# *LTC Research Paper*

## 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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# 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

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# GLOSSARY *OF* TERMS

| | |
|---|---|
| **APIE** | government agency in charge of renting residential properties nationalized at independence |
| ***Administrador*** *do Distrito (do Posto)* | District Administrator, **the highest** authority at the district level. Maputo is divided into 8 administrative districts, each having its own district administrator. |
| *associações de produtores* | peasant producer associations |
| *Banco Popular de Desenvolvimento* | People's 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. |
| *câmara municipal* | pre-independence term for municipality |
| *Caixa de* | one of the now-defunct financial lending institutions |
| *casa* | Office housing the extension agents of the *Gabinete das Zonas Verdes.* There are 4 *casas agrárias,* one in each of districts 4-7 of Maputo, to provide extension services at the district level and also to sell **agricultural inputs.** ***Casas*** *agrárias* are found outside of Maputo as well, but these are administered by the Ministry of Agriculture. |
| *chefe do quarteirao* | Political leader responsible for a single block subdivision within *a bairro.* His or her immediate supervisor is the *grupo dinamizador.* |
| *chefe das terras* | Head of lands, or the person responsible for ensuring that the occupation of land and housing at the block level conforms with the law. The *chefe* cannot grant title. S/he may be involved in resolving residential but rarely agricultural disputes. |
| *colono* | Portuguese farmer who was granted a land concession by the Portuguese government in the colonial era. |

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| *Concelho Executivo* | Executive Council (EC), the political/administrative authority at the municipal level in Maputo (officials of the EC are all FRELIMO party members). |
| *conservatôrio de registro predial* | custodian of property registry |
| *conto* | (informal), is equivalent to 1,000 meticais (2.2 contos=US$1 in December 1991). |
| DINAGECA | Cadastral Office of the Ministry of Agriculture |
| *Direcção de Construção e Urbanização (Dcu)* | The office within the Executive Council which is responsible for land-use zoning and titling of both residential and agricultural lands in the city of Maputo (sometimes broadly referred to as the *Concelho Executivo).* |
| *Direcção Distrital de Agricultura* | District Office of the Ministry of Agriculture. It has no jurisdiction within the city of Maputo. |
| *Direcção Provincial de Agricultura* | Provincial Office of the Ministry of Agriculture, that is, 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 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 Zones Verdes (Gzv)* | 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* (GD) | 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 admin-** istration called *a permanente,* and several voluntary *responscáveis* who direct a variety of social programs, including security, women's affairs, health, |

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| | housing, and farm extension. There is also a Tribunal Popular, or local court, which is part of the *grupo dinamizador* (see Jenkins 1991, p. *128).* Its role and function have inherent contradictions; it is supposed to be a forceful and critical representative of popular concerns, yet, as the lowest tier of the state structure, it may be required to represent unpopular government initiatives (see Pinsky *1985,* p. 301). |
| *guevas* | Marketing intermediaries (who in practice are predominantly female). *Guevas* buy agricultural produce—chiefly lettuce and kale—directly at the plot level or farm gate. Often they cut the produce themselves before taking it to 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* | 1979 Land Law in the amended *1975* Constitution of Mozambique |
| *machamba* | farm or agricultural plot |
| *palhotas* | traditional straw or reed house or building |
| *posto administrativo* | Building in which the offices of the *Administrador do Distrito* are housed. |
| *privado* | private farmer or operator |
| *quinta* | **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*** |
| *regulo* | **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 dinamizador* after independence. |
| *responsável* | Individual responsible for the daily labor allocation as well as production and marketing decisions on his or her agricultural plot. |
| *seção do foral* | land registry of the municipality |

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| *terrenos* | parcels or plots |
| *título precário* | precarious, renewable, one-year concession |
| *título provisório* | provisional, renewable, five-year concession |
| *título definitivo* | definitive, permanent concession |
| *Tombo Geral da Propriedade* | Municipal Property Registry in colonial times |
| *União Geral das Cooperativas Agro-Pecuárias de Maputo* | General Union of Agricultural Cooperatives of Maputo |
| *União Geral das Associações dos Produtores* | General Union of Producer Associations |
| *zonas verdes* | Areas of agricultural production within the limits of Maputo city. |

**EXECUTIVE SUMMARY**

## Land policy

1. Mozambique was beset by Political and economic turmoil as it moved toward independence in 1975. Portuguese settlers, fearing the power of a new regime hostile to colonial and private interests, began to abandon their lands, homes, and businesses in large numbers. As many Portuguese fled, they destroyed what they could not take along with them. Moreover, the Portuguese practice of hiring expatriates for nearly all skilled and semi-skilled Positions deprived native Mozambicans of the abilities required to 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 any way privately transferred; only land improvements may be mortgaged. A concession may be held by any individual or collective with legal identity and may be perpetual or temporary in duration (the original statute limited the period of holding to 5-15 years, but a recent amendment permits leasing up to 50 years). Leasehold rights are transferable only by inheritance or, on the death of the holder, bequeathal to heirs according to terms of civil law. The holder must utilize the land rationally and in conformity with an authorized development plan. Any family which leaves unleased land idle for over 2 years, without justification, may have its right to the land revoked, without compensation.

3. The 1975 Constitution and 1979 Land Law confer on the state a strong interventionist role in the use and transmittal of land. The state has divested these powers among various agencies which make up the state apparatus in urban areas. At the time of independence, central control over urban land use and transfer was granted to the Ministry of Construction and Water, National Planning Commission, and National Institute of Physical Planning **(NIPP).** At the municipal level, the Executive Council (EC) was assigned principal responsibility for land use and distribution. Some 13 other institutions also received authority over land allocations, including, inter alia, the ministries of agriculture, education, and interior as well as APIE. In addition, the *grupo dinamizador* 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 the division within the EC responsible for issuing titles throughout the city of Maputo, including the pen-urban agricultural areas. This dispersion of responsibility among multiple institutions has resulted in complex and diffuse institutional arrangements governing land tenure in Maputo.

## Maputo peri-urban green zone settlement

4. Immediately after independence in the late 1970s, demand for arable land in the Maputo green zones came mainly from urban workers or ex-farm laborers already within the city. In the 1980s, several factors led to a sharp increase in land pressures and contributed to new groups of people from outside Maputo seeking land. These provocations—including (1) closure of the South African mines to Mozambican laborers, (2) drought and a severe drop in agricultural exports, and (3) civil war—induced massive movement to Maputo of people needing employment, land, and security. The rapid in-migration that ensued, continuing from about 1982 to 1987, caused an outward expansion of settlement. By the end of the period, most of the best agricultural land in districts 4-8 had been claimed. The next phase, from 1987 to the early 1990s, has mainly involved settlement of the drier lands around the green zones, though irrigated areas have also been shrinking with the intrusion of population.

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

## Green zone policies

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

7. In an attempt to curb declining food security in 1983/84, the government engaged in a policy of "parcelization," which aimed at transferring "underutilized" former *quintas* to private farmers who had demonstrated means and capacity to use the land more productively. 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 who possessed either capital and/or political influence. In 1985, specific areas of Maputo were divided into three categories: (a) permanent green zones, which contained the highest quality agricultural land (including demarcated zones corresponding to former *quintas* that had been officially registered before independence as well as undemarcated zones that were never surveyed or registered); (b) provisional green zones, which included land

more suitable for urban occupation (producers are allowed to cultivate but must leave without compensation whenever urban development begins); and (c) zones of urban expansion, which consisted of peripheral areas of the city.

8. The Central Union of Producer Associations was officially formed in 1988, though individual associations have operated in the peri-urban zone since independence. Following self-government, the producer associations carried out activities that had been performed before by labor gangs, for example, cleaning irrigation ditches. Beginning around 1985, their emphasis shifted to providing their members with commercial inputs. Since 1989, they have turned their attention to problems of land conflict, in particular, to the issue of outsiders with "certificates" claiming the lands of smallholders. Now, the principal goal of the Central Union is to become a legal entity and thereby register its members' land by way of group registration. At this time, however, the Dcu has no administrative procedure for granting group titles to agricultural land.

9. Only land that lies within the demarcated areas of permanent green zones is eligible for registration with the Dcu, though individuals have recently begun hiring topographers to conduct surveys outside of these districts. Three types of title may be issued: precarious (one-year concession), provisional (five-year concession), and definitive (permanent concession). Precarious concessions were intended for areas of future urban expansion or for landholders who currently lacked the potential to develop the land. The provisional category is supposed to result in definitive title once the holder shows capacity to better the land.

## Survey methodology

10. Between September and December 1991, the LTC research team surveyed 121 households in the peri-urban green zones—51 registered and 70 unregistered; 68 in District 4 and 53 in District 6. Titled households in the sample were randomly selected from records in the Maputo and Matola land registries. Unregistered households were randomly selected from lists provided by the *casas agrárias* and producer associations. A two-tier interview process was employed: a first-round questionnaire was administered at the site of the landholding to the *responsável* of each irrigated *machamba* held by the household; a second-round interview, inquiring about household-level characteristics, was administered at the place of residence to the household head, spouse(s), and adult workers.

11. The plot-based questionnaire asked about the *responsável'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 probed household demographics, wage- and self-employment activities, 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 4 versus District 6), gender (male- versus female-headed households), tenure status (households with at least one versus those with no registered plot), and the overall sample.

## Household-level analysis

12. Of the 121 households in the survey, 28 percent have at least one family member living outside of Mozambique (though very few reported receiving remittances). Household heads on average have resided in the Maputo area for 30 years, and in their current *bairro* for 21 years. Compared with the general population, which is in a high state of flux from refugee resettlement, this sample of producers has a long history of occupancy in the study area.

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

14. On average only 7 percent of households have one or more members who belong to a cooperative, and 65 percent have members who belong to a producer association. Unregistered households have higher rates of membership in producer associations than registered households (90 percent versus 29 percent) 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 getting marketing assistance. Those families with membership in a producer association joined to increase security of land rights and to acquire farm inputs. Increasing security of land rights was a more important factor for unregistered than for registered households.

15. Registered (compared with unregistered) households practice more intensive land use whether measured by total revenue (1,012 versus 640 meticais/square meter), chemical inputs (89 versus 60 meticais/square meter), or net revenue (747 versus 520 meticais/square meter). Female-headed households have the lowest productivity of any stratum and, compared with male-headed households, disclose very low revenue (437 versus 836 meticais/square meter), chemical inputs (32 versus 76 meticais/square meter), and net revenue (358 versus 644 meticais/square meter).

16. Males have higher rates of participation in and earnings from formal wage employment than females. Fewer adults are engaged in self-employment relative to wage employment (80 versus 133), but net monthly income from self-employment is considerably higher. Almost 20 percent of all income earners reported having compensation from multiple nonfarm sources. The average total income of female-headed households in 1991 was 739,000 meticais ($336) versus 4,445,000 meticais ($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 meticais, $56) was still only 21 percent of the male-headed category (596,000 meticais, $271). Registered households have substantially greater total income than unregistered households (7,473,000 meticais versus 1,610,000 meticais/household), demonstrating the economic power of private (titled) farms in the economy.

17. On average, crop activities contribute 59 percent, livestock activities, 16 percent, and nonfarm activities, 25 percent, to total household income. Unregistered households (37 percent) and female-headed households (35 percent) place greater emphasis on nonfarm earnings, lending weak support for the hypothesis that these groups are turning to nonfarm sources of employment because of limited land access. Conversely, registered households place the least emphasis on nonfarm income (21 percent).

18. Overall, the analysis reveals that agricultural producers in District 6, which has the least effective state administration, rely to a greater extent on cooperatives and producer associations to gain access to land and production inputs. Female-headed households, usually composed of divorced or widowed individuals or women whose husbands are abroad, are severely disadvantaged whether measured by land access, employment opportunities, or income levels. Registered households possess larger farms, more wealth, and higher incomes than unregistered 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 roots in both spontaneous settlement and official allocation by local and central authorities. Of the 162 irrigated plots in the sample, 29 percent were obtained through *bairro* authorities, 15 percent through spontaneous occupation, 11 percent from the Dcu or Executive Council, 11 percent from producer associations, 3 percent from the traditional village chief *(regulo),* 2 percent from the Green Zones Office, and 1 percent from the Ministry of Agriculture. Lower percentages of holdings were acquired through nonadministrative mechanisms—12 percent through borrowing, 9 percent through purchases, 6 percent through inheritance, 1 percent through eviction of a former tenant, and 1 percent through renting-in. No household 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 percent of land acquisitions in the 1950-1974 period, had become one of the least important modes by 1986-1992 (8 percent). Administrative allocations by *bairro* authorities were important not only during the post-independence era (1975-1980), when these influential people assisted urban residents in settling vacated lots, 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 percent in the 1950-1974 period to 21 percent in 1981-1985. Granting of concessions by producer associations has also expanded over time, from 0 percent before independence to the predominant source since 1986 (24 percent in 1986-1992. Land purchases, once common before independence, virtually ceased between 1975 and 1985 due to legal restrictions.

Purchases since 1986 have rebounded (18 percent), despite periodic decrees that private land transfers are illegal. Borrowing has remained an important means of land acquisition over time, ranging from 10 percent to 15 percent of total. Rentals have become more important since 1986, but still represent only 3 percent of all acquisitions.

21. A total of 34 plots of land was alienated by sampled households sometime in the past. In 65 percent of the cases, the landholders were evicted, losing land to private farmers, government, and producer associations; less than 12 percent of landholders in these cases received compensation. Besides holding land in the peri-urban area, 42 households (35 percent) still have parcels in outlying regions or places of origin. The majority of these respondents know whether and by whom their lands are being farmed. Only 22 percent indicated that the entire household would return to these lands one day, suggesting that prospects for going back to rural areas are not likely for most of the sampled households.

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

23. Most plot 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 percent feel they do not have the prerogative to rent or sell land. Although the law does not explicitly grant men greater transfer privileges than women, male-headed households appear to have greater rights of rental and sale than female-headed households, again despite legal restrictions. Growing vegetables or fruit trees can generally be done freely without involving the authorities. However, permission is normally needed on matters relating to permanent constructions and transfers. Registered households commonly seek approval from the Dcu or Executive Council; unregistered households usually seek permission from producer associations.

24. Despite some progress made in market reforms since 1985, the vast majority of households would still use administrative mechanisms to acquire more land. Of the 38 percent of households that would like additional land, a high percentage would turn to the *grupo dinamizador* for an allocation, especially in District 6. Purchasing would be more common in District 4 and among male-headed households. Female-headed households would rely more heavily on producer associations and *casas agrárias*. Surprisingly, 11 percent 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 percent of households are worried about losing land, and 57 percent feel that disputes have become more serious. In District 4, the major sources of dispute, in declining

order of importance, are "outsiders" claiming land (with concession papers issued by the Dcu) and neighbors; only 12 percent indicated that disputes are not a problem. In District 6, the major sources of conflict are individuals from outside the *bairro*, neighbors, *bairro* officials, and ex-landowners; 22 percent felt that disputes are not a problem. Twenty-five households reported having had a land conflict sometime over the 1973-1991 period; over 44 percent of these disputes have arisen since 1989, and 64 percent since 1986. The principal causes, in declining order of importance, include conflicting title claims (multiple titles issued for the same plot or overlapping registrations), private farmers expanding their holdings, projects claiming land, border controversies 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 formal credit. Land registration, by increasing exposure to government scrutiny, also appears to be multiplying the risk of engaging in sales or rental activity, thus complicating the benefit-cost equation (that is, households seeking greater tenure security for investment or credit must weigh the benefits against the increased probability of land being expropriated because if they engaged in private transfers).

27. Considering the perceived positive effects of land registration, the question remains: Why don't more households register land? Registered households (when referring to lack of registration by unregistered households) tend to place higher weight on land not being demarcated, on small farmers not being interested, and on the process being too long and expensive, while unregistered landholders themselves feel more constrained by lack of knowledge, inability to understand procedures, and a general perception that the producer associations should take care of it. Only 4 percent of households expressed no interest in having their land registered, suggesting a strong latent demand. 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 but then stopped for reasons of time, cost, or false perception that all the necessary procedures had been completed.

28. Registration cannot normally be granted unless the land has been demarcated. Surveying fees for extralegal demarcations exceed the means of most smallholders. DINAGECA, which has the surveying capacity, is mandated to carry out registration only in rural areas outside of Maputo Province. The Green Zones Office, which has jurisdictional authority, lacks surveying capacity and resources. The Dcu, which has an urban focus but 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 now in effect 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 landholdings for the family sector. Smallholders, in addition to lacking the knowledge, resources, or influence to acquire title to land, incur the risk of losing holdings to "outsiders" who do possess the necessary means. A situation of

institutions at all levels being involved in granting land allocations has led to multiple or overlapping concessions (formal and informal).

29. Plot managers 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) as well as the price they would be willing to accept in disposing of the same plot (offer price). The average reservation price is 45,966,810 meticais/hectare ($20,894), and the offer price is 31,218,177 meticais/hectare ($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 in the green-zone areas and their intention to capitalize on this trend. The mean price difference is 32 percent of the reservation price—a very high figure compared with real estate costs of around 6-10 percent 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 bargaining Position among households, which 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 (transactions costs) with household-level attributes. Farm size tends to have a negative effect on the price difference due to the reluctance of smallholders to dispose of land for income-security reasons or their difficulty in bidding for land because they lack purchasing power. A negative relationship between income and transactions costs and a Positive relationship between income and land prices indicate a potential for small farmers to exit agriculture and wealthier farmers to expand their holdings, with any forthcoming improvement in employment opportunities. Land registration tends to increase transactions costs due to greater risk of detection as well as augment losses of land for those engaging in "illegal" transfers. Gender has no direct influence on transaction 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 have left a legacy of uncertain land rights, high transactions costs, and proliferous institutional involvement in land Policy by central and local authorities. Although land rentals and purchases are becoming more frequent, the government continues in 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 for 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 demanding sets 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 too many parties with a voice in land policy, none of which has sufficiently clear responsibilities and means to perform its tasks effectively. Individual ownership rights and unrestricted markets may not be the best solution. Yet, it is hard to see how Mozambique's market reforms can take hold without a land policy more geared to serving private interests.

**SUMÁRIO** **RESUMO**

## Polítics de terras

1. Desde que Moçambique se tornou independente em 1975, o Pals tern sofrido uma violenta instabilidade Polítics e econômica. Colonos portuguêses, ora residentes em Moçambique, temendo o Poder do novo regime hostil aos interesses coloniais e Privados, abandonaram as suas terras, habitacoes e inúmeros negócios. Muitos dos Portuguêses, enquanto fugiam, destruiam maciçamente tudo o que nao podiam levar consigo. Alem disso, a prática comum dos portuguêses de recorrer a mão-de-obra estrangeira Para quase todas as qualificadas e semi-qualificadas, Privou o Pals de quadroon capazes de operar imediata e efectivamente as propriedades agrícolas e fábricas abandonadas.

2. De acordo corn a Lei de Terras de 1979 e regulamentos subsequentes, toda terra ProPriedade do estado. A terra nao poderá ser vendida, cedida, alugada, hipotecada ou em nenhuma circunstância transferida de forma Privada, embora beneficiações as terras Pudessem ser hipotecada. Por outro lado, a concessão poderá ser cedida a qualquer indivíduo ou colectivo corn 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 heranca ou na morte do mesmo aos herdeiros de acordo corn os termos da lei civil. 0 titular deverá utilizar a terra racionalmente e em conformidade corn urn Piano de desenvoivimento autorizado. Qualquer família que abandone um terreno, sem contrato, e sem justificação, por mais de dois anos, poderá ter o seu direito a terra revogado e sem comPensação .

3. A Constituição de 1975 e a Lei de Terras de 1979 conferem ao estado um forte intervencionista quanto ao uso e heranca de terras. 0 estado tern cedido esses poderes a várias entidades estatais. Esta descentralizacão do poder combinada corn o facto de estas resPonsabilidades terem lido designadas a muitas instituições, em diferentes circunstâncias, tornou o Processo de administracão de terras bastante comPlexo e difuso. APós a indePendência, o Poder do uso de terras, a nível nacional, foi outorgado ao Ministério e Aguas, 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 alem das entidades mencionadas, outras 13 instituições autônomas também receberam alguma autoridade sobre as terras, incluindo o Ministério de Agricultura, o Ministério de Educação, o Ministério do Interior, e o APIE . Alem disso, autoridades locais—grupos dinamizadores e outras organizações a nível do bairro—foram também envolvidas no Processo de distribuição de terras. Alguns anos mais tarde, no Princípio de 1980, o Departamento de Construção e Urbanização (Dcu) foi criado

dentro do Conselho Executivo. 0 Dcu 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 finals 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 maciças para Maputo de pessoas a procura de emprego, terra e segurança . 0 fluxo migratório, que se acentuou entre 1982 a 1987, resultou num aumento descontrolado da densidade populacional. Até 1987, a maior parte das terras corn melhor aptidao agrícola dos distritos 4 a 8 já tinham sido consignadas. Por outro lado, essas áreas têrn 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 Portuguêses a quern tinham sido atribuídas quintas, na periferia de Maputo. Após a independência, a imigração maciças 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. Alem 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 dispersal em várias instituições e poucos recursos são alocados para uma administração efectiva das terras Segundo o modelo proposto.

**Política das zonas verdes**

6. 0 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.** 0 Gabinete das Zonas Verdes foi criado em Maio de 1980 com a função de coordenar a produção agrícola, investigar a utilizadão das terras e infraestruturas das propiedades agricolas, 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 corn o grupo dinamizador, a administração do distrito e o Dcu).

7. Numa tentativa de controlar o declínio da segurança alimentar, em 1983-1984 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 use

das terras. A ocupação espontanea das quintas, verificada após a independência, foi declarada Regal. Muitos dos ocupantes foram substituídos por funcionários do estado, comerciantes, e elite urbana corn capital e/ou influência Polítics. 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 (inclundo 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 sãe permitidos a cultivar, contudo o terreno deve ser abandonado sem compensação em caso de necessidade para desenvolvimento urbano; e (c) zonas de expansão urbana—áreas da periferia da cidade.

8. A União Geral das Associaçöes dos Produtores foi oficialmente formada em 1988, embora associaçöes individuais já existissem nas zonas peri-urbanas desde a independência. A seguir a independência, as associaçöes 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 Geral 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 corn "certificados" exigindo a terra aos pequenos proprietários. Hoje, o principal objectivo da União Geral 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 pars 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 têrn contratado topógrafos pars conduzir levantamentos fora destas zonas. Existem tees tipos de títulos: "precário" (concessão de um ano); "provisório" (concessão de cinco anos) e "definitive" (concessão permanente). As concessões precárias foram designadas pars áreas planificadas para futura expansão urbana, ou pars 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 4 e 53 ao distrito 6. Os agregados familiares corn 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 associaçöes 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/a chefe do agregado familiar,

esposo(a), e adultos trabalhadores. Este inquérito foi realizado no local de residência do agregado familiar.

11. 0 questionário feito ao responsável do talhão debrucou-se sobre a sua experiência de gestão, direitos da terra, formas de adquisição da terra, características dos talhões, desenvolvimento, use 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 familia, salário e trabalho por conta própria, tomada de decisão no agregado familiar, posicão política, migração e remessa de dinheiro, e história dos terrenos dos membros do agregado familiar. Na análise, os dados foram desagregados de acordo corn o distrito (distrito 4 versus distrito 6), sexo (chefe do agregado familiar do sexo feminino contra o chefe do sexo masculino), posse de terra (agregados de família corn pelo menos urn 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 por cento tern pelo menos urn membro da familia 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 corn a população em geral, na sua maioria refugiados de guerra, esta amostra de produtores tern tido uma 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 têrn 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 hectare e as de sequeiro 0,52 hectare. Contudo, estes dados ocultam importantes variações. As família corn 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 não registadas possuirem maior número de talhões de sequeiro. Todavia, os registados possuem maior área total irrigada (1,01 versus 0,21 hectare). Por outro lado, a área da parcela irrigada dos registados maior (0,75 versus 0,16 hectare/talhão). Embora os agregados com chefe do sexo feminino tenham menos dependentes (18 por cento a menos), as suas áreas irrigadas são aproximadamente um terco do tamanho das áreas corn chefe de família do sexo masculino (0,21 versus 0,58 hectare).

14. Em média, 7 por cento dos agregados tern urn ou mais membros pertencentes a cooperativa, e 65 Por cento a determinada associação de produtores. A proporção das não-registados afiliadas as associações de produtores superior a das registadas (90 e 29 por cento respectivamente), enquanto que a proporção das família afiliadas cujo chefe do sexo feminino aproximadamente igual a das família corn o chefe do sexo masculino. As que se afiliaram as cooperativas fazem-no por diversas razões, denture elas o acesso aos meios de produção agrícola, facilidades de colocacão dos produtos no mercado, aumento do acesso a terra, e/ou assistência nas vendas. As família que se afiliam a associação dos produtores fazem-no para aumentar a segurança dos seus direitos a terra, e obter meios de

agrícola. 0 factor mais importante que leva as famalias não-registadas a se afiliarem a associação de produtores o aumento da segurança dos direitos da terra.

15. 0 use da terra das familias registadas superior a das não-registadas, seja a navel do rendimento total (1012 versus 640 meticais/metro quadrado), aplicação de tratamentos químicos (89 versus 60 meticais/metro quadrado), ou rendimento laquido (747 versus 520 meticais/metro quadrado). A productividade das familias cujo chefe seja do sexo feminino inferior a qualquer extracto social. Os seus rendimentos são também muito inferiores a das familias cujo chefe seja do sexo masculino (437 versus 836 meticais/metro quadrado), assim como os químicos empregues (32 versus 76 meticais/metro quadrado) e rendimento laquido (358 versus 644 meticais/metro quadrado).

16. A taxa de participação e salários dos homens em empregos formais superior a das mulheres. Poucos adultos fizeram referência ao emprego por conta propria no concernente aos rendimentos (80 versus 133), contudo os rendimentos líquidos mensais das actividades por conta-própria são consideravelmente altos. Aproximadamente 20 por cento 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 corn o chefe do sexo feminino foi 739.000 meticais ($336) versus 4.445.000 meticais ($2.020) corn 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 corn chefe feminino (123.000 meticais, $56) foi sómente 21 por cento do relatado no segundo tipo de família (596.000 meticais, $271). As famílias registadas têrn substancialmente maior rendimento total comparado ao dos não-registadas (7.473.000 meticais versus 1.610.000 meticais/agregado familiar), o que ilustra o poder econômico das entituladas propriedades agrícolas privadas na economia.

17. Em média, o rendimento total da familia provém de actividades agrícolas (59 por cento), pecuárias (16 por cento) e as não-agrárias (25 por cento). As famalias não-registadas (37 por cento) e familias com chefe do sexo feminino (35 por cento) 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 a terra. Contrariamente, as familias registadas dáo menos ênfase ao rendimento não-agrário (21 por cento).

18. No global, a análise demonstrou que os agricultores do distrito 6, o menos efectivo administrativamente, confiam nas cooperativas e associaçöes de produtores devido as facilidades de acesso a terra e aos meios de produção (insumos). Os agregados corn 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 famalias registadas possuem maiores áreas de cultivo e rendimentos do que os não-registadas, 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 tern sido feita sob duas formal principais: ocupação espontanea, e alocação official por autoridades locais e centrais. Dos 162 talhões da amostra 29 Por cento foram obtidos via autoridades do bairro, 15 por cento de ocupação espontanea, 11 por cento do Dcu ou Conselho Executivo, 15 por cento das associaçöes de produção, 3 por cento do regulado, 2 por cento do Gabinete das Zonas Verdes, e 1 por cento do Ministério de Agricultura. Uma pequena porcentagem foi obtida a partir de mecanismos não-administrativos, dos quais 6 por cento por herança, 9 por cento compra, 12 por cento empréstimos, 1 por cento oferta do antigo proprietários e 1 por cento explora terreno arrendado. Nenhuma família declarou ter alugado o seu terreno a outros.

20. A importância dos vários processos usados na adquisição da terra tern sofrido mudanças corn o tempo. A ocupação espontânea que representava 35 por cento das adquisiçöes de terras no periodo 1950-1974, tornou-se a forma menos importante no período 1986-1992 (8 por cento). As atribuições administrativas das terras abandonadas por autoridades de bairro foram importantes durante o periodo pós-independência (1975-1980), 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 Por cento no periodo 1950-1974 a 21 por cento em 1981-1985. As concessões atribuídas pelas associaçöes de produtores têrn aumentado ao longo dos anos. Desde a sua criação, nos meados de 1986, esta tern sido a forma predominante de concessão de terras (24 por cento). As compras de terra, que eram comuns antes da independência cessaram completamente entre 1975-1985. Uma subida notória de compras verificou-se por volta de 1986 (18 por cento), apesar dos decretos periódicos de notificação ao público da ilegalidade do acto de venda de terras. Os empréstimos têrn sido uma forma importante de adquisição de terras, oscilando entre 10 a 15 por cento das adquisiçöes. Os arrendamentos tornaram-se importantes a partir de 1986, mas representam somente 3 por cento das adquisiçöes.

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 Por cento dos casos, os proprietários dos terrenos foram retirados das suas terras, e substituídos por agricultores privados, governo ou associaçoes de produtores. Nesses casos, menos de 12 por cento dos originais donos dos terrenos recebeu compensação. 0 inquérito também demonstrou que 42 proprietários (o correspondente a 35 por cento 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 quern os explora. Alguns dos inquiridos (somente 22 por cento da amostra) acham que os originais donos dos terrenos poderão urn dia regressar e apoderar-se dos mesmos. Este dado indica que a maioria das famílias não tern intenção de regressar as suas áreas rurais de origem.

22. Apesar dos decretos periódicos emitidos pelo Conselho Executivo banindo transferências privadas de terras, 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 têrn estado a aumentar drasticamente corn 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 transaçoes variam entre $2.500 a $15.000 (USA) por hectare. Estas quantias são bastante elevadas, em particular se se considerar que o rendimento medio anual das família não-registadas aproximadamente $732, e o das familias corn o chefe do sexo feminino $336.

23. Muitos dos gestores acham que têrn 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 por cento dos inquiridos acha que não tern 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 as família registadas são normalmente cedidas pelo 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 família usa mecanismos administrativos para adquisição de mais terra. A maioria dos 38 por cento das família inquiridas, especialmente no distrito 6, 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 4, e em família com o chefe do sexo masculino. As mulheres chefes de família têrn a tendência de confiar mais nas associações dos produtores e casas agrárias. Curiosamente, 11 Por cento 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 Por cento das família receia perder a terra, e 57 por cento acha que o conflito de terras se está a agravar. As principais causas de disputa no distrito 4, em ordem decrescente são: estranhos reivindicando terrenos corn contratos emitidos pelo Dcu , e problemas corn os vizinhos. No distrito 4, 12 por cento das família acha que as disputas não constituem problema. No distrito 6, as principais causas são: indivíduos que não pertencem ao bairro, vizinhos, oficiais do bairro, e ex-proprietários das terras. Neste ultimo distrito, 22 por cento de opinião que as disputas não são problema. Vinte e cinco família revelaram ter tido conflitos de terras durante o período 1973-1991. Acima de 44 por cento dos conflitos surgiram em 1989 e 63 por cento em 1986. As principais causas incluem, em ordem decrescente de importância, conflitos de títulos (títulos multiplos 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 credito 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 equacão 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 questao do porquê da fraca aderência das famílias ao processo de registo permanece. As principais 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 por cento dos inquiridos demonstrou falta de interesse em registar as suas terras. Esta informacão 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 corneçaram o processo mas não continuaram por falta de tempo ou falsas percepções de terem concluído.

28. 0 registo normalmente feito a terras demarcadas. As taxas dos levantamentos topográficos das demarcações extra-legais excedem os meios financeiros da maioria das famílias. A DINAGECA, instituicão com capacidade tecnica de conduzir levantamentos topográficos, só pode executar registos em áreas fora da província de Maputo. 0 Gabinete das Zonas Verdes apesar de ter autoridade jurídica de fazer registos de terras agrícolas, não possui nem recursos nem capacidade tecnica. 0 Dcu, vocacionado em assuntos urbanos e limitado financiamento, tende a disponibilizar os escassos recursos ao processo de registo de propriedades urbanas. Embora já tenham tido fundos adequados para o volume de servicos então prestados, neste momento a situação financeira do Dcu e da DINAGECA precária. Para proprietários de terras do sector familiar certos requisitos não são aplicáveis, tais como submeter uma conta bancária, folha de salários ou piano de desenvolvimento. 0 envolvimento de muitas instituições na alocação de terras conduziu a concessões múltiplas ou 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 possuem meios adequados.

29. Os responsáveis pelos talhões em estudo foram questionados acerca do preço de reserva (o disposto a ser pago pelo responsável para urn talhão idêntico ao que possua actualmente), e do pre-ço de oferta (o aceitável em caso de oferta do seu talhão). 0 preço medio de reserva 45.966.810 meticais/hectare ($20.894), e o de oferta 31.218.177 meticais/hectare ($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 intencão de capitalizarem neste facto. A diferenca entre o preço de reserva e o de oferta 32 per cento do preço de reserva, valor bastante elevado comparado a diferenca de preços para terrenos nos mercados ocidentais (6-10 por cento).

30. Os modelos desenvolvidos de determinação dos preços de terras relacionam o talhão e as características da familia, 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 familias, que em princípio Poderiam deturpar os sinais dos preços 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 familias. 0 tamanho da propriedade agrícola demonstrou ter urn efeito negativo na diferenca de preço , devido a relutância dos proprietários de pequenas áreas de alienar os seus terrenos por razoes 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. 0 registo de terras tende a aumentar os custos de transação devido ao aumento do risco de ser detectado, o que pode induzir a perda do terreno. 0 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.

## Conclusoes

31. Os dezoito anos de socialismo em Moçambique criaram um estado de conflito em aos direitos da terra, altos custos de transação e proliferacão 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 pars controlar o use 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 compensacão honesta, inseguranca 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 pars pequenos como pars grandes proprietários de terras. A combinação de nacionalizaçöes 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 tern provado não ser a mais adequada. 0 registo de terras bastante complicado, corn 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 associaçöes de produtores para protecção dos seus direitos a terra, solução que tern também os seus problemas. De facto, a distribuição dos poderes da política de terras entre múltiplas instituiçöes com pessoal e recursos inadequados tem criado uma situação bastante turbulenta sem clareza nas responsabilidades e recursos pars uma realização efectiva das actividades. Os direitos individuais de propriedade e o mercado livre aparentemente não são a melhor solução. Todavia, difícil visualizar como as reformas do mercado podem ter lugar sem uma política de terras mais dirigida aos interesses privados.

# 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

**Michael Roth, Steve Boucher, and Antonio Francisco**

## 1. INTRODUCTION

The peri-urban areas of Maputo have experienced dramatic changes over the past two decades. Beyond the old cement city, low-lying regions 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 other horticultural production. The green zones underwent rapid settlement following independence, first, by un- and underemployed urban residents and former farmworkers occupying abandoned Portuguese farms and, later, after 1980, by refugees fleeing drought and war.

The civil war had a tumultuous effect on people's welfare, settlement, and employment as well as government's ability to regulate. Rural families have been uprooted from their traditional lands, experiencing devastating losses of property and life. While fear, drought, and economic deprivation pushed rural populations off the land, urban residents have seen their city overrun by refugees and squatters. Massive immigration from the countryside and lack of employment opportunities within the secure zone of Maputo have resulted in a rapidly expanding belt of squatter housing and mass of poverty at the city's fringe. Petty trade and low-wage occupations have burgeoned as formal sector employment 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 meager means to regulate land use or even adequately to 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 beauty of old. Yet the skeletal remains of skyscrapers continue to mark the city skyline eighteen years after independence. Beyond the old cement city and pushing into the agricultural green zones is a now vast area of temporary housing and squatter settlement which has limited or no access to water, electricity, or sewage (DeGroot 1989). Poverty is pervasive. Long-term residents show a sense of "pain" when

talking about the city's decline. While Maputo has rebounded somewhat in recent years, the deterioration is clearly seen and felt throughout the metropolis. As noted by José 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 central planning under the guidance of socialist principles to less state control with a greater reliance on private market forces. Considerable headway has been made in price liberalization, as indicated by the widespread presence of vegetables in street markets and articles in stores that were absent only a few years ago. Yet institutional rigidities continue to impose a drag on the economy. Land still cannot legally be sold, rented, leased, or transferred without the consent of an ever-changing set of authorities. A dynamic, informal land market is emerging, but transactions costs remain high due to insecure property rights and the onerous time involved in negotiating transfers. Economic hardships have left most Mozambican ministries and departments dealing in land Policy with only meager resources for day-to-day operation, effectively constraining government's capacity to provide the essential surveying and registration services.

Clearly defined and certain property rights are necessary underpinnings for any economy. In this regard, 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 sufficient duration? Are they secure? Can they be transferred at "reasonably" low cost? Negative responses to these questions imply high costs for economic activity, with the consequence of dampening the response of aggregate output to pricing reforms.

## 1.1 Research project

Beginning in January 1991, the U.S. Agency for International Development (USAID) activated funding for a series of studies on land, employment, and financial markets in the peri-urban areas of Maputo. Three institutions, acting under the rubric of the Peri-Urban Economic Growth in Africa project, agreed with the Science and Technology Bureau of USAID to cooperate in research: the Land Tenure Center (LTC) of the University of Wisconsin-Madison, the Ohio State University (Osu), and the Institute of Development Anthropology (IDA). Funding for the research was provided by UsAID's Bureau of Science and Technology, Africa Bureau, and Mozambique Mission. Work 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. 1995); 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 4 and 6. Households were queried about their land-settlement histories, mode of land acquisition, terms and conditions of transfer, land rights, size of holdings, perceptions of tenure security, land-use practices, commercial input use, hired labor, agricultural sales and revenues, nonfarm employment and earnings, and general demographic characteristics. The survey was first administered in District 4 in October and November 1991 and later extended to District 6 in November and December of the same year. While the surveys went according to plan for the most part, research activity in District 6 was shortened by 2 weeks due to escalated violence in November.

## 1.2 OUTLINE OF PAPER

The present study reports findings from the land-market survey along with numerous other interviews with producers, buyers and sellers of land, local authorities, and district and national officials in Maputo and its surrounding peri-urban green zones. Section 1 is introductory while section 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 zone. Section 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. Section 4 provides a statistical profile of the household economy while section 5 examines processes of land settlement, land acquisition, types and sources of land dispute, and registration benefits. In section 6, economic and political factors are linked with land prices to explain the determination of "reservation" 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.

# 2. LAND LEGISLATION, ADMINISTRATION, AND SETTLEMENT

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

## 2.1 LAND POLICY AND LAND LEGISLATION IN MOZAMBIQUE

### 2.1.1 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 of the reserves, land classified as "vacant" was available for acquisition through public sale. In principle, "progressive" African farmers could obtain up to 2 hectares of land contingent upon demonstrating financial capability and surveying the appropriate plot. As is still the case in Mozambique, the process of demarcation (section 5) was prohibitively complicated and expensive. The combination of land partitioning and high demarcation costs together with privileges and economic advantages already set aside for 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 inequitable land access resulted in the enactment of the Statute of Native Agriculture (Decree no. 43897) of 6 September 1961. This decree partitioned Mozambique's land base into three tenure categories: (1) land for towns and settlements, including peripheral areas; (2) land reserved for common ownership by Africans, to be utilized in accordance with customary practices; and (3) all other vacant lands not covered under classes (1) and (2). The decree contained no formal recognition of land rights for indigenous individuals or families, but allowed Africans to access land under statutory tenure in certain limited cases:

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1. This **and** the following subsection **draw heavily** on Bruce (1990).

2. As used during the colonial era, "Africans" shall be used here to designate indigenous (that is, **non-European)** 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.

- under ARTICLE 226 of the 1961 Decree, the local administration could grant concessions for permanent farms from class 2 (reserve) land to residents in its administrative jurisdiction subject to the authorization of the district governor and to the consent of the local administrator's advisors; and
- under ART. 229 and ART. 231, local residents could enter into rental or tenancy contracts with the local administration for available class 2 lands (but not for areas in excess of 50 hectares, unless resources and expertise justifying a larger hectarage could be proved).

Land rights acquired through these channels could be transferred only with the governor's authorization, though land rights were safe from government appropriation and holdings 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.

### 2.1.2 POST-INDEPENDENCE LAND POLICY

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

The post-independence land Policy had to strike a balance between a rising tide of socialism which was fueled by the need to avoid or redress past inequities in political and economic design, a modernist ideology by those coming to power who thought that future growth would require massive state and corporate structures, and practical concerns which focused on 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), "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." A debate on property rights ensued within the ruling party of Mozambique, the National Defense and Security Forces (FRELIMO), set against a background of ideology hardening along Marxist-Leninist lines. The reality of properties being abandoned in the wake of the Portuguese exodus precipitated the 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.'

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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 close to closely located central government.

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

According to the law, land cannot be sold, ceded, rented, mortgaged, pawned, or in any way privately transferred (ART. 1), though a subsequent provision permits land improvements to be mortgaged (ART. 2). Title or "license," which in effect is 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 unconditionally grant 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 to be paid for land use by the state itself, state agencies, or families, but fees are to be paid by private titleholders (ART. 9).

The distinction between private holdings and family farms follows the conventional Marxist distinction: family farms employ no wage labor while private farms do hire workers (ART. 15).[5] The land rights of family producers are guaranteed by their occupation of the land (ART. 8). Integration of such farms 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. (1995) have documented, has rarely been implemented or enforced (see also section 5, "Alienated land").[6]

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4. According to Bruce (i990), 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 (that is, 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 alt the same time, most family sector farmers produce for the market and many hire limited wage labor to augment the family work force."

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

While any individual or group may apply for a title concession under the Regulations (ART. 55), only private producers are required by law to file for title. Under the law their rights 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" was limited to between five and fifteen years, but a recent amendment (Law no. 1/86) allows a lease to be given for as long as fifty years. While titles for individuals and private entities are subject to this limitation, the restriction 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 apply 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 subdivided 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; the state retains 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; a lease no longer simply expires but must be renounced or revoked to terminate. In the event of termination, all improvements revert to the state (ART. 35). Revocation may be caused by nonfulfillment of the development plan, except when prompted 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 a six-month 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); it is obligatory to register the creation, termination, and transmission of such rights (ART. 39).

The Regulations further define 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 smaller than 250, 500, and 1,000 hectares, respectively. Leases for larger areas must be approved by the Minister of Agriculture. The Council 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 also seek to monitor family production. Although a family farm need not have a lease, it may apply for one (ART. 55). As defined, a family is composed of the extended family rather than the nuclear unit; the key criterion is "a community of material and affective life" (formal marriage is not required). Land occupied by families is not subject to taxation (ART. 47). The area for occupation is limited, however; a family's holding cannot legally exceed 0.25 hectare of irrigated land and 0.5 hectare of rain-fed land (per family member). 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 dictated allocations cannot be supported because of land scarcity, they can be reduced by local

authorities when taking account of social, economic, and cultural realities of the region. In the event that a family must vacate the land it occupies, a declaration of explanation is required (ART. 50). In such cases, compensation for improvements on the land must be paid in advance of the move and new land of similar value must be provided; those being moved should be able to view the new holding before they relocate (ART. 52), implying a right of refusal. If, of its own volition, a family leaves the land idle for over two 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).

### 2.1.3 URBAN LAND TENURE

The Constitution and Land Law confer a strong interventionist role to the state for the management, use, and transmittance of land. The state, in turn, has divested these powers among the various departments, agencies, and ministries which make up the state apparatus in urban areas (García 1989).

The Ministry of Construction and Waters (Mcw) has broad responsibilities for—as well as a strong history of intervention in—granting licenses 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 1976), and developing and approving construction plans (ART. 5 of Ministerial Diploma no. 25/87 of 21 January 1987). The National Planning Commission (NPc) (ART. 5 of the 1987 Land Regulation and ART. 11 of P.D. No. 34/86 of 24 April 1986) is responsible for developing and elaborating urban plans, implementing the regulations governing physical space, developing regional and local plans for residential use, and supporting local authorities in producing partial and detailed urban plans. However, in practice, it is the National Institute of Physical Planning *(Instituto Nacional de Planeamento Físico*, NiPP), an institute subordinate to the NPc, that is in effect in charge of elaborating and promoting urban plans (ART. 2 of Ministerial Diploma No. 61/88 of 11 May 1988) and regulating the occupation of municipal land.

At the local level, it is incumbent on the provincial government to issue lease concessions (ART. 8, Regulations), on the Executive Council to issue leases for areas within the urban plan, and on the Executive Council and respective people's assemblies to collaborate with the NiPP and superior agencies in elaborating local urban plans.' Local offices of the Mcw, NPc, and NiPP are also responsible for coordinating and executing urban development plans in accordance with general designs devised at the central agency level, protecting and maintaining immovable state property, and developing housing policy. Although the Land Law assigns the responsibility for governing land use in residential areas to the Executive Council, the Department of Construction and Urbanization *(Direcção de Construção e Urbanização, Dcu),* which issues concessions in Maputo, is actually in charge of issuing titles for urban property in the periphery of the city, including agricultural land.

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7. Summary of first meeting of the city and communal residential areas of February/March i979.

A complex web of overlapping responsibilities is the outcome, one that defies easy description or interpretation. In addition to the above-mentioned central and local authorities —the Mcw, the NPC, the NiPP, the EC, and the People's Assemblies—land grants were made to at least thirteen different 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 García (1989, pp. 7, 8), this dispersion and overlap of responsibilities combined with constantly changing legal rules and accountability have created an environment of arbitrary and uncertain land rights, lack of certainty over who is liable for leases, proliferation of urban technicians, dilution of scarce resources, and fundamental disrespect for rules and regulations by administrative officers and citizens alike.

## 2.2 MAPUTO PERI-URBAN GREEN-ZONE SETTLEMENT

### 2.2.1 PRE-INDEPENDENCE PERIOD

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

### 2.2.2 POST-INDEPENDENCE PERIOD (1975–1979)

The withdrawal of the Portuguese at independence resulted in the partial collapse of agricultural production for the market as well as a breakdown of urban industrial activity. The ensuing economic recession caused large and abrupt increases in unemployment and deflation of real wages, accompanied by the spontaneous and unorganized occupation of the agricultural lands abandoned by the Portuguese. During this period there was no official policy regarding either agricultural production or land possession in the green zones. The occupation that took place mainly involved ex-wage laborers and sharecroppers of the colonial *quintas* and urban workers who sought alternative employment in response to their falling incomes and living standards. The previous demarcations were largely ignored; in most cases, multiple families occupied a single, demarcated plot of land.

### 2.2.3 NEw CRISES (1980-1987)

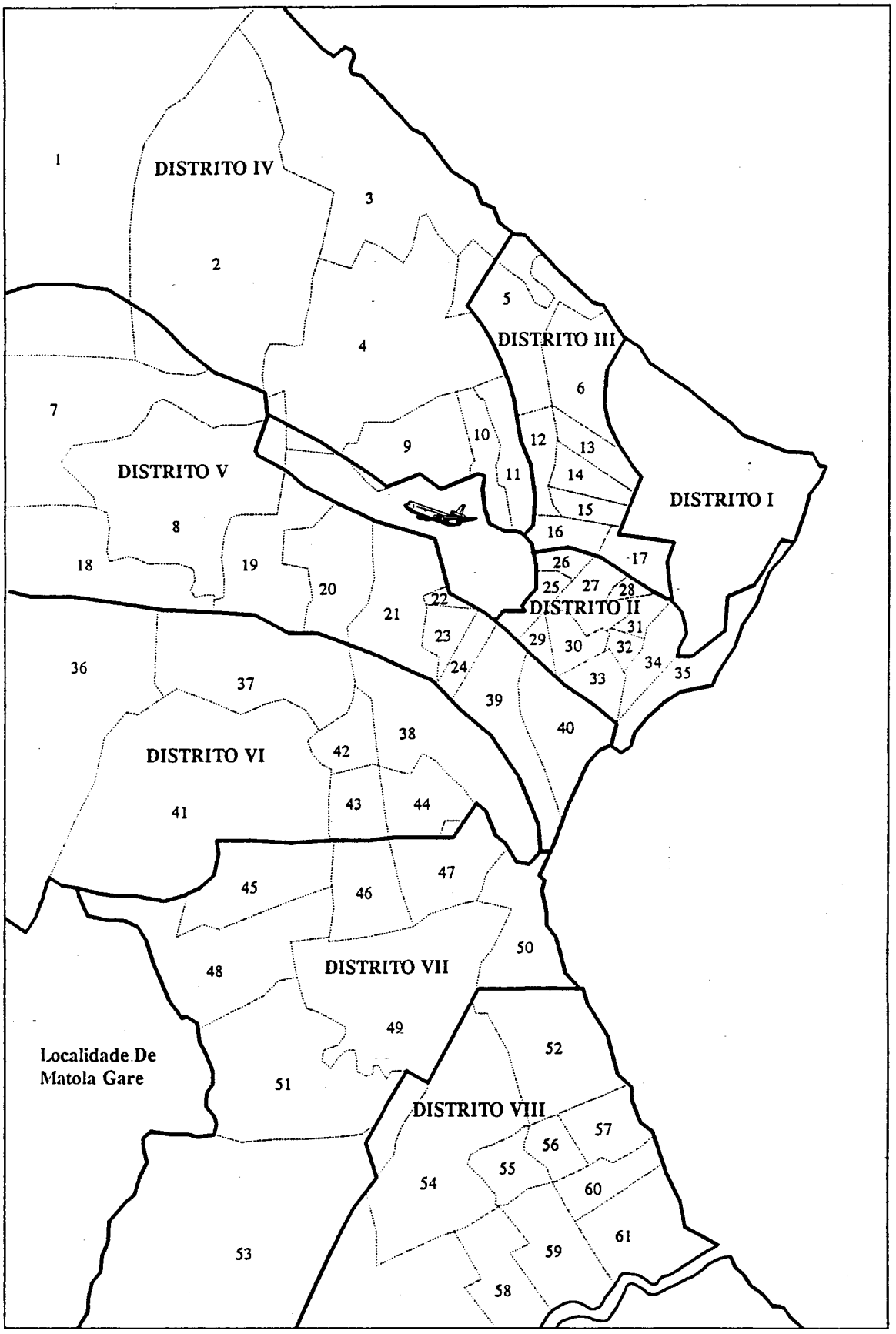
The 1980s brought new pressures on the city of Maputo and, consequently, on its green zones. First, the Republic of South Africa (RsA) restricted access to jobs in South African mines, causing a monetary crisis for Mozambique and unemployment distress for many rural workers. These jobs were crucial both to foreign exchange earnings of the state and to maintenance of large numbers of households in southern Mozambique. Moreover, the restriction came at a time when there were record numbers of Mozambicans in the mines—over 115,000 workers, according to Francisco (1987). Second, a series of severe droughts plagued southern Mozambique in the early 1980s, forcing a dislocation of many rural households. Third, armed attacks by former Rhodesian- and South African-backed forces intensified. This accelerated economic deterioration in the countryside, disrupted food supply lines to urban areas, and marked the beginning of a massive influx of refugees into Maputo, which continued into the early 1990s.

These factors collectively led to an acceleration of the spontaneous occupation of abandoned land that had begun at independence. The source of many current land conflicts in the peri-urban area, in fact, stem from the unorderly occupancy of previously demarcated land during this period.

### 2.2.4 GREEN-ZONE SETTLEMENT

The settlement of lands in the peri-urban green zones following independence was thus the culmination of several factors (personal interviews; see also Graham et al. 1991; Pinsky 1985; and Boucher et al. 1995). 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 the movement of people from the city's center to its outlying areas in search of farmland and jobs. (See figure 2.1 for the administrative boundaries of districts and *bairros,* and figure 2.2 for a land-use map demarcating the peri-urban green zones of Maputo and Matola cities.) Second, after independence the government adopted an "open-arms" policy, inviting rural people to occupy the apartments, houses, and shops that had been abandoned by the Portuguese. While purposed primarily to attract individuals into the urban areas, the proclamation no doubt led to settlement in the peri-urban regions as well, particularly as the supply of vacant property lessened. Third, while Mozambicans working in the mines of the RsA had been a common and important source of employment going back to the latter half of the nineteenth century, the closing of the mines to Mozambicans, the repatriation of earnings that followed, and the departure of the Portuguese provided Mozambicans with the rationale, opportunity, and means to acquire land (which they had heretofore faced restrictions in acquiring). Fourth, the impact of drought (and the severe drop in agricultural exports and incomes in the countryside) combined with civil war, particularly from 1980 onward, helped to encourage rural-urban migration—people seeking employment, land, and security—on a massive scale. Finally, the elimination of price controls on fruits and vegetables in 1985-1986 along with the structural adjustment program *(Programa de Reabilitação Econômica*, PRE), which relaxed restrictions on other types of

# Maputo, Mozambique: 1993



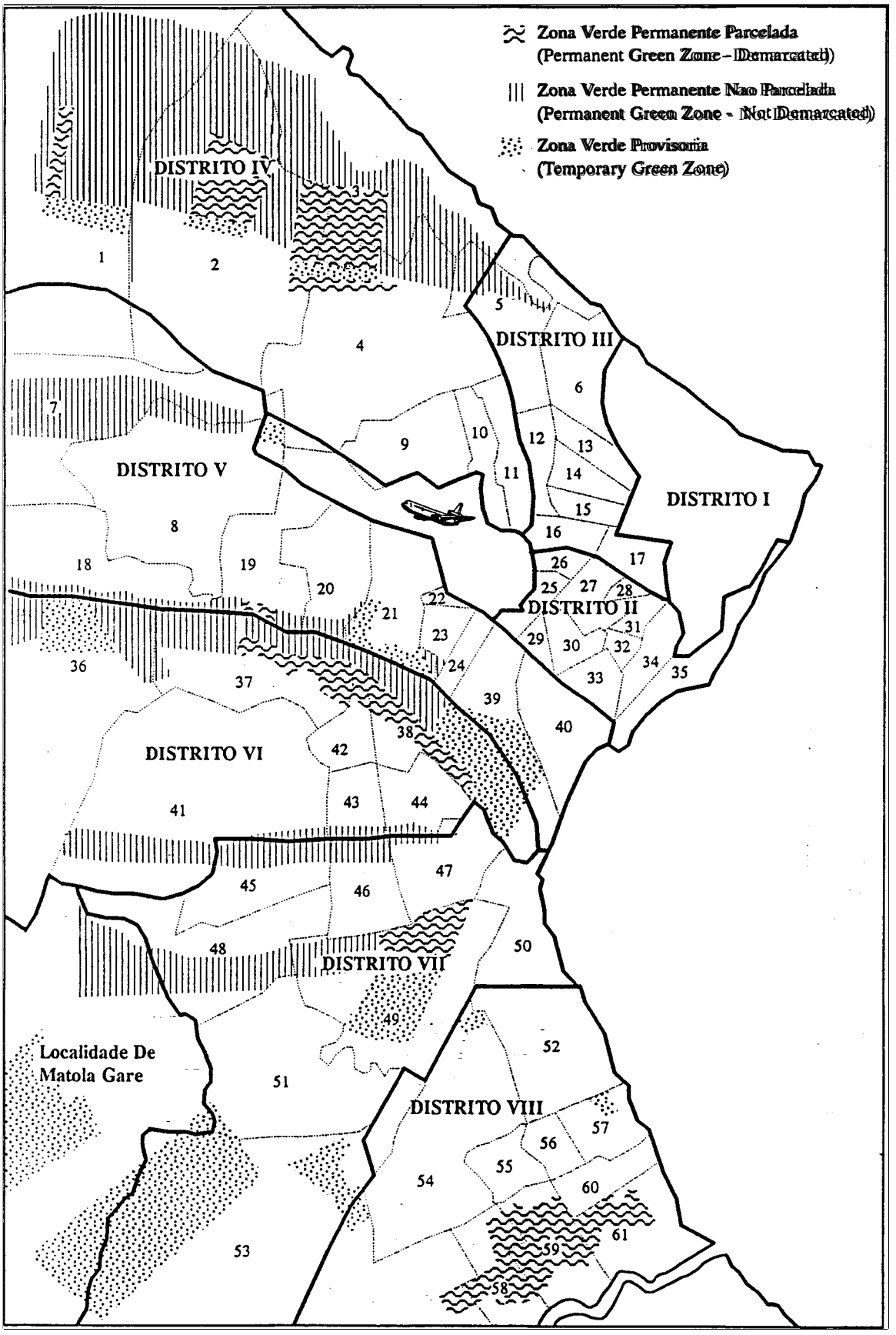

## Bairros:

25 De Junho (21)
Acordos De Lusaka (44)
Aeroporto A (26)
Aeroporto B (25)
Albazine (1)
Bagamoio (20)
Bunhica (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 Canico A (6)
Polana Canico B (5)
S. Damaso (45)
Trevo (50)
Tsalala (53)
Unidade 7 (29)
Unidade A (47)
Unidade D (43)
Urbanizacao (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**
*AnnaGraphics,* **Madison,** WI

# Maputo, Mozambique: 1993

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Unidade D (43)
Urbanizacao (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
**AnnaGmphics, Madison,** WI

trade in 1987, effectively increased incomes from horticultural production and improved the profitability of private vegetable trade by 1989 (Little and Baptista 1992).

A baseline survey of 330 households in 1991 contributed the following settlement characteristics of households in the peri-urban areas of Maputo (Graham et al. 1991): 32 percent of the total sample population were migrants, having moved to districts 1-8 of Maputo Province sometime in the past; 66 percent of household heads were migrants, but many had children who were born in Maputo and were therefore counted as nonmigrants (thus the reason for the lower percentage reported for the total sample population); and 3 percent (household average) had resided in the area for less than 5 years, 11 percent between 5 and 9.9 years, 28 percent between 10 and 14.9 years, and 58 percent for 15 years and more. Thus, while 67 percent of household heads were migrants, only 42 percent appeared to have moved to the peri-urban area since independence. Between 1971 and 1980, the primary motives (over 80 percent of valid responses) given for migration to the pen -urban area include, 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 continued 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 farmworkers. Although the peri-urban zone today is densely settled, in early 1980, the boundaries were still mostly limited to the old cement city. In the course of interviews, some smallholders vividly recalled the humid lands as being mostly unutilized and available for the taking in 1975. However, the rapid in-migration of people uprooted by war caused a rapid outward expansion of residential settlements in the period from about 1982 through 1987.[8] By 1987, most of the best agricultural land in districts 4-8 had been claimed and was being intensively farmed in vegetables. The period from 1987 to the early 1990s has involved mainly the subdivision and reallocation of irrigated lands and the settlement of rain-fed lands in surrounding areas. Due to the political transition at independence and war-related migration, population data are understandably scarce and unreliable. Nevertheless, the rate of growth in Maputo's inhabitants has by most crude estimates been extremely rapid, growing from around 250,000 in 1975, to around 800,000 by 1980 (Pinsky 1985), and to around 1.7-2.0 million by 1990. Although the most intense demand 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 followed 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 that vested all land rights to the state—and thence land administration to state agencies—produced a system ripe for corruption, where land rights are too limited or uncertain, land allocation decisions appear arbitrary, responsibilities for administering land are onerous and too broadly dispersed among multiple agencies, and too

8. Except the lowlands which were unsuited for residential construction.

few resources are spread too thinly to effectively administer the legal and land-administration systems proposed.

## 2.3 GREEN-ZONE POLICIES

In response to declining agricultural production and an increasingly unstable economic situation following independence, the government officially created green zones in the peri-urban areas in 1980. The green-zone 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 an ecological balance.

To meet these goals, the Green Zones Directorate *(Gabinete das Zones Verdes,* Gzv) was established in May 1980 to coordinate production activities of all producers in the green zones, investigate the common situation of land occupation, conduct an inventory of existing agricultural infrastructure, construct and maintain recreational areas, absorb as much of the marginal urban population as possible, and guarantee a supply of both input and output markets for green-zone producers. Administratively, the Green Zones Directorate follows the notion of "double subordination"; it is subordinated vertically to the Ministry of Agriculture and horizontally to the Executive Council of Maputo.

Initially the Green Zones Directorate was assigned responsibility for the outlying districts of Marracuene, Manhica, Matutuine, and Boane as well as for abandoned *quintas* within districts 1-8 of Maputo. However, lack of resources and increased security problems in the outlying areas forced the Directorate to scale back its activities to districts 1-8, Catembe, and Matola. Districts 3-8 have remained the principal zones of concentration, since Catembe and Matola continued to suffer security problems until 1992.

To carry out these goals, extension offices *(casas agrarias)* were organized in each district within the green zones to work with family, private, and cooperative farms. *Casas agrárias* are responsible for extending and teaching basic production techniques (an important function since 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 that is not being used efficiently, and participating in the issuance and reallocation of land concessions [along with local administrative structure *(grupo dinamizador,* GD) at the *bairro* level, the district administration, and the Dcu within the Executive Council of Maputo]. [9]

---

9. *Grupos dinamizadores* 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 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 i974, helping to organize the selection *of grupos dinamizadores* ('dynamizing groups' or GDS) in neighborhoods, factories, institutions, and sections of the bureaucracy. GD members were sometimes militants known to FRELIMO from

Box 2.1 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 Lourenco 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,* edited by John S. Saul, pp. 286-287. New York: Monthly Review Press.

When the redistribution of *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 a decline of the powers of the Green Zones Directorate. Currently the Gzv plays at most a token role in the granting of land concessions. Its principal function is agricultural extension and supplying agricultural inputs.

The process of assigning land concessions had become very controversial by 1984/85. Due to the worsening economic situation 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 exploitation and to assess the level of infrastructural development. The process of granting concessions *(entregas das quintas)* began with the objective of reallocating the "unutilized" or "underutilized" *quintas* to those individuals who demonstrated means (and capacity) to better 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 green-zone residents with capital or political influence. The redistribution might have been innocuous had demand for land been weak. But strong demand was coming from refugees and itinerants, and migrants returning from South Africa with foreign exchange.

**TABLE 2.1** **Area of green zones, Maputo, 1985**

| DISTRICT | PERMANENT GREEN ZONES | | PROVISIONAL GREEN ZONES (ha) | TOTAL AREA (ha) |
|---|---|---|---|---|
| | Demarcated (ha) | Not demarcated (ha) | | |
| District 3 | - | 140 | - | 140 |
| District 4 | 598 | 1,650 | 300 | 2,548 |
| District 5 | 8 | 1,000 | 110 | 1,118 |
| District 6 | 164 | 500 | 185 | 849 |
| District 7 | 120 | 750 | 1,800 | 2,670 |
| District 8 | 300 | - | 180 | 480 |
| **Total** | **1,190** | **4,040** | **2,575** | **7,805** |

**Source: Maputo, *Plano de Estrutura !dal Cidade de Maputo* ( Maputo: Instituto Nacional de Planeamento Físico e Concelho Executivo da Cidade de Maputo, 1985).**

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...."

It was not until 1985 that specific areas of Maputo were formally declared green zones. The official designation came within the 1985 Structural Plan *(Plano de Estrutura)* elaborated by the NIPP and the Executive Council of Maputo. In this plan, three categories of green zones were defined—permanent, provisional, and areas of urban expansion (see table 2.1).

### 2.3.1 PERMANENT GREEN-ZONE AREAS

Permanent green-zone areas, totaling 5,230 hectares (Mozambique 1985), contain the best quality agricultural land for intensive vegetable production based on soil quality and access to irrigation. These were further subdivided into two types of land—demarcated and undemarcated—based on cadastral status from the colonial period.

The demarcated permanent green zones (1,190 hectares) include areas which were officially designated and 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, though their grounds rarely correspond with their formerly demarcated boundaries. They are mainly located in the Infulene Valley and District 4. 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 land redistribution described above and higher demand for land in these zones stemming from their superior land quality and formal tenure security.

The undemarcated permanent green zones (4,040 hectares) contain similar quality land but were never surveyed or formally registered during colonial times. In these areas, all occupation after independence was spontaneous and disordered. After 1985, attempts were made to organize families working in these regions into producer associations *(associapoes de produtores).*

### 2.3.2 PROVISIONAL GREEN ZONES

According to the five-year plan, these areas, amounting to 2,575 hectares, are less suitable for intensive agriculture and more appropriate for urban use, including residential expansion, industrial parks, and schools. Rain-fed agriculture is permitted on the condition that producers leave without compensation when development of urban projects begins.

### 2.3.3 ZONES OF URBAN EXPANSION

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

Land quality is not uniform within the permanent areas. One study estimates that only about 2,000 hectares—of the almost 8,000 hectares defined as green zones—have "significant development potential" (DAN1DA 1987, p. 48); it excludes most of the land area because of

poor soil quality and lack of consistent irrigation. The zones identified as having high potential include about 680 hectares in the Infulene Valley and 1,270 hectares in District 4.

## 2.4 PRODUCER TYPOLOGY

No state farms exist within the peri-urban area of Maputo. However, three categories of producers—cooperatives, family farms, and private farms—are present, the latter two of which are included in the survey sampling frame discussed in section 3. A fourth category, producer associations, is beginning to obtain an important political force in the peri-urban green zones and comprises members primarily from the first two classifications of producers.

### 2.4.1 COOPERATIVES

Following the Third FRELIMO Congress, the government emphasized forming agricultural cooperatives to facilitate the "modernization" of Mozambican agriculture and as a means to assist the Poor and disadvantaged in gaining access to land. [10] The Mozambican Women's Organization strongly embraced and supported the movement, as reflected by the large number of female managers and female members who currently work on cooperative farms. Approximately 200 cooperatives covering roughly 1,000 hectares operate within the peri-urban zone. They are organized and managed under the General Union of Cooperatives *(Unto Geral das Cooperativas Agro-Pecuárias de Maputo).* The cooperatives' "peasant" orientation and philosophy stress collective participation and self-help work in agricultural enterprises, arts, and crafts. Historically, these organizations have provided an important means for poor families, unwed mothers, widows, and divorced wives with children to become engaged in farming." [11] While the cooperatives within the Maputo green zones have experienced more success than elsewhere in the country, the sector's performance has come under increasing scrutiny as land pressures have tightened. Since 1985, a number of factors have forced changes in their orientation and structure.

First, the General Union of Cooperatives has begun in recent years to aggressively register the land of its members as a precaution against government expropriation. Of the 200 cooperatives in the peri-urban area, about 86 had been registered by 1991. [12] According to officials in the union, small families (which are not in cooperatives) have been losing land to government employees, who use donor funds intended for development projects.

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**10. For a more complete discussion of cooperatives in the Maputo green zones, see Tibana (1986); Gzv (1986); and Francisco (1987).**

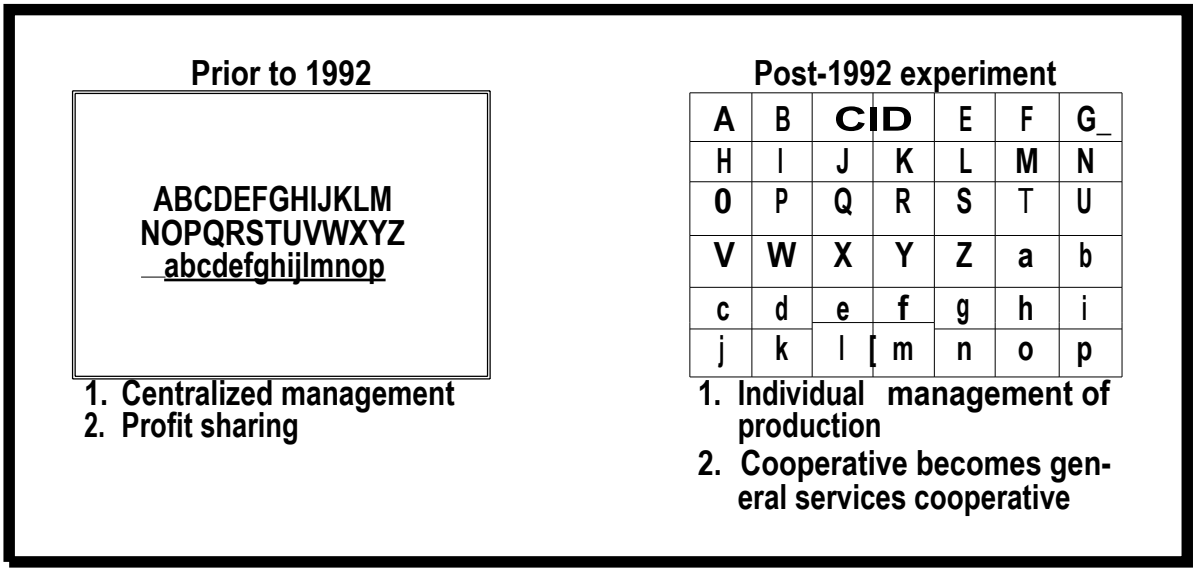
**11. Many household heads in the cooperatives are women, a fact explained by several considerations. Some women who have husbands working in the mines of South Africa support themselves through remittances and employment on cooperative farms. Also, a large number of co-op members were wives of men who were drafted into the military. Finally, a clear subdivision of labor has emerged in Maputo, whereby women produce the food and undertake petty trade in the informal sector while men seek formal wage employment (Little and Baptista 1992).**

12. Communications with Prosperino Gallipoli, advisor, General Union of Cooperatives.

Smallholders, who lack the influence or 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. [13]

Second, while the cooperatives have historically provided the disadvantaged and poor with access to land, recent rumblings of discontent within government about the low productivity of cooperatives have forced the General Union to "rethink" its orientation and structure. Until recently, all land-use decisions were managed centrally by an elected body of members of the cooperative, the land was operated collectively, and profits were divided among members. By late 1991, however, the cooperatives were considering individualizing the landholdings of their members to minimize "free-rider" problems and to increase productivity. As indicated in figure 2.3, individual cooperative members (indicated by A...Z, a...p) who made decisions collectively prior to 1992 are, under the new model, allocated individual plots to farm on their own. [14] Profits are individually retained while a fee is paid to the cooperative for general services (input procurement, marketing, and land registration).

**Figure 2.3 Proposed restructuring, cooperatives in the Maputo peri-urban zone**




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 being more frequently asked to bear production

13. Note that the General Union of Producer Associations of Maputo has adopted a similar strategy, though with less success since it does not yet have official legal status.

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

costs (the cooperative still provides assistance with input purchasing, but price and ability to pay are supposed to play a greater role in allocation among co-op members). Second, members who once never had to work are now being asked to "pay their own way," thus creating internal dissension. Third, in attempting to resolve the "free rider" problem, vulnerable groups—the disadvantaged, elderly, and ill—risk experiencing greater economic hardship, which poses a moral dilemma for managers who continue to see the cooperatives' role of assisting the economically disadvantaged as their most important raison d'être. Too little time has passed to determine the degree of success of these experiments, but the cooperatives clearly conceive their future structure as shifting toward a general services approach with greater emphasis on economic initiative and performance.

### 2.4.2 FAMILY SECTOR

The family sector in the pen-urban area of Maputo differs from the family sector in rural areas in two principal ways: (1) it employs a greater number of wage laborers; and (2) it provides more marketed surplus. Whereas most family farms in the countryside produce primarily for home consumption or barter, many of the family *machambas* in the peri-urban zone are dedicated chiefly to output for sale. [15] Several points help explain the more frequent use of both permanent and temporary wage laborers and the higher degree of market orientation by family farms in the green zones:

- **Surplus of cheap labor.** The influx of war refugees *(deslocados de guerra)* and economic migrants has increased the supply of farm labor and driven monthly wages far below the official minimum wage rate. Typical monthly wages for migrants range from 10,000 to 20,000 meticais [16] while the official minimum wage is approximately 35,000 meticais.

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

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

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

**16. In** i99i, 2,i00 meticais=US$1.00.

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

- Price **liberalization.** The higher prices received for vegetables (as a result of the economic liberalization program begun in 1985) have provided a strong incentive for all producers in the peri-urban area to increase marketed surplus.

### 2.4.3 PRIVATE SECTOR

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

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

Production is primarily, if not exclusively, for the market. A distinction must be made between the *quinta* owners *(quintaleiros)* and the other private producers *(privados).* The former occupy the farms abandoned by 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, and fruit trees as well as small animals. In contrast, private producers not occupying *a quinta* do not reside on their farms. Their production is more specialized, almost exclusively for market sale; they rarely produce subsistence crops. Their labor is almost exclusively hired, and they normally use more capital-intensive production techniques (for example, mechanized irrigation and tillage) than the *quintaleiros.* Further, many *privados* own their own trucks, which allows them to directly market their produce. Conversely, like family farmers, many *quintaleiros* depend on intermediaries to buy their crops at the farm gate.

**In** theory, private farmers are required 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 where land can be officially registered, that is, the *quintas* which were 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 unable to obtain title.

### 2.4.4 PRODUCER ASSOCIATIONS

The Central Union of Producer Associations *(União Geral das Associacoes dos Productores)* was officially formed in 1988, though individual producer associations (PAS) have operated in the Maputo peri-urban zone since independence. With the support of the Green Zones Directorate, the PAS have organized themselves with a structure parallel to that of the cooperative movement; they have a centralized body that is responsible for coordinating efforts among the different associations operating at the *bairro* level. Some 74 PAS operate in districts 4 through 8 (table 2.2). According to PA officials, three factors influenced the decision to seek approved standing: (1) the spontaneous emergence of PAS to do work requiring collective action (see below); (2) the success of cooperatives in providing technical support as well as procuring inputs and other services for their members; and (3) the influence of the Green Zones Directorate in organizing producers."

**TABLE 2.2 Number of producer associations in Maputo by district**

| DISTRICT | # OF PRODUCER ASSOCIATIONS |
|---|---|
| District 4 | 10 |
| District 5 | 11 |
| District 6 | 12 |
| District 7 | 31 |
| District 8 | 10 |
| Total | 74 |

Source: Archives of the General Union of Producer Associations.

In the early days after independence, the producer associations organized themselves around activities previously carried out on a collective basis by labor gangs, for example, cleaning irrigation ditches. Beginning around 1984/85, however, and extending through 1989, their emphasis shifted toward providing members with commercial inputs. At the time inputs were—and continue to be—sold by the *casas agrárias and* could not be purchased in "small" amounts (part of a bag of fertilizer or part of a can of pesticide) by individual producers. The *casas agrárias,* for budgetary reasons, could only purchase inputs once or twice during the year. Small producers who wanted fertilizer usually lacked the financial resources to acquire sufficient quantities in advance for the three or more vegetable seasons each year, while private producers, who had better knowledge of input arrivals and better capital endowments,

i7. There is a widespread feeling among smallholders in Maputo that, without the assistance of a larger organization with political influence (that is, a cooperative or a producer association), there is little chance of gaining access to inputs, getting credit, or protecting land rights.

could purchase their entire stock.[18] Producer associations began to help members purchase inputs in bulk from the *casas agrárias*, construct small warehouse facilities for storage, and develop and maintain accounting procedures to record purchases and payments. They are also trying to import inputs directly without state intermediation.

Since 1989, the PAS have turned their attention to problems of land dispute and conflicts stemming from government Policy—in particular, the emergence of outsiders holding official documents to claim landownership.[19] The principal goal of the *Uniao Geral* currently is, first, to gain status as a legal entity and, then, to register land for its members (a process similar to what the cooperatives are now doing). Without such status, the PAS can have no formal relationship to the state nor can they hope to obtain formal land registration.

## 2.5 LAND REGISTRATION

### 2.5.1 COLONIAL TIMES

Before independence, registration of a concession was more expedient than at present, in part because of lower demand for services. A letter from the producer, which contained a cadastral map (formally requested from the municipality), had to be written to the municipality *(câmara municipal)* indicating the location of the desired plot. A representative of the municipality *(seção do foral)* then visited the plot to determine whether or not it was occupied. After having his/her land rights verified, the applicant was 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. Occupation became permanent if **no** objections were filed within thirty days, after which an annual fee was assessed, on a square footage basis, payable to the municipality.[20] Copies of the title were then delivered to the landholder and the municipal property registry *(Tombo Geral da Propriedade)*.

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18. The *casas agrarias* cannot replenish stocks on a regular basis because they lack priority within the government budget. At the time of this study, the scarce foreign exchange needed to import inputs was rationed to the highest priority sectors, which excluded the Gzv.

19. In District 5, for example, there are reportedly many cases of individuals bringing papers showing claims to land. In most cases, with the backing of the Pas, producers have refused to leave. The dispute, rather **than** ending, becomes stuck in limbo. Landholders still retain their title certificates while Pas enforce the rights of smallholders. According to the Pas, land disputes are not declining; rather, people with certificates have momentarily halted their pursuit of claims for fear of confronting the producer associations.

20. For example, a concession granted in i972 in Matola carried an annual fee of 12.5 escudos (data collected from Dcu archives of Maputo and Matola).

### 2.5.2 AGRICULTURAL OR RURAL LAND

Bruce (1990) outlines the steps currently required to register a concession of land in rural areas of Mozambique. An application must be made to the provincial cadastral office *(Direção Nacional de Geografia e Cadastro)* (DINAGECA) of the Ministry of Agriculture if the plot is less than 250 hectares, or to the central office in Maputo, if greater than 250 hectares. 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 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 the property registry *(conservatôrio de registro predial).* The entire process should take approximately four months, though a year or more is commonly necessary.

### 2.5.3 PERI-URBAN ZONE, MAPUTO

The design of the current process of registration in the green zones, initiated around 1983/1984, coincides 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. Dcu also houses the land registry of Maputo, including residential, industrial, commercial, and agricultural concessions.

Until recently, only land within the boundaries of the permanent green zones (that is, those areas demarcated and registered in colonial times) were effectively eligible for registration.[21] However, in recent years, extralegal exceptions have arisen. Individuals with money and connections hire topographers from the Dcu or DINAGECA to survey 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:

- precarious *(precãrio)* title, a renewable, one-year concession;
- provisional *(provisôrio)* title, a renewable, five-year concession; and
- definitive *(definitivo)* title, a permanent concession.

Precarious and provisional concessions were originally envisioned as subdivisions of temporary titles. Precarious concessions were intended for landholdings in areas planned for

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*2i.* No *formal* process of registration existed between i975 and the time this study was undertaken.

urban-expansion projects or for landholders lacking clear and strong potential to develop the land. Rather than leading to definitive title, precarious titles were meant instead to temporarily provide land rights until such time that the landholder was asked to vacate the property. The provisional category was intended to lead to definitive title once the individual demonstrated a capacity and willingness to develop the land.

Much confusion among both 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 granted only after the concession has been filed with the property registry *(conservatôrio do registro predial)*. However, green-zone producers often believe that they hold title even though only precarious or provisional registration has been approved. In some cases, a definitive concession has been granted, but the landholder fails to obtain the title certificate. In the course of interviews, several producers with provisional or definitive concessions expressed their interest in obtaining the title certificate from the custodian of the property registry, but said they lacked a clear understanding of the procedures for doing so.

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

- The applicant acquires an occupation request form *(ficha de occupacao 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 his/her employer confirming his/her employment and salary level, or the applicant must obtain a written declaration from the bank documenting his/her savings balance (not both).

- With the application, the petitioner must submit a written plan describing how s/he plans to develop the plot.

- The applicant must obtain a written declaration 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.

- The applicant must furnish a topographical map of the plot requested.

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

- The land-registry archival section *(foral)* of the Dcu checks the topographical map to ensure that it coincides with their own cadastral maps. A member of the field brigade of the Dcu (that is, employees responsible for confirming land occupations and seeing that development plans are executed) then visits the plot again to 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 archives *(foral)* of the Dcu, at which point a written document certifying the registration may or may not be given to the landholder.

- An announcement must be made in the official gazette allowing thirty days for filing objections to the concession.

After these steps are completed, the applicant is given six months to prepare a detailed project plan. If the plan is approved, the applicant can have an additional two years to complete the investments specified. In cases where the landholder fails to complete improvements in the two-year time period, the concession may be terminated, a serious problem for projects requiring long investment horizons (buildings, for example). Assuming that the stated land-use conditions have been met, the applicant may petition for title with the custodian of the property registry, which issues the definitive title certificate, a step rarely followed by green-zone producers.

### 2.5.4 REGISTRATION PROBLEMS, PRIVATE LANDHOLDERS

As currently designed the registration process 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 commonly unknown or ambiguous to applicants and concession holders alike. Second, the application process, especially the conditions stipulating bank accounts and salaries, is heavily biased toward capital-intensive residential or business investments, not farming endeavors (excluding livestock sheds or mechanical processing facilities) that are primarily labor intensive. Third, the registration process is far from transparent. The above steps were compiled after long interviews with Dcu personnel; booklets or pamphlets, which could describe the registration process in full, do not exist. Rumors and speculation of registration procedures and terms thus abound, leading to misinformation and uncertainty.

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

- **Limitation on plots eligible for registration.** According to the Land Law, private producers are required to register their land; family-sector producers, though not required, may register if they choose to do so. Outside the demarcated areas, there are many private producers who cannot register concessions without first surveying and delimiting the land through extralegal means. Family-sector producers have no way of acquiring an official concession since they are located outside the demarcated areas and lack both financial resources and political status necessary to obtain a certificate extralegally.

- **Lack of uniformity in registration process.** While the above-mentioned steps are formally required for registration, certain points are bypassed. The GD is the local authority most aware of land occupation in individual *bairros.* One major source of conflict reported by applicants is the failure of the Dcu to check with *bairro* authorities to determine whether a requested plot is vacant, with the result that concessions are sometimes granted to land already occupied. This problem is exacerbated by understaffing and lack of resources within the Dcu, causing the infrequent monitoring of land use or 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 extended upon expiration. Many do not know the duration of the lease associated with their concession. 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 five-year term, others, with a ten-year term, while still others, with no term specified.

- **Lack of uniformity in fees.** In practice, application fees are not uniformly assessed. Many producers are charged either nothing or nominal fees for topographical services since this effort usually involves only crosschecking to verify that the plot coincides with the demarcations already made. However, other landholders are less fortunate. One landholder in the study was charged 315,000 meticais (US$155) for topographical services which, 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 obligations. Producers complained that taxes were arbitrarily applied by members of the Dcu, despite the fact that that organization has no responsibility for tax collection.

- **Administrative split of districts 6, 7, and 8.** In 1989, districts 6, 7, and 8 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 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 became effectively frozen. Requests by applicants for access to the documents for inheritance or conflict-resolution purposes were denied. The Dcu of Matola has re-initiated registration in the green zones only within the past year (1991). Whereas over 500 concessions had been granted in District 5 prior to the move, less than 15 were given between 1989 and December 1991 under the Matola administration.

- **Multiple institutions granting concessions.** Since independence, institutions at all levels have been involved in granting concessions for agricultural and residential land. Besides the Dcu and various government ministries (for example, 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. Although some local authorities act out of greed, others feel compelled to assist the landless, especially refugees who arrive destitute (Boucher et al. 1995). Under the latter situation, local authorities can ill afford to wait for solutions from the Dcu. Conflicts sometimes arise, however, when concessions are granted by the local authorities and are later issued to other parties by the Dcu, which has failed to verify claims at the local level.

### 2.5.5 GROUP REGISTRATION

Leaders of the producer associations are taking a different strategy to register the land of their members, that is, through "group" titles. On several occasions the PAS have visited the Dcu to acquire a group title on behalf of their members. They were informed, first, that the PA must be a legal entity and told, second, that it had to complete the following steps to register the land:[22] (1) the entire area encompassing all members of the PA must be surveyed and measured; (2) the area of private farms and cooperatives must be subtracted (which requires further surveying); (3) the remaining area would belong to the PA, effectively shifting legal rights in property from the individuals to the PA; and (4) any landholders not wanting to have their land registered in the PA must separately register their land to be excluded.

Two obstacles have impeded the process of group registration as outlined. First, the PAs have not yet achieved official legal status. Currently, the major efforts of the *Uniao Geral* are focused on developing a charter and set of statutes for the movement. At the time of study, leadership from the *Uniao Geral* was 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 Maputo 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).

22. This sequence was reported by representatives of the PAs.

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, or care to belong, to a producer association. While a single producer may visit the Dcu to register his or her land 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 cost of resurveying private farms and cooperatives. Third, the question remains of the suitability of group title. When some respondents were presented with the hypothetical issue of preference (individual versus group registration), a strong inclination for individual rights was expressed—along with a willingness to pay for it. But if this were not possible for reasons of cost and procedure, group registration was considered a second-best option.

## 2.6 CONCLUSIONS

At the time of independence in 1975, much of the area now known as the Maputo peri-urban green zones was either demarcated into Portuguese estates or covered by bush, woods, or grasses. The 1975-1982 period witnessed some settlement of the former *quintas* by urban dwellers and farmworkers along with some expansion into lowland and upland areas previously not in use. However, the immigration of refugees in the 1980-1987 period led to a rapid expansion of residential settlement and the claims to agricultural land that one observes in Maputo today. By 1987, most of the best agricultural land in districts 4-8 had been claimed and is now being farmed in vegetables. Although the most intense demand for land at the beginning of the 1990s was for residences in upland areas, the green zones have also been shrinking with the intrusion of population.

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. Rather than creating a secure legal framework for ascertaining and defending land rights, the existing land policy created a system ripe for corruption: 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) constrain private demand to register land.

The causes of land disputes in the green zones point to the Dcu in one way or another. While the Dcu was given jurisdictional authority only for the cement city, its responsibilities and powers have been expanded over time to include the now much larger area of greater Maputo. Furthermore, at the time of independence, land was allocated to at least thirteen different, autonomous agencies while local authorities have also become involved in land allocations. Institutional arrangements governing land access have thus become diffuse to such an extent that even the Dcu expresses dismay at their complexity. Because the Dcu has an urban mandate, it understandably lacks interest in registering agricultural lands and, further, already lacks the resources to effectively fulfill its responsibilities in all 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 1-8, which make up 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.

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 also 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 acts to concentrate power in the hands of a few technocrats, thus producing an environment conducive to rent-seeking behavior. While a companion study by Boucher et al. (1995) describes, in considerable detail, the effects of the current land policy on land disputes and tenure insecurity, the remainder of this paper analyzes its impact on land markets, land access, and productivity indicators.

# 3. RESEARCH METHODOLOGY

After eighteen years of independence and nearly as many years of civil war, Mozambique appears to have finally reached the threshold of a peaceful settlement. Issues of postwar 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 brought a devastating toll of people's lives as well as institutions that once provided public services. Recordkeeping systems once dutifully kept have slipped into dysfunction. Collection and reporting systems for most types of data came to a halt for lack of resources, security, and political stability in both urban and rural areas. Only a few years ago, a dearth of hard data existed at all levels, including the most basic facts 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 section describes research objectives, methods, procedures, and limitations. Subsequent sections present empirical data generated by the research design.

## 3.1 PERI-URBAN ECONOMIES IN AFRICA PROJECT

The "Economic Growth in Peri-Urban Areas of Africa" project is a collaborative effort among the Land Tenure Center (LTC) of the University of Wisconsin-Madison, the Institute for Development Anthropology (IDA), and the rural-savings cooperative agreement of the Ohio State University (Osu). The project seeks insight into the processes of, and constraints to, growth in the dynamic areas surrounding principal and secondary African cities. It further pursues more detailed information on the operation of land, labor, and capital markets and their intermarket 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, which are characterized by relatively abundant factor endowments, "thin" or "disconnected" markets, and more limited employment opportunities. Research under the project encompasses various sectors 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 legal framework, land disputes, and processes of land-dispute resolution (Boucher et al. 1995); 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 taking place 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 1, a survey was to be administered to a sample of households in the peri-urban area of Maputo (Graham et at. 1991), defined as the area between the cement city (and urban

neighborhoods beyond) and the end of the security zone, roughly 20-25 kilometers from downtown Maputo (figures 2.1 and 2.2, pp. 12-13). In phase 2, follow-up case studies and topical surveys were to be undertaken using subsets of households from the baseline survey, identified on the basis of predetermined socioeconomic criteria (for example, in the study by Boucher et al. 1995, on land disputes). However, in the course of realizing 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 outer reaches of the security zone (annex A). This combination—smaller baseline sample and undersampling of green-zone population—effectively resulted in the identification of too few households of green-zone producers for further statistical surveys. Thus a new sample frame was designed, one that for all intents and purposes is not connected to the original, phase 1 research methodology. Since the two sampling frames are structurally different (land-markets sampling frame based on access to agricultural holding versus baseline survey based on Population), statistical results are not generally comparable.

## 3.2 PRE-RESEARCH VISITS

A preliminary reconnaissance trip was made to Maputo in March 1990, comprising discussions with green-zone producers and members of two agricultural cooperatives, "Primeiro de Maio" and "16 de Junho." Interviews were also held with officials of the Bank of Mozambique, Green Zones Directorate, Centre of African Studies, Faculty of Agronomy and Faculty of Architecture and Planning at Eduardo Mondlane University, Ministry of Construction and Water, National Agency for Geography and Cadastre, 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 1 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 Desenvolvimento, Centre for African Studies, DINAGECA, Europa Agencias, Faculty of Letters and Faculty of Architecture and Planning at Eduardo Mondlane University, Remote Sensing and Mapping Unit of the Food and Agriculture Organization (FAO), Standard Totta Bank, Ministry of Construction and Water, Ministry of Labor, 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 to the green zones was again made to visit with producers and select future research sites for the second phase of land-markets work (Graham and Roth 1990b).

In August and September 1991, a third visit laid the groundwork for the final design of the land-markets research activity. Informal interviews were held with producers in districts 4 and 6. Meetings were also held with local officials, including representatives of the *casas agrárias* (extension offices) in districts 4 and 6, DINAGECA, the Farmers' Training Center within the Ministry of Agriculture, the Provincial Agricultural Office for Maputo

Province, selected producer associations in District 4, 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.

## 3.3 RESEARCH ISSUES AND OBJECTIVES

### 3.3.1 LAND MARKET EFFICIENCY AND DISTRIBUTIONAL CONSEQUENCES

Although landownership is vested in the state, both formal 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 generating widespread tenure insecurity while the layers of bureaucracy created by multiple agencies with powers and responsibilities over land allocations induce 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 lest it not be returned. Leaving land uncultivated or unused risks de facto settlement by refugees or reallocation by officials. Although land cannot legally be transferred without government authorization, private land markets are robust, involve considerable administrative involvement and oversight, and exhibit complex contractual underpinnings. The agricultural restructuring now under way raises a number of 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 by socio-political factors which reflect 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?

### 3.3.2 REGISTRATION COSTS AND BENEFITS

Land registration in districts 1-8 is handled by the municipality. Registration in rural areas, starting with the outer limits of districts 1-8, is handled by DINAGECA. Cooperatives and producer associations, foreseeing urban expansion, have aggressively sought 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 documented 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 are unavailable. Based on discussions with officials at the districts' *casas agrárias,* definitive titles for agricultural use are rarely issued. Most farmers who have title hold either a precarious (one-year) or a provisional (five-year) concession. [23] A provisional concession would offer superior benefits if, for no other reason, 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 landholdings 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?[24] Does it increase incentives for fixed-place investment? Does it increase landholders' demand for credit and formal lenders' security of repayment?

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23. Since the current process of registration in the green zones has been in place only since 1983/84, very few producers who were granted a five-year provisional concession have had sufficient time to fulfill the development plan and thereafter request definitive title. It is also possible that the Dcu is reluctant to issue definitive title to agricultural land for fear of curtailing future urban expansion.

24. Theoretically, this would not be expected due to legal restrictions on transfers in the Land Law.

### 3.3.3 MIGRATION AND LAND SHARING

In interviews, landholders voiced reluctance to rent-out land to persons other than close neighbors or family. The Land Law contains prohibitions on renting and stipulates that land not cultivated for two consecutive years is subject to expropriation by the state. Lessees 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. While reluctant to give or rent land to outsiders, families appear willing to award land to migrant kin. Nonetheless, the massive influx of refugees has 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 lest migrants return to their home districts in the postwar era. As Boucher et al. (1995) 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 the peri-urban areas or remain only loosely attached has important implications for urban planning and development. Important questions emerge:

- **Rental markets and land sharing.** How common are land rentals and what is the impact of the current legal and administrative land-allocation framework 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 serves what primary purpose(s)—provides livelihood to the refugee population; demonstrates land use to prevent expropriation; or increases 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 can move on to other lands or sources of employment?

- **Postwar** intentions. To what extent do migrants maintain claims to land in rural areas? How are these landholdings 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?

### 3.3.4 REGIONAL DIFFERENTIATION

The green zones in District 4 are ostensibly less vulnerable to residential encroachment due to the limited availability of land appropriate for housing. Land in District 6 is more suitable for housing; the city apparently plans to convert its land use from agriculture to residence, though this information could not be verified. Government support services (registration and input supply) are also better organized in District 4. Conflicts between residential and agricultural use are most severe on drylands surrounding the green zones and on outlying areas of dispersed settlement at the fringe of the city. District 5 (mainly rain-fed upland areas separating the irrigated green zones of districts 4 and 6) 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 less resistance when settling the rain-fed areas, though these same places will eventually come under more pressure from housing expansion. Lacking long-term customary rights to the land and financial resources to strengthen their claim through investment, refugees also face a higher risk of having land expropriated through administrative reallocation. 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 4 and 6? Is commercial input use higher in District 4, suggesting that commercial firms (in District 6) have troubles with market access in the absence of government assistance?

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

### 3.4 SURVEY DESIGN

As indicated earlier, the baseline survey in phase 1 yielded insufficient observations on peri-urban land transactions and registration of agricultural holdings in the areas of dispersed settlement (annex A). Thus a distinct and separate sampling frame was designed to include households operating in the two principal green zones of Maputo—District 4 and District 6. (The theoretical survey design is illustrated in figure 3.1.) To be included in the survey, a household had to possess at least one plot of irrigated land. Regarding tenure categories (columns in figure 3.1), a target number of households (20-30) possessing the following characteristics were to be interviewed: holding at least one plot with definitive title (A,G), five-year provisional title (B,H), one-year provisional title (C,I), or no title (D,J); having sold at least one plot (E,K); and having bought at least one plot (F,L). Viewed regionally, the sampling frame was to include households equally divided between District 4 (ABCDEF) and District 6 (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. Several 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 granted (that is, definitive, provisional, or precarious). Only after reviewing the registration documents (not certificates, since these often were never acquired) of the respondent in the course of administering questionnaires could the type of registration be ascertained.

Figure 3.1 Peri-urban green-zones survey, theoretical research design

| | DEFINITIVE TITLE | FIVE-YEAR PROVISIONAL TITLE | ONE-YEAR PRECARIOUS TITLE | No TITLE | LAND SELLERS | LAND BUYERS |
|---|---|---|---|---|---|---|
| DISTRICT 4 | A (20) | B (20) | C (20) | D (30) | E (20) | F (20) |
| DISTRICT 6 | G (20) | H (20) | I (20) | J (30) | K (20) | L (20) |

A: Households with primary *machamba* in District 4 with at least one *machamba* held under definitive title.
B: Households with primary *machamba* in District 4 with at least one *machamba* held under five-year provisional title.
C: Households with primary *machamba* in District 4 with at least one *machamba* held under one-year precarious title.
D: Households with primary *machamba* in District 4, no *machambas* titled.
E: Households with primary *machamba* in District 4 having ever sold at least one *machamba.*
F: Households with primary *machamba* in District 4 having ever bought at least one *machamba.*
G: Households with primary *machamba* in District 6 with at least one *machamba* held under definitive title.
H: Households with primary *machamba* in District 6 with at least one *machamba* held under five-year provisional title.
I: Households with primary *machamba* in District 6 with at least one *machamba* held under one-year precarious title.
J: Households with primary *machamba* in District 6, no *machambas* titled.
K: Households with primary *machamba* in District 6 having ever sold at least one *machamba.*
L: Households with primary *machamba* in District 6 having ever bought at least one *machamba.*

Second, both land "sellers" and land "buyers" were extremely reluctant to report details of transactions or even to admit that a transaction had taken place. Due to government statutes which ban transfers without official approval, land sellers risked having the proceeds heavily taxed or the sales receipts appropriated if the sale were discovered. The buyer risked having the land expropriated or reallocated by the state. Therefore, researchers adopted a case-study approach based on intensive interviews with the limited number of households (15) reporting a purchase or sale transaction in the baseline (Graham et al. 1991) or land-market survey (figures 3.2 and 3.3).

**Figure 3.2** **Peri-urban green-zones** survey, actual household sampling frame

| | UNREGISTERED/UNTITLED HOUSEHOLDS | REGISTERED/TITLED HOUSEHOLDS | TOTAL HOUSEHOLDS |
|---|---|---|---|
| DISTRICT 4 | A (40) | B (28) | C (68) |
| DISTRICT 6 | D (30) | E (23) | F (53) |
| TOTAL HOUSEHOLDS | G (70) | H (51) | (121 ) |

A: Households in District 4 with no *machambas* registered.
B: Households in District 4 with at least one *machamba* registered.
C: Households in District 4 regardless of registration status.
D: Households in District 6 with no ***machambas*** registered.
E: Households in District 6 with at least one *machamba* registered.
F: Households in District 6 regardless of registration status.
**G:** Households in districts 4 and 6 with no *machambas* registered.
H: Households in districts 4 and 6 with at least one *machamba* registered.
I: Total number of households in the survey.

Third, violence caused by insurgents, with random shootings and thefts, escalated in November and December 1991, particularly in District 6. While the survey had been initiated in District 4 in October and November 1991, it was extended to District 6 in those same two months of increased violence. While research operations went smoothly at first, activity in the area had to be postponed for two weeks shortly after inception due to the intensified conflict. The survey was finally terminated in December 1991 because of financial and security concerns, resulting in fewer households being sampled in District 6 than District 4.

To circumvent these problems, the research team settled on the simpler research design depicted in figures 3.2 and 3.3. A total of 121 households (excluding defective or incomplete questionnaires) were surveyed in the peri-urban zone, 68 in District 4 and 53 in District 6. Of the 121 households, 51 have at least one registered plot while 70 are unregistered. Of the unregistered households, 40 (57 percent of unregistered total) are located in District 4 and 30 (43 percent) in District 6. Of the registered households, 28 (55 percent of registered total) are located in District 4 and 23 (45 percent) in District 6. The 121 households in the survey controlled a total of 162 irrigated plots of land, 92 located in District 4 and 70 in District 6. Of the total plots held, 19 (12 percent) had definitive title, 32 (20 percent) had provisional title, 7 (4 percent) had precarious title, and 104 (64 percent) had not been registered.

Figure 3.3 Peri-urban green-zones survey, actual plot-level sampling frame

| | **DEFINITIVE** TITLE | **PROVISIONAL** TITLE | **PRECARIOUS** TITLE | No TITLE | TOTAL **PLOTS** |
|---|---|---|---|---|---|
| DISTRICT **4** | **A** (14) | B (16) | C (3) | D (59) | E (92) |
| DISTRICT **6** | **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 4.
B: Number of plots registered with provisional title in District 4.
C: Number of plots registered with precarious title in District 4.
D: Number of plots not registered in District 4.
E: Total number of plots surveyed in District 4.
F: Number of plots registered with definitive title in District 6.
G: Number of plots registered with provisional title in District 6.
H: Number of plots registered with precarious title in District 6.
I: Number of plots not registered in District 6.
J: Total number of plots surveyed in District 6.
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.
0: Total number of plots surveyed regardless of district.

## 3.5 SAMPLE DESIGN

The government distinguishes two types of farm operation—private sector and family sector—based on definitions that are only partially useful in peri-urban settings 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 both districts to select samples of registered (private sector) versus unregistered (family sector) households.

### 3.5.1 DISTRICT 4

The green zones of District 4 consist of four *bairros—Costa* do Sol, Laulane, Mahotas, and Albazine, listed sequentially from nearest to city to farthest out (figures 2.1 and 2.2,

pp. 12-13). 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 respective managers in the two *bairros.* The other two *bairros* are situated farther out in the peri-urban area, with Albazine bordering the outer limits of the security zone. The *casa agrária* responsible for Mahotas and Albazine was unable to produce comparable population lists.

Under the Dcu's registration procedures, each approved concession is issued an index card which is filed in the office archives. The index cards are stacked by *bairros* and by land-use category—agricultural or residential. Based on a review of these records, 336 agricultural registrations were identified in all 4 *bairros* of District 4.

Each of the four *bairros* has multiple producer associations to which most producers belong. The associations in Laulane and Costa do Sol provided membership lists containing 921 names.' The associations in Mahotas and Albazine contributed membership lists containing 779 names. The lists together yield a reasonably representative population of nonregistered farmers operating in District 4, Maputo peri-urban green zone.[26]

Unregistered households in District 4 were randomly selected from the membership lists provided by the *casa agrária* and producer associations; the registered households were chosen 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 select households. In the event that a given name was chosen twice or that the same name existed on both lists, the selection was dropped and another name drawn. More households were picked by this procedure than were actually interviewed in case some families proved difficult to locate. However, only five of the first thirty households chosen no longer resided in the area or could not be found, suggesting that the lists were fairly current and/or the population was tolerably stable.

### 3.5.2 DISTRICT 6

The green zones of District 6 also contain four *bairros* (listed sequentially from nearest to city to farthest out)—Vale do Infulene, T-3, Zona Verde, and Kongolote. Compared with District 4, the *casa agrária* in District 6 was poorly organized. While it could provide a partial list of registered farms, it simply had no record of unregistered farmers. The nine producer associations that operate in the four *bairros* supplied membership lists totaling 2,155 names. Although researchers felt that the lists were less comprehensive than those of District 4, they

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25. While neither list is complete, these **data** suggest **that** 6i percent (921/1,500) of **agriculturalists** in the green zones belong to producer associations.

26. Very few members of the producer associations held registered title to their land. The difference between the lists from Laulane and Costa do Sol—576 (i,500—921) persons—included those households with title and nontitled land. Also, based on personal observations, most of the registered plots (that is, 336) were located in Laulane and Costa do Sol, indicating that the vast majority of unregistered households belong to a producer association.

nonetheless were furnished with a fairly current inventory of producers working in the peri-urban zone.

However, identifying registered landholders 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 6 were transferred to the government offices of Matola city. Lacking proper facilities, the files were stacked in a storage room of the municipality authority. Since 1989, only 12 registrations had been initiated and completed in Matola. Researchers had a great deal of difficulty gaining access to the storage room; once admittance had been approved, organizing files took a long time. Piles were first arranged according to land-use category (agricultural and residential); then supplies were created according to registration status (approved and nonapproved). Finally, names associated with approved agricultural concessions were assembled, and a random-number generator was used to select households.

### 3.5.3 IMPLICATIONS

As a result of these methods, (1) names of titled households were obtained from records in the land registry; (2) names of unregistered households were secured from producer association lists (and the records provided by the *casa agrária* in District 4); and (3) all households included in the sample have access to at least one irrigated plot in the green zones (though some of the families also produce on rain-fed land located in other peri-urban areas).

Regarding registered households, since the location of the plot was known from registry files, researchers could visit the plot, find the operator, and inquire about other landholdings. Unregistered households proved more difficult to locate, however, because neither the address of the user nor the location of the plot was known to the research team. Both survey instruments and interview processes were specifically designed to address this constraint.

## 3.6 SURVEY INSTRUMENT AND METHODS

### 3.6.1 INTERVIEW PROCESS

Extension agents *(monitores/tecnicos)* of the *casas agrárias* in both District 4 and District 6 were employed to find the *machamba* managers chosen from the population lists, for these extensionists work closely with producer associations, are well acquainted with individual producers in their district, and have good knowledge of plot locations. If the agent did not know either the location of the plot or the *responsável* selected, the producer association was then asked 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 respondent's principal irrigated *machamba.* The *monitores* were also very aware of other irrigated plots held by the *responsável* and by other members of the family. In the case of two

or more *responsáveis* per household, both were asked to be present for the interview on the scheduled date.[27]

Since agricultural activities on the *machambas* normally take place between early morning and early afternoon, investigators used a two-tier interview process. The research team and extension agents would visit the sampled *machamba* in the morning to obtain plot-specific data. Once that interview was complete, enumerators would visit the second plot of the *responsável* or the irrigated plots of other *responsáveis* in the family. To verify data, enumerators tried to visit as many irrigated plots as possible; for those irrigated plots not examined, they had to rely on respondent recall. Surveyors asked a smaller set of questions about rain-fed plots, which were generally not inspected because of security risks.[28]

At the first visit to the household's *machambas,* information were obtained on the location of family's residence. Another interview, usually scheduled for the next day, was arranged for the second-stage household-level survey of family 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.

### 3.6.2 SURVEY INSTRUMENTS

A two-round questionnaire, written in Portuguese, was administered to each household. Round one involved plot-level questions asked of the *responsáveis* at the site of the irrigated *machamba.* When the *responsável* was not the proprietor (for example, a male who works in the city while his wife cultivates the *machamba),* the owner was asked also to attend the interview, if possible. For each irrigated *machamba* held by the household, a round-one questionnaire was administered to the appropriate *responsável,* inquiring about his or her farm-management experience, land rights held, settlement history, and mode of land acquisition. Also, the respondent was queried about physical characteristics of his or her plot(s), 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). For the preceding agricultural year, too, detailed questions were asked on production mix, output, marketed surplus, production costs, family labor time spent on the *machamba,* wage labor costs for both permanent and temporary workers, and income.

The second-round interview explored household demographics; language proficiency; type and earnings of all nonfarm wage employment; nonmonetary benefits received in association with salaried employment; type, revenue, and costs of all nonfarm self-employ-

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27. 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 tract(s) were addressed to those who did attend. Since plot managers frequently work on the parcels of all family members, the absence of one *responsável* did not seriously undermine data quality.

28. Rain-fed plots were generally located far away from the irrigated perimeters, in many cases in "insecure" zones.

ment 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, tracts 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 household members with nonfarm activities were asked to attend the interview as well.[29]

### 3.6.3 DATA ENTRY

Questionnaires were duplicated in Maputo; one copy was deposited with the Department of Economics, Eduardo Mondlane University (the names and addresses of respondents having been deleted) while the original set was taken to the United States with the LTC field researcher in December 1991. Data entry and editing took place in Madison, Wisconsin, from March through August 1992; a preliminary report was distributed in November 1992. Further data analysis of land-price regressions and revision of statistics took place from June through November 1993.[30]

### 3.6.4 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. Working sessions were held to thoroughly review and discuss the questionnaire; pretesting with students helped standardize interview techniques as well as indicated questions or areas where respondents might have difficulty.

## 3.7 IMPLICATIONS AND LIMITATIONS

This section describes the research issues, objectives, and methods associated with a land-markets survey of 121 producers in the pen-urban green zones of districts 4 and 6 of Maputo. Despite the lack of accessible, up-to-date population lists (unregistered sample) and registration records (District 6) and the risk of insurgency in the study area, a reasonably comprehensive and randomized sampling frame was developed and implemented, albeit with considerable effort. The data generated by the questionnaires administered within this sampling frame form the basis of the empirical analysis that follows.

Despite having generated extensive data of high quality, the survey encountered a number of problems in the course of execution, with important implications for data analysis and reporting. First, language presented little problem. Nearly all operators of registered plots could speak Portuguese. The student enumerators spoke the mother tongue of the respondent

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29. Letters were **prepared** and signed by the Director of the National Directorate of Statistics to authorize the absence from work of **any** household member for interview sessions.

30. This study, containing corrected data and new land-price regressions, supersedes the 1992 report.

in about three-quarters of the interviews; the extension agent could speak the required language in the remaining cases. There is, nonetheless, some risk of information loss in the communication of information from respondent to extension agent to enumerator to researcher.

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

Third, respondents had difficulty disaggregating input use by plot. In cases where chemical inputs and labor wages had been paid, records were kept independently of any given plot. If detailed applications of farm chemicals and seeds by plot could not be remembered, the enumerators were instructed to ask whether or not the input had been applied to the *machamba*. For those plots receiving inputs, use per hectare was prorated by plot size. However, the significance of this problem was greatly minimized in practice since commercial input use proved low and most households held only one or two plots.

# 4. GENERAL HOUSEHOLD AND PLOT CHARACTERISTICS

Selected data are presented and analyzed in this section on political and socioeconomic characteristics of green-zone producers including household demographics, landholdings, language skills, political status, household decision-making, physical assets, nonfarm employment, and farm and nonfarm income. Data are disaggregated according to seven categories of households to reflect different degrees of political and institutional status: quality of state administrative structures (District 4 versus District 6), gender (male- versus female-headed households), tenure status (registered versus nonregistered), and the overall sample. The analysis reveals that agricultural producers in District 6, which had the least effective state administration, rely to a greater degree on cooperatives and producer associations to gain access to land and production inputs as well as to secure land rights. Female-headed households—usually directed by women who have been divorced or widowed or have husbands living abroad—are severely disadvantaged, whether measured by resource access, employment opportunities, or income levels. Registered holdings have larger farm sizes, more family wealth, and higher total income than nonregistered households due to differences in human capital, property rights, market access, and nonfarm employment among households.

## 4.1 HOUSEHOLD STRATA

Data by household level are reported in this and subsequent sections by seven primary groupings:

A. households whose primary irrigated *machamba is* located in District 4 (most but not all plots are located in the same district) (n=67);
B. households whose primary irrigated *machamba is* located in District 6 (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); [31]
E. households with at least one plot registered (n=51);
F. households with no plots registered (n =70); and
G. aggregate sample of households (n=121).

Of the 68 households in the survey with the primary *machamba* located in District 4, only 67.6 percent (46=68) reside in the same district (table 4.1).[32] The percentage of

31. Only partial information is available for one female-headed household.

32. Plot managers were asked to identify the "primary" *machamba,* that is, the plot generating the largest share of the household's total farm income.

households in District 6 with the primary *machamba* and place of residence in the same district is higher, or 84.9 percent (45=53). This indicates a fair degree of commuting between place of residence and site of agricultural work, particularly for District 4 landholdings.

**TABLE 4.1 Number of sample households by district of primary residence, 1991 peri-urban survey, Maputo**

| DISTRICT OF RESIDENCE | DISTRICT 4 | | DISTRICT 6 | | OVERALL SAMPLE | |
|---|---|---|---|---|---|---|
| | Non-registered households | Registered households | Non-registered households | Registered households | Total households | Percent |
| 1 | 1 | 3 | 1 | 1 | 6 | 4.9 |
| 2 | 1 | - | - | - | 1 | 0.8 |
| 3 | 10 | 6 | - | - | 16 | 13.1 |
| 4 | 27 | 19 | - | - | 46 | 37.7 |
| 5 | 1 | - | 4 | 2 | 7 | 5.7 |
| 6 | - | - | 25 | 20 | 45 | 36.9 |
| 7 | - | - | - | - | - | - |
| 8 | - | - | - | - | - | 0.8 |
| **Total** | 40 | 28 | 30 | 23 | 121 | 100.0 |

Strata C and D distinguish between the presence or absence of a male or female adult as the primary decision-maker and provider for the household. Questions at the household level were addressed to the family's elders, usually the oldest male adult or his first son along with the first and second principal woman residents. Other household members with nonfarm activities were asked to be present during the employment section of the survey. The random sample indicates a preponderance of male-headed (90.1 percent) as opposed to female-headed (9.9 percent) households. As will be seen shortly, these data underestimate the importance of females in household decision-making, for women had a tendency to defer to a male adult as the household head, even when the husband may be gone for most months of the year because of military obligations or work abroad. Strata D, then, includes primarily 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 percent) possess at least one plot confirmed to have been registered as a precarious, provisional, or definitive concession, and 70 (57.9 percent) have no registered land.

## 4.2 HOUSEHOLD DEMOGRAPHY AND MIGRATION

Selected household indicators of family size, residency, age, and education are reported in table 4.2. As expected, female-headed households, for which the husband (male adult) is normally absent, have the smallest average family size (8.0 residents). Households also tend to be smaller in District 4 (8.9 residents) than in District 6 (10.7 residents). Registered households have the largest average household size (10.8 persons) relative to the overall mean (9.7 persons). Female-headed households have a comparable number of female adults to male-headed households (2.5 versus 2.6 women), but have fewer children (3.8 versus 4.7 youngsters) and fewer male adults (1.7 versus 2.6 men).

A small but important number of households have close family members living abroad. For the sample as a whole, 28.1 percent of households have at least one member living outside Mozambique. The figure is higher in District 6 than District 4 (37.0 percent versus 20.9 percent) and is highest for female-headed households (46.2 percent). However, very few households, including female-headed, reported receiving remittances from abroad, suggesting that nonresident family members are usually children, cousins, or dependents living with close kin rather than husbands working in the Republic of South Africa. [33] 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 versus 33.7 years 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 both female and male adults tends to be remarkably uniform among groupings.

Male adults (those above 15 years of age), on average, tend to be better educated than female adults, though adults in general hold less than a primary level of education. On average, male adults had 4.8 years of public education versus 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 places of residence for a relatively long period of time. As measured by years of residence of the household head, households on average have been settled in the Maputo area for 30.1 years, and for 20.8 years in their present *bairro.* [34] Female-headed households have been in residence in greater Maputo longer than male-headed households (36.2 years versus 29.4 years), though time of occupancy in current *bairro is* nearly the same (19.8 years versus 20.8 years). Aside from sex of household head, little variance in means of length of residency is observed among strata.

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33. Of the i2i households in the survey, only i1 (9.0 percent) received remittances in 1991, and of these i1, **only** 4 collected cash payments (1 for 5 rand, 1 for 54 rand, 1 for 200 rand, and 1 for 500 rand). The remaining remittances were in-kind.

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

**TABLE 4.2 Mean household-level demographic characteristics by sample strata, 1991 peri-urban survey, Maputo**

| CHARACTERISTICS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| # of households (hh) | 67 | 54 | 109 | 13 | 51 | 70 | 121 |
| Family size and migration | | | | | | | |
| Total # of hh members | 8.9 | 10.7 | 9.9 | 8.0 | 10.8 | **8.9** | 9.7 |
| # of children ( ~ 15 years) | 4.3 | 5.1 | 4.7 | 3.8 | **5.4** | 4.1 | 4.6 |
| # female adults (> 15 years) | 2.3 | 3.0 | 2.6 | 2.5 | 2.8 | 2.4 | 2.6 |
| # male adults (>15 years) | 2.4 | 2.7 | 2.6 | 1.7 | 2.6 | 2.4 | 2.5 |
| # family members abroad | 0.3 | 0.6 | 0.4 | 0.7 | 0.5 | 0.4 | 0.4 |
| % hh with z 1 members abroad | 20.9 | 37.0 | 26.6 | 46.2 | 29.4 | 27.1 | 28.1 |
| Age (years) | | | | | | | |
| Female adults (>15 years) | 32.7 | 33.7 | 33.2 | 32.6 | 32.6 | 33.7 | 33.2 |
| Male adults (>15 years) | 33.5 | 33.9 | 34.2 | 26.8 | 33.2 | 34.1 | 33.7 |
| Public education (years) | | | | | | | |
| Female adults (>15 years) | 3.3 | 3.6 | 3.4 | 3.5 | 3.6 | 3.3 | 3.4 |
| Male adults (>15 years) | 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* (years) | 21.1 | 20.4 | 20.8 | 19.8 | 20.9 | 20.7 | 20.8 |
| % hh with nonfarm job | 60.0 | 56.0 | 61.0 | 23.0 | 47.0 | 66.0 | 58.0 |
| Land | | | | | | | |
| # 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 |
| Rain-fed | 0.7 | 1.1 | 0.9 | 1.0 | 0.4 | 1.2 | 0.9 |
| Farm size (ha) | | | | | | | |
| Irrigated and rain-fed | .65 | .96 | .84 | .29 | 1.24 | .46 | .79 |
| Irrigated | .50 | .60 | **.58** | .21 | 1.01 | .21 | .55 |
| Rain-fed[b] | **.15** | .36 | .26 | .07 | .23 | .25 | .24 |
| Mean plot size | | | | | | | |
| Irrigated (ha)" | .28 | .57 | .44 | .13 | .75 | .16 | .41 |
| Rain-fed (ha)[c] | .44 | .59 | .56 | .10 | .89 | .38 | .52 |

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

b. Mean rain-fed land including nonmeasured plots counted as having zero area.

c. Most rain-fed 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.

## 4.3 LANDHOLDINGS

Households tend to own multiple plots of land in rain-fed and irrigated areas for residential and agricultural use. Households on average farmed *2.2 machambas,* 1.3 in irrigated and 0.9 in rain-fed zones. Irrigated *machambas* averaged 0.41 hectares in size (entire sample) while rain-fed plots averaged 0.52 hectares.[35] However, these data mask three important variations.

First, the number of holdings varies according to registration status. The registered stratum on average holds 1.7 plots (versus 2.6 for unregistered households). However, as the number of irrigated *machambas is* relatively similar between the two groups (1.3 plots versus 1.4), the difference is mainly due to the greater number of holdings of rain-fed plots by the nonregistered stratum (1.2 parcels versus 0.4).[36] This variation partially reflects nonuniform employment access and income strategies. Registered households tend to have larger irrigated holdings (1.01 hectares versus .21 hectare), produce high-income crops for market, and depend more heavily on earnings from self-employment (see table 4.9, p. 63). Conversely, unregistered households have smaller irrigated holdings and tend (perhaps need) to supplement their comparatively lower urban wages and farm income with earnings from rain-fed plots.[37]

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

Third, despite a smaller number of holdings, registered households have larger irrigated *machambas* (0.75 hectare per plot versus 0.16 hectare) than the unregistered group. While female-headed households have slightly fewer dependents (18 percent) to feed based on family size, their irrigated landholdings are only one-third the size of male-headed households' holdings (.13 hectare versus .44 hectare).

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35. Figures for rain-fed and irrigated hectares are based on different sampling frames. All plots in irrigated zones were measured and all families **had** at least one irrigated *machamba.* Rain-fed *machambas,* which tend to be located farther out in less "secure" areas, were generally not measured by researchers. While some farmers were able to estimate the size of their rain-fed holdings, others were not. The area reported is thus based on a small sample of rain-fed *machambas* for which respondents were able to estimate plot sizes, albeit with larger errors (relative to the more precise measurements taken for irrigated plots).

36. Whereas irrigated land is very scarce and difficult to acquire, "idle" land in rain-fed areas is still available, though with higher risk of violence.

37. It could be argued that the difference in holdings in rain-fed plots reflects a difference in residency status, that is, earlier settlers in the demarcated areas were able to claim sufficient land for a livelihood while later migrants were forced to live in outlying areas for subsistence. The data for residency in the present *bairro* (2i.i versus 20.4 years) would not support this **hypothesis.**

Fourth, rain-fed holdings tend to be more important in District 6 than in District 4 (1.1 versus 0.7 holdings and .36 versus .15 hectare per farm, on average), which is consistent with the view that the best irrigated land is concentrated in the latter area.

## 4.4 LANGUAGE SKILLS

Portuguese is the official language for government administration and services in Maputo. Government forms, schoolbooks, pamphlets, and registration records are prepared in this language; all billings, invoices, and receipts are written in Portuguese as well. The ability to read and write Portuguese is therefore necessary for engaging in commercial and legal activities, particularly those involving official obligations.

However, language capabilities are not uniform. Both household heads 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 percent and 63.0 percent of household heads responding in districts 4 and 6, respectively. Less than 3.0 percent of the household heads in each district spoke Portuguese as a mother tongue. However, 83.6 percent of the household heads in District 4 and 85.2 percent in District 6 said they were fluent in speaking Portuguese, and 77.6 percent and 79.6 percent, respectively, said they were able to write the language.

The stratum comprising female household heads is the notable exception. Only 38.5 percent reported being able to speak Portuguese fluently, 23.1 percent expressed a fair ability, and 38.5 percent confessed a poor competence. Further, only 30.8 percent indicated being able to write in Portuguese. When the principal spouse, normally a woman, was asked about Portuguese-reading and -writing ability, the responses mirrored those of female household heads (except for female-headed households, the principal spouse was normally a brother or son, who in all cases was fluent in both speaking and writing Portuguese). Only 59.3 percent (44.1 percent) of spouses indicated an ability to speak (write) Portuguese fluently in District 4, and 56.0 percent (38.0 percent) in District 6. Spouses in registered households tended to be more fluent in Portuguese than those in nonregistered households (75.5 percent versus 43.3 percent with speaking, and 53.1 percent versus 31.7 percent with writing).

## 4.5 POLITICAL STATUS AND CORPORATE MEMBERSHIP

As reported in section 2, people ostensibly join cooperatives and producer associations to increase access to farm inputs and secure land rights. Having a family member with an official position in government would theoretically improve access to government services (for example, titling) through better knowledge of the bureaucracy and the ability to use one's position as leverage. Information on political status and cooperative membership was 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 holds a position within the *bairro* organization, GD, Dcu, Executive Council, and/or provincial or national government. Responses are summarized in table 4.4.

On average, only 6.6 percent of household heads (and households) had one or more members belonging to a cooperative. The lower percentage reported for family membership (0.7 percent responding as members) indicates that membership is held by only one or two persons in the household, not the entire family workforce. Membership in cooperatives by household head tends to be more prevalent in District 6 compared with District 4 (13.0 percent versus 1.5 percent). Nonregistered households tend to have higher rates of membership than registered households (8.6 percent versus 3.9 percent) while rates of membership between male-headed and female-headed households are nearly equal (6.4 percent and 7.7 percent, respectively). On average, for the entire sample, 37.5 percent of the families belonging to a cooperative joined to gain access to farm inputs, 37.5 percent to obtain produce to sell in the market, 12.5 percent to gain access to land, and 12.5 percent to acquire assistance with marketing. However, these motives varied among household strata. Increasing access to farm inputs was most important in District 4 (100 percent) and by registered households (100 percent). Obtaining produce to sell was more important in District 6 (42.9 percent), by adult male-headed households (42.9 percent), and for nonregistered households (50.0 percent). Female-headed households indicated general assistance with marketing as their principal motive for joining (100 percent), which includes both gaining access to farm inputs and selling products.

Membership in a producer association was more prevalent, partially due to the fact that producer-association listings were used as the basis for selecting the nonregistered household sample in the research area, especially District 6. [38] About 64.5 percent of households in the overall sample had one or more members involved in a producer association. However, the fact that only 7.5 percent of household members mentioned themselves as being members indicates that affiliation is effectively limited to one or two persons per associated family. Membership is higher in District 6 than District 4 (75.9 percent versus 55.2 percent), among female-headed than male-headed households (76.9 percent versus 63.3 percent), and among nonregistered than registered households (90.0 percent versus 29.4 percent). Various motives were mentioned for joining a producer association, including, in descending order of importance, increasing security of land rights (44.8 percent) and acquiring farm inputs (41.4 percent). The fact that 10.3 percent of association members said that they joined because their land was located within the association's domain implies that, in addition to associations being perceived as member-motivated, they are also seen by some as autonomous, land-controlling entities. Increasing security of land rights was a more important factor for nonregistered than registered households (49.3 percent versus 25.0 percent). [39] Increasing access to farm inputs

38. Lists of green-zone producers maintained by the *casas op-árias* in District 4 were also used.

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

was the most important factor for female-headed and registered households (50.0 percent and 56.3 percent, respectively).

Official status in table 4.4 concerns 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 percent of households in the overall sample reported having a family member with a position in the GD, the principal decision-making body for land allocations at the local level. Whether this reflects the political power and status of landholding groups in the sample, extended positions within the GD, or a broad interpretation of "position" by respondents cannot be ascertained from the data. Conversely, few households (less than 2 percent in all categories) have family members who hold positions within the offices of the central authority. 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, which have low official representation in both local and central offices.

## 4.6 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 involvement of other household members. In this study, the principal male and female adults in the household were asked to respond jointly to six 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 nonfarm income?[40] Possible responses include: household head (normally male with the exception of the female-headed household categories) 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 makes the 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.

Decisions about farm investments and destination of farm produce tend to be taken solely by household heads, and to a lesser extent solely by the principal spouse (59.5 percent

40. Addressing questions to both adults simultaneously forced a consensus response. Asking each 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—53.7 percent of all decisions, depending on the activity, suggests that this problem was not widespread or debilitating.

**TABLE 4.5** **Decision-making authority of sample households, 1991 peri-urban survey, Maputo**

| SCOPE OF DECISIONS | DISTRICT 4 | DISTRICT 6 | 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 nonfarm 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 |

versus 28.9 percent and 58.7 percent versus 27.3 percent, respectively). This tendency is particularly strong for household heads in the registered (74.5 percent versus 17.6 percent and 78.4 percent versus 13.7 percent) and female-headed (84.6 versus 15.4 percent and 76.9 percent versus 15.4 percent) categories, respectively. Despite the fact that many *machamba* managers are women (table 5.1, p. 68), the decisions concerning which family members work on the plot tend to be made by the head of household (normally male, 50.4 percent, versus spouse, 28.9 percent) (the notable exception is female-headed households, in which 84.6 percent of the decisions are made by women).

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 the husband or wife determines 53.7 percent (60.3 percent) of the decisions concerning overall labor allocation, 53.4 percent (68.4 percent) of farm-income expenditures, and 50.0 percent (68.1 percent) of nonfarm-income expenditures. In the case of female-headed households, decisions regarding overall labor allocation (84.6 percent), farm-income expenditures (84.6 percent), and nonfarm-income expenditures (54.5 percent) 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 responses) than those in other categories.

## 4.7 ASSETS AND PHYSICAL INFRASTRUCTURE

Information on access to physical services, quality of housing materials, and ownership of physical assets (reported in table 4.6) serves as evidence of household wealth. Data on financial assets are noticeably lacking; attempts were made in early rounds of questionnaire development to elicit this information, but respondents were generally reluctant to disclose details.

Compared with most rural economies in Africa, households in the green zones appear relatively wealthy. About 9.0 percent of households in District 4 (25.9 percent in District 6) own an automobile or truck; 22.4 (11.1) percent, a color television; 20.9 (9.3) percent, a VCR; 40.3 (31.5) percent, a refrigerator; and 49.3 (53.7) percent, a gas or electric stove. Registered households appear the wealthiest in terms of asset accumulation. Compared with the nonregistered group, the registered category has the highest percentage of households with a color television (27.5 percent versus 10.0 percent), VCR (23.5 percent versus 10.0 percent), refrigerator (52.9 percent versus 24.3 percent), and an automobile or truck (29.4 percent versus 7.1 percent). Conversely, compared with male-headed households, the female-headed category is relatively disadvantaged in asset holdings: color television (0 percent versus 19.3 percent), VCR (0 percent versus 17.4 percent), refrigerator (15.4 percent versus 38.5 percent), gas or electric stove (30.8 percent versus 53.2 percent), and automobile or truck (0 percent versus 18.3 percent).

The advantaged position of registered households and the disadvantaged position of female-headed households hold as well with respect to physical services and quality of

**TABLE 4.6** **Assets and physical infrastructure of sample households, 1991 peri-urban survey, Maputo**

| ASSETS AND INFRASTRUCTURE | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| 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 |
| 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 | 0.9 | | 2.0 | | 0.8 |

housing. On average, 38.0 percent of households in the overall sample have access to electricity, and 59.5 percent to piped water or a private well. Households in districts 4 and 6 have similar access to electricity, but only 38.8 percent of households in District 4 (versus 85.2 percent in District 6) have access to piped water or a private well. While 40.4 percent (60.6 percent) of male-headed households and 49.0 percent (68.6 percent) of registered households have access to electricity (piped water), only 15.4 percent (46.2 percent) of female-headed households have the same luxury. While 74.4 percent of homes in the overall sample are constructed of cement blocks, registered households (86.3 percent) and households in District 6 (81.5 percent) are above this mean; nonregistered households (65.7 percent) and female-headed households (53.8 percent) are below. Female-headed households in turn have the highest percentage of homes constructed of reeds (15.4 percent) and reinforced reeds (23.1 percent).

## 4.8 ECONOMIC ACTIVITY

Heads of household, spouses, and other adults with at least one wage activity or self-employment activity were asked to provide information on type of work and wage level as well as nonwage benefits for all nonfarm employment enterprises in which they were involved. Wage employment was defined as those activities for which remuneration was paid on a periodic basis by an employer. Self-employment activities were defined as those operations from which monetary income was earned or lost from the activity's profit or loss. Almost 20 percent 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.[41] In the case of self-employment, 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.

### 4.8.1 FORMAL-SECTOR WAGE ACTIVITIES

Average monthly wages for all household-resident males and females who reported having wage employment in the past year are recorded in table 4.7 by job category. Many of the activities are part-time positions, some consuming several weeks per month, others several months per year. Multiple activities are sometimes undertaken by one wage earner. Several points in the data stand out. First, the construction/industry and service/administration sectors were the most significant sources of wage employment for both males and females. Second,

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

males participate in formal wage employment to a much higher degree than females. While the number of male and female adults in the sample is approximately equal (table 4.2, p. 49), female labor represented 20.3 percent (27=133) of formal-sector activity (months worked) while men accounted for 79.7 percent of time worked. Third, women earn less than men in formal-sector activities. Only within the restaurant/hotel and health sectors did women earn higher average monthly wages than men. In all other categories, monthly wages for males were 9.0-77.8 percent higher than those for women. Further, the average monthly wage across activities is 38,500 meticais for women, and 54,000 meticais 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.

**TABLE 4.7 Average monthly formal-sector' wages of sample households, 1991 pert-urban survey, Maputo**

| OCCUPATION CATEGORY | FEMALES | | | MALES | | | OVERALL | |
|---|---|---|---|---|---|---|---|---|
| | Mean income (000 mt) | Range (000 mtl | n | Mean income (000 mtl | 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/administration | **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 |
| Agricultural 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.**

### 4.8.2 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, that is, raising animals for sale, fishing, and milling. These enterprises were not included in farm income because the activity takes place away from the *machamba-either* on the coast (fishing) or at the place of residence (livestock, milling). Although fewer adults reported self-employment relative to wage employment (80 versus 133), net monthly incomes from self-employment activities are considerably higher. The overall average monthly wage for self-employment is

166,200 meticais per worker compared with 50,800 meticais per worker for wage employment.[42] Average net monthly income was the highest for poultry, fishing, grocery stores, and transportation, all of which earned over 300,000 meticais per month.

**TABLE 4.8 Average monthly income, principal self-employment activity° of sample households, 1991 peri-urban survey, Maputo**

| | MALES | | FEMALES | | OVERALL | |
|---|---|---|---|---|---|---|
| EMPLOYMENT ACTIVITIES | (000 mt) | n | (000 mt) | n | (000 mt) | 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 |
| Fisherperson | 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.

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-employment 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 meticais versus 48,100 meticais for women. As with formal wage employment, earnings from self-employment were not standardized for time worked; thus potential causes for the wage gap-for example, discrimination, unequal

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

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 earnings potential of self-employment? Part of the answer lies with the other benefits obtained by working in the formal sector (table 4.9). On average, 52.1 percent of households qualified for retirement benefits, 49.6 percent obtained medical benefits, 33.9 percent got credit assistance, 28.1 percent received transportation services, and 25.6 percent acquired food subsidies. These benefits vary widely among strata, but the category of female-headed households is most notable for lack of access. Only 7.7 percent of female-headed households had access to medical benefits, 7.7 percent to retirement, and 84.6 percent received no benefits whatsoever.

## 4.9 HOUSEHOLD INCOME

### 4.9.1 NONFARM INCOME

Data on mean household earnings for nonfarm 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 at 0.4 self-employment enterprises. The number of self-employment activities was fairly constant across categories. However, the number of formal salaried jobs ranged from 1.3 jobs per household for nonregistered households to 0.8 job per household and 0.5 job per household for registered and female-headed households, respectively. Mean annual nonfarm earnings for the entire sample of 121 households was 801,000 meticais. Self-employment represented 69.5 percent of this total, and wage earnings 30.5 percent. Female-headed households earned 292,000 meticais in 1991, or approximately $132 ($US1.00=2,200 meticais) compared with an average of 854,000 meticais ($388) for male-headed households. Registered households had the highest absolute level of nonfarm income of any category. Compared with nonregistered households, the nonfarm income of registered households in 1991 averaged 985,000 meticais (versus 667,000 meticais), of which 47.1 percent (93.7 percent) came from wage employment, and 52.9 percent (6.3 percent) from self-employment. These data indicate both the vulnerable position of women in the formal economy and the relatively stronger economic and social position of registered households compared to nonregistered households.

### 4.9.2 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.[43] The nonfarm income gap between

43. Rain-fed plots are used almost exclusively for home consumption and reciprocal in-kind trade among extended family and neighbors. Since output could not be recalled with any reasonable degree of accuracy, both output and inputs on rain-fed plots were excluded from income calculations.

**TABLE 4.9** **Farm and nonfarm income and expenses of sample households, 1991 peri-urban survey, Maputo**

| INCOME AND EXPENSES | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Crop income and expenditures (0001° | | | | | | | |
| 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 | 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 $m^{2}$ | | | | | | | |
| 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 | 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 nonfarm jobs | | | | | | | |
| Nonfarm jobs/family | 1.5 | 1.6 | 1.6 | 1.1 | 1.2 | 1.8 | 1.6 |
| Formal jobs | 1.0 | 1.2 | 1.2 | 0.5 | 0.8 | 1.3 | 1.1 |
| Self-employed | 0.5 | 0.4 | 0.4 | 0.6 | 0.4 | 0.5 | 0.4 |
| Farm and nonfarm 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 |
| Nonfarm 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 | 3,289 | 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 nonfarm income | 27.4 | 22.1 | 24.6 | 34.6 | 20.9 | 36.9 | 24.9 |
| Households with access to other social benefits (%)` | | | | | | | |
| Medical benefits | 50.7 | 48.1 | **54.1** | 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 nonwage benefits.

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 meticais, 89.7 percent of which came from crop activities, and 10.3 percent from livestock farming on the *machamba*. Comparable figures for male-headed households are 3,591,000 meticais, 83.9 percent from crop income, and 16.1 percent from livestock activities. Registered households have the highest annual net farm income of any stratum (6,488,000 meticais), in part due to larger farm size.

Registered households (compared with nonregistered households) also appear to make more intensive use of the land resource, whether measured by total revenues (1,012 versus 640 meticais per square meter), wages paid (164 versus 57 meticais per square meter), chemical inputs applied (89 versus 60 meticais per square meter), or net revenue (747 versus 520 meticais per square meter). Female-headed households have the lowest productivity of any stratum and, compared with male-headed households, they exhibit very low revenues (437 versus 836 meticais per square meter), wages paid (46 versus 108 meticais per square meter), chemical inputs (32 versus 76 meticais per square meter), and net revenue (358 versus 644 meticais per square meter).

### 4.9.3 TOTAL INCOME

Total household income, including farm and nonfarm activities, is reported in table 4.9. The income gap between female-headed and male-headed households shows the severe vulnerability of female-headed households to economic fluctuations. The average total income of female-headed households in 1991 was 739,000 meticais ($336) versus 4,445,000 meticais ($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 meticais, or $56) was still only 21 percent of the level reported for the male-headed category (596,000 meticais, or $271). Households in District 6 have incomes 53.9 percent higher than in District 4 (5,065,000 versus 3,287,000 meticais), but per-capita incomes are similar (572,000 versus 531,000 meticais) due to a greater number of residents per household in District 6 (table 4.2, p. 49). Registered households have substantially higher total and per-capita income levels than nonregistered households (7,473,000 versus 1,610,000 meticais per household and 977,000 versus 238,000 meticais per capita), further demonstrating the economic Power of private (titled) farms in the economy.

On average, crop income contributes 58.7 percent to total household incomes across categories. The contribution of crop income is highest in District 6 (74.8 percent), and for registered households (63.3 percent) and female-headed households (61.7 percent), and lowest in District 4 (44.7 percent) and for nonregistered households (44.9 percent). Nonregistered households (36.9 percent) and female-headed households (34.6 percent) place the greatest dependence on nonfarm employment, lending weak evidence to the hypothesis that these disadvantaged populations, because of limited land access and weak property rights, are turning to the nonfarm sources of income. Conversely, registered households place the least

emphasis on nonfarm income sources of income (20.9 percent), indicating the combined effect of both greater farm sizes and greater security of property rights.

## 4.10 CONCLUSIONS

Selected data were presented and analyzed in this section on political and socioeconomic characteristics of green-zone producers including household demography, landholdings, language skills, political status, household decision-making, physical assets, nonfarm employment, and farm and nonfarm income. Data are disaggregated according to seven categories of households reflecting different degrees of Political and institutional status: quality of state administrative structures (District 4 versus District 6), gender (male- versus female-headed households), tenure status (registered versus nonregistered), 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, though very few households reported receiving remittances. Also, compared with the general population, which is in a high state of flux from refugee resettlement, the household sample has a history of long residency in the study area. Households tend to own multiple plots of land in rain-fed and irrigated areas, though registered households have fewer, but larger, plots than unregistered households due to fewer holdings of rain-fed land. Female-headed households are particularly disadvantaged; while they have fewer dependents (18 percent fewer residents), their irrigated landholdings are roughly one-third the size of those of male-headed households.

Only 7 percent of households on average have one or more members who belong to a cooperative, and 65 percent, to a producer association. Nonregistered 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 securing 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 nonregistered 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 stratum, 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 meticais versus 4,445,000 meticais 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 percent of that reported for the male-headed category. Registered households have substantially higher total income than nonregistered households, demonstrating the economic Power of private (titled) farms in the economy.

Overall, the analysis reveals that agricultural producers in District 6, 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 work abroad—are severely disadvantaged, whether measured by resource access, employment opportunities, or income levels. Registered farms possess larger farm sizes, wealth, and income than nonregistered households due to differences in human capital, property rights, market access, and nonfarm employment among households. The next section compares land-market transactions, land rights, land disputes, and settlement histories among the various household strata, before turning to land-price determination in section 6.

# 5. LAND SETTLEMENT AND LAND MARKETS

The land market in the peri-urban zone of Maputo 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 serves as the safety net that separates subsistence from starvation. For registered households, land as an asset has produced farm incomes far above the combined farm and nonfarm earnings of nonregistered households. For urban residents, peri-urban land provides a home away from the city and the opportunity to engage in part-time gardening. For refugees, the green zones have furnished 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. Using survey data and case-study methods, this section examines the structure and operation of the land market in the peri-urban green zones. It investigates the nature of land transactions in the peri-urban zones, intermediaries involved, transactions 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 the final section.

## 5.1 SETTLEMENT AND LAND ACQUISITION

As indicated in section 4, the 121 households surveyed controlled 161 plots of land. These plots were managed by 124 managers *(responsáveis).* On average, a household had access to 1.3 *machambas* of irrigated land and 0.9 *machamba* of rain-fed land. Irrigated plots averaged 0.41 hectare in size while rain-fed plots averaged .52 hectare. However, plot sizes of female-headed households were considerably smaller (0.13 hectare and 0.10 hectare for irrigated and rain-fed, respectively) while those of registered households were substantially larger (0.75 hectare and 0.89 hectare, respectively).

### 5.1.1 SETTLEMENT

The vast majority of plot managers in the survey migrated to Maputo from the rural areas outside districts 1-8, then, over time, moved outward from the city to their current *bairros* of residence in the peri-urban area. When migrants arrived prior to 1975, however, Maputo was a much smaller city (mainly consisting of the cement city) than it is today. Many residents settled at the outskirts of then-Maputo city before relocating later with the expansion of the peri-urban fringe.

**TABLE 5.1** **Migration history of sample households and plot-level mode of land acquisition, 1991 peri-urban survey, Maputou**

| MIGRATION AND LAND ACQUISITION | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Number of plot managers | 67 | 57 | 1 12 | 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 |
| 1950-1973 | 74.6 | 73.7 | 75.9 | **58.8** | 77.4 | 71.8 | 74.2 |
| 1974-1980 | 10.4 | 14.0 | 12.5 | **8.3** | 7.5 | 15.5 | 12.1 |
| 1981-1985 | 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 |
| 1950-1973 | 53.0 | 49.1 | 51.4 | 50.0 | 51.9 | 50.7 | 51.2 |
| 1974-1980 | 31.8 | 40.4 | 37.8 | 16.7 | 34.6 | 36.6 | **35.8** |
| 1981-1985 | 6.1 | 1.8 | 3.6 | **8.3** | **3.8** | 4.2 | 4.1 |
| 1986-1992 | 6.1 | **5.3** | 4.5 | 16.7 | 3.8 | 7.0 | 5.7 |
| Years' **experience** growing vegetables° | | | | | | | |
| 0-5 | 11.9 | 14.0 | 11.6 | 25.0 | 13.2 | 12.7 | 12.9 |
| 6-10 | 26.9 | 28.1 | 27.7 | 25.0 | 30.2 | 25.4 | 27.4 |
| 11-15 | 22.4 | 24.6 | 23.2 | 25.0 | 28.3 | 19.7 | 23.4 |
| 16-20 | 25.4 | 19.3 | 22.3 | 25.0 | 15.1 | 28.2 | 22.6 |
| >20 | 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/executive council | 8.8 | 14.1 | 11.7 | **5.9** | 27.3 | - | 11.1 |
| Concession from producer association | 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 Agriculture | | 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. The *regulo* was the village chief installed by the colonial Portuguese government.**

For the 124 plot managers in the survey, table 5.1 contains key data on date of immigration to Maputo and last date of change of residency to the current *bairro* (though other moves may have taken place in the interim). On average, 12.9 percent of the respondents indicated that they had immigrated to the greater Maputo area (mainly the cement city) prior to 1950. The vast majority (74.2 percent) arrived in the 1950-1973 period, just before independence. Roughly 12.1 percent immigrated to greater Maputo in the years immediately after independence (1974-1980), 0.8 percent between 1981 and 1985, and none thereafter. The high cost of living creates a formidable barrier to settlement, which partially explains the decline in recent years. However, the rapid expansion of the pen -urban zone beyond districts 1-3 (and thus beyond Maputo city) also means that, for reasons of cost, present immigrants are now establishing their roots first in the outer districts (4-8).

After the initial period of settlement, all respondents, by definition (that is, place of residence in the green zones) moved outward from Maputo, through one or more stops, to their current *bairro.* As indicated in table 5.1, an initial surge (51.2 percent) took place from 1950 to 1973, but 35.8 percent of the overall sample moved between 1974 and 1980, corresponding to the period of economic decline following the departure of the Portuguese. Since 1980, the population has been exceptionally stable. Only 9.8 percent of respondents reported moving to their current *bairro* sometime during the 1981-1992 period. This settlement pattern appears remarkably similar for households in districts 4 and 6 as well as between registered and unregistered groups, though plot managers for female-headed households appear to have arrived later than their male counterparts. Compared with the general population, which is in a high state of flux from refugee resettlement, this sample of green-zone producers has a history of long residence and access to land in the study area.

The green zones also have a long history of vegetable production. Years of experience with growing vegetables is a good indicator of background in farming and length of cultivation.' Of the 124 plot managers in the survey, 36.3 percent have been growing vegetables for at least 16 years; 23.4 percent, between 11 and 15 years; 27.4 percent, between 6 and 10 years; and 12.9 percent, between 0 and 5 years. The widespread belief that a surge of vegetable producers broke into agriculture following the price liberalization of 1985 appears inconsistent with these data. At least 59.7 percent of *machamba* managers were producing vegetables prior to 1982. [45] The price reforms no doubt encouraged some entry of producers into the vegetable sector, but most of the increase in production that has taken place since 1985 has come from the expansion of area in vegetables or more intensive production by then existing producers.

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**44. Many** elders recall that, prior to 1975, much of the area now known as the green zones was low-lying territory covered in grass and brush. Another question—years of experience in farming in peri-urban irrigated green zones—yielded a similar set of responses.

45. For those respondents reporting having grown vegetables for 6-i0 years (27.4 percent), some would have been engaged in vegetable production prior to price liberalization.

### 5.1.2 MODE OF ACQUISITION

Land acquisition in the peri-urban green zones has historically involved two principal sources: spontaneous settlement, and formal allocation by the district and national government. As indicated in table 5.1, 29.0 percent of the currently held *machambas* were acquired through *bairro* authorities, 15.4 percent through spontaneous occupation, 11.1 percent from the Dcu or Executive Council, 10.5 percent from producer associations, 3.1 percent from the village chief installed by the colonial Portuguese government *(regulo),* 1.9 percent from the Green Zones Office, and 0.6 percent from the Ministry of Agriculture. A lower percentage of landholdings was acquired through nonadministrative mechanisms-6.2 percent through inheritance, 8.6 percent through purchase, 12.3 percent through borrowing, 1.1 percent through eviction of former tenant, and 0.6 percent through renting-in. No households claimed to have rented-out land, which is not surprising given the risk that lessors face of having land expropriated by state or local authorities.

Concessions by the *bairro* administration and producer associations are the lowest level of administrative mechanism for acquiring land and, for most intents and purposes, can be combined since the two institutions work closely together. However, producers do perceive a difference. The *bairro* authorities in District 4 tended to allocate concessions to producers directly (37.4 percent versus 18.3 percent in District 6). In 1984/85, the producer associations in District 6 sought the assistance of families in cleaning the irrigation canals; a concession was offered in exchange for labor, thus producing the higher allocation by producer associations (21.1 percent versus 2.2 percent in District 4). Spontaneous settlement tends to be more common among nonregistered households (21.9 percent versus 6.1 percent of registered households). As expected, registered households tend to rely more heavily on concessions from the Dcu (27.3 percent versus 0 percent for nonregistered). Purchases and borrowings tend to be fairly evenly distributed among strata. However, of 58 plots managed by female-headed households in the sample, none was inherited (versus 6.9 percent for male-headed households), suggesting de facto constraints on women's 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 percent of land acquisitions over the 1950-1974 period, when land was abundant, had become one of the least important modes of acquisition (7.9 percent) by the 1986-1992 interval (table 5.2). This collaborates the prevalent view that land in most areas of the pen-urban green zones had become fully settled or occupied by 1987. Administrative allocations by *bairro* authorities were particularly important during the postindependence era (1975-1985), 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 allocations by the Dcu or Executive Council have been increasing in importance over time, rising from 0 percent in the 1950-1974 period to 20.8 percent in 1981-1985, though declining in recent years. Granting of concessions by producer associations has also increased over time, from 0 percent before independence to the predominant source since 1986 (23.7 percent). Land purchases, common before

independence, virtually ceased over the 1975-1985 period due to legal provisions banning sales. Purchases since 1986 have rebounded (18.4 percent 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, ranging from 10.4 percent to 15.1 percent of acquisitions, depending on the time span. Rentals have become more important since 1986, but still represent less than 3 percent of acquisitions.'

**TABLE 5.2 Mode by which sample households acquired land plots by year of acquisition, 1991 peri-urban survey, Maputo**

| (ACQUISITION | 1950-1974 | 1975-1980 | 1981-1985 | 1985-1992 |
|---|---|---|---|---|
| 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* (Go) | 17.4 | 35.8 | 37.5 | 15.8 |
| Concession from Dcu/executive 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 *regu/o* | 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 Agriculture | | - | 2.1 | |
| Eviction of tenant | | 1.9 | - | |

The incidence of inheritance will increase with the aging of the current population. However, whether private market transactions-purchase, borrowing, and rental-will continue to multiply, in the absence of legal reforms aimed at liberalizing land transfers, is far from clear. As indicated by a recent circular (8 July 1992), issued by the Executive Council of the City of Maputo and published in the daily newspaper *Noticias,* the government has firmly emphasized its authority and control over landownership 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 no. 16/79 on July 15.
>
> 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.

46. From independence to the present, land rental markets have been suppressed by the same legal restrictions that affected sales. Recent growth in rental markets, as with purchases, illustrates a growing willingness of households to contravene these restrictions.

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.]

### 5.1.3 ALIENATED LAND

Over the 1967-1991 period, households in the sample reported having disposed of, or having lost, 34 plots of land (table 5.3). These forsaken *machambas* were widely dispersed among 12 different *bairros,* though a particularly large number (cumulatively, 67.7 percent) appears to have been located in Costa do Sol, Laulane, Zona Verde, Albazine, and Khongolote. Most of the plots have been alienated since 1982: 26.5 percent over the 1982-1986 period, 23.5 percent between 1987 and 1989, and 32.4 percent in the 1990-1991 interval. Both registered households (17.5 percent, 10 plots alienated out of 57 currently held) and nonregistered households (22.9 percent, 24 plots alienated out of 105 currently held) had similar rates of dispossession (compare tables 5.1 and 5.3).

Unlike *machambas* currently held (which were acquired primarily through administrative transactions), most of the alienated plots were obtained through spontaneous occupation (32.4 percent), gift by family (17.6 percent), inheritance (14.7 percent), or purchase (11.8 percent). Most striking, however, is the mode of alienation: landholders were evicted in 64.7 percent of the cases. Eviction rates were highest in District 6 (75.0 percent versus 55.6 percent in District 4) and among female-headed households (80.0 percent versus 62.1 percent for male-headed households). Land had been given to the family in 20.6 percent of the cases, and was abandoned, most probably due to war-related violence, in 8.8 percent of the cases. Family members (20.6 percent) obviously gained control of the land when it was given to the family. However, in the remaining instances, where land was alienated (primarily by eviction), private farmers gained in 38.2 percent of the cases; government, 20.6 percent; producer associations, 5.9 percent; and others, 14.6 percent. Evicted registered farmers tended to lose their land primarily to the government (30.0 percent); evicted nonregistered landholders tended to lose their land to private farmers (50.0 percent), who had been issued concessions by government. In only 11.8 percent 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 percent) lost their land through eviction, and none received compensation.

In table 5.3, data on authorizations provide some indication of the agencies responsible for evictions. No authority was involved in 50 percent of the cases of land being alienated. However, 26.5 percent were authorized by the *bairro* structure; 11.8 percent by the *casas agrárias;* and 2.9 percent each by producer associations, Dcu/Executive Council, district administration, and APE (the housing parastatal). These data clearly indicate that refugees entering the city since 1982 induced many local authorities *(casas agrárias* and *bairro* structures) to expropriate land for their resettlement.

**TABLE 5.3 Plot histories of land alienated from sample households, 1991 pert-urban survey, Maputo**

| PLOT HISTORY | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED 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 | | | | | | | |
| 1967-1970 | **5.6** | 6.3 | 6.9 | | - | **8.3** | 5.8 |
| 1977-1980 | 11.1 | 12.5 | 13.8 | | 20.0 | **8.3** | 11.7 |
| 1982-1986 | 22.2 | 31.3 | 27.6 | 20.0 | 30.0 | 25.0 | 26.5 |
| 1987-1989 | 22.2 | 25.0 | 27.6 | - | 50.0 | 12.5 | 23.5 |
| 1990-1991 | 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 |
| 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 agrária* | 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 |

### 5.1.4 LAND CLAIMS BEYOND THE PERI-URBAN ZONE

Besides having irrigated and rain-fed land in the peri-urban area, 53 households, or 43.8 percent of the sample, believe they still retain rights to land beyond districts 1-8 of Maputo Province. As indicated in table 5.4, the largest number of these *machambas* are in Inhambane (22.6 percent), followed by Chibuto (9.4 percent), Chokwe (9.4 percent), Manhica (9.4 percent), Manjacaze (7.5 percent), and thirteen other districts or regions. In the majority of cases, war or security problems were the primary reason for leaving the plot behind (43.4 percent), followed by need to seek employment (30.2 percent) and desire to join one's family in Maputo (15.1 percent). War and security problems proved more disruptive to families in District 6 (50.0 percent) than in District 4 (36.0 percent). Members of female-headed households were more inclined to leave land behind to join family in Maputo (50.0 percent) or to flee natural disaster (33.3 percent).

In the majority of cases, the abandoned land consisted of 5 hectares or less (76.1 percent), though 7.2 percent reported leaving tracts larger than 50 hectares. These holdings outside the peri-urban area (and security zone) are currently being guarded or farmed by close family (39.6 percent), distant family (1.9 percent), or neighbors (3.8 percent), or are not being used at all (49.1 percent). Given the war situation, the very fact that respondents indicate no knowledge of land use in only 5.7 percent of the cases is rather surprising. The majority of households (66.0 percent) expect one day to occupy or reoccupy the land; male--headed households are more inclined to return than female-headed households. However, in only 22.6 percent of the cases, on average, did respondents say that the entire household would return; in the remainder of cases (43.4 percent), one or more members of the family would return while others stayed in Maputo. Combined with the other 68 households, which did not hold land in rural areas, these data suggest that agricultural households have formed strong roots in the peri-urban area and that prospects for their returning to rural areas are remote.

## 5.2 LAND MARKET PROCESSES

### 5.2.1 LAND BUYERS AND SELLERS

The survey design, including the Osu baseline and the LTC peri-urban land-markets survey, identified a number of households that reported buying and selling (mainly buying) agricultural land. Using case-study methods, special follow-up interviews were arranged with willing participants 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, both formal and informal.

#### 5.2.1.1 Case study 1

The buyer respondent, a farmer, is a descendant of a Portuguese family that settled in a neighboring *quinta* in 1949. He oversees the management of farm labor and sells the produce

**TABLE 5.4 Landholdings of sample households outside urban and peri-urban areas of Maputo, 1991 peri-urban survey**

| INFORMATION ON LANDHOLDINGS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED 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 famiy 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 |

**(Table 5.4, Landholdings outside urban and peri-urban areas of Maputo, cont.)**

| INFORMATION ON LANDHOLDINGS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Area of land left behind | 21.7 | 15.8 | 15.8 | 50.0 | | 36.4 | 19.0 |
| 0-1 ha | 60.9 | 52.6 | **57.9** | 50.0 | 55.0 | 59.1 | 57.1 |
| 1-5 ha | 8.7 | 10.5 | 10.5 | | 15.0 | **4.5** | **9.5** |
| 5-10 ha | 4.3 | 10.5 | 7.9 | | 15.0 | | 7.1 |
| 10-50 ha | 4.3 | | 2.6 | | 5.0 | | 2.4 |
| 50-100 ha | | 10.5 | **5.3** | | 10.0 | | **4.8** |
| >100 ha | | | | | | | |
| Plot currently utilized by | | | | | | | |
| Close famiy | | | | | | | |
| Do not know | 44.0 | **35.7** | **37.5** | 50.0 | 41.7 | 37.9 | 39.6 |
| Neighbor | 8.0 | 3.6 | 4.2 | 16.7 | 4.2 | 6.9 | 5.7 |
| Distant family | 4.0 | 3.6 | 4.2 | | **8.3** | | 3.8 |
| Plot currently unused | | 3.6 | 2.1 | | 4.2 | | 1.9 |
| | 44.0 | 53.6 | 52.1 | 33.3 | 41.7 | 55.2 | 49.1 |
| Household member expects to return (% yes) | 64.0 | 67.9 | 70.8 | 33.3 | 70.8 | 62.1 | 66.0 |
| Who would return° | | | | | | | |
| 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 |
| Ony spouse of household | 4.0 | 3.6 | 4.2 | | | 6.9 | 3.8 |
| Only head of household and spouse | - | 7.1 | 4.2 | | | 6.9 | 3.8 |
| No one | 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.

to restaurants and in the central market. His father is responsible for raising livestock (cattle, hens, and pigs) while his mother supervises the farmworkers and sells produce at the *machamba* level and to intermediaries. In 1991, his family earned a net income of more than 10 million meticais, mainly from selling kale, lettuce, and chickens. In addition to working with his parents, he employs sixteen workers, whom he pays 35-40 *contos,* and two *milicianos* and two guards, to each of whom he pays 50 *contos.*

In 1983, the buyer agreed to purchase a plot (about 1 hectare) from a Portuguese owner who had decided to return to his native country. The buyer wanted the land to expand his own *quinta* and to build corrals for raising livestock. A formal contract was approved, whereby the Portuguese owner would be paid about 23,500,000 meticais—half in meticais, and half in escudos payable in Portugal with a check. The secretary of the GD witnessed the transaction, including filing and completing all documents.

**In** 1989, the buyer ran into financial difficulties; his attempts to obtain credit through the Green Zones Office failed. He then learned about a military officer who was going to receive money from the ***Banco Popular de Desenvolvimento*** (BPD) and was seeking land to buy. The respondent sold one of his plots to the officer to raise cash to invest in his other plots. The value of the *quinta* was set at 45,000,000 meticais, 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 officer's lack of agricultural experience, the contract also stipulated that the respondent would provide technical assistance for three months after the transaction. This arrangement has 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, at the time had to raise the 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.

#### 5.2.1.2 Case study 2

The buyer respondent refers to himself as a war refugee. He recently left his homeland, Manjacaze, due to its worsening security situation. He was settled (by district authorities) in a zone reserved specifically for war refugees and, to profit from his living near the agricultural zone, decided to acquire the plot. 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 a relative who works in the Republic of South Africa, to determine his interest in buying the *machamba* with him. The neighbor responded positively.

They bought the *machamba* for 150,000 meticais, including sugarcane plants, vegetables, and wells. The former owner advised the chief of the *quarteirao* of the purchase price; the secretary of the GD witnessed the transaction and signed a declaration verifying its transferal to new ownership. The *machamba is* not registered because it is located in a zone that was never demarcated. The zone "belongs" to a producer association named "Tomás 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. He and his partner hope to invest in the land and obtain secure land rights through title ownership.

#### 5.2.1.3 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 30 x 50 meters, then hiring the seller to work there. The buyer, a Portuguese man, wanted to live in Maputo. The seller agreed to sell only one of the lots for 1,500,000 meticais. He received half this amount, together with an Iou for the remainder once the buyer returned to the country. Why sell? According to the seller, he already had had one plot taken from him by the GD to establish the Association of Small Animal Raisers *(Associação de Pequenos Criadores de Animals);* he had sold the land lest people steal it, leaving him with neither land nor money. He is now considering selling his remaining lots as well. This would provide him with a monthly salary and prevent his "being kicked off the land like a stray dog." The contract with the Portuguese man was oral; no one was involved in witnessing the transaction, though the buyer intends to register his occupancy with the GD, the district administration, and the Dcu upon his return to the country.

#### 5.2.1.4 Case study 4

The buyer respondent is a major in the Mozambican army. In 1989, he received a loan for 15,000,000 meticais from a fund designated for army veterans and distributed by the BPD. In the same year, he bought a *quinta* (approximately 1 hectare), which had pig stalls, corrals for rabbits and birds, wells, an electric pump, a storehouse, and banana and papaya trees. The purchase was arranged with formal contract. The seller at the time lacked financial resources to run the farm. The buyer, too, is now facing a financial crisis. He has applied to the BPD for another loan to renovate the decaying infrastructure and to begin production, but, at the time of interview, the loan had not yet been granted. His second concern is inability to find a trustworthy and qualified person to manage the *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 went abroad on a service mission, both technicians damaged the installations and sold the animals. He is also worried about not yet having definitive title to the property. Although he has been granted a permit of temporary occupation, he anxiously awaits the formal title from the Dcu, where the documents are pending.

#### 5.2.1.5 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 regularly worked on the *machambas* that they own. They produce vegetables and raise chickens and pigs. In 1982, when the food crisis was worsening throughout the country, he and his wife asked the GD for a plot of land in Albazine. Seven years later, in 1989, the couple got a second plot (5,000 square meters) after hearing of someone who wanted to sell because of financial difficulties. This plot is located on the border between Albazine and the district of Marracuene, a violent zone where frequent

In the case of the latter two acquisitions, the buyer indicates that he did not spend any money to facilitate the transactions. His only expenses (which were minimal at the time of purchase) were the stamps needed to register the documents. However, based on hearsay evidence, the Dcu is now charging from 103,000 meticais to 108,000 meticais per title for these services. The buyer currently wants to open irrigation wells, build water tanks, construct breeding stalls for animals, and install an electric pump for the plot in Boane. He has never had trouble getting money from the bank, since he has always been able to meet the loan requirements.

### 5.2.2 LAND ADMINISTRATION[47]

Extensive areas of land in districts 4-8 were left idle following the departure of the Portuguese. By 1979, however, problems arose as a result of spontaneous occupation: 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 severe recession; and a general policy of "occupying the land" was widespread—in part to meet the needs of a growing urban population and in part to provide employment for an expanding pool of jobless.

Initially the unplanned settlement involved families from inner Maputo and former farmworkers. Later, with the insurgency of the 1980s, refugee families began moving directly into the pen-urban zone. Residents felt obliged to accept in-coming migrants, particularly family members. By 1987, the agricultural areas had been almost totally occupied, densely settled, and heavily subdivided.

In 1985, the government officially stopped its occupation policy; prices of vegetables were liberalized, effectively resulting in a sharp increase in real produce 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 of district authorities.

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

1. Someone, perhaps a miner returning from South Africa, approaches the local *(bairro)* authorities and inquires about idle land; idle land happens to be available (this process would have been more common prior to 1987). If the applicant has no money, s/he is probably told that no land is available. If the applicant does have money, on the other hand, the local authorities will negotiate "a fee,"[48] the land is allocated, money is transacted, maps are

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**47. Based on** discussions with officials in the Dcu and *casas agrarias.*

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

and the prices include not only land but also infrastructure, which can vary widely from purchase to purchase.

Nevertheless, the data in the preceding section and in table 5.5 provide two important insights into the land market of peri-urban Maputo. First, the nominal (and probably real) land price has been rapidly rising over time. Second, although the rising price of land has sharply increased the wealth of most smallholders occupying irrigated land, it is also creating a formidable barrier to potential farm entrants. Using the 1991 exchange rate (2,200 meticais=US$1.00) and prices of 5,000,000-32,000,000 meticais per hectare of irrigated land, the value could fall in the range of $2,273 per hectare to $14,545 per hectare.50 In 1991, smallholders (in personal interviews) were quoting prices of around $2,500 per plot being paid in actual transactions of irrigated land, an amount roughly equivalent to $6,250 per hectare (based on the mean of 0.4 hectare per plot in table 4.2, p. 50). These prices are very high, especially when considering that the average annual income of nonregistered households is around $732 ($336 for female-headed households).

**TABLE 5.5 Land prices, 1991 peri-urban survey, Maputo (meticais/hectare)**

| LAND | 1950-1974 | | 1975-1980 | | 1989-1991 | |
|---|---|---|---|---|---|---|
| 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 |

50. One respondent reported that, in i989, a group of Koreans offered him i0 million meticais for his 60 x 30 meter plot. A women holding an adjacent plot did sell in 1990, receiving 16,000,000 meticais for about 0.5 hectare. Both plots are considered prime irrigated land because of their superior access to water and because they are located next to a gravel road (the road **substantially** adds value since it permits hauling vegetables by **truck).**

drawn, testimonials are written, and the district authorities send the necessary documents to the Dcu. No information could be obtained on the amount of the fees negotiated, mainly because these types of transactions have become rare with the tightening supply of land in the pen-urban zone.

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 persons are the potential sellers. As intermediaries, the district authorities contact a seller and bring the buyer and seller together; a price is negotiated and money changes 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 the amounts involved.

3. Finally, someone interested in buying a plot locates a seller and 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 described in #2 above.

In principle, land sales are not legal, though a seller and buyer may 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. 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 secure part of the land price through "gratuities" at the time of transaction. The Dcu obtains its "rents" through surveying fees (for services which may or may not actually be done) or through title fees,[49] which appear to vary widely from case to case.

### 5.2.3 LAND PRICES

Those respondents reporting buying plots were asked for information on the prices they paid. However, three circumstances resulted in widely varying estimates: only fifteen households reported ever having purchased land; amounts were paid over the 1950-1992 period, and unreliable price data exacerbate any attempts to standardize prices to a uniform Point in time;

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49. These fees are levied sometimes on a per-hectare basis and, at other times, per title. In one case study, the respondent's nephew was charged 4,500,000 meticais for registering 8.5 hectares. Two other persons, whom he knew personally, were charged 300,000 and 600,000 meticais, respectively, for two lots of the same size (1,500 square meters).

armed attacks take place; the owner was thus willing to lower the selling price to 1,000,000 meticais. Following the purchase, the couple began the process of acquiring title. All necessary documents have been compiled and delivered to the Dcu, where they are pending. The plot is currently being worked by four laborers, who receive wages of 12,500, 15,000, 18,000, and 20,000 meticais, respectively, per month. They grow mainly kale, lettuce and onions, bananas, oranges, mangoes, papayas, and sugarcane. However, they are currently having problems selling the produce; they lack a truck to transport the goods to market, and market women are hesitant to visit the plot for fear of being caught in the violence.

#### 5.2.1.6 Case study 6

The buyer respondent heard about the possible sale of a *machamba* through a third person, whereupon he contacted the seller. The seller was forced to relinquish 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 meticais was negotiated for 5,000 square meters, including pig stalls and banana and avocado trees.

#### 5.2.1.7 Case study 7

Until 1984, the buyer respondent was a driver for the Mozambique National Airline. He later became the owner of two warehouses in Hulene, where he sells construction materials. In 1986, he acquired his first *machamba,* 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 renovate his house. A price was negotiated for 2,500,000 meticais and an informal agreement signed. After beginning his farming, the buyer decided to enlarge the *quinta* to 2 hectares. Over the next six months, he arranged to buy out the three remaining smallholders, one for 200,000 meticais, the second for 800,000 meticais, and the third for 400,000 meticais. All told, the buyer paid 3,900,000 meticais for the 2 hectares of land. He purchased a second *machamba* (1 hectare) in 1987 for 3,000,000 meticais with no written contract.

The buyer acquired his third *machamba,* in Boane District, without purchase. In this case, he applied to the GD, requesting *a machamba;* he got their approval through their declaration to the *Direção Distrital de Agricultura da Namaacha,* asking for support of the application. Although a rain-fed plot, this third *machamba is* considered very productive for manioc, maize, and garlic.

The buyer's most recent acquisition, which measures 4 hectares, is located in Costa do Sol. He got it through the GD. The parcel was located in a zone not previously settled. To secure it, the buyer personally contacted the GD and then formally submitted an application. The GD sent its consent to the administrator of the district, who granted final approval.

## 5.3 MANAGEMENT RIGHTS AND LAND RIGHTS

The earlier investigation of household decision-making asked the head of household and principal spouse about their involvement in decisions on investment, labor allocation, marketing, and spending (table 4.5, p. 57). Questions concerning land rights in table 5.6 were directed to the person or persons primarily responsible for managing the *machamba.*[5] Rarely was there any ambiguity over who controlled the land. Within the overall sample, 64.5 percent of the managers are the household head (mainly male adult), and 33.1 percent, the principal spouse (normally female adult). In the case of female-headed households, all (100 percent) management decisions are made by the household head. Principal and secondary spouses are more directly involved in *machamba* management decisions in nonregistered (45.1 percent) than in registered households (20.8 percent).

Each *machamba* manager was asked if s/he possessed any of five specific land-use rights and three land-transfer rights. The former included (1) the right to grow vegetable crops, (2) the right to plant fruit trees, (3) the right to build a storehouse, (4) the right to build a cement wall, and (5) the right to build a house; the latter, (6) the right to bequeath the *machamba* to an heir, (7) the right to rent-out the plot, and (8) the right to sell the plot. Respondents were also asked if they had the right to refuse to vacate land if ordered to do so by the government. The responses, tabulated in table 5.6, indicate a number of important points.

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

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

Third, there is considerable ambiguity in people's minds about rights of transfer. The majority of households, regardless of stratum, feel they can bequeath land to heirs (83.2 percent in the overall sample). Yet fewer households perceive they have the right to rent-out (45.3 percent) or sell a plot (43.5 percent), at least partially reflecting the legal restrictions on private transfer. While registration seems to increase people's perception of their right to invest in permanent structures, it does not seem to change their attitude toward right to

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5i. The i21 households in the study had *124 machamba* managers.

**TABLE 5.6** **Family relationship of *machamba* managers and land-rights perceptions, 1991 pert-urban survey, Maputo**

| RELATIONSHIP AND RIGHTS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED 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 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 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, Family relationship, cont.]**

| RELATIONSHIP AND RIGHTS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Number of ***machamba*** managers | | | | | | | |
| Number of plots | 68 | 56 | 71 | **53** | 52 | 72 | 124 |
| | 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 agrária* | **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 | **38.9** | 41.7 | **42.9** | | **83.3** | 11.1 | 40.0 |
| *Casa agrária* | 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 agrária* | | **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 agrária* | 7.1 | 7.7 | 7.7 | | 10.5 | | **7.4** |
| *Grupo Dinamizador* | 7.1 | | **3.8** | | **5.3** | | 3.7 |

transfer land. Only 55.4 percent of households in the registered stratum felt 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 have greater rights of rental and sale (47.2 percent and 45.1 percent) than female-headed households (29.4 percent and 29.4 percent), respectively.

Finally, in the event that people are told to vacate the property by government, do they think they can refuse?[52] The majority (64.0 percent) feel they **do** not have the right. The perception of right of refusal was lowest in District 4 (28.9 percent), where the control of local authorities is stronger, and among nonregistered landholders (27.1 percent). Conversely, perceptions of right of refusal were highest in District 6 (45.1 percent) and among registered landholders (49.2 percent).

Those *machamba* managers affirming the possession of a land right were asked in addition if permission from authorities is needed to exert that right, and by whom. In general, they respond that growing vegetables or fruit trees can be done freely without involving authorities. However, permission is normally needed—or believed to be needed— on matters pertaining to permanent constructions (building a wall, house, or storehouse) in 14.8-18.5 percent of cases, and on land transfers, 11.1-16.7 percent of cases, with very little difference between districts, male- and female-headed groups, or tenure status. The authorities involved (depending on the case) include, inter alia, the producer associations, Dcu, Executive Council, *casa agrária,* and GD. Registered households normally seek approval from the Dcu or Executive Council while nonregistered households approach producer associations.

## 5.4 LAND ACCESS

Despite considerable market (not land) reforms since the mid-1980s, the vast majority of households would still first turn to administrative mechanisms to acquire more land (table 5.7). On average, 38.0 percent of households would like to acquire more land, a proportion that is nearly equal across districts and gender categories but is higher for registered households (47.1 percent versus 31.4 percent for nonregistered). A high percentage of all households would turn to the GD (34.8 percent on average) for a land allocation, especially in District 6 (47.4 percent versus 25.9 percent in District 4). Purchasing would be more common in District 4 (25.9 percent versus 5.3 percent in District 6) and among male-headed households (18.0 percent versus 0.0 percent of female-headed) 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 percent versus 2.3 percent) and *casas agrárias* (25.0 percent versus 16.3 percent) for a land allocation. Surprisingly 10.9 percent (overall average) would in the future attempt to rent-in land despite legal restrictions.

52. The responses to this question might also be interpreted as whether landholders feel they have the power to refuse.

**TABLE 5.7 Land access of sample households, 1991 peri-urban survey, Maputo**

| LAND ACCESS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSE-HOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Percent households 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 famiy | | **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 agrária*** | 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 |

## 5.5 LAND DISPUTES AND CONFLICTS

In general most landholders are very worried about losing their land. As indicated in table 5.8, 70.3 percent of households feel either very worried or a little worried about losing land. The majority (57.0 percent) also felt that disputes had become more or much more serious in recent years, though this perception was stronger in District 4 (67.1 percent) than District 6 (44.4 percent).53**)."**

The source of disputes also depends on the region. In District 4, the major origins of dispute are individuals from outside the *bairro* (55.2 percent), who come with concession papers issued by the DcU, and neighbors (14.9 percent); only 11.9 percent said that disputes are not a problem. In District 6, the major sources of dispute are individuals from outside the *bairro* (35.2 percent), neighbors (13.0 percent), *bairro* officials (13.0 percent), and ex-landowners (9.3 percent); 22.2 percent indicated that disputes are no problem. A large percentage of households have firsthand knowledge of "outsiders" claiming land with official documents (41.3 percent) or producers being evicted for land underutilization (24.8 percent).

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

53. The recent intrusion of housing northward along the coast is a principal source of disputes in District 4.

**TABLE 5.8 Perceptions held by sample households about land disputes, 1991 peri-urban survey, Maputo**

| PERCEPTION OF LAND DISPUTES | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NONREGISTERED 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 disputes | | | | | | | |
| 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 firsthand knowledge of (% yes): | | | | | | | |
| Outsiders claiming land with 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 |

The 121 households in the survey reported encountering 25 occasions of dispute sometime over the 1973-1991 period (multiple disputes per household were possible) (table 5.9). Over 44.0 percent of the conflicts have occurred since 1989, and 64.0 percent since 1986. The disputes were 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 percent), private farmer trying to expand holding onto owner's land (26.1 percent), project expanding onto the owner's land (17.4 percent), border dispute with neighbors (13.0 percent), and ex-landholder claiming land (8.7 percent).

The parties involved in creating conflicts varied among categories. Private farmers encroaching upon or reclaiming land were purportedly the major culprits in District 6 (63.6 percent); in District 4, however, private farmers caused only 28.6 percent of disputes, followed, in descending order of importance, by other small farmers (14.3 percent), producer associations (14.3 percent), members of government (14.3 percent), and various local authorities (agricultural cooperative, *bairro* structure, construction company, and church) (7.1 percent each). Private farmers (30.0 percent) were less important in the case of registered households; local-level institutions—small farmers (20.0 percent) and various local authorities (cooperatives, churches, producer associations, and government officials) (10.0 percent each)—were the dominant instigators of dispute. Not surprisingly, disputes reported by nonregistered farmers tended to be generated by more influential groups—private farmers (53.3 percent) and local *bairro* authorities (20.0 percent).

## 5.6 LAND REGISTRATION

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

In general, land registration is expected to increase tenure security (74.6 percent much more, 14.9 percent more), incentive to invest in the land resource (72.7 percent much more, 18.2 percent more), and access to credit (62.8 percent much more, 21.5 percent more). However, these data disguise two underlying trends. First, households in District 4 perceive higher benefits across the board than households in District 6, partly reflecting the poorer organization of government services in District 6. Second, female-headed households perceive fewer benefits to registration than male-headed households, particularly for credit benefits. Compared with female-headed households, registration for male-headed households is much more likely to increase security (77.1 percent versus 53.8 percent), investment in land (75.2 percent versus 53.8 percent), acquisition of credit (67.0 percent versus 30.8 percent), renting-out land (33.9 percent versus 7.7 percent), and selling land (32.1 percent versus 7.7 percent).

**TABLE 5.9** **Land conflicts experienced by sample households, 1991 pert-urban survey, Maputo**

| LAND CONFLICTS | DISTRICT 4 | DISTRICT 6 | 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 | | | | | | | |
| 1973-1979 | 7.1 | 18.2 | 13.6 | | 20.0 | 6.7 | 12.0 |
| 1980-1985 | 21.4 | 27.3 | 27.3 | | 30.0 | 20.0 | 24.0 |
| 1986-1988 | 7.1 | 36.4 | 18.2 | 33.3 | 20.0 | 20.0 | 20.0 |
| 1989-1991 | 64.3 | 18.2 | 40.9 | 66.7 | 30.0 | **53.3** | 44.0 |
| Sources 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 famiy-farm sector | 14.3 | 9.1 | 13.6 | | 20.0 | 6.7 | 12.0 |
| 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.**

**TABLE 5.10** **Perception of registration benefits by sample households' 1991 peri-urban survey, Maputo**

| LAND CONFLICTS | DISTRICT 4 | DISTRICT 6 | 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 likey | 1.5 | | 0.9 | | | 1.4 | 0.8 |
| Willingness to rent-out land | | | | | | | |
| Much more likely | **35.8** | 25.9 | **33.9** | 7.7 | **49.0** | 18.6 | 31.4 |
| More likey | 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.**

Part of the lower response for women can be attributed to their disadvantaged access to information about land registration and institutional forms of credit.

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

If households, at least male-headed households, perceive important benefits from land titling, why do they not register land? The data presented in table 5.11 show the following reasons, in declining order of importance: unaware of registration process (28.4 percent), belief that the producer association will take care of it (23.5 percent), does not understand registration procedures (13.6 percent), and plot has not yet been demarcated by the Dcu (12.3 percent). Surprisingly, the cost of having to wait too long for the Dcu to issue documentation was the major reason cited by only 7.4 percent of households. Only 3.7 percent of households expressed no interest whatsoever in having their land registered, suggesting a strong latent demand for benefits of titling. However, important differences are evident among strata. In District 4, households tended to say that the producer associations should take care of it (27.7 percent versus 17.6 percent in District 6) while households in District 6 were generally unaware of registration (52.9 percent versus 10.6 percent in District 4). Registered households (when referring to lack of registration by unregistered households) tended to place more weight on land not being demarcated (25.0 percent versus 9.2 percent for nonregistered), small farmers not being interested (18.8 percent versus 1.5 percent), and process too long and expensive (12.5 percent versus 6.2 percent); smallholders actually felt more constrained by lack of knowledge (33.8 percent versus 6.3 percent for registered), inability to understand procedures (15.4 percent versus 6.3 percent), and general perception that the producer association should take care of it (24.6 percent versus 18.8 percent).

Clearly, certain producers either lack a general awareness of or do not understand the registration process, but this situation may arise from specified procedures that are not well advertised, ambiguous rules, or arbitrary implementation. As mentioned in section 2, respondents often did not know, or were mistaken about, whether title was actually held. To determine the uniformity and scope of implementation, respondents were asked precisely which steps they had completed in the registration process (see table 5.11). Compared with the nonregistered group (2.1 percent), 57.6 percent of the registered group had submitted a statement of bank account, an employer salary statement (22.7 percent versus 2.1 percent),

54. No doubt, the fact that registered households had the lowest formal-sector employment of any category (table 4.9, p. 64) severely limited their compliance with this provision.

**TABLE 5.11 Registration procedures and constraints, 1991 peri-urban survey, Maputo**

| PROCEDURES AND CONSTRAINTS | DISTRICT 4 | DISTRICT 6 | 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 (% fulfilled) | | | | | | | |
| 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 agrária* | 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 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° | - | 4.3 |
| Provisional title granted | 15.4 | 25.4 | 20.7 | 11.8 | 47.0° | 1.0 | 19.8 |
| Definitive title granted | 19.8 | 4.2 | 14.5 | | 31.8° | | 13.0 |
| Registered in property registry | 2.2 | 4.2 | 3.4 | | 7.6 | | 3.1 |

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

a plot map (69.7 percent versus 20.8 percent), written authorization from the *casa agrária* (71.2 percent versus 24.0 percent), written authorization from the GD (89.4 percent versus 31.3 percent), and written authorization from the Dcu (87.9 percent versus 2.1 percent). Most of the registered households were issued provisional leases (47.0 percent), followed by definitive leases (31.8 percent), precarious leases (10.6 percent), and unsure (10.6 percent). Finally, only 7.6 percent of all registrations made their way through the entire process to documentation in the property registry (only after entry can a title certificate be issued). In summary, many registered households did not complete all the necessary steps; many nonregistered households started the process but stopped for reasons of imperfect knowledge, time, cost, or thinking that all steps had been completed.

Smallholders are caught in a trap. Titles cannot be granted because the land in most areas has not been demarcated. Yet surveying fees for extralegal demarcations greatly exceed the means of most small farmers. DINAGECA has been stepping in to help; the Green Zones Office, which lacks surveying capacity to implement its jurisdictional authority over land registration in districts 3-8, has in at least one instance paid DINAGECA topographers to undertake a two-stage demarcation process in District 4 and the Infulene Valley.' The Dcu, which is responsible for registration in the peri-urban area, has an urban focus and is understandably less concerned with strengthening land rights on irrigated lands. Such requirements as submitting a bank account, employer salary statement, or development plan are perhaps applicable to the commercially oriented, capitalized private farms but are ill-suited to family-sector landholdings. With its urban interests, tight staffing, and limited budgets, the Dcu has every incentive to allocate its scarce resources to registering urban properties. In addition to lacking the knowledge, resources, or influence needed to acquire title, smallholders must also suffer the consequences of tenure insecurity created by "outsiders" claiming unregistered land.

## 5.7 CREDIT ACCESS

Increasing the security of lenders through collateral enhancement and expanding the demand for credit by investors are important theoretical benefits of strengthening property rights. These benefits also depend on the unrestricted transferability of land, which permits formal lenders to foreclose and liquidate property. To assess credit use, respondents in the survey

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55. Having made only the initial visit and provided a plot map, a number of households thought that they now held title to their property.

56. The first step is an overall demarcation of permanent green-zone areas, with the immediate goal of impeding residential encroachment. At the time of the study, this stage had been completed in the Infulene Valley but was stalled in District 4 due to lack of resources. The fee for the first stage was around 5,000,000 meticais. Projected for the future, the second stage is to be detailed demarcation of individual plots both to indicate the areas **currently unmarked** and to **adjust** colonial **demarcations** to **present-day** land **occupations.** No fee has yet been agreed upon for the stage-two surveys, and the Gzv was still trying to raise funds from the government and donor communities (personal communications with the director of the Gzv and topographers at DINAGECA).

were asked the number, amount, terms, and conditions of all loans received in the past five years. Of 121 households in the sample, 25.5 percent of the registered and 17.1 percent of the unregistered stratum made use of credit facilities (table 5.12). Despite similar frequencies among strata, registered households on average borrowed 9,511,100 meticais per loan versus 139,200 meticais for unregistered households. Registered households tended to borrow from both family and formal *sources—Banco Popular de Desenvolvimento* (46.7 percent), family (26.7 percent), *Banco de Mozambique* (6.7 percent), and the *Caixa Central de Econômica* (6.7 percent). Nonregistered farms tended to rely more heavily on family (23.1 percent), employers (30.8 percent), and friends (38.5 percent) as sources for capital.

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

## **5.8** CONCLUSIONS

Eighteen years of socialism in Mozambique has a legacy of legal uncertainty, high transactions costs, and excessive institutional involvement by local authorities and the state in land allocation. Although land rentals and purchases are becoming more frequent, the government continues in its attempt to control land allocation and use, periodically issuing decrees that prohibit transfers without state authorization. The economic costs of land market restrictions are difficult to enumerate but are, nonetheless, widely apparent in the frequent occurrence of land disputes, land expropriation by the Dcu and local authorities, invasion of irrigated land by refugees and private farmers, encroachment of urbanites seeking residential land, absence of fair compensation, tenure insecurity, deteriorating incentives for long-term investment, high transfer costs under indigenous tenure systems, and onerous procedures for 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 enormous influx of refugees poured into the city. Local *bairro* authorities and GDS assisted in locating and reallocating land to refugee families and other disadvantaged people, albeit at the sacrifice of existing landholders. With the insurgency at an end, it is now 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

**TABLE 5.12 Credit access of sample households, 1991 peri-urban survey, Maputo**

| CREDIT ACCESS | DISTRICT 4 | DISTRICT 6 | MALE HOUSEHOLD HEAD | FEMALE HOUSEHOLD HEAD | REGISTERED HOUSEHOLDS | NON-REGISTERED HOUSEHOLDS | OVERALL SAMPLE |
|---|---|---|---|---|---|---|---|
| Percent 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 (#) | 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 Desenvo/vimento*** | **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 Geral de Depósitos e Crédito*** | **6.3** | | **3.8** | | 6.7 | - | 3.6 |
| Principal reason for obtaining credit | | | | | | | |
| Nonfarm 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 |

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 onerous requirements and procedures that both exceed the abilities of smallholders and are inappropriate to the needs of agriculture. Smallholders, who feel largely 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 they 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 predicament of too many parties voicing land policy, none of which has sufficiently clear responsibilities and resources to perform its tasks effectively.

The socialist principles that once governed land policy seem asynchronous with the demands of the modern economy now surfacing in Mozambique. The administrative structure that once served the colonial government well has now been turned on its head. The Dcu and DINAGECA, which had adequate funding for a much smaller volume of land services, are 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 title to their land. Until property 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 determining title status.

In the current transformation from a socialist state to a market-oriented economy, the Mozambican government has not yet agreed upon the appropriate role of the land market—or even the degree to which market principles should govern resource allocation. Clearly, there are some who favor state control over landownership and land-market restrictions as a way to protect the resource base and societal interests. An unfettered land market based on private ownership 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.

# 6. LAND PRICE DETERMINATION

Land-price determination models are now developed and evaluated to link plot and household characteristics with the land-price perceptions of 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 positions among households, which 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 (transactions 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 for lack of purchasing power. A negative relationship between income and transactions costs and a positive relationship between income and land prices indicate potential for small farmers to exit agriculture and wealthier farmers to expand their holdings, with overall improvement in employment opportunities. Land registration tends to increase transactions costs due to greater risk of detection—and consequent loss of land—from engaging in "illegal" transfers. Gender has no direct influence on transactions costs per se, but the effects of unequal gender access are apparent through differences in tenure status and farm-size attributes.

## 6.1 THEORETICAL MODEL

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

$$LP_i = LP_i\,[PC_i, L_i, H_i \{P(M), Y, Z(M)\}, T_i, A(HC)] \tag{6.1}$$

$$LP' = Lk:\,[PC_i, L_i, H_i \{P(M), Y, Z(M)\}, T_i, A(HC)] \tag{6.2}$$

$$t_i = LP_i - LP' \tag{6.3}$$

where LP; is the reservation price that the manager would be willing to accept in disposing of his or her i-th plot, LP': is the offer price that the plot manager would be willing to pay in purchasing the same plot, PC; is a vector of physical-quality characteristics of the i-th plot including land improvements, L; is a vector of attributes of the i-th plot's location relative to markets or infrastructure, II;(...) 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 transactions 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 (II), 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 nonfarm uses should theoretically raise both the reservation and the offer price. Unfavorable location would theoretically lower 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 market) 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 landholders' 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, II, 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 being based on highest and best value, it may instead be determined by who is best able to exert political or economic power, regardless of price. Yet financial lending institutions, in order to find land an attractive collateral substitute, must see its 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 unduly high risks to banks seeking to expand mortgage-based lending.

The pervasiveness of administrative transactions in the peri-urban green zones, as well as 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 as well as 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 present landholders, who acquired their land through administrative channels, did so during the 1975-1985 period. The increase in land purchases and rentals that has been occurring since the mid-1980s may in fact suggest a more competitive land market than is commonly believed, in spite of land restrictions.

## 6.2 EMPIRICAL ESTIMATION

Plot managers participating 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) as well as 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, though declaring a reservation price proved easier than a hypothetical purchase price. Those not able to respond (either 20 percent or 24 percent of managers, depending on the question) tended to make up the most disadvantaged or marginalized populations. When the remaining respondents were asked to justify the seemingly "exorbitant" land prices being reported, they stressed the high future demand for—and value of—land in the peri-urban green zones and their intention to capitalize on this trend.[57]

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 (which excludes households unable to report either a reservation or an offer price) is 18,156, 890 meticais, and the offer price, 12,331,180 meticais. Based on the average plot size of .395 hectare, the average reservation price per hectare is 45,966,810 meticais ($20,894), and average offer price per hectare, 31,218,177 meticais ($14,190). While these prices are consistent with certain land prices (based on actual transfers reported in section 5, there is almost certainly some degree of upward bias caused by the exclusion of those households unable to state prices as well as households tending to speculate, sometimes wildly, about future capital appreciation.[58] The price difference (5,825,710 meticais) is 32.1 percent of the reservation price—a very high figure compared with real estate costs of around 6-10 percent in Western markets.

Plot-quality characteristics contained in subsequent regression models include size of *machamba,* topography (whether plot is inclined), presence of salinity (yes or no), and extent of flooding (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), severity of drainage problems and lack of water, without improvement in model results. The average plot size is .395 hectare, but ranges from .02 hectare to 4.0 hectares. Of plots measured, 33 percent are on an incline, 57 percent have salinity concerns, and 76 percent have flooding problems.

Various proxies for location were attempted, including walking distance from home to plot as an alternative for higher monitoring, enforcement, and production costs; walking distance to nearest road and to 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

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

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

nearest road. Only 8 percent 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 because of either high multi-collinearity with other location variables or inferior model results.

**TABLE 6.1 Descriptive statistics, hypothetical land-price regressions, 1991 peri-urban survey, Maputo**

| 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 | 0.0 | 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) [d] | 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 (#) | 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 |
| Household characteristics | | | | |
| Sex of plot manager (male = 1) | .57 | .50 | 0 | 1.0 |
| Political status (yes =1)° | .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 nonfarm income (000 mt) | 3,792.7 | 9,017.2 | -1,228.5 | 81,321.0 |
| Nonfarm 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.

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 improvement exists on plot, 0 otherwise). In addition, data were collected on the number of banana and other fruit trees on the plot. On average, 19 percent of plots in the reduced sample had a cement well, 24 percent had a shed or a house, and 14 percent had livestock barns or stalls. Furthermore, plots on average had 78 fruit trees. The remaining improvements were excluded from subsequent regression models because of either too few improvements *(palhotas, 6* percent), too many improvements (irrigation ditches, 72 percent), or high multi-collinearity with other improvements on the plot (dirt wells with cement wells; walls or fences 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 meticais per plot or 6,340,742 meticais per

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 nonfarm 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 have either 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 be either positive or negative. Status as a female manager would tend to have a dampening effect on the offer price due to lower purchasing power and disadvantaged access to input and credit markets. As indicated in table 6.1, the mean farm size is .54 hectare, but ranges from .02 hectare to 7.6 hectares; the mean farm size per resident ratio is .04 hectare per person, but ranges from .0 hectare to .57 hectare per person. Approximately 57 percent of plot managers are male, and 25 percent have household members who hold positions in the *Grupo Dinamizador* or *bairro* organization. The mean of nonfarm income per resident is 136,561 meticais per person, but ranges from 0 to 3,416,000 meticais per 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.

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59. Despite concerns of bias in the reduced sample that stem 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 meticais/hectare computed for the overall sample in table 4.9 (p. 63), and the average size of irrigated holdings (.395 hectare per plot) is nearly equal to that of .41 hectare per plot in the same table.

An increase in the number and certainty of land rights should theoretically raise both the reservation and offer price of land, since sellers would demand a higher premium and borrowers should be willing to pay more for the additional rights provided. Whether this relationship holds in practice would depend on the breadth and certainty of rights provided by the tenure system(s) and the transactions 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) sales or rentals, increased exposure of registered plots to government scrutiny, and high administration costs in processing leases. On average, 42 percent of plots in the reduced sample have either precarious, provisional, or definitive title. [60]

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.

**TABLE 6.2 Percentage of various rights held by a priori selection of designated right, 1991 peri-urban survey, Maputo**

| RIGHTS | RIGHT TO GROW VEGETABLES | RIGHT TO GROW FRUIT TREES | RIGHT TO BUILD HOUSE | RIGHT TO BEQUEATH | RIGHT TO RENT | RIGHT TO SELL |
|---|---|---|---|---|---|---|
| # 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 plot | **43.5** | **44.9** | 55.0 | 49.3 | 82.2 | 100.0 |

60. 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 precarious and provisional 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 which type of title they held.

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 on which plot managers indicated a right to grow vegetables, only 45.3 percent and 43.5 percent perceived the right to rent-out or sell, respectively. Conversely, only 70 of 162 plot managers indicated an ability to sell the plot, but of these, the vast majority also perceived the right to grow vegetables or fruit trees (100 percent), build on the plot (87.1 percent), bequeath the land to heirs (94.3 percent), and rent-out the plot (85.7 percent). 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 percent of plots in the reduced sample had plot managers who perceived having the right to sell, despite government restrictions prohibiting private transfers.

## 6.3 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 *(p* =.658) and the right to bequeath *(p* = .335). Having the right to bequeath, rent, or sell a plot does not appear strongly correlated with any of the measures of plot, plot-manager, or household characteristics tested [the positive correlation between right to sell and farm size per resident *(p = .248) and* size of *machamba (p* = .230) are exceptions]. Registration status, on the other hand, is significantly correlated with presence of a cement well (p = .517), house or shed (p=.516), wall *(p=.452),* livestock buildings *(p=.427),* size of *machamba* (p=.423), number of fruit trees *(p = .377),* sex of plot manager (male =1) (p = .462), farm size per resident (p =.390), and years of education (p =.227). Farm size in turn is highly correlated with commercial outlays on farm operations (p=.668) and hours of hired wage labor (p=.655). Thus, while it is difficult to generalize about the characteristics of plots and managers associated with the right to sell, those plots being registered tend to be larger and have substantial physical improvements; also, those households registering land tend to have larger farms that are more commercially oriented. Moreover, registration status does not necessarily confer the right to sell, rent, or bequeath, indicating that registered households are claiming greater awareness—and perhaps observance—of 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.

## 6.4 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 percent and 69 percent 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.

**TABLE 6.3 Correlation between plot- and household-level characteristics and tenure status, 1991 peri-urban survey, Maputo**

| STATUS AND CHARACTERISTICS | RIGHT TO BEQUEATH | RIGHT TO RENT | RIGHT TO SELL | PLOT REGISTERED |
|---|---|---|---|---|
| Tenure status | | | | |
| Right to bequeath | 1.000 | .421 [b] | .335 [b] | -.068 |
| Right to rent | .421 [b] | 1.000 | .658 [b] | .166 |
| Right to sell | .335 [b] | .658 [b] | 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 [b] | -.033 |
| **Size of *machamba*** ($m^2$) | .013 | .137 | .230° | .423 [b] |
| Number of fruit trees (#) | .041 | .047 | .049 | .377" |
| Cement well (Yes =1) | -.100 | .137 | .136 | .517 [b] |
| Wall (yes =1) | -.112 | .068 | .017 | .452 [b] |
| Livestock buildings (yes =1) | .041 | .173 | .160 | .427 [b] |
| House or shed (yes =1) | .013 | **.153** | .033 | **.516** [b] |
| **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 [b] |
| 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 [b] |
| Hired labor (hours/plot) | -.001 | .031 | .158 | .375 [b] |
| Political status (yes = 1) | -.045 | .025 | -.010 | -.173 |
| Nonfarm income per resident (000 mt/person) | -.206 | -.001 | .190 | .219 |

a. One-tailed significance.
b. Two-tailed significance.

**TABLE 6.4 Land-price regressions, hypothetical reservation price,° 1991 peri-urban survey, Maputo**

| REGRESSIONS | MODEL A | MODEL B | MODEL C | MODEL D | MODEL E | MODEL F |
|---|---|---|---|---|---|---|
| Constant | 1,100.3<br>(4,238.5) | -2,380.6<br>(6,407.7) | -1,608.9<br>(3,907.8) | -1,365.1<br>(4,907.4) | 2,427.3<br>(3,931.4) | 258.7<br>(5,427.9) |
| Size of ***machamba*** (ha) | 30,856.0'<br>(3,704.1) | 31,130.3'<br>(3,730.1) | 25,745.3'<br>(3,809.0) | 21,3678.7'<br>(7,321.9) | 20,068.3'<br>(8,802.5) | 23,382.5'<br>(7,598.7) |
| Topography (1 =inclined) | 3,390.2<br>**(5,231.9)** | 4,936.0<br>**(5,468.1)** | **4,734.3**<br>(5,111.3) | 6,520.3<br>**(5,312.5)** | | 11,352.1'<br>**(5,434.9)** |
| Salinity problems y = 1) | -7,270.0<br>**(4,588.4)** | -7,159.9<br>(4,670.7) | -4,832.0<br>(4,183.3) | -4,785.6<br>**(4,340.5)** | | -5,904.1<br>**(4,514.0)** |
| Flooding problems (scale) | **2,555.2**''<br>(1,467.6) | 2,369.8<br>(1,503.6) | 3,071.3'<br>(1,354.6) | 3,078.7'<br>(1,379.2) | | 2,645.5–<br>(1,429.4) |
| Plot registered y = 1) | 18,455.6'<br>(5,561.1) | 18,614.6'<br>(5,884.1) | 17,401.1'<br>(5,297.6) | 16,379.0'<br>(5,646.6) | | |
| Right to sell plot y =1) | | | | | | 723.4<br>(4,588.7) |
| Minutes to market (min) | | 74.0<br>(72.2) | | | | |
| Minutes to road (min) | | -11.6<br>(293.0) | | | | |
| Access road adjacent to plot y = 1) | | | 29,500.4'<br>(7,730.8) | 28,017.2'<br>(7,879.7) | | 30,049.3'<br>(8,182.7) |
| Presence of cement well (y =1 ) | | | -15,117.3'<br>(7,263.8) | -19,101.4'<br>(7,694.7) | | -16,802.5'<br>(7,990.7) |
| Presence of house or shed y =1) | | | -3,926.3<br>18,341.3) | -2,528.1<br>(8,483.7) | | -962.1<br>(8,822.9) |
| Presence of livestock buildings y =1) | | | 32,191.2'<br>**(9,354.4)** | 31,800.8'<br>(9,4(3 1.6) | | 30,212.0'<br>(9,851.5) |
| Number of fruit trees (#) | | | -7.0<br>(15.6) | 4.5<br>15.8) | | .8<br>(16.4) |
| Net income per plot (000,000 mt) | | | | | 919.0<br>(332.1) | |
| Farm size/resident (ha/person) | | | | 41,642.5<br>(64,684.9) | 91,197.6<br>(75,158.1) | 42,906.1<br>(67,428.8) |
| Sex of plot manager (male =1) | | | | -738.4<br>(4,773.1) | 6,487.5<br>(4,801.4) | 3,400.8<br>(4,743.3) |
| Nonfarm income/resident (000 mt/person) | | | | 7.7<br>(6.1) | 7.1<br>(6.6) | 9.6<br>(6.4) |
| Political status y =1) | | | | -2,866.2<br>(4,746.4) | -3,665.1<br>(5,304.8) | -3,800.7<br>(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 |

a. The dependent variable is in units of 000 meticais.
* = .05 significance; * * = .10 significance. Figures in parentheses are standard errors.

**TABLE 6.5 Land-price regressions, hypothetical offer price,' 1991 peri-urban survey, Maputo**

| 'REGRESSIONS | MODEL G | MODEL H | MODEL I | MODEL J | MODEL K | MODEL L |
|---|---|---|---|---|---|---|
| Constant | 1,850.9 (3,465.1) | 4,235.9 (5,190.1) | 1,198.0 (3,329.4) | 863.1 (3,860.5) | -457.3 (2,799.2) | 1,385.7 (4,145.2) |
| Size of ***machamba*** (ha) | 22,759.4* (2,875.5) | 22,568.5* (2,917.0) | 19,456.8 (3,046.2) | 2,568.0 (5,412.6) | -541.7* (6,162.6) | 3,039.2 (5,491.8) |
| Topography (1 =inclined) | **-3,653.5** (4,290.5) | **-4,513.3** (4,542.0) | -4,116.9 (4,401.3) | -2,040.7 (4,197.3) | | 692.9 (4,129.6) |
| Salinity problems y= 1) | **-4,155.9** (3,689.2) | **-4,309.4 (3,745.3)** | **-3,756.3** (3,476.8) | -3,206.2 (3,342.5) | | -3,761.6 (3,391.2) |
| Flooding problems (scale) | 268.5 (1,168.3) | 322.0 (1,204.2) | 771.7 (1,110.7) | 402.9 (1,046.5) | | 154.3 (1,053.5) |
| Plot registered y = 1) | 12,199.7* (4,530.7) | 11,754.7* (4,740.0) | 9,290.9* (4,469.8) | 7,621.4* (4,397.9) | | |
| Right to sell plot y =1) | | | | | | 1,046.0 (3,437.7) |
| Minutes to market (min) | | -33.7 (60.5) | | | | |
| Minutes to road (min) | | -69.0 (241.2) | | | | |
| Access road adjacent to plot y=1) | | | 21,073.1* (6,671.2) | 19,664.7* (6,257.5) | | 20,948.0* (6,312.4) |
| Presence of cement well y=1) | | | **-5,584.9** (6,225.5) | -10,131.4** (6,047.8) | | **-8,824.4** (6,098.7) |
| Presence of house or shed y =1) | | | -3,536.5 (6,279.8) | 5,541.6 (5,953.9) | | **5,256.3** (6,043.7) |
| Presence of livestock buildings y = 1) | | | 19,464.3* (7,628.2) | 17,934.3* (7,129.0) | | 18,334.6* (7,251.6) |
| Number of fruit trees (#) | | | -17.2 (12.6) | -14.9 (11.8) | | -13.1 (12.0) |
| Net income per plot (000,000 mt) | | | | | 526.5* (233.6) | |
| Farm size/resident (ha/person) | | | | 17,296.8* (4,869.7) | 21,289.2* (5,267.9) | 17,460.0* (4,940.6) |
| Sex of plot manager (male =1) | | | | -160.7 (3,720.0) | 4,298.4 (3,448.6) | 1,680.5 (3,616.4) |
| Nonfarm income/resident (000 mt/person) | | | | 5.7 (4.6) | 7.1 (4.6) | 6.5 (4.7) |
| Political status (y =1) | | | | -3,265.3 (3,700.2) | -3,954.7 (3,856.1) | -3,947.3 (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 |

a. The dependent variable is in units of 000 meticais.
= .05 significance; * = .10 significance. Figures in parentheses are standard errors.

### 6.4.1 RESERVATION PRICE REGRESSIONS

Regarding the reservation price of land, each hectare in the green zones has a marginal value of between 20,068,260 meticais and 31,130,250 meticais, or $9,122-$14,150 per hectare, depending on the model, significant at the 5 percent confidence level. An incline in slope tends to increase and the 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 meticais, 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 meticais, 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, p. 96, indicates, are present but weak) or greater security of land use rights. Location factors in model B show mixed effects with wide standard errors. Possession of the right to sell tends to have a positive effect on the reservation (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 meticais, and presence of livestock buildings augments it by 30,211,988 to 32,191,159 meticais). While dirt wells tend to be only 1-2 meters in depth, cement wells tend to be deeper and are located on slopes or in areas of deep water tables." The significantly negative coefficient for presence of a cement well (-15,117,260 to -19,101,424 meticais per 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 meticais) 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 nonincome-earning improvements, including residential uses.

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

### 6.4.2 OFFER J ER PRICE REGRESSIONS

Regarding the offer price for land, each hectare in the green zones has a marginal value of between 19,456,790 and 22,759,440 meticais, or $8,844 to $10,345 per hectare, depending on the model, significant to the 5 percent 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 while the flooding index increases it, but neither variable is statistically significant. Possession of registration

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6i. Presence of a cement well is significantly correlated with sandy soil (p = .25i) and inclined topography (*p* = .402). Dirt wells are significantly correlated with clay soils (*p* = .292) but are not significantly correlated with slope (p=.042).

significantly improves the price of land in all models, by 7,621,437 to 12,199,735 meticais, 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 meticais, and presence of livestock buildings increases the offer price by 17,934,305 to 19,464,330 meticais. Net income per plot (526,497 meticais) 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, though only farm size per resident is statistically significant. For every unit (hectare) increase in farm size per resident, the offer price of land increases by 17,297,765 to 21,409,486 meticais per hectare. Land acquisition through the GD and *bairro* organizations is the lowest tier of administrative transactions and tends to be used by the poorest farms. Political membership in local organizations tends to decrease the offer price, consistent with expectations, though results are not highly significant. Reliance on nonfarm income may improve cash liquidity and ability to pay, which would have a positive effect on the offer price. Alternatively, nonfarm employment could theoretically drive up the opportunity cost of family labor and reduce the offer price for land. Model results show that access to nonfarm income tends to increase the offer price, though results are not highly significant.

### 6.4.3 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 rights, and gender status. Model M examines the relationship between price difference and farm size while controlling for size of plot.[62] The relationship between income and price difference is estimated in model N. Model 0 examines the impact of registration status, and model P, possession of right to sell on the price difference. Model Q estimates the impact of gender on transactions costs while controlling for the effects of farm size, income, and tenure status.

Theoretically, small households with limited access to land would be more reluctant to sell their holdings 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 (hectare) increase in land size, the price difference tends to fall by between -4,218,420 and -4,978,560 meticais per hectare, significant at the 5 percent level.

Limited land access need not be a constraint on willingness to sell land assets if households have access to other, nonfarm income or if income is derived from other farm

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

TABLE **6.6 Land price regressions, hypothetical transactions costs or price difference,' 1991 peri-urban survey, Maputo**

| REGRESSION | MODEL M | MODEL N | MODEL O | MODEL P | MODEL Q |
|---|---|---|---|---|---|
| Constant | **2,384.4** ' (1,208.5) | **1,788.5** (1,219.7) | **587.4** (1,344.3) | 3,299.8 ' (1,425.3) | **999,8** (1,710.2) |
| **Size of *machamba* (ha)** | **14,558.7** ' (2,621.4) | 7,796.9 ' (1,806.3) | 13,189.9 ' **(2,591.8)** | 14,796.7 ' (2,623.2) | 12.218.1 ' (2,667.8) |
| Total household farm **size (ha)** | -4,303.5 ' **(1,857.9)** | | -4,799.9 ' (1,811.4) | -4,218.4 ' (1,855.2) | **-4,978.6** * (1,799.6) |
| Total household income (000 mt) | | 251.6 " (140.5) | | | 231.8 ' (135.2) |
| Plot registered (y = 1) | | | 6,276.3 ' (2,297.8) | | 5,366.7 ' (2,524.8) |
| Right to sell plot (y = 1) | | | | -2,601.4 (2,159.0) | -2.750.1 (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 |

a. Dependent variable is the price difference between reservation and offer price in units of 000 meticais.
" = .05 significance; = .10 significance.

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 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 meticais) in total household income, the price difference increases by 231,811 to 251,608 meticais per plot.

In situations where land markets are unrestricted and information is perfect, possession of registration ought to reduce transactions costs by increasing the certainty of property rights and reducing the time and money spent by buyers and sellers on negotiating and monitoring land contracts. However, to the extent that risk to buyers and sellers is increased from privately transferring land or that the administrative process of acquiring and renewing registrations is costly relative to transfers in the informal market, a positive effect between title and transactions costs would be expected. [63] The effect of registration status in table 6.6 (that is, registration status increasing the price difference by 5,366,721 to 6,276,289 meticais

63. Sellers engaging in unauthorized *transfers* of *registered* land risk being fined, whereas buyers risk having **the land expropriated.**

per plot) would tend to support the conclusion that transactions 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 transactions 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 meticais per 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, since the offer price may increase as well if, due to constrained access, women 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 meticais per plot compared with female managers; thus being a female would tend to lower the price difference, but results are not statistically significant. Being a male manager is not significantly correlated with net plot income, nonfarm income, or right to sell, but is significantly and positively correlated with title *(p=.462)* and farm size *(p=.252).* Gender thus does not have a direct influence on transactions costs per se, but the effects of unequal gender access are apparent through differences in tenure status and farm-size attributes.

## 6.5 SUMMARY

Land-price determination models are developed and evaluated in this section to link plot attributes and household characteristics 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 the 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, which 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 as perceived by plot managers.

Regression models linking price differences (transactions 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 transactions costs and a positive relationship between income and land prices indicate potential for small farmers to exit agriculture and wealthier farmers to expand their holdings, with overall improvement in employment opportunities. Land

registration tends to increase transactions costs due to the greater risk of detection and loss of land from engaging in "illegal" transfers, while perception of right-to-sell tends to reduce transactions costs. Gender has no direct influence on transactions 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 suggests the emergence of a land market with potential for distributing land among the best and most efficient uses. While the predictive power strengthens the possibility of mortgage-based lending by financial institutions, transactions costs remain very high—to such an extent that land-collateral value will experience steep discounting in financial transactions until such time as transactions 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 not only are search and negotiation costs high, but also 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, since they lack the financial means to acquire more land and demand a steep reservation price to part with land. As employment opportunities expand in the postwar 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 asynchronous with the Powerful market forces that are presently emerging in Mozambique.

**ANNEX A**

# SAMPLING FRAME FOR PERI-URBAN BASELINE SURVEY

Phase 1 of the peri-urban project was implemented by The Ohio State University from January to April 1991. The survey includes a sample of 330 households in the urban to peri-urban area of Maputo. In the course of designing the research, the investigators faced two pressing concerns (Graham and Roth 1990a,b). First, census data or population lists that might be used to select sample households were either unavailable or out of date. Second, 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 piloted in August 1989. When enlarged to a scale of 1:10,000 (1:40,000 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 layout since 1982. The aerial photographs combined with Jenkins's detailed understanding of city infrastructure and residential density on the ground enabled the team to develop the following research design.

A grid map containing 500 blocks, each block measuring 1 kilometer to a side, was to be overlaid on a physical map of Maputo. Population density gradients were then to be assigned to each grid—for example, 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 as well as those with 100 percent habitation and full services were to be excluded, the former because of no population, the latter because it was considered urban. Blocks were then to be randomly selected. A second set of procedures identified and selected individual households within each designated block. This scheme was intended to cover all residential areas (excluding urban tracts) out to the end of the security zone, with households sampled in each block in proportion to the population density.

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

1. The peri-urban area was defined as Greater Maputo City, including the satellite urban districts of Matola and Machava. This area covers 675 square kilometers.

2. This area was subdivided into 544 blocks, each 1 square kilometer, by overlaying the grid onto a city map (table A2).

3. An aerial photograph mosaic was then prepared from the 1:10,000 enlargements. Lines of the grid were 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 analysis by block of land use (residential, industrial, agricultural) and, in the case of residential land use, the proportion of coverage, residential characteristics, and number of housing units).

5. Residential characteristics were identified as follows:

   **a.** **dispersed spontaneous,** occupation of a predominantly rural character;
   **b.** **planned,** no services;
   **c.** **planned,** basic services;
   **d.** **planned,** medium services; and
   **e.** **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 percent of the area classified as residential) is provided in table Al.

6. Only those blocks meeting the following criteria were retained for sampling purposes. First, all blocks with less than 50 percent 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, and thus considered to be urban, were eliminated. Third, areas with other forms of residential land use were excluded if more than 50 percent of the area was planned with full services. After deleting these blocks, only 87 blocks remained for sampling purposes (table A2).

7. Each of the blocks remaining 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 Al. Blocks with less than 50 percent 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 percent or more full services (5, 6, 40, 74, 483, 510, 517, 544). The 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 settlements and the possibility that perhaps as high as 25 percent of the people on the urban fringe are excluded," 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 settlement, there is risk that the sample is underweighted in migrant population.

Second, due to resource constraints and security risks in District 7, the survey was scaled back to 330 households. It is not clear how this affects the randomness of the sample population.

**TABLE A1** **Residential characteristics of grid survey design**

| RESIDENCY CHARACTERISTICS | NUMBER OF BLOCKS | | |
|---|---|---|---|
| | < 50% | > 50% | Total |
| 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 |

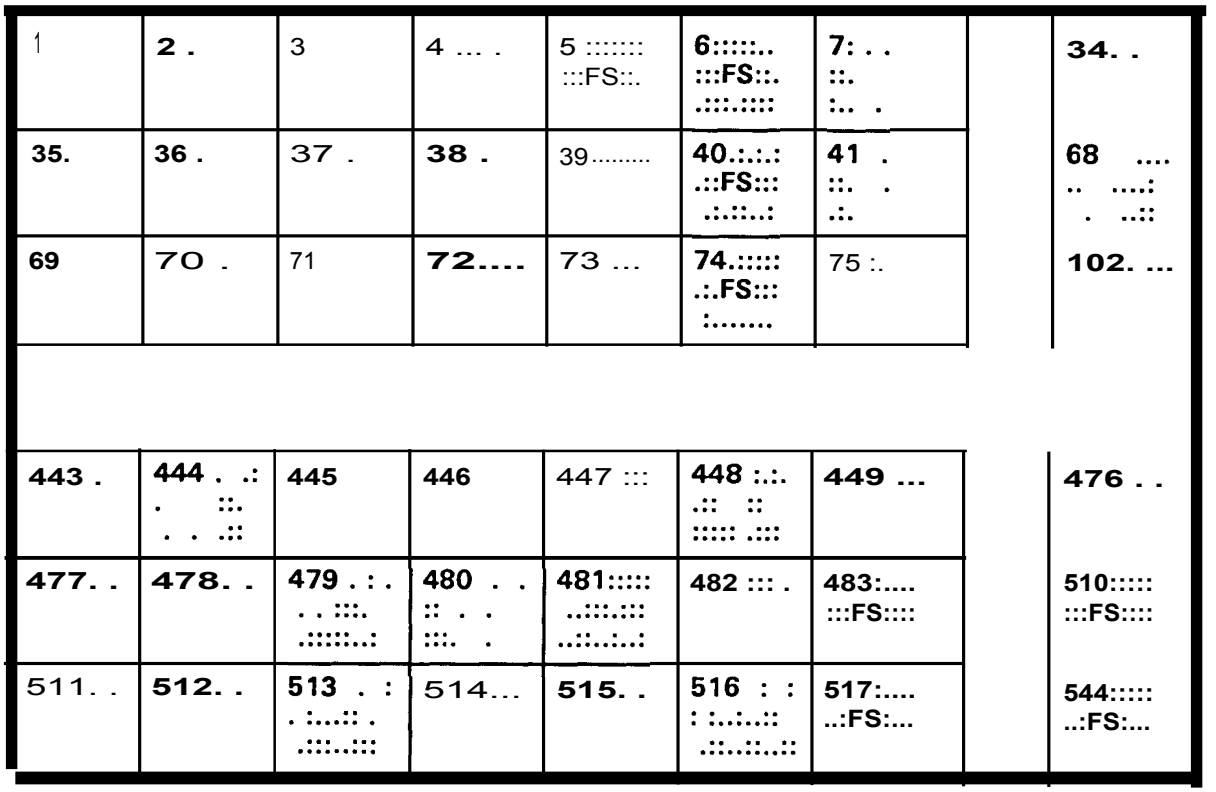
Source: Work performed by Paul Jenkins, 1990.

64. **Assuming** that the **median** point between 50 percent and 100 percent residency is 75 percent and that the median point between 0 percent and 50 percent is 25 percent, and given that the households are evenly distributed over these ranges, one can conclude that the baseline survey was offered to about 75 percent of the pen-urban population, and not to about 25 percent.

**TABLE A2 Target population and sampling frame, Phase 1 of the household baseline survey**

| RESIDENTIAL DENSITY (units/ha) | NUMBER OF BLOCKS | HOUSEHOLDS TO BE SELECTED PER BLOCK | TOTAL SAMPLE SIZE |
|---|---|---|---|
| 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 AI Schematic diagram of peri-urban sampling frame**



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