocations, show either inconsistent or weak effects. Regression models linking price differences (transaction costs) with household-level attributes are also estimated. Farm size tends to have a negative effect on the price difference due to reluctance of small landholders to dispose of land for income security reasons, or their difficulty in making a competitive offer price, due to lack of purchasing power. A negative relationship between income and transaction costs, and a positive relationship between income and land prices, indicate potential for small farms to exit agriculture, and wealthier farms to expand their holdings, with improvement in employment opportunities. Land registration tends to increase transaction costs due to greater risk of detection, and loss of land, from engaging in "illegal" transfers. Gender has no direct influence on transaction costs per se, but the effects of unequal gender access are apparent through differences in tenure status and farm size attributes.

Theoretical Model

Equations (6.1) to (6.3) represent a general model of land price determination for the i-th plot:

$$(6.1) \quad LP_i^r = LP_i^r\,[PC_i,\ L_i,\ \Pi_i\{P(M),\ Y,\ Z(M)\},\ T_i,\ A(HC)]$$

$$(6.2) \quad LP_i^o = LP_i^o\,[PC_i,\ L_i,\ \Pi_i\{P(M),\ Y,\ Z(M)\},\ T_i,\ A(HC)]$$

$$(6.3) \quad t_i = LP_i^r - LP_i^o$$

where LP_i^r is the reservation price that the manager would be willing to accept in disposing of his or her i-th plot, LP_i^o is the offer price that the plot manager would be willing to pay in purchasing the same plot, PC_i is a vector of physical quality characteristics of the i-th plot including land improvements, L_i is a vector of attributes of the i-th plot's location relative to markets or

infrastructure, $\Pi_i(\ldots)$ is the annual net profit of the i-th irrigated plot, and A(...) is a vector of household characteristics representing unequal bargaining power and information asymmetry among households. Equation (6.1) links theoretical determinants on the right-hand side of the equality with the reservation price of land, and equation (6.2) links the same theoretical determinants with the offer price. The difference between the reservation price and offer price in equation 6.3 is the transaction cost (t_i) or economic rent accruing to uncertainty, and to intermediaries other than the buyer and seller who are involved in negotiating and monitoring the transfer contract.

The reservation price and offer price are theoretically influenced by five sets of factors, including plot quality (PC), location (L), plot income or productivity (Π), tenure status (T), and information asymmetries or unequal bargaining position (A). Physical characteristics or land improvements that either enhance the productivity of irrigated land, or increase the owner's utility in non-farm uses, should theoretically increase both the reservation and offer price. Unfavorable location would theoretically reduce plot price to the extent that labor time in production (time from household to plot) and transportation cost in marketing (time from plot to road or markets) are increased. Agricultural profit (returns to family labor and land), derived from prices (P), yields (Y), commercial inputs (Z), and market access (M), should theoretically be positively related to the land price as long as land is inelastic in supply (which is surely the case in the green zones). Tenure status (T) would theoretically lead to current land holders commanding a higher sale price, and to greater willingness of borrowers to pay a higher purchase price, as long as it confers, on balance, either greater number of land rights, greater certainty of rights, and/or lower costs of transferring land.

Price under competitive market conditions is the rationing mechanism that allocates land among alternative uses and users. Under such market conditions, attributes PC, L, Π, and T should prevail as principal determinants of land prices. However, in markets characterized by administrative transactions, household characteristics might play a more important role in land allocation decisions, and may dominate quality and location effects. Rather than resource allocation based on highest and best value, resource allocation may instead be determined by those best able to exert political or economic power, regardless of price. Financial lending institutions, in order to find land an attractive collateral substitute, must see the price as being highly predictive (having high probability of being realized in the market) and obtainable at "reasonable" costs. A land equation that has no predictive power, based on either physical, spatial, or social factors, would entail very high risks to banks seeking to expand mortgage-based lending.

The pervasiveness of administrative transactions in the peri-urban green zones, and the role of economic and political power in acquiring land from local and central authorities, suggests at least the possibility that differences in human capital, wealth and political status among households are creating asymmetries in information access and bargaining power. These asymmetries in turn may be affecting the prices that buyers are potentially able and willing to pay for land, and the prices that sellers are willing to accept. Asymmetry leading to higher reservation and offer prices by political and economic elites would tend to lead to higher levels of land concentration; lower prices would tend to result in the opposite. However, many of the

current landholders who acquired their land through administrative channels did so during the period 1975-85. The increase in land purchases and rentals that have been occurring since the mid-1980s may in fact suggest a more competitive land market, than is commonly believed, in spite of land restrictions.

Empirical Estimation

Plot managers in the study were asked to state the price they would be willing to pay for a plot identical to their i-th plot held (hereafter referred to as the reservation price), and the price they would be willing to accept in disposing of the same plot (offer price). Plot managers in general had difficulty answering these questions, although stating a reservation price proved easier than stating a hypothetical purchase price. Those not able to respond (either 20% or 24% of managers depending on the question) tended to be the most disadvantaged or marginalized populations. When the remaining respondents were asked to justify the seemingly "exorbitant" land prices being reported, they emphasized the high future demand for, and value of, land in the green zones, and their intention to capitalize on this trend.[50]

Mean values, standard deviations, and minimum and maximum values for land prices and other variables included in subsequent regression models are presented in table 6.1. The average reservation price for plots in the reduced sample (those excluding households unable to report either a reservation or offer price) is 18,156,890 mt, and 12,331,180 mt for the offer price. Based on the average plot size of .395 ha, the average reservation price/ha is 45,966,810 mt ($20,894), and offer price/ha is 31,218,177 mt ($14,190). While these prices are consistent with certain land prices, based on actual transfers, reported in chapter 5, there is almost certainly some degree of upward bias caused by the exclusion of those households unable to state prices, and by households tending to speculate, sometimes wildly, about future capital gains.[51] The price difference (5,825,710 mt) is 32.1% of the reservation price--a very high figure compared with real estate costs of around 6-10% in western markets.

Plot quality characteristics included in subsequent regression models include size of *machamba*, topography (whether plot is inclined), presence of salinity problems (yes or no), and extent of flooding problems (a weighted scale from 0 meaning no problems to 6 meaning frequent and very serious problems). Alternative measures were also tried, including type of soil (whether primarily clay, mud, or sand), and severity of drainage problems and lack of water, without improvement in model results. The average plot size is .395 ha, but ranges from .02 to 4.0 ha. Thirty-three percent of plots are on an incline, 57% have salinity problems, and 76% have flooding problems.

Various proxies for location were attempted including walking distance from home to plot as a proxy for higher monitoring, enforcement and production

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50. In fact, rampant price speculation has taken place in the peri-urban area since this survey was undertaken.

51. To the extent that prices are speculative, estimators in the subsequent regressions are biased, but may still be consistent.

Table 6.1:
Descriptive Statistics, Hypothetical Land Price Regressions

Variables	Mean	Standard Deviation	Minimum	Maximum
Hypothetical sell price (000 mt)	18,156.9	32,534.7	30.0	200,000.0
Hypothetical offer price (000 mt)	12,331.2	26,151.6	15.0	150,000.0
Price difference (000 mt)	5,825.7	12,813.4	.0	90,000.0
Plot-level attributes:				
Size of machamba (m^2)	3,954.0	7,012.2	170.0	40,000.0
Topography (inclined=1)	.33	.47	0	1.0
Plot has salt problems (yes=1)	.57	.50	0	1.0
Plot has flood problems (scale)[a]	.76	1.58	0	6.0
Tenure status:				
Plot registered (yes=1)[b]	.42	.50	0	1.0
Right to sell plot (yes=1)	.41	.49	0	1.0
Locational attributes:				
Distance to nearest market(min)[c]	39.3	33.0	3	210.0
Distance to nearest road (min)[c]	7.1	8.2	0	45.0
Access road for vehicles (yes=1)	.08	.27	0	1.0
Land improvements:				
Cement well (yes=1)	.19	.39	0	1.0
House or shed (yes=1)	.24	.43	0	1.0
Livestock buildings (yes=1)	.14	.35	0	1.0
Number of fruit trees (no.)	78.1	153.8	0	1,008.0
Plot productivity:				
Net plot income excluding family labor (000 mt/plot)	2,504.6	8,642.0	-1,296.5	81,321.0
HH characteristics:				
Sex of plot manager (male=1)	.57	.50	0	1.0
Political status (yes=1)[e]	.25	.43	0	1.0
Farm size (m^2	5,379.8	9,893.9	240.0	76,000.0
Farm size/resident (m^2/person)	440.3	776.9	17.0	5,714.3
Farm and non-farm income (000mt)	3,792.7	9,017.2	-1,228.5	81,321.0
Non-farm income(000 mt/resident)	136.6	394.1	.0	3,416.0

a. Multiplicative variable computed from frequency of problem (0=none, 1=problem occurs once per year, 2=problem occurs multiple times) times severity of problem (1=not very serious, 2=somewhat series, 3=very serious).

b. Precarious, provisional or definitive registration.

c. Minutes to walk the distance.

d. Means are calculated only for those observations for which complete information is available in computing the variance, co-variance matrix in subsequent regressions.

e. A binary variable, 1 if the household has a member in the *grupo dinamizador* and *bairro* organization, 0 otherwise.

costs; walking distance to nearest road and market as proxies for transportation and marketing costs; location of plot by district; and proximity of plot relative to an access road. On average, 39 minutes are required from site of plot to nearest market by walking, and 7 minutes to the nearest road. Only 8% of plots are situated adjacent to an access road suitable for traffic by vehicles. The remaining variables--district and proximity to home (53 minutes)--were dropped from the subsequent regression models either because of high multi-collinearity with other location variables, or inferior model results.

A number of land improvements are commonly found in the study area including dirt wells, cement wells, walls or fences, irrigation ditches, sheds, houses, livestock buildings, and traditional straw houses (*palhotas*). Managers were queried about the presence or absence of all such improvements, and data were coded as binary variables (1 if the improvement exists on the plot, 0 otherwise). In addition, data were collected on the number of banana and other fruit trees on the plot. On average, 19% of plots in the reduced sample had a cement well, 24% had a shed or a house, and 14% had livestock barns or stalls. Furthermore, plots on average had 78 fruit trees. The remaining improvements were excluded from subsequent regression models either because of too few improvements (*palhotas*, 6%), too many improvements (irrigation ditches, 72%), or high multi-collinearity with other improvements on the plot (dirt wells--38%--with cement wells, walls or fences--18%--with buildings).

Plot income or productivity represents the cumulative effect of plot quality characteristics, improvements, inputs, prices, transport costs and tenure status. It represents the use value of land in agriculture, but excludes any household utility derived from quality of location, or place of home or business. Net plot income for the reduced sample is 2,504,593 mt/plot, or 6,340,742 mt/ha.[52]

Asymmetry in market information or unequal bargaining power among households may act to distort price signals in a variety of ways. Farm size or access to non-farm income opportunities, may help to increase access to capital markets, and provide greater household liquidity for land purchases. Conversely, to the extent that larger farms are less efficient than small farms, a lower reservation and offer price would be expected. Political status (a binary variable, 1 if the household has a member in the *grupo dinamizador* and *bairro* organization, 0 otherwise) could either have a positive or a negative effect on prices depending on whether membership acts to facilitate or constrain access to land market information, or increases or decreases access to administrative transactions through exertion of political power. Education would tend to increase one's ability to assimilate price information, but the effect could either be positive or negative. Status as a female manager would tend to have a dampening effect on the offer price, due to lower purchasing

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53. Despite concerns of bias in the reduced sample stemming from having to exclude those households unable to state a reservation or offer price, net plot income is comparable to that of 6,160,000 mt/ha computed for the overall sample in table 4.9, and the average size of irrigated holdings--.395 ha/plot--is nearly equal to that of .41 ha/plot in the same table.

power, and disadvantaged access to input and credit markets. As indicated in table 6.1, the mean farm size is .54 ha, but ranges from .02 to 7.6 ha, and the mean farm size/resident ratio is .04 ha/person, and ranges from .0 to .57 ha/person. Approximately, 57% of plot managers are male, and 25% have household members who hold positions in the *grupo dinamizador* or *bairro* organization. The mean of non-farm income/resident is 136,561 mt/person, but ranges from 0 to 3,416,000 mt/person. Other household-level factors--age of plot manager (46 years), years of education (3 years), or time managing the plot (12 years)--were included at various stages of model development, but were later dropped in favor of existing model specifications.

An increase in the number and certainty of land rights should theoretically increase both the reservation and offer prices of land, as sellers would demand a higher premium, and borrowers should be willing to pay more for the additional rights provided. Whether in fact this relationship holds in practice would depend on the breadth and certainty of rights provided by the tenure system(s), and the transaction costs incurred in transferring rights. Registration would theoretically increase the certainty of rights, but would not necessarily improve the likelihood or costs of transferring land due to legal restrictions on private (unauthorized) transfers, increased exposure of registered plots to government scrutiny, and high administration costs in processing leases. On average, 42% of plots in the reduced sample have either a precarious, provisional or definitive title.[53]

An alternative measure of tenure security--right to sell--is based on the codification and ranking of individual use and transfer rights perceived by the plot manager. Each manager was asked if s/he had the right to grow vegetables, plant fruit trees, build a wall or fence, build a house, bequeath the plot to heirs, rent-out the plot, or sell the plot. Responses are binary. Defining and ranking distinct combinations or bundles of rights is difficult because of the large number of potential permutations. However, certain lexicographic relationships can be exploited in the data to arrive at an alternative proxy. Theoretically, transfer rights imply greater tenure security than use rights. Among transfer rights, rights of permanent transfer are theoretically superior to rights of temporary transfer (rental), and the right to sell is theoretically superior to the right to bequeath.

The data in table 6.2 confirm these hypotheses. Nearly all plot managers (161 of 162) felt they could plant vegetables or fruit trees, but fewer perceived having the right to rent (73) or sell (70). For those plots in which plot managers indicated a right to grow vegetables, only 45.3% and 43.5% perceived the right to rent-out or sell the plot, respectively. Conversely, only 70 of 162 plot managers indicated an ability to sell the plot, but of

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54. An index variable from low to high tenure security was attempted to capture the effects of precarious registration having fewer rights of less duration than provisional registration, and both having fewer rights and less duration than definitive title: 0=no registration, 1=precarious registration, 2=provisional registration, and 3=definitive registration. However, this variable did not materially improve results, partially because respondents themselves rarely knew the type of title they held.

Table 6.2

Percentage of Various Rights Held by A Priori Selection of Designated Right

	Right to Grow Vegetables	Right to Grow Fruit Trees	Right to Build House	Right to Bequeath	Right to Rent	Right to Sell
No. with primary right	161	156	111	134	73	70
Complementary rights (% primary plots with right to):						
Grow vegetables	100.0	100.0	100.0	100.0	100.0	100.0
Grow fruit trees	96.9	100.0	100.0	97.8	100.0	100.0
Build house	68.9	71.2	100.0	76.1	89.0	87.1
Bequeath to heirs	83.2	84.0	91.9	100.0	97.3	94.3
Rent-out plot	45.3	46.8	58.6	53.0	100.0	85.7
Sell the plot	43.5	44.9	55.0	49.3	82.2	100.0

these, the vast majority also perceived the right to grow vegetables or fruit trees (100%), build on the plot (87.1%), bequeath the land to heirs (94.3%), and rent-out the plot (85.7%). Perception of right to sell is thus a good proxy for breadth of use rights and inferior transfer rights, as long as perceptions and actual rights are highly correlated (this relationship is empirically untestable). On average, 41% of plots in the reduced sample had plot managers who perceived having the right to sell, despite government restrictions prohibiting private transfers.

Determinants of Tenure Status

A review of table 6.3 reveals very little correlation between registration status and possession of specific land rights. Registration status is not significantly correlated with right to bequeath, right to rent, or right to sell. However, right to sell is positively correlated with the right to rent (ρ=.658) and the right to bequeath (ρ=.335). Having the right to bequeath, rent or sell a plot does not appear strongly correlated with any of the measures of plot characteristics, plot manager characteristics, or household characteristics tested [the positive correlation between right to sell and farm size/resident (ρ=.248) and size of *machamba* (ρ=.230) are exceptions]. Registration status, on the other hand, is significantly correlated with presence of a cement well (ρ=.517), house or shed (ρ=.516), wall (ρ=.452),

Table 6.3

Correlation Between Plot and Household-Level Characteristics and Tenure Status

	Right to Bequeath	Right to Rent	Right to Sell	Plot Registered
Tenure status:				
Right to bequeath	1.000	.421**	.335**	-.068
Right to rent	.421**	1.000	.658**	.166
Right to sell	.335**	.658**	1.000	.135
Plot registered (yes=1)	-.068	.166	.135	1.000
Plot characteristics:				
Topography (plot inclined=1)	-.113	-.007	-.177	.458**
Plot clay (yes=1)	.080	.166	.356**	-.033
Size of machamba (m^2)	.013	.137	.230*	.423**
Number of fruit trees (no.)	.041	.047	.049	.377**
Cement well (yes=1)	-.100	.137	.136	.517**
Wall (yes=1)	-.112	.068	.017	.452**
Livestock buildings (yes=1)	.041	.173	.160	.427**
House or shed (yes=1)	.013	.153	.033	.516**
Access road for vehicles (yes=1)	.053	.203	.106	.176
Income per plot (000 mt/ha)	.077	.012	.038	.275*
Plot manager characteristics:				
Sex of plot manager (male=1)	-.122	.072	.144	.462**
Years plot held (years)	.140	.125	.048	.013
Education of plot manager(years)	-.212	-.177	-.005	.227*
Household characteristics:				
Farm size/resident (m^2/person)	-.038	.134	.248*	.390**
Hired labor (hours/plot)	-.001	.031	.158	.375**
Political status (yes=1)	-.045	.025	-.010	-.173
Non-farm income per resident (000 mt/person)	-.206	-.001	.190	.219

*=one-tailed significance; **=two-tailed significance.

livestock buildings (ρ=.427), size of *machamba* (ρ=.423), number of fruit trees (ρ=.377), sex of plot manager (male=1) (ρ=.462), farm size/resident (ρ=.390), and years of education (ρ=.227). Farm size in turn is highly correlated with commercial outlays in farm operations (ρ=.668), and hours of hired wage labor (ρ=.655). Thus, while it is difficult to generalize about the characteristics of those plots and managers associated with the right to sell, those plots being registered tend to be larger with substantial physical improvements, while those households registering land tend to be larger farms that are more commercially oriented. Moreover, registration status does not necessarily confer the right to sell, right to rent, or right to bequeath, indicating that registered households are claiming greater awareness of, and perhaps are

complying with, legal restrictions on private land transfers. In general, the data suggest a great deal of uncertainty and confusion among households over whether or not private transfers are permissible.

Land Price Regressions

Six alternative regression models are estimated in table 6.4 for the reservation price of land, and in table 6.5 for the offer price. Model (A,G) examines the effect of plot quality characteristics and registration status on price. Model (B,H) examines, in addition to plot quality and registration status, the effect of location on plot value. In model (C,I), various indicators of land improvements are incorporated along with plot quality and registration status, and location variables are replaced by presence or absence of an access road. Model (D,J) is the same as model (C,I), except for the addition of various proxies for unequal bargaining position or asymmetries in information. In model (E,K), net income per plot is substituted for plot quality characteristics and capital improvements. Model (F,L) is the same as model (D,J), except that right-to-sell is substituted for registration status. With regard to the reservation price regressions in table 6.4, the various models explain between 55% and 69% of total variation in the reduced sample, and errors appear normally distributed. The various regressions for offer price do not provide comparable degrees of fit, whether measured by R^2 values or standard errors of coefficients.

Reservation Price Regressions

With regard to the reservation price of land, each hectare of land in the green zones has a marginal value of between 20,06[illegible],260 mt/ha and 31,130,250 mt/ha, or $9,122 to $14,150/ha depending on the model, significant at the 5% confidence level. An incline in slope tends to increase land price, and presence of salinity problems tends to decrease land price, but neither variable is highly significant. Each step of the scale in the flooding index increases land price between 2,369,787 and 3,078,733 mt, depending on the model, indicating the effect of improved water availability for vegetable cultivation. Possession of registration significantly improves the price of land in all models, from 16,379,037 to 18,614,562 mt, or from $7,445 to $8,461 per plot. As registration does not legally confer additional transfer rights, the premium can be attributed to either credit benefits (which as table 5.12 indicates are present but weak), or to greater security of land use rights. Location factors in model B show mixed effects with wide standard errors. Possession of right to sell tends to have a positive effect on the reservation price (and offer price), but results are not significant.

Presence of a road significantly increases the reservation price of a plot by 28,017,169 to 30,049,319 mt, and presence of livestock buildings increases it by 30,211,988 to 32,191,159 mt. While dirt wells tend to be only a meter or two in depth, cement wells tend to be deeper and located on slopes, or in areas of deep water tables.[54] The significantly negative coefficient for presence of

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54. Presence of a cement well is significantly correlated with sandy soil (ρ=.251) and inclined topography (ρ=.402). Dirt wells are significantly correlated with clay soils (ρ=.292), but are not significantly correlated with slope (ρ=.042).

Table 6.4

Land Price Regressions, Hypothetical Reservation Price[a]

	Model A	Model B	Model C	Model D	Model E	Model F
Constant	1,100.3	-2,380.6	-1,608.9	-1,365.1	2,427.3	258.7
	(4,238.5)	(6,407.7)	(3,907.8)	(4,907.4)	(3,931.4)	(5,427.9)
Size of machamba (ha)	30,856.0 *	31,130.3 *	25,745.3 *	21,368.7 *	20,068.3 *	23,382.5 *
	(3,704.1)	(3,730.1)	(3,809.0)	(7,321.9)	(8,802.5)	(7,598.7)
Topography (1=inclined)	3,390.2	4,936.0	4,734.3	6,520.3		11,352.1 *
	(5,231.9)	(5,468.1)	(5,111.3)	(5,312.5)		(5,434.9)
Salinity problems (y=1)	-7,270.0	-7,159.9	-4,832.0	-4,785.6		-5,904.1
	(4,588.4)	(4,670.7)	(4,183.3)	(4,340.5)		(4,514.0)
Flooding problems (scale)	2,555.2 **	2,369.8	3,071.3 *	3,078.7 *		2,645.5 **
	(1,467.6)	(1,503.6)	(1,354.6)	(1,379.2)		(1,429.4)
Plot registered (y=1)	18,455.6 *	18,614.6 *	17,401.1 *	16,379.0 *		
	(5,561.1)	(5,884.1)	(5,297.6)	(5,646.6)		
Right to sell plot (y=1)						723.4
						(4,588.7)
Minutes to market (minutes)		74.0				
		(72.2)				
Minutes to road (minutes)		-11.6				
		(293.0)				
Access road adjacent to plot (y=1)			29,500.4 *	28,017.2 *		30,049.3 *
			(7,730.8)	(7,879.7)		(8,182.7)
Presence of cement well (y=1)			-15,117.3 *	-19,101.4 *		-16,802.5 *
			(7,263.8)	(7,694.7)		(7,990.7)
Presence of house or shed (y=1)			-3,926.3	-2,528.1		-962.1
			(8,341.3)	(8,483.7)		(8,822.9)
Presence of livestock buildings (y=1)			32,191.2 *	31,800.8 *		30,212.0 *
			(9,354.5)	(9,431.6)		(9,851.5)
Number of fruit trees (no.)			-7.0	-4.5		.8
			(15.6)	(15.8)		(16.4)
Net income per plot (000,000 mt)					919.0 *	
					(332.1)	
Farm size/resident (ha/person)				41,642.5	91,197.6	42,906.1
				(64,684.9)	(75,158.1)	(67,428.8)
Sex of plot manager (male=1)				-738.4	6,487.5	3,400.8
				(4,773.1)	(4,801.4)	(4,743.3)
Non-farm income/resident (000 mt/person)				7.7	7.1	9.6
				(6.1)	(6.6)	(6.4)
Political status (y=1)				-2,866.2	-3,665.1	-3,800.7
				(4,746.4)	(5,304.8)	(4,951.0)
R^2	.59	.59	.68	.69	.55	.66
Adj R^2	.57	.56	.65	.65	.53	.62
n	114	114	114	114	114	114

* = .05 significance; ** = .10 significance. Figures in parentheses are standard errors.

a. The dependent variable is in 000 mt units.

Table 6.5:

Land Price Regressions, Hypothetical Offer Price[a]

	Model G	Model H	Model I	Model J	Model K	Model L
Constant	1,850.9	4,235.9	1,198.0	863.1	-457.3	1,385.7
	(3,465.1)	(5,190.1)	(3,329.4)	(3,860.5)	(2,799.2)	(4,145.2)
Size of machamba (ha)	22,759.4 *	22,568.5 *	19,456.8 *	2,568.0	-541.7	3,039.2
	(2,875.5)	(2,917.0)	(3,046.2)	(5,412.6)	(6,162.6)	(5,491.8)
Topography (1=inclined)	-3,653.5	-4,513.3	-4,116.9	-2,040.7		692.9
	(4,290.5)	(4,542.0)	(4,401.3)	(4,197.3)		(4,129.6)
Salinity problems (y=1)	-4,155.9	-4,309.4	-3,756.3	-3,206.2		-3,761.6
	(3,689.2)	(3,745.3)	(3,476.8)	(3,342.5)		(3,391.2)
Flooding problems (scale)	268.5	322.0	771.7	402.9		154.3
	(1,168.3)	(1,204.2)	(1,110.7)	(1,046.5)		(1,053.5)
Plot registered (y=1)	12,199.7 *	11,754.7 *	9,290.9 *	7,621.4 **		
	(4,530.7)	(4,740.0)	(4,469.8)	(4,397.9)		
Right to sell plot (y=1)						1,046.0
						(3,437.7)
Minutes to market (minutes)		-33.7				
		(60.5)				
Minutes to road (minutes)		-69.0				
		(241.2)				
Access road adjacent to plot (y=1)			21,073.1 *	19,664.7 *		20,948.0 *
			(6,671.2)	(6,257.5)		(6,312.4)
Presence of cement well (y=1)			-5,584.9	-10,131.4 **		-8,824.4
			(6,225.5)	(6,047.8)		(6,098.7)
Presence of house or shed (y=1)			3,536.5	5,541.6		5,256.3
			(6,279.8)	(5,953.9)		(6,043.7)
Presence of livestock buildings (y=1)			19,464.3 *	17,934.3 *		18,334.6 *
			(7,628.2)	(7,129.0)		(7,251.6)
Number of fruit trees (no.)			-17.2	-14.9		-13.1
			(12.6)	(11.8)		12.0
Net income per plot (000 mt)					526.5 *	
					(233.6)	
Farm size/resident (ha/person)				17,296.8 *	21,409.5 *	17,460.0 *
				(4,861.7)	(5,267.9)	(4,940.6)
Sex of plot manager (male=1)				-160.7	4,298.4	1,680.5
				(3,720.0)	(3,448.6)	(3,616.4)
Non-farm income/resident (000 mt person)				5.7	7.1	6.5
				(4.6)	(4.6)	(4.7)
Political status (y=1)				-3,265.3	-3,954.7	-3,947.3
				(3,700.2)	(3,856.1)	(3,752.7)
R^2	.52	.52	.61	.68	.59	.67
Adj R^2	.50	.49	.57	.63	.56	.62
n	109	109	109	109	109	109

* = .05 significance; ** = .10 significance. Figures in parentheses are standard errors.

a. The dependent variable is in 000 mt units.

a cement well (-15,117,260 to -19,101,424 mt/plot), would thus appear to be capturing the latent effect of lack of water and higher cost of water lifting for irrigated vegetable production. Net income per plot (918,957 mt) is shown to significantly increase the reservation price through the combined effect of plot quality characteristics, prices, use of animal stalls, and transport costs, but the R^2 declines as the model excludes the utility derived from non-income earning improvements, including residential uses.

None of the variables included as proxies for unequal bargaining position or information asymmetries--farm size/resident, sex of plot manager, non-farm income/resident, or political status--appear to significantly affect the formation and transmission of land price signals in the peri-urban zone.

Offer Price Regressions

With regard to the offer price, each hectare of land in the green zones has a marginal value of between 19,456,790 and 22,759,440 mt/ha, or $8,844 to $10,345/ha depending on the model, significant to the 5% probability level. Unlike the reservation price regressions, an incline in slope tends to decrease land price. Like the reservation price regressions, presence of salinity problems tends to decrease land price, and the flooding index increases the land price, but neither variable is statistically significant. Possession of registration significantly improves the price of land in all models, by 7,621,437 to 12,199,735 mt, or $3,464 to $5,545 per plot. Location factors in model B are negative and consistent with expectations, but nonetheless exhibit wide standard errors.

Presence of an access road suitable for vehicle traffic significantly increases the offer price of a plot by 19,664,707 to 21,073,127 mt, and presence of livestock buildings increases the offer price by 17,934,305 to 19,464,330 mt. Net income per plot (526,497 mt) is again shown to significantly increase the offer price, but like the reservation price regressions, the R^2 declines as a result.

Also unlike the reservation price regressions, the household-level indicators for asymmetries in bargaining position and information exhibit higher levels of significance, although only farm size/resident is statistically significant. For every unit (ha) increase in farm size/resident, the offer price of land increases by 17,297,765 to 21,409,486 mt/ha. Land acquisition through the *grupo dinamizador* and *bairro* organizations is the lowest tier of administrative transactions, and tend to be used by the poorest farms. Political membership in local organizations tends to decrease the offer price, consistent with expectations, although results are not highly significant. Reliance on non-farm income may improve cash liquidity and ability to pay, which would have a positive effect on the offer price. Alternatively, non-farm employment could theoretically drive up the opportunity cost of family labor and reduce the offer price for land. Model results show that access to non-farm income tends to increase the offer price, although results are not highly significant.

Price Difference Regressions

The regressions in table 6.6 evaluate the relationship between the price difference (reservation price less offer price) and farm size, income, land

Table 6.6:

Land Price Regressions, Hypothetical Transaction Costs or Price Difference[a]

	Model M	Model N	Model O	Model P	Model Q
Constant	2,384.4 *	1,788.5	587.4	3,299.8 *	999.8
	(1,208.5)	(1,219.7)	(1,344.3)	(1,425.3)	(1,710.2)
Size of machamba (ha)	14,558.7 *	7,796.9 *	13,189.9 *	14,796.7 *	12,218.1 *
	(2,621.4)	(1,806.3)	(2,591.8)	(2,623.2)	(2,667.8)
Total household farm size (ha)	-4,303.5 *		-4,799.9 *	-4,218.4 *	-4,978.6 *
	(1,857.9)		(1,811.4)	(1,855.2)	(1,799.6)
Total household income (000 mt)		251.6 **			231.8 *
		(140.5)			(135.2)
Plot registered (y=1)			6,276.3 *		5,366.7 *
			(2,297.8)		(2,524.8)
Right to sell plot (y=1)				-2,601.4	-2,750.1
				(2,159.0)	(2,084.3)
Sex of plot manager (male=1)					1,204.7
					(2,290.1)
R^2	.31	.30	.36	.32	.39
Adj R^2	.30	.28	.34	.30	.35
n	106	106	106	106	106

* = .05 significance; ** = .10 significance.

a. Dependent variable is the price difference between reservation and offer price in 000 mt units.

rights, and gender status. Model (M) examines the relationship between the price difference and farm size, while controlling for size of plot.[55] The relationship between income and the price difference is estimated in model (N). Model (O) examines the impact of registration status on, and model (P) possession of right to sell on, the price difference. Model (Q) estimates the impact of gender on transaction costs, while controlling for the effects of farm size, income, and tenure status.

55. Alternatively, price differences could have been expressed in per-hectare terms.

Theoretically, small households with limited access to land would be more reluctant to sell land at any price for reasons of social security, income security, and felt need to bequeath land to children. A lower offer price would also be expected because of lack of purchasing power. Both relationships should result in an unambiguous negative effect on the price difference. The results in table 6.6 lend support to this hypothesis. For each marginal (ha) increase in land size, the price difference tends to fall by between -4,218,420 and -4,978,560 mt/ha, significant at the 5% level.

Limited land access need not be a constraint on willingness to sell land assets, if households have access to other non-farm income opportunities, or income is derived from other farm plots. Wealthier households may have a higher reservation price because of either superior productivity, or less need for distress sales. Higher household income would theoretically tend to lower the reservation price of small farms, and would also tend to increase their offer price due to improvements in purchasing power. The results in table 6.6 are consistent with these conclusions. For each marginal increase (000 mt) in total household income, the price difference increases by 231,811 to 251,608 mt/plot.

In situations where land markets are unrestricted, and information is perfect, possession of registration ought to reduce transaction costs, by increasing certainty of property rights, and reducing time and money spent by buyers and sellers in negotiating and monitoring land contracts. However, to the extent that risk to buyers and sellers is increased from privately transferring land, or the administrative process of acquiring and renewing registrations is costly relative to transfers in the informal market, a positive effect between title and transaction costs would be expected.[56] The effect of registration status in table 6.6 (i.e. registration status increasing the price difference by 5,366,721 to 6,276,289 mt/plot) would tend to support the conclusion that transaction costs increase with possession of title.

Regardless of registration status, perception of right to sell ought to result in a lower reservation price by the seller, and a higher offer price by the potential buyer due to lower transaction costs. Overall, a negative relationship between right to sell and the price difference would be expected. As indicated in table 6.6, presence of right to sell decreases the price difference by -2,601,357 to -2,750,078 mt/plot, but results are not highly significant.

Finally, to the extent that women have constrained access to land, employment, or input and capital markets, a positive relationship between gender and the reservation price would be expected. However, the net effect on the price difference is uncertain, as the offer price may increase as well if women, due to constrained access, must pay more for land in the market. The gender variable for plot management in table 6.6 suggests that being a male increases the price difference by 1,204,713 mt/plot compared with female managers; thus being a female would tend to lower the price difference, but

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56. Seller's engaging in unauthorized transfers of registered land risk being fined, whereas buyers risk having the land expropriated.

results are not statistically significant. Being a male manager is not significantly correlated with net plot income, non-farm income, or right to sell, but is significantly and positively correlated with title (ρ=.462), and farm size (ρ=.252). Gender thus does not have a direct influence on transaction costs per se, but the effects of unequal gender access are apparent through differences in tenure status and farm size attributes.

Summary

Land price determination models were developed and evaluated in this chapter that link plot attributes and household characteristics from earlier sections with land price perceptions by plot managers. Plot size, flooding problems, and presence of an access road or buildings are found to be significant and positive determinants of both the reservation and offer price of land. These model results show that a substantial amount of the variation in land prices can be explained by economic factors based on plot quality or improvements. Asymmetries in information and unequal bargaining position among households, that one might expect to distort price signals in a land market characterized by administrative allocations, show either inconsistent or weak effects. To the extent that land resource allocation is determined by political or economic power, rather than market mechanisms, these administrative allocations do not appear to be distorting land prices being perceived by plot managers.

Regression models linking price differences (transaction costs) with household-level attributes are also estimated. Farm size tends to have a negative effect on the price difference due to reluctance of small landholders to dispose of land for income security reasons, or their difficulty in making a competitive offer price, due to lack of purchasing power. A negative relationship between income and transaction costs, and a positive relationship between income and land prices indicate potential for small farms to exit agriculture, and wealthier farms to expand their holdings, with improvement in employment opportunities. Land registration tends to increase transaction costs due to greater risk of detection, and loss of land, from engaging in "illegal" transfers, while the perception of right-to-sell tends to reduce transaction costs. Gender has no direct influence on transaction costs per se; the disadvantages that women experience in the land market appear to be fully captured by differences in tenure status and farm size attributes.

Despite problems in collecting data for the reservation and offer price variables, signs on coefficients are mostly consistent with economic theory, and the various models explain the majority of variation in land prices. The predictive power of the regression models suggest the emergence of a land market with potential for distributing land among best and efficient uses. While the predictive power strengthens the possibility of mortgage-based lending by financial institutions, transaction costs are very high, to such an extent that land collateral value will experience steep discounting in financial transactions until such time as transaction costs are reduced. The data are not sufficiently disaggregated or robust to explain the high difference between reservation and offer prices. One can only surmise that search and negotiation costs are high, but also that buyers and sellers incur considerable risk in transfers due to legal restrictions. The land market appears to exhibit particular sluggishness among those households with both

small farm size and low income, as they lack the financial means to acquire more land, and they demand a steep reservation price to part with land. As employment opportunities expand in the post-war era, growth in income will help lubricate the land market particularly among smaller holdings. Rather than being demand constrained, land transactions (administrative and market) are being overly curtailed by legal impediments and enforcement, both of which seem terribly out-of-sync with the powerful market forces that are presently emerging in Mozambique.

REFERENCES

Boucher, Steve, Antonio Francisco, Laurel Rose, Michael Roth, and Fernanda Zaqueu. 1993. Legal Uncertainty and Land Disputes in the Peri-Urban Areas of Mozambique: Land Markets in Transition. Land Tenure Center research paper. Madison: Land Tenure Center, University of Wisconsin, August.

Bruce, John W. 1990. Land Policy and State Farm Divestiture in Mozambique. Land Tenure Center research paper. Madison: Land Tenure Center, University of Wisconsin, April.

DANIDA (Danish International Development Agency). 1987. Danida Food Security Project: Maputo and Quelimane Zonas Verdes. Mozambique. Feasability Study-Maputo. Main Report, May.

DeGroot, David G. 1989. Urban Issues and Program Options in Mozambique. Paper prepared for the U.S. Agency for International Development. Maputo: USAID, November.

Francisco, Antonio. 1987. A Produção e a Comercialização de Hortifruticolas da Zona Suburbana para a Cidade de Maputo No Contexto da Liberalização dos Preços. Tese de Licenciatura. Maputo.

García María Isabel. 1989. General Aspects of the Problematical Use and Occupation of Urban Land in the People's Republic of Mozambique. Maputo: UCHS HABITAT PROJECT MOZ/86/005.

Graham, Douglas H. and Antonio Alberto da Silva Francisco. 1993. The Banco Popular de Desenvolvimento (BPD) and Formal-Informal Financial Market Linkages in Maputo, Mozambique. Maputo, Mozambique: Ohio State University, March.

Graham, Doug, and Michael Roth. 1990a. "Project on Dynamics of Peri-Urban Economies in Africa." USAID/Maputo reconnaisance trip report, 20-24 March.

Graham, Doug, and Michael Roth. 1990b. "Peri-Urban Markets Project, Preliminary Research Plan." USAID/Maputo planning report, August.

Graham, Douglas H., Irae Baptista Lundin, Antonio Francisco, William Nall, Mindy Walker, Paul Jenkins. 1991. Peri-Urban Baseline Research Results: Maputo Mozambique Final Report to USAID Mission. Maputo, Ohio State University, October.

G.Z.V. (Gabinete das Zonas Verdes de Maputo). 1991, Informe sobre as Zonas Verdes na Cintura das Areas Urbanas. Maputo.

G.Z.V. 1991. Proposta Para a Implementação duma Estrutura de Gestão das Redes Hidraulicas nas Areas Baixas das Zonas Verdes de Maputo. Maputo.

G.Z.V. 1991. Proposta para a Organização dos Servicos de Apoio as Associaçoes de Camponeses: Projecto de Assistencia Técnica as Zonas Verdes de Maputo. Maputo.

Hanlon, Joseph. 1990. Mozambique: The Revolution Under Fire. London: Zed.

Isaacman, Allen and Barbara Isaacman. 1983. Mozambique: From Colonialism to Revolution, 1900-1982. Boulder: Westview Press.

Little, Peter D. and Irae Baptista Lundin de Coloane. 1992. Petty Trade and Household Survival Strategies: A Case Study of Food and Vegetable Traders in the Peri-Urban Area of Maputo, Mozambique. Institute for Development Anthropology research paper. Binghamton: Institute for Development Anthropology, April.

Ministerio da Agricultura. Gabinete das Zonas Verdes. Informação sobre G.Z.V. (n.d.).

Myers, Gregory W. and Harry G. West. 1993. Land Tenure Security and State Farm Divestiture in Mozambique: Case Studies in Nhamatanda, Manica, and Montepuez Districts. Land Tenure research paper 110. Madison: Land Tenure Center, January.

Pinsky, Barry. 1985. "Territorial Dilemmas: Changing Urban Life" in A Difficult Road: the Transition to Socialism in Mozambique. John S. Saul ed. New York: Monthly Review Press.

Plano de Estrutura Cidade de Maputo. 1985. Instituto Nacional de Planeamento Físico. Concelho Executivo da Cidade de Maputo.

ANNEX A

SAMPLING FRAME FOR THE PERI-URBAN BASELINE SURVEY

Phase I of the peri-urban project was implemented by Ohio State University January-April 1991. The survey includes a sample of 330 households in the urban to peri-urban area of Maputo. The researchers, in the course of designing the research, faced two pressing concerns (Graham and Roth 1990). First, up-to-date census data or population lists that might be used to select sample households were either unavailable or out of date. Second, any official population records or lists that might exist would likely be outdated by the rapid influx of migrants, or would miss significant numbers of the refugee and indigent population.

Two fortuitous circumstances helped the team to overcome these problems. First, aerial photographs were available in DINAGECA based on flight lines flown in August 1989. Once enlarged to a scale of 1:10000 (1:40000 original), these provided a reasonably accurate overview of residential establishment and expansion. Second, the municipality of Maputo had constructed good maps of physical infrastructure and population density as of 1982. Paul Jenkins, an architect/planner with the UNDP Urban Development and Housing Program in the Ministry of Construction and Water, was hired to relate aerial photographs to city landmarks, and to update the city map for changes in population settlement and infrastructure since 1982. The aerial photographs combined with Jenkins' detailed understanding of city infrastructure and residential densities on the ground enabled the team to develop the following research design.

A grid map containing 500 blocks, each block measuring 1 km to a side, was to be overlayed on a physical map of Maputo. Population density gradients were then to be assigned to each grid, e.g. 0 being no population resident, 1 the lowest level of residency, and 'x' the highest (where 'x' is the population density factor of the most highly populated block relative to the least populated block. Blocks without resident population and those with 100% residency and full services were to be excluded, the former because of no population, the latter considered urban. Blocks were then to be randomly selected. A second set of procedures were designed to identify and select individual households within each selected block. This scheme was intended to cover all residential areas (excluding urban areas) out to the end of the security zone, with households sampled in each block in proportion to population density.

In practice, the actual survey design was implemented as follows:

1. The peri-urban area was defined as the greater Maputo city, including the satellite urban areas of Matola and Machava. This area covers 675 km^2.

2. This area was sub-divided into 544 blocks each 1 km^2 by overlaying the grid onto a city map (Table A2).

3. An aerial photograph mosaic was then prepared from the 1:10000 enlargements. Lines of the grid were then drawn onto the aerial photographs and a grid map transparency copied.

4. The base map overlaid with the grid was then used to pinpoint the administrative location of each block. The aerial block overlaid with the grid permitted an analysis by block of land use (residential, industrial, agricultural), and in the case of residential land use, the proportion of coverage, residential characteristics, and the number of residential units).

5. Residential characteristics were identified as follows:

   - **Dispersed spontaneous**, occupation of a predominantly rural character.
   - **Planned**, no services.
   - **Planned**, basic services.
   - **Planned**, medium services.
   - **Planned**, full services.

   The final grid showing the number of blocks associated with 13 different categories of residency, and scope of settlement (percentage of blocks with either more or less than 50% of the area classified as residential) is provided in Table A1.

6. Only those blocks meeting the following criteria were retained for sampling purposes. First, all blocks with less than 50% residential use were excluded on grounds that it would distort the study by including too many grid units with dispersed spontaneous residential occupation. Second, all extensive areas of planned residential use with full services, considered to be urban, were eliminated. Third, areas with other forms of residential land use were excluded if more than 50% of the area is planned with full services. After deleting these blocks, only 87 blocks remained for sampling purposes (Table A2).

7. Of the blocks remaining, each block was assigned a population gradient coefficient, ranging from 1 to >45. Blocks with 1-5 residential units would have two households sampled. Blocks with >45 residential units would have a maximum of 11 households sampled. Based on these criteria, the final research design called for a survey of 524 households.

An indicative outcome of this sampling design is illustrated by Figure A1. Blocks with less than 50% residency (1, 2, 3, 7, 34, 35, 36, 37, 41, 69, 70, 71, 72, 75, 102, 443, 444, 445, 446, 476, 477, 478, 480, 511, 512, 514, 515) were excluded, as were blocks with 50% or more full services (5, 6, 40, 74, 483, 510, 517, 544). Remaining blocks were sampled.

These procedures have two important implications for the characteristics of households included in the survey design:

First, urban is defined as any area with full services. Areas with high residential density that would normally be considered urban by nature of building infrastructure are considered peri-urban. By excluding dispersed

Table A1:

Residential Characteristics of Grid Survey Design

	< 50%	> 50%	Total
Residency Characteristic (No. Blocks):			
Dispersed Spontaneous	88	10	98
Spontaneous	44	19	63
Spontaneous/planned (no services)	3	1	4
Spontaneous/planned (basic services)	5	29	34
Spontaneous/planned (basic/medium)	1	7	8
Spontaneous/planned (medium)	1	3	4
Spontaneous/planned (full)	7	6	13
Planned (no services)	2	0	2
Planned (basic services)	5	10	15
Planned (medium services)	2	3	5
Planned (full services)	12	11	23
Planned (basic/medium services)	0	1	1
Planned (basic/full services)	0	2	2
Total	170	102	272

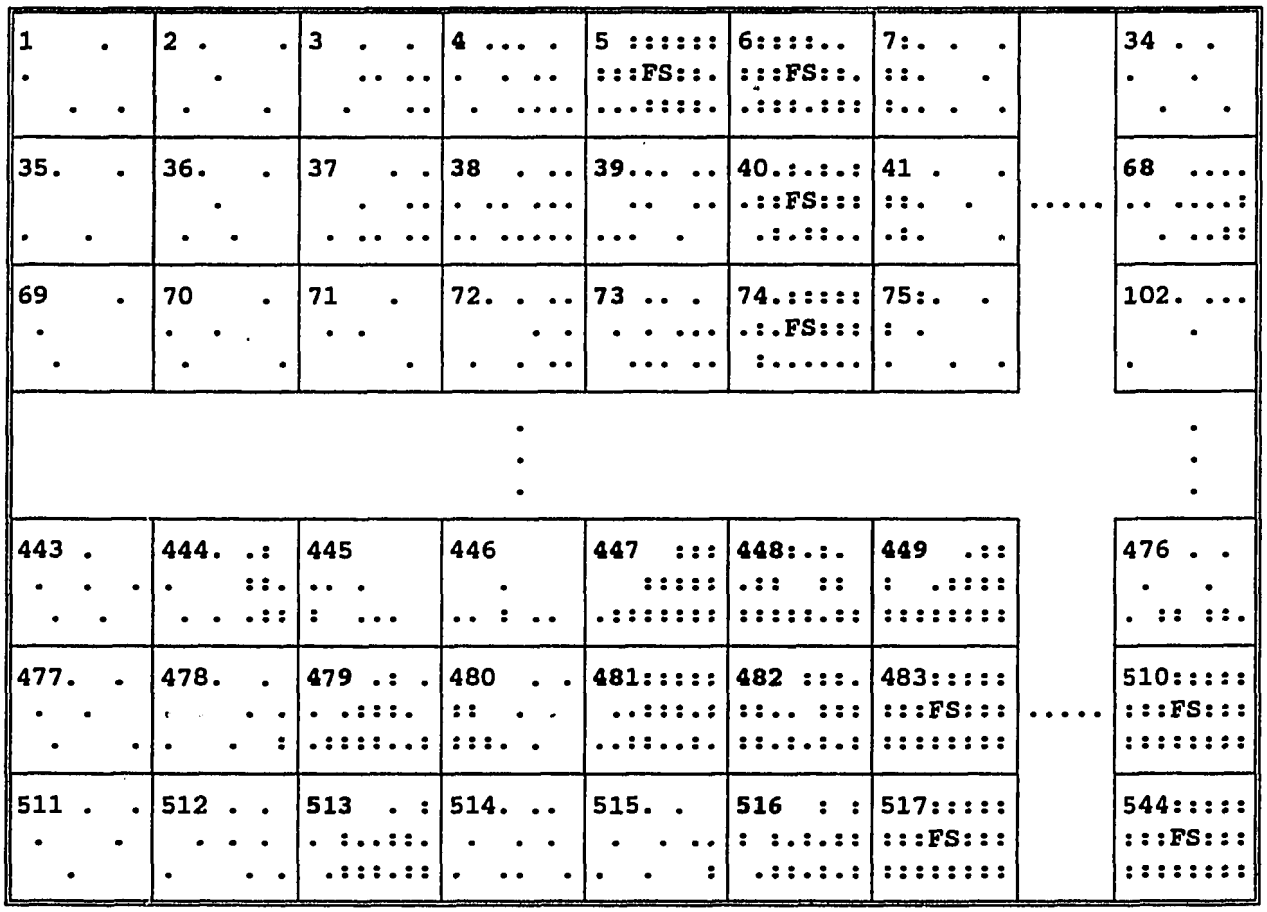
Table A2:

Target population and Sampling Frame, Phase 1 of the Household Baseline Survey

	Number of Blocks	Households to be Selected per Block	Total Sample Size
Residential Density (Units/ha):			
1 - 5	14	2	28
6 - 10	4	3	12
11 - 15	2	4	8
16 - 20	15	5	75
21 - 25	23	6	138
26 - 30	6	7	42
31 - 35	4	8	32
36 - 40	5	9	45
41 - 45	10	10	100
> 45	4	11	44
Total	87		524

Figure A1:

Schematic Diagram of Peri-Urban Sampling Frame



settlements, and the possibility that perhaps as high as 25% of the people on the urban fringe are excluded[57], there is some risk that the sample is biased toward the urban population. To the extent that in-coming migrants settle in more outlying areas or in more dispersed settlements, there is risk that the sample is under-weighted in migrant population.

Second, due to resource constraints, and security risks in district VII, the survey was scaled back to 330 households. It is not clear how this affects the randomness of the sample population.

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57. Assuming that the median point between 50% and 100% residency is 75%, and the median point between 0% and 50% is 25%, and given that the distribution of households is evenly distributed over these ranges, then one can conclude that the baseline survey was distributed to about 75% of the peri-urban population, and not to about 25%.