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LTC Research Paper

Land Tenure, Land Markets, and Institutional Transformation in Zambia

edited by

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with the assistance of

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**LAND TENURE, LAND MARKETS,
AND INSTITUTIONAL TRANSFORMATION
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All views, interpretations, recommendations, and conclusions expressed in this paper are those of the authors and not necessarily those of the supporting or cooperating organizations. Any recommendations or suggestions herein do not represent the official position of the Government of Zambia.

LTC Research Paper 124

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LIST OF ACRONYMS

CPI	consumer price index
CSO	Central Statistics Office
GOZ	Government of Zambia
GRZ	Government Republic of Zambia
ICRAF	International Centre for Research in Agroforestry
LTC	Land Tenure Center
MAFF	Ministry of Agriculture, Foods and Fisheries
MMD	Movement for Multiparty Democracy
MOL	Ministry of Lands

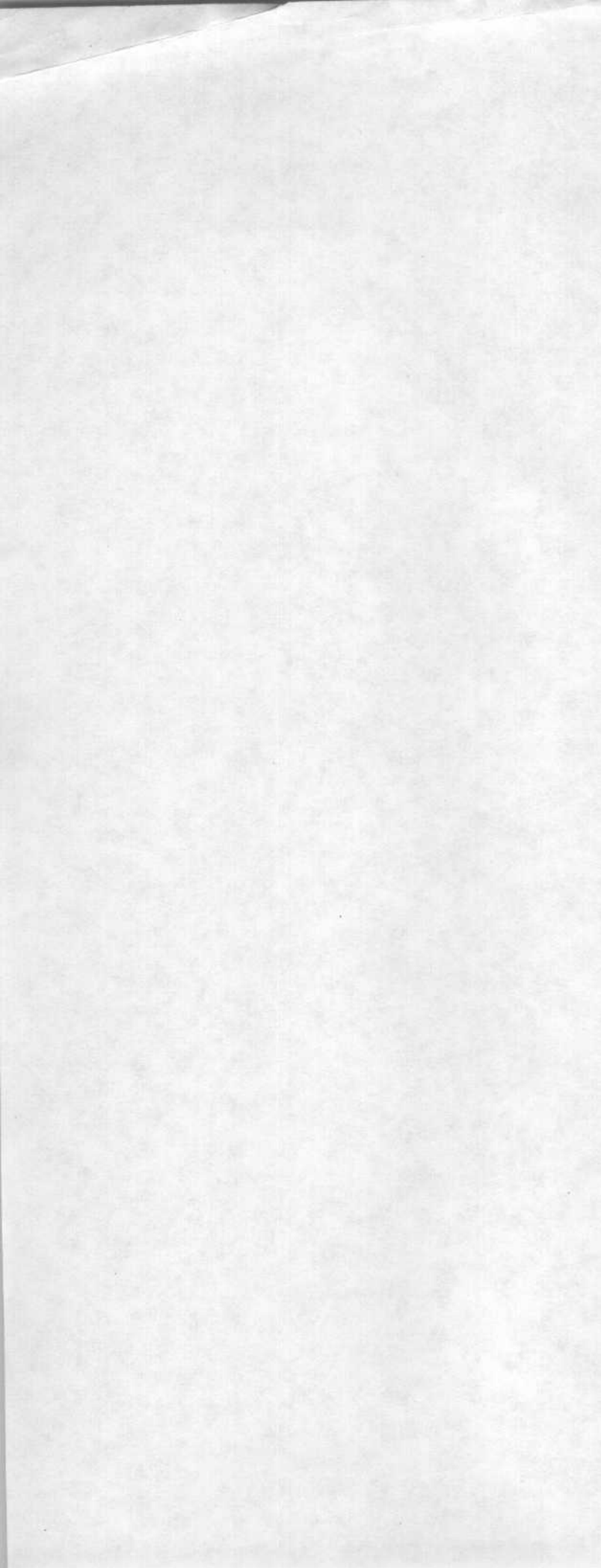
Preface

The Government of Zambia is embarking on an ambitious program of legal and administrative reforms in land policy. Although the need to liberalize the land market is universally shared, the ideas on how to accomplish this transformation are not. Two decades of underinvestment in field research have resulted in the present situation of micro-level data on land tenure and farm-level production, consumption, and resource management inadequate to guide policy decisions. This report was prepared to help assess the state of knowledge and identify important land policy issues as a foundation for recommending future research directions and to facilitate informed policymaking. Some will feel that the current state of research is adequate and that the report does not go far enough with policy advice. Others will disagree with the level and nature of policy recommendations that are given. Should this report have erred in either direction, it is due to the very difficult task of finding the appropriate balance, rather than to any willful decision by the research team.

The research was carried out between September 1993 and March 1994 with funding from the US Agency for International Development (USAID) in Lusaka. Further comments and suggestions were incorporated between March and September 1994. An action plan for land tenure and administrative reforms based on these research findings was developed in close collaboration with the Ministry of Lands (MOL) and is contained in a follow-up document entitled "Land Reform and Institutional Transformation in Zambia: Recommendations for Policy Change" (July 1994). That action plan has now been incorporated into a master planning document for the MOL, and its recommendations are under review by USAID/Zambia for possible financial support.

As will be seen, many Zambian authors have made important technical contributions through their respective chapters and more generally to the report. The Land Tenure Center (LTC) is grateful for their support and that of the staff of the MOL who so generously gave their time in responding to the many questions and calls for data. Important comments on the report were also received from the land committee (S.P. Mulenga, T. Bull, L. Handahu, S.M.J. Zaloumis, and T.H. Phiri), David Straley of USAID, the Overseas Development Agency, G.H. Sicalwe of the Department of Resettlement, and various senior officers in the Central Statistics Office. The authors would also like to gratefully acknowledge those people who willingly gave interviews or assisted with the analysis. Special thanks are due David Musona, who managed in-country travel, banking, and other logistics, and Jane Dennis and Steven Smith, who spent considerable time on editing and assembly. There are no doubt many knowledgeable individuals in Zambia who should have been contacted for contributions but were not. If research deficiencies have resulted, we can only hope that such an oversight can be corrected in future research endeavors.

Michael Roth
Project Director
20 September 1994



Chapter 1:

Legal Framework and Administration of Land Policy in Zambia

by

Michael Roth, A.M. Khan, and M.C. Zulu'

I. Introduction

A. Issues

The current system of land legislation, based on antiquated English law, is badly in need of modernization. Private landownership is effectively repressed if not prohibited by Zambia's current legal framework, and land cannot legally have value.¹ Lack of private ownership and a land market ostensibly constrains the development of formal credit and real estate markets, while delays and costs in processing leasehold issuances and property transfers purportedly constrain land markets and inhibit economic growth. The system responsible for officially delivering titles and managing state lands is severely constrained by limited surveying capacity and the weight of thousands of applications, many of which have been pending for years. Market reforms are increasing the profitability of agriculture and the demand for agricultural holdings at the same time that improvements in wealth and population pressures are increasing the demand for residential property. The historical, political, and economic factors that have led to a highly urbanized Zambian population and emphasis on mining are beginning to wane in favor of peri-urban and rural settlement. Zambia has a highly urbanized population; yet, it has, arguably, an abundant supply of arable land that, for complex historical reasons, remains uncultivated. However, institutional constraints to agricultural expansion are manifest. Urban dwellers, whose links to ancestral lands have eroded with time, reportedly experience difficulties acquiring sufficient land through customary authorities and/or do not want to depend on their control. Many turn to the Ministry of Lands (MOL) for an allocation and for land sizes in excess of those provided by traditional authorities; yet, considerable delays are caused by current registration bottlenecks and problems with land identification.

Associated with the above agrarian expansion and land tenure constraints are issues that have implications for economic growth and equity. Are land rights adequate to encourage investment in buildings and other fixed land improvements? Are land markets overly constraining land access, particularly for lower-income families in the residential real estate market and smallholders in the agricultural land market? Is the growth in demand for land speculative or productive? Are the landholders residing on the land or are they absentee? Are legal provisions or transfer fees overly constraining the transfer of land among existing landholders or to potential market entrants? What mechanisms are appropriate for facilitating the emergence of land markets after nearly two decades of socialism? What policies are needed to create a land market that is conducive to economic growth?

¹ Michael Roth is associate research scientist with the Land Tenure Center and Department of Agricultural Economics, University of Wisconsin-Madison. A.M. Khan is chief registrar of Lands-Deeds, and M.C. Zulu is commissioner of lands, Ministry of Lands, Lusaka.

² See the section "Tenure on State Lands" (p. 14, below) for counterarguments asserting that land could legally have value under the Land (Conversion of Titles) Act, 1975, but that the law was incorrectly applied or interpreted in practice.

Why are there delays in the registration system, and how ought they be corrected? Is expanded registration a panacea, or have abuses at central and local levels resulted in land grabbing, land concentration, and inefficient land utilization by elites in pattern with the experiences of other African countries at similar stages of development? Is the veritable land rush underway creating resource degradation problems on arable farm land? What natural resource concerns are emerging in newly opening frontier areas?

The Movement for Multiparty Democracy (MMD) government is calling for the institutionalization of a modern, coherent, simplified, and relevant land code and land administration system that: ensures the fundamental right to private ownership of land; creates a more efficient land delivery system; restores the confidence of investors; merges the now disparate pieces of legislation for reserve and trust lands; facilitates the varied development needs of the country; attaches economic value to undeveloped land; encourages private real estate agency business; promotes the regular issuance of title deeds to productive landowners in both rural and urban areas; and, clears the current backlog of cadastral surveys and mapping.³ This paper was contracted by the US Agency for International Development and the MOL to identify current land market constraints as a basis for designing an action plan to assist the government with land policy reforms.

B. Outline of report

This chapter provides a general overview of the history of land policy in Zambia and critiques selected pieces of land legislation that define the legal framework governing land rights and land markets in the country. Legal and institutional impediments to the development of a market-oriented land policy are identified along with concrete recommendations for short- and long-term legal and institutional reforms. An institutional profile of ministries and agencies responsible for designing, promulgating, and implementing the various dimensions of land policy is briefly reviewed. Principal land policy issues confronting policymakers in Zambia are identified, setting the stage for more detailed analyses of land administration processes, leasehold demand, land markets, and land valuation in subsequent chapters.

Chapter 2 presents a thorough review of land registration procedures starting with the roles and activities of the chiefs and rural councils⁴ and ending with the issuance of the title certificate by the Commissioner of Lands. Emphasis is given to evaluating the issuance of leaseholds in previously undemarcated State, Reserve, and Trust Lands. The chapter further examines the causes of delays in the leasehold process, explores ways for streamlining registration processes, proposes legislative and administrative changes, and identifies future research needs.

Chapter 3 focuses on the assimilation and analysis of data on official title issuances and transfers in State, Reserve and Trust Lands. Data are assembled on the number and size of property transfers and land prices as a basis for gauging land value and economic ground rents. Changes in agrarian structure based on available regional and national data from annual surveys are also evaluated to assess the net growth in the number of farming units by land tenure category, trends in farm size, and growth of demand for leasehold property.

³ Since the MMD government came to power, value to land has been recognized and amendment to the law is being effected.

⁴ Herein, the term *council* or *rural council* is used in place of *district council*. The latter, while frequently cited in regulations, is discontinued as two or more councils sometimes exist in the same district.

Chapter 4 deals with issues related to the emergence of a land market in urban and agricultural properties in Zambia. Technical and financial problems confronting private investors and the real estate industry are reviewed for private transfers. The chapter also reviews alternative methods for administering government land policy in undeveloped areas, including options for land development, land distribution via allocation or auction, land price determination, valuation of leasehold rents, and property taxation. It further reviews the existing and potential institutional arrangements for setting, collecting, and disbursing proceeds from land sales and rental fees. Finally, it evaluates the financial, legal, and management issues associated with the establishment and operation of a land development fund (LDF) proposed by the MOL to assist with financing land development.

Chapter 5 is a synthesis of a land tenure study recently completed by the International Centre for Research in Agroforestry (ICRAF) in collaboration with the Land Tenure Center (LTC) and the University of Zambia. That study, involving a survey of 200 agricultural producing households in Eastern and Southern provinces, is one of the few studies in recent years that details customary land tenure arrangements. Although the study focused on linkages between tenure and on-farm tree planting, the formal questionnaire included general indicators of agricultural productivity and development as well. The chapter briefly discusses the research methodology used, followed by empirical findings on land acquisition, land rights, and land conflicts. Empirical results are also presented of an econometric analysis of linkages between land tenure institutions and selected productivity indicators including oxen mechanization, use of chemical fertilizers and credit, and presence of various long-term improvements on land, including trees.

Chapter 6 reviews the nature and scale of past settlement schemes and assesses their performance based on archival research, and analysis of primary and secondary data. The market for private transfers and administrative allocations on newly opened lands will provide the principal mechanisms through which people can acquire lands in agricultural areas. However, due to past historical factors and economic hardship, some segment of the population seeking land for farming will be unable to effectively use these mechanisms because of lack of purchasing power or the means to resettle. The Government of Zambia (GOZ) has a long history of settlement programs that could accommodate these disadvantaged populations. The desirability of continuing or expanding this mechanism depends on the scale and performance of past schemes.

Chapter 7 uses available time series data to analyze national and regional changes in land use, productivity, and profitability of agriculture, both spatially and temporally, for the commercial and noncommercial farm sectors. This chapter was intended as a more forward-looking analysis of economic forces influencing the profitability of farming in Zambia, the rate of expansion in the agricultural frontier, and the resource issues that are likely to emerge in the context of agricultural extensification. The chapter instead highlights the difficulties of using aggregate time series data for such analyses due to structural biases and inconsistencies in the data. Relatively straightforward questions—such as "How fast in area terms is the agrarian sector expanding?"—are rendered nearly unanswerable by erratic swings in the data stemming partially from unreliable statistical methods and reporting.

Interpretation of data in the above chapters depends crucially on data quality and length and breadth of data time series. Chapter 8 provides an overview of official time series published by various agencies in Zambia, including the state of their availability for analysis and the methodology used to collect the data. Data presented in this and previous chapters underscore the difficulty of making policy decisions given the very weak and tenuous base of empirical research on property

rights, agrarian structure, resource management, land use, and market access in both the state and customary sectors.

The Overseas Development Agency (UK) has made considerable investments in Zambia's land delivery system and government valuation department. Likewise, the Swedish International Development Agency (SIDA) has made considerable investments in Zambia's land surveying system and the analysis of economic ground rents. In recognition of their quality efforts and studies, this report deals only superficially with land surveying and mapping. Readers are encouraged to contact those agencies for their respective reports. Any future work by USAID in land tenure reform and policy in Zambia should be tightly coordinated with their endeavors.

II. Colonial policy and settlement

Zambia's present system of State, Reserve, and Trust Lands is a legacy of the early colonial period. Emissaries of Cecil Rhodes and the British South Africa Company arrived in Barotseland in 1884 to make a treaty with the then-paramount chief Lewanika. Treaties concluded with most of the chiefs in Zambia during the 1890s guaranteed "African" rights to large areas of tribal land in exchange for mineral concessions. The 1911 Northern Rhodesia Order in Council instructed the company to assign to the African population (of Northern Rhodesia) sufficient land for their use and occupation. Missionaries, miners, and traders began to settle, reaching a population of roughly 1,500 Europeans by 1911. The company divested its control of the territory in 1924, and a governor was appointed by the British sovereign. Under its agreement with the crown, the company retained its mineral rights in exchange for territory. The 1928 Northern Rhodesia Order in Council formally established areas of crown land to be reserved for white settlement under English Land Law and reserve areas for African occupation under customary tenure arrangements. (Section 5, "Land Tenure" [p. 14ff, below] covers in greater depth changes in statutory law from colonial times to the present.)

White settlement initially took place in a rather haphazard manner, first by the company and later under crown governance. A series of Native Reserves Commissions between 1926 and 1928 established a more regularized system of settlement by whites, and the systematic evacuation of crown land by African residents, who were forcibly crowded into reserves. Much land was left unclassified (table 1.1), and came to be known as the "silent lands," set aside for the anticipated influx of white settlers that never materialized (Bruce and Dorner 1982).

A postwar influx of ex-soldiers in 1919 brought the number of white farms along the rail line to about 250. This figure remained static into the 1940s, resulting in substantial areas of crown land left idle. Overcrowding in the reserves continued to worsen, leading in 1938 to the Pimm Commission openly stating that the reserves policy had been a disaster. The 1947 Northern Rhodesia (Native Trust Land) Order in Council provided for a fundamental reversal in policy. Whereas previously crown land was reserved for white settlers, under the 1947 order it was defined as that amount required for a more realistic and limited number of white settlers, with the remainder reserved for native "African" occupation. Around 100 million acres of formerly unassigned land, forest and game land, and unutilized crown land were transferred to native "Africans" in the name of a new land category, Trust Lands. By 1950, the crown land reserved for Europeans had shrunk to 4.6 million acres, while the land reserved for "Africans" (Reserve and Trust Lands) had increased to around 171 million acres.

Table 1.1: Land tenure classification, Zambia, 1937 and 1950 (million acres)

Land category	1937	1950°
Reserve Land:		
Barotseland	37.0	
Other reserves	34.0	
Unassigned	94.0	
Crown (European) land	9.0	4.6
Forest and game land	5.0	1.0
African land:		
Reserve Land		71.0
Trust Land		100.0
Unalienated crown land		4.7
Total	179.0	181.3

- a. Robin Palmer, "Land in Zambia," in "Zambian Land and Labour Studies," vol. i, Occasional Paper no. 2 (Lusaka, National Archives, n. d.), p. 64.
- b. Robin Palmer, op. cit. supra, 64. **The discrepancy between the 1937 and 1950 is carried over from official sources.**

A number of important developments followed in the post-World War II period. First, a wave of settlers did eventually acquire farms; over a thousand white farms were established by the 1960s, with a substantial reduction in the area of unalienated crown land. Second, prior to the 1930s, allocations of crown land involved mainly freehold property. Beginning in the 1930s, more and more settlers were granted long-term leaseholds rather than freeholds, giving way entirely to leaseholds by 1944. With independence in 1964, crown land became State Land, while Reserves and Trust Land retained their pre-independence classifications (table 1.2). As late as 1987, the former European sector comprised only 6 percent of the nation's total land area.

III. Agrarian structure

State Land, or the former commercial sector, has been the geographical focus of commercial farming in Zambia. The country historically has relied heavily on the commercial farm sector for the food surplus to feed its highly urbanized population and work force. Large numbers of expatriate farmers emigrated in the 1960s for several reasons: Zambian independence, marketing policies that seriously eroded profits, major land incentives offered by Zimbabwe and South Africa, and stringent regulations governing expatriation of profits. Sales of freehold farms and assignments of leaseholds increased in the years immediately preceding independence and continued into the 1970s. Approximately 1,185 European farms with a total area of 3.79 million acres existed in 1961. Approximately 460 European farmers left the country within two years after independence (Arntzen et al. 1982). By 1970-71, the commercial farming sector had declined to 1,076 farming units, of which 643 were classified as "African" and 433 as "non-African" (agricultural census). By 1981, the number of "non-African" commercial farming units by most counts had fallen to around 300 (Bruce and Dorner 1982).

Table 1.2: Land tenure classification, Zambia, 1973 and 1987 (million hectares)

	1973 ^a	1987 ^b
State (formerly crown) Land:	4,080,647	4,518,953
Freehold	1,015,791	
Leasehold	1,284,788	
Land under tribal occupation	509,396	
Unalienated land	125,102	
Inundated by water	216,250	
Forest reserves	546,570	
Protected forest reserves	382,750	
Reserves ^c	27,314,000	27,297,500
Trust Land ^d	38,977,530	43,447,900
National parks and wildlife areas	5,826,300	
Total	76,198,477	75,264,353

- a. International Rural Development Division, Swedish University of Agriculture, Forestry and Veterinary Medicine (Uppsala, April 1976), Zambia Sector Study, Preliminary Report, par. 3.1.1 (mimeo).
b. Includes 689,691 hectares of Protected Forest Areas.
c. Includes 4,250,889 hectares of Protected Forest Areas and 29,153 hectares of Forest Reserves.
d. Ministry of Lands and Natural Resources, "Ministerial Statement in Parliament on 4th August, 1987 on Land Alienation in Reserves and Trust Lands" (1987).

The mass emigration of Europeans, as in Mozambique, depleted the agricultural sector of much of its skilled labor and capital. The Zambian government, in order to maintain the productivity of the sector and to feed its heavily urbanized population and work force, undertook a variety of agricultural programs. In some cases, parastatals took over land under leases for direct farming operations. In other cases, settlement schemes were established which subdivided large commercial operations (in some cases failed parastatal operations) into smaller units of widely varying size.

Bruce and Dorner (1982) provide data on the number, area, and size of leaseholds existing at the end of the 1970s (precise years are unavailable due to inconsistent updating of data from four separate cadastre strips from the mid-1970s through 1981) (table 1.3). Private leaseholds constituted the largest share, representing 60.4 percent of the total. Government leases held by ministries and parastatals represented the next largest category (26.5 percent). The remainder of the leasehold land was held by settlement schemes (3.1 percent), cooperatives (0.3 percent), and religious/educational institutions (2.2 percent), or were vacant (2.2 percent) or in nonagricultural uses (5.3 percent).

Following independence, the agricultural sector witnessed a rapid expansion in the number of smaller "medium-scale" and "emergent" commercial farms (table 1.4).⁵ As of 1989, the farming sector comprised 740 large-scale farms (> 60 hectares), 25,230 medium-scale farms (20-60 hectares), 119,200 emergent commercial farms (10-19 hectares), and 387,000 smallholder and mainly "subsistence" farms (1-9 hectares). The number of "emergent" farmers increased from 25,000 in 1965

⁵ Data reported on number of farms in chapter 3 (table 3.4) indicates farm numbers greatly in excess of these figures. No information is available on the methodology for calculating these data.

to about 120,000 in 1990 (World Bank 1993a, p. 40). However, while the group of "emergent" commercial farmers, who rely on oxen plows, improved seeds, and fertilizers to produce a large marketed surplus, is substantial (21 percent of total farming units) and growing, smallholder agricultural production, which is dependent on simple hand tools and subsistence farming, still accounts for 73 percent of all farming units. Most large-scale farms (97 percent), and to a lesser extent medium-scale farms (75 percent) and "emergent" farms (66 percent), tend to be concentrated along the rail line and major road arteries in the Southern, Central, Lusaka, and Copperbelt provinces. Only 14 percent of smallholder households are located in these provinces; the majority reside in Northern (29 percent), Western (22 percent), Luapula (19 percent), and North-Western (14 percent) provinces that are less well connected to urban and market centers and where the marketing and physical infrastructure remain less developed.

Converting "smallholder" households into "emergent" commercial farmers is of strategic importance. While in the past, commercial farms produced sufficient marketed surplus for the urban population, shortfalls in maize and food riots in the 1980s have underscored the need for more broad-based agricultural development. However, such conversion of smallholders into an "emergent" class of commercial farmers will require substantial public investments in rural infrastructure to enable their integration into the marketplace.

IV. Arable land and crop expansion

Of Zambia's roughly 75 million hectares (table 1.2), approximately 16 million hectares are considered suitable for rough livestock grazing, and 9 million hectares are considered to be arable land with good potential for crop cultivation (Ministry of Agriculture, Food and Fisheries 1993). Only 1.3 million hectares are currently under crop cultivation, or roughly 14 percent of the nation's arable land. Almost all of Zambia's highest-quality arable land (about 1.4 million hectares) is currently concentrated in already densely-populated areas and generally in the state sector (World Bank 1993a).

Table 1.3: Leases of State Land by type of lessee, late 1970s

	Number of leases	Total area leased (ha)	Percent of area leased	Average size of household (ha)
	A	B	C	B/A
Private	1,674	1,232,987	60.4	737
Governmental	502	541,902	26.5	1,079
Settlement schemes	61	62,241	3.1	1,020
Cooperatives	10	6,580	.3	658
Religious/educational	69	45,677	2.2	662
Vacant	74	44,387	2.2	600
Nonagricultural	228	107,500	5.3	471
Total	2,618	2,041,274	100.0	780

Source: Bruce and Dorner, *Agricultural Land Tenure in Zambia: Perspectives, Problems and Opportunities*, LTC Research Paper no. 76 (Madison: Land Tenure Center, University of Wisconsin, 1982), p. 11.

Table 1.4: Number of farm units by size and province, 1989⁶

	Large-scale commercial (> 60 ha)	Medium-scale commercial (20-60 ha)	Emergent commercial (10-19 ha)	Smallholder households (1-9 ha)
Southern	330	9,000	51,000	6,000
Central	300	7,500	21,000	18,000
Lusaka	90	2,000	4,500	14,000
Copperbelt		500	2,000	18,000
Eastern	20	6,000	23,000	8,000
Western		10	5,400	85,000
North-Western		70	2,900	53,000
Luapula		60	2,000	73,000
Northern	-	90	7,400	112,000
Zambia	740	25,230	119,200	1

- a. Estimates provided by the Ministry of Agriculture and reported in World Bank, "Draft Economic Report for Zambia CG Meeting" (1993), p. 40.
- b. The **discrepancy** between the column sum (387,000) and the total indicates a **discrepancy** of 72,000 households.

However, a recent study commissioned by the Ministry of Agriculture, Foods and Fisheries (MAFF) and the World Bank (DHV Consultants BY, Netherlands, and Wood Consultants and Investments Ltd., Zambia, 1993), hereafter referred to as the MAFF/WB report, indicates that as much as 43 percent of the potentially arable land in the commercial farming sector is being underutilized for crop production (table 1.5).⁶ According to the study, many farms owned by the Government Republic of Zambia (GRZ) and many of the Zambia National Service Farms are poorly managed and undercapitalized; the prison farms are only marginally better. Parastatals, including farms held by Zambia Agricultural Development Ltd., Cold Storage Board, and Indeco, were also found to be experiencing high rates of underutilization. Other areas found to be class I underutilized farms are settlement schemes (Munyama, Mpimo in Kabwe, Chinjarain, Chipata) and most previously-owned TBZ (Tobacco Board of Zambia) farms (Mukonchi, Chibwe, etc.). However, high degrees of underutilization were also found in the private sector. Among private farms currently underutilized were those owned by civil servants, parastatal employees, and armed forces personnel who manage their farms as absentee landlords or leave their operation to relatives who lack basic farm-management skills. According to the study, the combination of inexperience and undercapitalization coupled with varying degrees of indebtedness have resulted in vast tracts of prime land lying idle.

⁶ The land has been cleared but not cropped and is being used for rough grazing, including grassland on prime arable land. Determining whether livestock production is an "inefficient" land use relative to crop use would be difficult to assess without a domestic resource cost analysis, but the data suggest that substantial expansion of crop agriculture on lands in the commercial sector is possible without further expansion onto virgin soils.

Table 1.5: Rate of land utilization, commercial farm sector

Province	Area of farms assessed (ha)	Rate of underutilized land (%)			Land area (%) under	
		Well or very well utilized	Moderately under-utilized	Grossly or simply under-utilized	Resettle-ment schemes	Squatter
Lusaka	227,691	46.6	10.2	33.6	9.5	
Central:						
Kabwe	140,486	21.3	11.3	60.6	6.9	
Chisamba	121,800	45.1	4.3	47.3	3.3	
Mukushi	151,050	63.4	7.2	29.4		
Big Concession	91,569		-	100.0		
Southern:						
Livingstone	43,777	31.9	21.7	46.4		-
Kalomo	216,890	62.8	22.0	15.1		-
Choma	175,276	64.4	3.1	16.8	15.2	.5
Monze	76,378	48.3		15.3	35.8	.7
Mazabuka	164,515	59.4	.7	7.5	30.8	1.7
Northern:						
Mbala	53,446	31.3	24.1	26.9	-	17.6
Eastern:						
Chipata	49,240	28.7	19.8	18.1	33.4	-
Katete	92,744	56.4	2.5	26.6	14.5	-
Copperbelt	183,159	15.8	3.6	70.2	10.4	-

Source: DHV Consultants By, Netherlands, and Wood Consultants and Investments Ltd., **Zambia, 1993.**

With the exception of several parastatal farms and settlement schemes, the commercial farming blocks in Southern province were the best utilized (table 1.5). Eastern-province blocks were found to be generally well utilized due to their relatively high population densities. The commercial blocks around Lusaka contained a mixture of some of the "best" and "worst" utilized farms in the country. The entire Big Concession Block in Mumbwa was found to be grossly underutilized due largely to lack of basic infrastructure. The Kabwe farm block was also found to be grossly underutilized due to "the saga of the TBZ assisted tenant scheme." Many commercial farms in Copperbelt have recently been opened, hence the reason for large areas of underutilized land there. The Mbala farm block in particular was found to be underutilized due to poor soils and numerous absentee landlords.

Of the total of over 400 farms visited in the course of the study, 222 had underutilized land totalling 364,583 hectares. The largest proportion was located in the Copperbelt, but large areas of underutilization were also found around Lusaka, the Big Concession, Kabwe, and Chisamba. Of the total number of assessed farms (visited and unvisited), 687,886 hectares were determined to be underutilized. Assuming that 60 percent of this area is good arable land, an heroic assumption given the dearth of data on land use quality, the study concludes that a total of roughly 400,000 hectares could be brought into cultivation without opening new lands.

The study recommends that: (a) all parastatal farms be privatized immediately; (b) government should adopt stringent but realistic criteria for selecting farmers based on sound management, proven track record in farming, solid financial base, and sound farm development plans; (c) land tenure reforms should be implemented to permit private ownership, confer tenure security, and facilitate transfers; (d) government should consider an economic ground rent (rates varying by agroecological zone) to induce greater land utilization; and (e) government should establish a land agency to smoothly handle land transfers.

The GRZ has also been identifying new farm land for agricultural expansion (table 1.6). In Lusaka province, an area of about 30,000 hectares was identified along the Kafue Flats, but the land base is fragile, requiring special management. The area in Central province east of Mukonchi, according to the study, offers good scope for development. Two further areas south of Mkushi offer good potential for development. Overall, the study concludes that about 1,470,000 hectares of new land can be opened for agricultural production, and that some of these lands (79,384 hectares) are currently being opened up for settlement with mixed success. Success, according to the study, usually depends on the provision of basic infrastructure—roads, water, and utilities. Given the high level of land underutilization already existing on state lands, the study concludes there is no immediate need to identify new farm blocks, while the existing blocks—namely Mansha, Mkushi South, Mupamadzi along the Tazara, the Mtirizi/Chipangali West in Eastern province, and Mukonchi East in Central province—have high potential for development.

Table 1.6: New farm blocks and areas under development

New farm block	Area (ha)	
	Gross	Under development
Lusaka west, Lusaka province	30,000	0
Mukonchi East Bank, Central province	28,000	0
Mtirizi, Eastern province	10,000	1,000
Chipangali West, Eastern province	28,000	1,000
Tazara blocks:	78,000	0
Cl: New Mkushi	215,000	11,216
TZC2: Munte	90,500	870
TZC3: Katikulula	125,000	0
TZC4: Mupamadzi	120,000	20,000
TZC5: Kanchibya	100,000	28,798
TZC6: Mansha	300,000	0
TZC7: Kasama	65,000	0
TZC8: Mbala	95,000	0
TZC9: Isoka		
Copperbelt province:	22,000	4,000
Mpongwe	30,000	10,000
Munkumpu	30,000	0
Munkumpu South State Farm	66,000	2,500
Mwinuna	28,000	0
Lukanga North State Farm	10,000	0
Mikata		
Total	1,470,500	79,384

Source: DHV Consultants BY, Netherlands, and Wood Consultants and Investments Ltd., Zambia, 1993.

Why such a large supply of arable land has not been brought under cultivation, despite Zambia having one of the highest rates of urbanization in Africa, is fundamental to assessing the potential expansion of crop and livestock agriculture. A number of factors have had an important influence. First, the British colonial policy of forced resettlement of the "African" population into the reserves, and later forced labor for the mines, combined to uproot the vast majority of the rural "African" population. Second, once uprooted, the vitality of the copper industry until the late 1970s helped to pull labor into urban employment and keep people in the cities. Third, the urban bias in agricultural policies, which subsidized consumers and implicitly taxed producers until the late 1980s, provided further disincentives to farming or returning to rural life. Finally, for much of the urban population, one or two generations removed from their rural roots, the lack of physical infrastructure (roads, hospitals, schools, comparable housing) and utilities in rural areas would now mean a high social cost in moving.

The culmination of these historical processes is a highly urbanized population—one of the highest in Africa. The urban population was estimated at 3.284 million in 1990, or 42 percent of the total population of 7.818 million. With population growing at an annual rate of 3.8 percent in urban areas and 2.9 percent in rural areas, the total population is projected to reach 10,816,440 by the year 2000, with the urban population increasing to 44 percent of the total (Ministry of Agriculture 1993, p. 9).

Zambia's economy has undergone a transition since independence. The mining sector as a percentage of GDP has declined from 41 percent in 1965 to 8 percent in 1991. Over the same period, the share of the agricultural sector remained fairly constant at around 15 percent but has increased slightly to about 18 percent in recent years (Ministry of Agriculture, Food and Fisheries 1993). With a decline in the copper industry, an abundance of arable land, and recently implemented marketing and price reforms that have begun to reverse the former urban bias in agricultural pricing policy in favor of rural producers, agriculture is positioned to become the engine of growth for future output expansion.

Despite what would appear to be a rather immobile urban population, Zambia's area of crop land, according to one source, has witnessed an extremely high rate of expansion since the 1970s. Data compiled by the World Bank from 1974 to 1990 (table 1.7) show an extremely high rate of growth in agricultural production, but mostly from opening new lands. The World Bank report does not provide statistics for total cropped area. However, the rates of growth for maize (10.0 percent), sorghum (19.4 percent), millet (14.9 percent), and groundnuts (23.7 percent) (these being the most important crops cultivated, table 1.8) provide a good indication of the rate by which new arable land is being brought into cultivation. After weighting these percentages by crop areas in table 1.8 (1986-87 figures), the calculation shows that crop area is expanding at an average rate of 12.5 percent per annum, resulting in a doubling of crop area every 6 years.

Independent estimates of growth rates calculated in chapter 7 show far more modest rates of growth. The growth rate analysis suggests that total crop area in the commercial sector declined at an average annual rate of 0.6 percent for the period 1975 to 1989, while maize area declined 4.1 percent annually on average. Maize production declined between 3 and 7 percent per annum depending on the farm size category studied. (Dramatically higher rates are observed among small farms in the northwest region, but the base of cultivated area is relatively small). Published estimates of area and

production figures for the noncommercial sector are extremely limited. Production data were located for the period 1972 to 1986 after which date publication ceased; area estimates were published

Table 1.7: Rates of growth in crop production, 1974-1990

Principal crops	Area growth rate (%)	Yield growth rate (%)	Production growth rate (%)
Maize	10.0	(1.9)	8.3
Millet	14.9	(1.8)	12.7
Sorghum	19.4	4.3	24.0
Paddy rice	22.0	2.6	24.0
Wheat ^o	78.2	18.0	64.0
Mixed beans	23.0	0.4	22.6
Groundnuts	23.7	(1.0)	17.8
Cotton	42.1	1.6	42.1
Tobacco (V)	1.1	(3.3)	(2.4)
Tobacco (B)	30.6	(4.1)	24.5
Soybeans	29.1	(1.9)	25.1
Sunflower	15.9	2.7	19.8

- a. The growth rate for wheat would appear to be incorrect as the estimated growth rate in yield plus the estimated growth rate in area should more or less equal the estimated growth rate in production.

Source: World Bank, "Draft Economic Report for Zambia CG Meeting" (1993), p. 39.

only for the period 1983 to 1986. Based on these data, maize production in the noncommercial sector grew at an average annual rate of 1 to 7 percent annually over the period 1972 to 1986, depending on the region examined. Both sets of data for the commercial and noncommercial sectors are consistent with statistics reported by the US Department of Agriculture which suggest a growth rate in cereals production in Zambia of roughly 1.1 percent annually over the period 1961 to 1989. These results suggest profound disparities between the World Bank analysis and the empirical analysis in chapter 7. Differences stem partially from the World Bank analysis beginning with the year 1974, a momentary trough in output, and their use of forecast (not actual harvested) data. Overall, the analysis in this paper suggests a far more modest rate of agrarian expansion, though the highly volatile nature of both forecast and Central Statistics Office (CSO) survey data cannot be overemphasized.

Rates of growth in area, production, and yields have important implications for the sustainability of resource management in arable areas and the conservation of natural resources in protected areas:

- ▶ A high rate of growth in area combined with stagnant yields would suggest that the greatest output gains in the short to intermediate term (10-15 years) would be expected from crop area expansion, particularly if an enabling land tenure environment is present. Data in table 1.7 would suggest this conclusion, while independent estimates in chapter 7 would suggest far more cautious estimates of expansion growth. Further the data in table 1.7 would suggest a conducive environment for land tenure and an ease in opening or expanding the agricultural

frontier. The data in chapter 7, showing stagnant area growth, do not refute this hypothesis, but likewise do not support it.

- ▶ A rapid rate of growth in area would raise important questions about: the sustained preservation of land reserves for forests, parks, and wildlife; and environmental concerns of deforestation and declines in soil and water quality, particularly in situations of land scarcity. The data in chapter 7 do not indicate an immediate cause for concern, although the issue may be important.
- ▶ Declining productivity measured by falling yields per hectare over time provides a weak indication that soil mining is occurring, and/or that addition of soil supplements and technology growth are not sufficient to offset the natural decline in soil fertility arising from cultivation. The data in table 1.7 and chapter 7 would weakly support both hypotheses, though again statistical inferences are difficult due to wide fluctuations in the data.

Table 1.8: Crop area, commercial and noncommercial farms

	1986—1987		1990—1991	
	Non-CF (000 ha)	CF (000 ha)	Non-CF (000 ha)	CF (000 ha)
Maize (including seed)	699	78	535	44
Millet	70	0	88	0
Sorghum	63	0	44	0
Rice	22	0	11	0
Wheat	10	8	na	na
Groundnut	107	na	125	3
Sunflower	48	5	32	5
Soybeans	27	14	15	38
Mixed beans	35	na	53	1
Cotton	33	1	na	na
Tobacco	8	7	na	na
Coffee	1	3	na	na
Sugarcane	3	11	na	na
Fruits	3	5	na	na
Other crops	88	2	na	na
Mixed crops	137	0	na	0
Total	1,354	134	na	91

Source: Ministry of Agriculture, Food and Fisheries, "Assessment of Potential Land For Expanding Agricultural Production in Zambia" (1993), p. 3.

At a more fundamental level, there is an urgent need for ground truthing of aggregate data time series through field-level research and data collection. There is a dearth of information on many basic questions. Is the customary land tenure system facilitating or constraining agricultural development? How are customary systems and statutory tenure curtailing or facilitating the agrarian

transformation? Is the current leasehold system properly performing its role of clearly adjudicating, recording, and guaranteeing rights, or instead is it causing unacceptable levels of disputes and displacement of landholders under the customary system? Is tenure insecurity under either system adversely limiting investment incentives and credit access?

Some weak evidence is provided on the performance of the various land tenure systems in the remainder of this paper, but a gross underinvestment in research on land rights, their intra-household distribution, agrarian structure, land markets, and land tenure security inhibits concrete conclusions. It would seem a reasonable conclusion that the leasehold process discussed further in chapter 3 and resettlement programs in chapter 5 have been important factors in bringing new entrants into agriculture and new land into farming. Yet, data on leasehold numbers and CSO data on number of farms are published only at a provincial level, which is far too aggregated to assess these issues in a rigorous way. The process of land settlement or crop area expansion also has fundamental implications for the sustainability of resource management, farm size, market access, and the environment; here, too, the information is rather superficial and largely anecdotal.

V. Land tenure'

Zambia's legal system is based on common law imported from Britain (Chinene et al. 1993). The Royal Charter executed on 29 October 1889 paved the way for the introduction of English law in the country. Through the North-Western Rhodesian Order in Council of 1889 (for Barotseland) and the North-Eastern Rhodesian Order in Council (outside Barotse territory), English law was made to apply. A host of other legal regimes in Zambia make reference to English law, including the Subordinate Courts Act Cap 45 of the Laws of Zambia (SECTION 14), and the High Court Act, chapter 50 of the Laws of Zambia (SECTION 13.9). However, the Application Act (chapter 4 of the Laws of Zambia) is the most prominent integration of English law. According to this act, common law, the doctrines of equity (c) statutes which were in force in England on the 17th day of August 1911, and any later English statutes applied to Zambia, are made in force in Zambia. Chinene et al. (1993) note there are doubts over which 1911 English statutes apply, but these provisions and the decisions reached in English courts elsewhere in the Commonwealth have considerably shaped Zambian law.

Despite the application of common law in Zambia, most Zambians still conduct their activities in accordance with customary law. No single body of customs prevails across the country; in fact, local variations are common. The term customary law encompasses a host of different prevailing tribal customs. Although customary law has been superseded by legislation in many areas, it continues to play a considerable role in the development of land tenure concepts and structure in tribal areas. However, land legislation enacted in Zambia by the colonial government and the post-independence parliament has had the single most important influence on land law and land rights in the country.

Common law, equity, and statute law mainly apply in State Lands, whereas customary law applies to Reserve and Trust Lands except where land in these categories has been converted to State Land. In 1928, the Northern Rhodesia (crown lands and Native Reserves) Order in Council was promulgated, creating two categories of land: Crown Land and Native Reserves. Generally, Crown

⁷ Parts of this section draw heavily on chapter 2, "Review of Land Tenure under Legal and Customary Systems," in Chinene et al. (1993).

Land consisted of land earmarked for European settlements and mining along a narrow strip of about 20 to 30 miles on either side of the railway line from Livingstone to the Copperbelt, including thin pockets of land near Chipata, Mbala, Mukushi, Mumbwa, and Mwinilunga.

A. Tenure on State Lands

Land alienation for white settlers along the rail line was initially framed in terms of freehold tenure for a preliminary period of 5 years during which personal occupation and development of the alienated land was mandatory. In other areas, farms were alienated to settlers for periods not exceeding 99 years, while leases for ranches over 6,000 hectares were issued for terms not exceeding 30 years (Chinene et al. 1993). Considerable disaffection with freehold tenure arrangements eventually led to a review of land policy by the Eccles Land Tenure Committee in 1943. The committee recommended that the freehold system be displaced by a 99-year lease on grounds that it ensured greater control over land by the state. The Legislative Council approved this in 1946. Extensive changes in the ownership of state agricultural land accompanied the Land Ordinance in 1956 that introduced the "concept of progression" whereby a farmer who performed satisfactorily could upgrade tenure from leasehold to freehold. This ordinance was later repealed and succeeded by the present Agricultural Lands Act.

The present framework for the administration of State Lands (former European sector) for commercial farming is the Agricultural Lands Act of 1960 (CAP 292). This act provides for the establishment of an Agricultural Lands Board appointed by the minister of Lands and Natural Resources and prescribes its composition, membership, powers, and functions.⁹ It also provides for the alienation of agricultural land, preparation of schemes, application process for allotted land, criteria for reviewing applications, duration of lease, rents, and conditions of use. It further provides for the development of tenant farming schemes, including scheme creation, conditions for terminating residency, and regulations. The act is framed to carry forward, and deal with, fee simple titles and leaseholds in State Land from previous registrations (SECTION I.3).⁹ New allotments to applicants are decided upon by the Land Board (SECTIONS II.4 to II.9), and, if approved, alienated by the president to the lessee for a duration of 30 years (SECTION III.19). Every lessee is required to take up personal residence on the holding within 6 months of the commencement of the lease, or as otherwise agreed by the board (SECTION III.21). Use conditions are specified, including (as approved by the board) annual cultivation of some portion of the plot, maintenance of stock, or development of dipping/spraying facilities, paddock fencing and water supplies as considered adequate by the board (SECTION III.21). The lessee, while allowed to use timber from the holding for own farming or domestic purposes, is prohibited from selling or removing any timber without the president's consent (SECTION III.23). A lessee is not entitled to assign, sublet, mortgage, charge, encumber, enter into a partnership, or part in any way with the holding without the prior consent of the president (SECTION III.24).

New leases of scheduled State Lands must be approved by the board, which is to consider general policy directions from the minister, age of applicant, the applicant's character, the applicant's

The agricultural lands board is defunct and hasn't been convened in years. Furthermore, land allocations are proceeding without it (see chapter 2 for elaboration).

⁹ Although the provision was drawn to carry forward and deal with fee simples, this is now subject to SECTION 5 of the Land (Conversion of Titles) Act, 1975, which terminated freehold property.

willingness to personally occupy and develop the holding, and his or her capital resources and qualifications to develop an agricultural holding (SECTION III.17). Preference is to be given to applicants who do not already hold State Land (SECTION III.18). Once an allotment is made and a rent level set by the board, the lease is executed by the president in whom the title is vested. This authority has been delegated to the Commissioner of Lands. In case of failure to comply with the provisions of the act or conditions of the lease, the board, after giving written notice of the failure and providing an opportunity for remedial action, may terminate the lease. Upon termination, for expiry or other reasons, the minister on the recommendation of the board authorizes compensation for unexhausted improvements (SECTION III.22). However, the act envisages the renewal of most expiring leases (SECTION 111.30).

The Land (Conversion of Titles) Act of 1975 (CAP 289, hereafter referred to as the Conversion Act) vested all land in Zambia absolutely in the president (SECTION 4) and converted all freeholds into leaseholds (SECTION 5). The act converted any fee simple titles or leaseholds still in effect at the time of the act to leaseholds not exceeding 100 years (SECTIONS 5 and 6). Upon expiry, a lease may be extended for a further 100 years or less as the president may see fit (SECTION 12.i). Lessees are not entitled to assign, sublet, mortgage, charge, encumber, or part in any way with the holding without the prior written consent of the president in writing (SECTION 13.1). The president is also granted powers of fixing the maximum amount to be received, recovered, or secured for land (SECTION 13.3). However, in fixing prices, the president must disregard any value of land apart from the unexhausted improvements thereon (SECTION 13.3).¹⁰ Thus, idle land without improvements cannot have value, and the benefits of investments in land accrue to the leaseholder, but not the value of the land created by location or presence of public investment. Mortgages on land are possible but only on the value of unexhausted improvements on the land (SECTION 10). Also, the minister may, by regulations, prescribe the maximum area of agricultural land, and different maxima may be so prescribed for different areas, districts, or provinces (SECTION 17). Further under the First Schedule to the act, the lessor or the state maintains the right of possession of all mineral oils and precious stones and right of entry on all lands to prospect for and mine such minerals (SECTION III.3). Also, the lessee is not allowed to let the land remain idle for a period of more than three years except with written consent of the lessor (SECTION III.6).

These two acts in effect create two systems of review and control of leases and leasehold transactions: State Land "scheduled" under the Agricultural Lands Act; and other State Land. In the first case, any leasing of land must first be approved by the Agricultural Lands Board, then referred to the Commissioner of Lands. As regards State Lands **not** scheduled under the Agricultural Act, the board has no role. Here it is the Commissioner of Lands, acting under delegated authority of the president who approves or refuses applications. As Bruce and Dorner (1982) suggest, there is no logical basis for this distinction between "scheduled" and "unscheduled" State Land, and consolidation is advised. Also, improvements on the leasehold must be valued to comply with the legal requirement

Michelo Hansungule (personal communication) of the School of Law, University of Zambia, asserts that the use of the term *may* rather than *must* or *shall* implies that the president need not set prices in every case. If a maximum price is not set, then the provision does not come into play. SECTION (13(3)) theoretically would allow a transaction where a willing buyer and a willing seller freely negotiate a price without recourse to the president, but the law has been neglected in practice. In Hansungule's view, SECTION 13(3) was intended to allow the Commissioner of Lands to decide whether a presidential invitation to fix prices was warranted, and, if so, a price would be set without regard to land value. However, successive commissioners apparently read the provision as applying to all land probably because of the prevailing mood against land markets and concerns of land speculation at the time.

that compensation be paid only on the basis of unexhausted improvements in the land, not the land itself. As the MOL lacks a valuation department, this task must be performed by the Valuation Department of the Ministry of Local Government and Housing—a cumbersome and time-consuming process.

The Lands and Deeds Registry Act of 1914 (CAP 287) provides for the registration of documents, the issue of Provisional Certificates of Title and Certificates of Title, and the transfer and transmission of registered land. Every lease for a period of more than one year must be registered, as must any assignment of, mortgage, or charge upon such a lease (SECTION II.4). Any document not registered in the designated time period is null and void (SECTION 11.6). Any proprietor of a lease of 14 years or more must first apply for a Provisional Certificate of Title. After 6 years, the proprietor of the lease may apply to the registrar for a final Certificate of Title (SECTION 11.43).

Before any title certificate (provisional or final) may be issued, the applicant must submit a survey diagram which complies with the requirements of the Land Survey Act of 1960. The act makes comprehensive provisions for the registration and licensing of land surveyors, provides for the manner in which land surveys are carried out and the diagrams and plans connected therewith, provides for the protection of survey beacons and other survey markers, provides for the establishment and powers of a Survey Control Board responsible for the registration and licensing of land surveyors, and for the exercise of disciplinary control over such surveyors.

The act imposes high and rigorous standards of ground survey. The Land Survey Division of the MOL, with severely limited staff for meeting these standards, is badly behind in survey work. Currently, the MOL estimates a backlog of roughly 30,000 applications in various stages. To avoid long delays in the issuance of title certificates, the Survey Division and the registry have for many years adopted a policy of accepting, for registration, leases of up to 14 years if accompanied by an adequate sketch plan (thereby sidestepping the rigorous standards of fixed-boundary survey). Once a Land Survey Act survey is conducted, the 14-year lease is surrendered, a 99-year lease is granted, covered by a final Certificate of Title. This practice is common, and is the mechanism for grants of land in settlement schemes. Its legality, however, is an open question because of the lower survey standard. In addition, the majority of the above backlog cases are reportedly 14-year titles for which surveys were never undertaken. The pending expiry of these leaseholds is raising anew the issue of surveying bottlenecks and added registry work associated with either renewing them as 14-year leases or converting them to a 99-year basis.

These procedures, involving six different sections in three different ministries (the Agricultural Lands Board, the Commissioner of Lands, the Land Registry Section and the Land Survey Section, all in the MOL, the Land Use Planning Branch in the Ministry of Agriculture, and the Valuation Branch in the Ministry of Local Government and Housing) are far more complex than can be justified. This complexity, coupled with severe understaffing, results in extended delays in leasehold transactions (see chapter 2 for further analysis of the registration process).

The Town and Country Planning Act (CAP 475) is the legal framework for the control and regulation of all development of statutory leaseholds. Submission and approval of these plans can be an onerous exercise, as indicated by a recent ODA (1989) study:

The system often fails to plan and program the release of land to meet demand or development policy and to program and coordinate the release of funds for plan

implementation including the opening up and servicing of land....The development plan system...is over-demanding in its requirements of plan content and procedure of preparation for the modest planning guidelines needed for the development of relatively small rural provincial and district centers. Staff resources in the Department of Town and Country Planning have found it difficult within their day-to-day workload, to keep up with the monitoring, updating and new plan preparation needed for these centers....A more simplified system is required but one which nevertheless is capable of measuring land requirements and providing a framework for and encouragement of public and private investment.

The Town and Country Planning Act omits from planning control and plan preparation important peri-urban areas on the city fringes. Curiously, the requirement of a development plan approved by planning authorities in Reserve and Trust Lands has also been excluded. The requirement for planning permission is mandatory and extensive. The term "development" is defined by statute (SECTION 24, CAP 475) and by common law, but in effect is determined on a case by case basis. Land use conditions are also specified in towns. Although the act provides for the preparation of regional plans, none to date have been prepared (ODA 1989).

The Lands Acquisition Act of 1970 makes provisions for the compulsory acquisition of land and property. No compensation is payable in respect of undeveloped or underutilized land (SECTION IV.15). In assessing compensation, the value of property is the amount by which the unexhausted improvements would be realized if sold on the open market (SECTION III.12). A right of appeal to the National Assembly exists against the amount of compensation determined by the minister. There is no appeal on matters involving decisions to compulsorily acquire property, since this is at the discretion of the president. This act has been severely abused in the past as government has expropriated land with inadequate levels of compensation, in some cases for public works, but in other cases for reallocation to private individuals. Charges of fraud, corruption, and bribery have been widespread in association with the implementation of this act.

B. Reserve and Trust Land administration

The administration of Reserve Land is governed by the Zambia (State Land and Reserves) Orders, 1928 to 1964 (hereinafter referred to as the State Land and Reserves Orders). Under these orders, the land in the reserves is set apart for the sole and exclusive use of the indigenous people of Zambia. This provision according to the Ministerial Statement in Parliament (4th August 1987) on Land Alienation in Reserves and Trust Lands is intended to protect the villagers and their customary rights to land. The president can make grants or dispositions of land to Zambians and rural councils for periods of up to 99 years. In the case of nonnatives, terms are limited to 99 years for public purposes, 33 years for missionary societies and charitable bodies, and 5 years in any other case (SECTION 6A.1). The president must in all cases consult the rural council (SECTION 6A.4). The lessee cannot, without written consent of the president, assign or sublet the leased land or appoint any person other than a native approved by the assistant district secretary to be in charge of the land (SECTION 10, The Reserves Regulations). Also, according to the Reserve Grant Regulations, a lease cannot be disposed of by will except if a law permits, that its disposal by intestacy shall be governed by a law passed by parliament, and that the land granted cannot be subdivided without the consent of the president unless a law permits (no such laws exist in any of the three cases). The nature of rights and interests that can be acquired in reserves is nowhere explicitly stated, although from the powers of the governor it is implied that what was intended is customary tenure (Chinene et al. 1993).

As a result of overcrowding and resource degradation in the reserves, and demands by Europeans for more land for settlements, Governor Young in 1938 introduced a new concept of Native Trust Lands. Unlike its predecessor in Nyasaland, which declared the whole of unalienated land as Trust Land, it was decided in Zambia that areas of alienated land which showed promise for European farming and mineral deposit would be retained as crown land. Once ecological and geological surveys determining these criteria were completed, the remainder of the land would be declared Native Trust Land. By the 1947 Trust Land Order in Council, 57 percent of the country was declared Trust Lands, and the net area under crown lands was subsequently reduced.

The above restrictions pointed out for the reserves do not apply to Trust Land areas. The administration of Trust Land is governed by the Zambia (Trust Land) Orders, 1947 to 1964 (hereinafter referred to as the Trust Land Orders). The president can grant a Right of Occupancy of up to 99 years to a non-Zambian and demand rent for the use of the land. While Zambians and district councils can own title, non-Zambians are also allowed provided that they qualify as investors or are approved by the president as provided under Act No. 15 of 1985. While fee simple and rights of occupancy with rent are mentioned, the president now makes such grants in leaseholds. No transfer of Trust Land to anyone for more than 5 years is valid without consent of the president. Further restrictions are placed on transfer, disposal by will, and subdivision. The governor (forerunner to the president) more or less enjoyed the same powers of administering land as in the reserves. The two provisions—99-year leases and grants of land to nonnatives—imply a felt need to distinguish between the Reserve and Trust Lands. As with the reserves, interests and land rights in the Trust Lands fell to customary law and administration thereof to traditional authorities (chiefs).

While the Conversion Act would seem to invoke fundamental legal changes in the Reserve and Trust areas, it was enacted without repealing the Orders in Council. The practical effect has been that land matters in Reserve and Trust areas continue to be interpreted in light of the orders. Under the Local Administration Act, 1980 to 1992, chiefs were statutory members of rural councils, a policy followed by the 1985 administrative circular in which the Department of Lands stipulated the requirement of consent of the chief before an application of leasehold on customary land. This arrangement has essentially afforded customary leaders a legalized means of effectively resisting land alienation, which according to Zambia's National Farmers Union is an important factor underlying the low rate of land alienation in Reserve and Trust areas.

The policy of land reservation through the Native Reserves and Trust Lands did not until recently apply to land in Barotseland proper. According to the Barotseland North-Western Rhodesia Order in Council of 1899, land in the central regions of Barotse were set apart for the *litunga* and their people. Under the terms of the Barotseland Agreement of 1964, the *litunga*'s powers over land in Barotseland as governed by customary law were recognized and guaranteed, as they were in ARTICLE 8(2) of the Independence Constitution of 1964. Land in Barotseland continued under the domain of the *litunga* and Lozi customary law until the Western Province (Land and Miscellaneous Provisions) Act of 1970 which vested all land in Western province in the president as a reserve under the State Lands Orders. Regardless of these legal changes, the traditional authorities in Western province have been the most reluctant to encourage or permit their subjects to hold state title deeds (personal communications, Commissioner of Lands). The *litunga* is in fact issuing title deeds that, while offering proof of customary rights, have no legal grounding in the eyes of government. There is substantial evidence (see *Times of Zambia*, 25 May 1993) of tensions emerging between local and central authorities over control of land rights.

[According to the acting] MMD chairman of Sesheke...three investors wanted...to set up cigarette and tomato sauce...factories [but] because of [a] mix-up between the council and the royal establishment...these people have not come back....But Chief Inyambo denied...he was blocking efforts by councillors to give land to investors.... [According to the chief's advisor, the chief] was not at loggerheads with the councillors because they were not...supposed to be involved in...issuing...land in his area....The investors were being misled [by the Sesheke council] into selecting areas of their choice which were already occupied by villagers and then...being taken to the senior chief for consent. The process of allocating traditional land is that headmen should [first] be approached. These report to the *Silalo indunas* who take the applications to the *Kuta*, [who] finally informs the chief to sign. [The MMD chairman indicated] that because of the previous mix-up..., investors [are now being] referred to the *Litunga* of Western Province.

Such problems act to stifle the initiative of "outsider investors," meaning all non-Lozi investors including foreign nationals and Zambians from other parts of Zambia. However, even Lozis cannot get statutory title deeds to their customary land.

The government is currently encouraging an "open-door" policy to spur capital creation, whereby foreign investors are encouraged to develop farms and businesses in Zambia. The current situation of high debt loads, declining donor aid, and slow economic growth are expected to dampen capital expansion from internal public and private sources for the foreseeable future. Foreign investors seek guidance on suitable land for settlement from the MOL, which then directs them to the councils. Investors leave disgruntled when the MOL is unable to designate clearly defined, demarcated, and registered areas of land for settlement, or when negotiations are held with the chiefs which must subsequently be turned down by the MOL.

The Ministerial Statement in Parliament on 4 August 1987 on Land Alienation in Reserves and Trust Lands provides clarification on the role of chiefs and the importance of leasehold property. It states that "there is no need to consult Chiefs before granting land on title deeds in the customary (Reserves and Trust) area." Rather the statement points out that ART. 6A(4) of the State Lands and Reserves Orders and ARTICLE 5(2) of the Trust Land Orders stipulate "that only the District Councils must be consulted" (p. 2). However, "since it is recognized that the Chief can make a grant of land under customary law and since the Chief is the custodian of traditions and customs of his community, it is important that he is consulted so that any alienation of land in the Reserves and Trust land areas does not infringe on the customary rights and interests of the community....[B]eing custodians of customary law and rights, [they] know better which members of their communities hold land under customary tenure or which land has been set aside for settlement, communal grazing, traditional farming or indeed for any other use" (p. 3).

It goes on to point out that some chiefs "regard the title deed as something that would make them lose control over land and their subjects. Hence they are very reluctant to recommend applications for land. [However,] there is a growing number of other progressive Chiefs who understand the law and procedures for applying for title deeds. These Chiefs have taken the lead in acquiring title deeds to their personal holdings" (p. 3).

An alternative view on the role of the chiefs is provided by the Zambia National Farmers Union (n.d.):

One of the main problems of improving access to individual titles in the traditional areas is the attitude of the chiefs....Some chiefs refuse [to give their consent] fearing loss of status and respect....There may be a case for removing the chiefs' power of veto, but this should only be...a last resort. They still have a significant role in rural societies, and removal of their power could both weaken this role and create opposition to...farming progress....On balance, it is probably desirable that they...retain [control over] land, but...there may be need for education and perhaps some sort of appeal procedure—possibly to provincial committees of chiefs.

Circular No. 1 of 1985, "Procedure on Land Alienation," hereafter referred to as simply the circular, lays out the procedures for preparation of layout plans, allocation of stands, matters related to unscheduled agricultural lands, matters related to Reserve and Trust Lands, and applications for land by non-Zambians. The councils are responsible, on behalf of the Commissioner of Lands, for processing applications, selecting suitable candidates, and making recommendations (SECTION 3). In the Reserve and Trust Lands, the powers of the president in making grants or dispositions of land are limited by the requirement to consult the local authorities affected by such grants or dispositions (SECTION D.(i)). Local authority, in the circular, had been administratively understood to mean the chief and the rural council (SECTION D(ii)). To ensure this practice, the Commissioner of Lands will insist upon the written consent of the chief concerned. The circular stipulates, for the time being, that leases cannot exceed 250 hectares of land for farming purposes in the Reserve and Trust Lands, and rural councils are advised not to recommend alienation of land in excess of this amount (SECTION D(v)).

Under Amendment 2 to the Conversion Act (see p. 16) no land can be alienated to a non-Zambian (foreigner) without written approval by the president. To obtain approval, a non-Zambian must first submit his/her application to the council. The council is given wide powers to request information about the intended development as is deemed necessary (s. E(ii)). When recommending the application to the Commissioner of Lands, the council is required to give full information on the intended development plan, extracts of the minutes of the committee of the council responsible for land matters, extracts of the minutes of the full council, and four copies of the approved layout plan duly endorsed and stamped by the Chief (SECTION D(iii)).

With the rigorous survey standards required for 99-year leaseholds, the many steps and procedures required by the leasehold process, the different levels of national and local bureaucracy involved, and one central registry to process applications, it is clearly understandable why there are long delays in processing leasehold applications. Advancements in survey technologies and decentralization of registry services can reduce registration costs and expedite surveying time. However, the issue remains whether, and to what extent, the involvement of chiefs in the registration process creates bottlenecks and will continue to do so even after actions are taken to improve the technical aspects of registration delivery." The strengths of the current system lie in the checks and balances imposed on the actions of both the chiefs and government, but inherent in the process are

" To some extent, the chiefs consent is a false issue. A newcomer would find it very difficult to operate in most Reserve and Trust areas without the chiefs consent and forbearance.

many tedious steps that lead applicants through a maze of administrative channels (see chapter 3 for more details).

C. Urban, housing, and improvement areas¹²

The Legislative Council in 1957 set up a committee to examine tenure conditions in respect to urban and peri-urban areas. That committee according to Chinene et al. (1993) recommended that government adopt a policy of freehold tenure in urban areas except African townships and African housing areas located in European municipalities and townships. It was further recommended that unalienated land should be granted as freeholds to municipal councils. These recommendations led to the Crown Grants Act, which was later repealed by the Housing (Statutory and Improvement Areas) Act of 1974 and the Conversion Act of 1975.

President Kaunda in 1975 announced fundamental changes in land policy to the sixth National Council of UNIP on grounds that freehold tenure impeded the country's development and led to excessive speculation by landlords (see, for example, Chinene et al. 1993). All freehold titles were to be converted to statutory leaseholds of 100 years duration or less; all unutilized tracts of farmland were to be taken over immediately by the state; a requirement of presidential consent was introduced before any dealings in land; sale of land in urban areas was abolished save for dealings in improvements on the land; all vacant and undeveloped land in and around major centers was to be municipalized; and real estate agencies were ordered to close down. The supporting framework for these changes—the Conversion Act of 1975—took effect the following year.

The Housing (Statutory and Improvement Areas) Act of 1974 still provides for the control and improvement of housing in declared areas. The minister is granted powers to declare any area of land within the jurisdiction of a council to be a Statutory Housing area as long as the land is held in fee simple, and a housing plan prepared by the council is approved by the surveyor general (SECTION 4). The council, with the minister's approval, can subdivide the land, effect improvements, and lease any piece to any person for such a term and conditions as are approved by the minister (SECTION 5 (1) (a)-(c)). The council is prohibited from selling or conveying any freehold estate, leasing more than one piece of land to any one person, or leasing to any person who is engaged in the business of buying, selling, letting, or developing immovable property (SECTION 5 (1) (i)-(iii)). Upon payment of a prescribed fee, a council certificate of title for land is issued to an individual (SECTION 7 (1)) or legal entity (SECTION 5 (2)). Where two or more persons are entitled as tenants in common to undivided shares, only one certificate of title shall be issued (SECTION 7 (3)), although the council registrar is given powers to issue a separate certificate for each person's share upon payment of a fee (SECTION 7 (4)). The registrar is prohibited from registering any document purporting to transfer land not having received the council's prior consent (SECTION 42). A person is liable to a fine (K500) or imprisonment (not to exceed 2 years) (SECTION 45) if such person applies a rent, fee, purchase price, or other charge in excess of charges prescribed in the act, erects a structure without prior approval of the council, or illegally occupies or uses the land (SECTION 44 (a)-(d)). The act further describes the regulations for registration of titles under part III, and for the declaration of improvement areas under part VIII.

¹² Parts of this section draw heavily on chapter 2, "Review of Land Tenure under Legal and Customary Systems," by Michelo Hansungule, in Chinene et al. (1993).

The rights of squatters and the landless were also implicitly addressed by this legislation. In 1968, the Ministry of Local Government instructed local authorities to lay out basic site and service schemes for squatter settlements (ministerial circular No. 29 of 1968). Settlers were issued Land Record Cards as verification of their rights to individual plots, but the cards lacked legal grounding, leaving settlers fearful of eviction (Chinene et al. 1993). Under the Housing (Statutory and Improvement Areas) Act, the minister was authorized to declare an "improvement area," and the Commissioner of Lands was granted authority to issue titles to the local authority, which in turn could issue occupancy licenses and titles to settlers. Once a general sketch plan by a settler is produced, occupants are allocated serial numbers indicating their plots which suffice for registration and issuance of title (i.e., 14-year leases). The Housing Act is the only legislative enactment on squatters in the country, but applies only to urban areas while squatting is common in state lands. Officials contend that occupancy licenses confer security of tenure, and the title is sufficient for collateral. Data on number of mortgages by 14-year and 99-year lease (in chapter 3) provide weak evidence to the contrary.

D. Agencies responsible for land policy

The MOL is responsible for formulating and ensuring proper administration of land. All land regardless of location is vested in the president (and the minister of Lands) on all land matters including granting of land, fixing ground rent, and determining the conditions under which land is held. The Lands and Deeds Registry is responsible for registering all interests in land and for issuing title deeds. The Town and Country Planning Department in the Ministry of Local Government is responsible for zoning, certain large local authority plans, and determining "proper" land use. The Ministry of Environment is responsible for the control of land use for forestry, factories, and other uses, and for formulating conditions under which land can be used in certain areas. It is also responsible for approving the consolidation and subdivision of land based on its environmental interests.

The Land Use Planning Section of the Department of Agriculture, Ministry of Agriculture, is involved through its central, provincial, and district offices with the preparation of farm plans and farm layouts, settlement planning, land allocation and demarcations, site preparation, land use and land suitability assessment. It receives directives from the planning section of the department to find sites and prepare layouts for agricultural schemes and projects. It also gives advice to applicants for individual farm holdings based on conservation principles, i.e., suitable land use, farm size, farm and field boundaries, and location of services and facilities (ODA 1989).

The workload in providing such advice for new individual holdings as well as the increased demand for lease titles will continue to expand. Without changes, farm planning advice and land application processes are likely to be overstretched, leading to further delays in land allocation and registration. The expansion in numbers of small-scale and medium-scale commercial farms is eroding the structure of a few large commercial-sector farms that the agency was designed to service. One can only expect the commercial farm sector to become more dispersed and extended through subdivisions and opening of new lands. The department will no longer be able to afford the intensity of planning work per farm that has characterized its operations since colonial times. If the department is to keep pace with these trends, fundamental changes will be needed. Options include, but are not limited to: (a) greatly simplifying land use planning and the work entailed in lease approvals; (b) reducing the volume of work by perhaps eliminating reviews of subdivisions; (c) prioritizing work toward farm

appraisals for divestiture and opening new lands for resettlement; and/or (d) expanding personnel, equipment, transport, and land mapping capabilities through additional infusion of funds.

The Government Valuation Department is responsible for assisting councils in levying rates for local revenue generation, for monitoring and advising on legislative and procedural reforms (e.g., the current government considerations on replacing the property transfer tax with the capital gains tax), for capital valuations of private sector housing, and for general advisement on ground rents, office allocation, land allocation, land identification, economic ground rent, land value, and sale of government housing. The GRZ also has approximately 15,000 government houses. The Government Valuation Department (GVD) sees a continued and growing role at the policy and implementation level in assisting GRZ policy to introduce phased economic rentals, and to provide funds to manage the portfolio more effectively (GVD 1993). It remains unclear to what extent the GVD will or should be responsible for fixing prices for land allocations by the Lands Department or setting economic ground rents for leasehold property. The Lands Department would argue that a separate capacity within the MOL ought to be developed to assist the Commissioner of Lands in these areas, particularly for agricultural properties. Alternatively, it could be argued that a merger, or greater integration, of functions is needed.

The institutions responsible for implementing the various functions of land policy are currently highly dispersed with inadequate coordination among ministries. As indicated in chapter 3, the Commissioner of Lands must rely on a nearly autonomous Surveys Department for surveying and mapping. Decisions on subdivision must come from the Ministry of Environment. Land use planning appraisals are made by the land use planning section of the Ministry of Agriculture, while no department has the capacity for conducting research on land policy. It is too much to expect the various ministries to make expeditious decisions in a seamless fashion. An overhaul of departments responsible for land policy is needed, with careful attention given to clarifying roles and responsibilities. In some cases, the establishment of new line departments (land policy analysis) may be needed. In other cases, mergers or consolidation may be justified.

E. Subdivisions

Various attempts were made in the course of this work to determine the rationale and criteria for decisions related to land subdivisions. As indicated earlier, the Ministry of Environment is responsible for the control of land use and for formulating conditions under which land can be used in certain areas. The land use division of the Ministry of Agriculture is responsible for advising on land use decisions for agricultural properties including making site evaluations and project plans for newly opened lands. Policy related to subdivisions has important land market implications, particularly if subdivisions are tightly controlled and constrain land access. Unfortunately, no data could be located on applications for subdivisions involving either of these ministries or the MOL. Data on number of approved lease subdivisions are reported in chapter 3, but these data would not necessarily reflect the existence or scale of problems should subdivision policy be constraining transfers. Furthermore, no official circular could be located that clearly articulates the criteria used to make actual decisions on whether to permit subdivisions in individual cases. The "General Notes on Farm Subdivisions," dated 1978, in figure 1.1 was extracted from ministry files and, according to certain ministry personnel, is still effectively used.

According to these notes, a number of considerations must be taken into account before any farm subdivision can be implemented. Such considerations may be based on land capability, farm size,

water potential, and the viability of the units to be subdivided. Except for land close to urban areas, allotments cannot be less than 10 hectares; in outlying areas, subdivisions would not normally be less than 80 hectares; and under certain circumstances, subdivisions may not be allowed in cases where the resulting portions are less than 500 hectares.

Subdivision limitations in general are difficult to justify on economic grounds. Farm sizes aimed at providing a minimum economic return are nearly impossible to set as yields or productivity change with technological advances, and prices of inputs and outputs fluctuate with supply and demand. Small farms, through part-time farming, may be quite effective in maintaining income parity with larger farms and non-farm employment may actually increase the private flow of capital into agriculture. Furthermore, designing farm size limits that carefully account for changes in incomes among region (based on differences in soils, climate, and prices) are nearly impossible to make, and in practice tend to be either badly done, or not done at all, resulting in regional imbalances. Concerns about uneconomical farm sizes developing from subdivisions are also not justified. In the presence of an unconstrained land market, profitable farmers should be able to expand their parcel (farm) holdings, while likewise farming units with underutilized land should have the flexibility to downsize. Granted, land markets in the past did not permit this flexibility. But, in the future economy where prices are permitted to adjust in response to market forces, the old system of applying subdivision policy to a limited number of commercial farm holdings will no longer suffice and runs the risk of curtailing growth.

Figure 1.1: General notes on farm subdivisions

1. 10 ha (25 acre) subdivisions should be confined to an area within 5 km of the latest Lusaka boundary. The subdivisions should all be on arable land with either high borehole potential or having a perennial stream within reach. Beyond 5 km from the Lusaka boundary, subdivisions should not go below a minimum economic agricultural holding. Thus each unit to be subdivided should remain large enough to remain economically viable as well as self-sustaining.
2. As a general rule, the size of the units to be subdivided should be calculated on the soils (as well as land use capability) and borehole or water potential. For example, deep Makeni red soils over dolomite with high water potential could be subdivided to 40 ha (100 acres). Similar subdivisions can be carried out on deep colluvium or alluvium soils with perennial streams through the land.
3. Sandy soils derived from schist and with low water potential fall into two categories: (a) farms over muva or cheta schists on the periphery of dolomite areas can be subdivided into 10 ha (25 acre) plots within 5 km of Lusaka. Beyond this distance, these soils should not be subdivided to less than 80 ha (200 acres) per unit of arable land; (b) basement complex schists usually with low borehole potential, high erosion hazard, and long soil rotation required should not be subdivided to less than 160 ha (400 acres) of arable land.
4. Farms with large areas that are non-arable (classes V, VI, and VII) will need special planning to maintain their agricultural viability. Cattle ranching is best suited for these classes. But as for farms close to Lusaka where stock theft is rife, forestry should be considered. A green forestry belt for rock areas west and south of Lusaka should be seriously considered. The carrying capacity of the above-named classes is one livestock unit for 4 ha and the minimum economic herd size is 125 livestock units. Therefore the minimum size subdivision of the above classes (V, VI, and VII) should be 500 ha (1,250 acres). This should be taken as a guide as each farm will need to be considered individually. For instance, if a proper subdivision only covers class V (dambo), then even 551 ha will not be viable as cattle will have nowhere to graze during the rainy season when the dambo is too wet for cattle grazing.
5. The units to be subdivided should remain large enough so that proper rotation and soil conservation practices may be carried out. Moreover, very small units far away from Lusaka are considered to be uneconomic. In addition, one should take into account the physical shape of the farm in relation to the arable units before considering subdividing the farm. The implication here is that the physical shape of a farm will ultimately influence the manner in which subdivisions should be carried out as well as taking into account the **positions** of the arable units.

VI. Demand for leasehold properties

A. Current registrations and lease transfers

Despite intentions to increase the number of leaseholds nationwide, the number of titles has plateaued in recent years. The number of new title issuances ranged from 1,491 to 1,757 annually between 1990 and 1992 (table 1.9). (More recent and complete data at the provincial and national levels are represented in chapter 3.) The MOL reports that these figures are down somewhat from earlier years, but nonetheless it is not expected that the supply of new titles would increase substantially from these levels due to capacity constraints. Surrenders of title or repossessions by the state for reasons of death or failure to meet land use plans or pay rents has been steadily increasing, from 219 in 1990 to 281 in 1992. Assignments or transfers of existing leases have also been steadily increasing, from 845 in 1990 to 1,242 in 1992. These data shed some doubt on the hypothesis that transfer fees and subdivision policy are absolutely constraining transfers. As the pool of existing leases

expands with registration, the demand for reissuing leases via surrenders or assignments will place ever greater demands on the registry.

Table 1.9: Issuances, transfers, and mortgages of leases, 1990 to 1992

	1989	1990	1991	1992
Issuance of state leases (including reserve leases)		1,491	1,757	1,701
Surrenders and certificates of reentry		219	203	281
Assignments (transfers of leases)		845	924	1,242
Mortgage'	879	707	677	692
Agricultural charges	10,947	1,530	517	2,137

a. Total value of mortgages was K809.7 million in 1989, K695.1 million in 1990, and K653.2 million in 1991. Source: MOL.

Unfortunately, lack of time series data on official transfer fees preclude any analysis of the elasticity or inelasticity of land transfers (how transfers change with adjustments in the level of transfer fees). A high elasticity would imply a strong positive response to a reduction in transfer fees (elaborated on in chapter 4), a negative response would imply only a limited potential land market response, perhaps due to subdivision policy. Without such an analysis, only weak conclusions can be drawn from the data in table 1.9: land transfers (assignments) are low. While subdivision policy may be constraining land markets, it is not an absolute constraint as transfers appear to be easing with time. (Ministry officials note that many if not most subdivisions have been approved in recent years; landholders taking excessive time to work through the various administrative procedures, however, may be dissuading potential market participants from selling land.)

At present, there are between 70,000 to 100,000 titles issued nationwide (MOL estimates). Most are residential properties, but a large number are agricultural properties, mainly registrations by "emerging" and "medium-scale" farmers (see chapter 3). New applications for title brought forward to the Land Allocation Committee" provide a fairly good indication of the overall split between agricultural and non-farm demands for title. During the first 5 months of 1993, a total of 2,486 applications for title were made to the councils: 58.5 percent were for residential property, 33.7 percent for agricultural property, 7.3 percent for commercial and industrial property, and 0.5 percent other. (See chapter 3 for a more complete and detailed regional breakdown.) Of the agricultural leasehold applications, over 71 percent originated in the councils located in the urban and peri-urban settings of Lusaka and Copperbelt provinces. Whether this demand stems from higher population densities, nearer access to the registry, greater demand for tenure security, or enhanced credit access is not possible to sort out from existing data.

B. Potential leasehold demand

The above estimates of current lease issuances and transfers reflect only the "flow" of work by the MOL and exclude lease applications in process and known future demands. Besides the 1,750

¹³ This agency appears to be fulfilling the functions of the board in the Agricultural Lands Act.

or so leases issued annually by the government, the MOL estimates that it has a current backlog of 30,000 applications in various stages. Based on the number of lease applications brought forward to the councils (table 1.10), applications are currently coming in at a rate of 6,000 per annum. In addition, the MOL foresees a large increase in the demand for title: 17,658 new registrations of small-scale and medium-scale farms on planned farmlands (on an area of roughly 730,350 hectares) mainly along the Tazara corridor; 6,210 cases of pending titles in settlement schemes on 338,700 hectares; and 1,020 titles on an area of 59,390 hectares associated with land demarcation surveys done in 1992 (internal MOL data). Another 18,000 titles are envisioned associated with the survey and settlement of smallholders on parastatal farms currently being considered for privatization in Lusaka, Central, and Northern provinces.

**Table 1.10: Lease applications brought forward to district councils,
1 January to 31 May 1993**

	Residential	Commercial	Industrial	Agricultural	Others
Northern	63	7	-	25	1
Luapula	19	7		25	1
Central	218	13	1	85	
Southern	144	37	1	58	2
Lusaka	-			477	-
Eastern	70	10	2	30	2
North-Western	30	5		9	
Western	120	8	1	8	
Copperbelt	190	33	12	122	3
Lusaka	600	30	15	-	2
Total	1,454	150	32	839	11

Source: MOL.

As with the administration of the Land Acquisitions Act, there are widespread rumors of graft and corruption in the leasehold process extending from the chiefs up to the MOL. Regardless of whether these claims are true, the situation where demand for title is greatly outpacing the system's capacity to process leaseholds creates a fertile environment for those with influence or wealth to abuse the system, as has been the case under the sporadic registrations systems in southern Uganda before 1975 and in Somalia throughout the 1980s. While the average time to process an application according to the MOL is 2-3 years at present, these estimates are biased in that they count only those leases that ultimately get issued and not the ones that have remained in the system for much longer without being processed. Under current conditions, many applications may never result in title.

C. Factors influencing demand for title

Why such a large demand for title? Two reasons, sometimes inseparable, are repeatedly mentioned by official sources: the demand of the leaseholder for enhanced tenure security for investment; and the greater security afforded to lenders of capital from title as collateral.

1. Tenure insecurity and investment demand in Zambia

Until independence, chiefs held responsibility for all land in the Reserve and Trust areas. With the nationalization of land after independence, the chiefs lost most of their legal responsibilities for land allocation, although they retained some status as titular heads. The government in 1985, partly to gain favor with the chiefs and partly in recognition of their custodianship of customary law and rights, decided in practice that the chiefs ought to be formally consulted on decisions of leasehold matters (SECTION V.B). Formerly, an individual wishing land, would go to his or her native village or parents' village and ask the chief for an allocation. This process appears to be no longer possible in many areas for two reasons.

- ▶ Ties between the urban population and the chiefs have weakened considerably with time. Children, whose parents and grandparents are one or more generations removed from rural life, in some cases find that chiefs no longer recognize their traditional rights to land and in other cases simply do not want to subject themselves to the chiefs authority. Applicants are requesting land allocations from the MOL partially for convenience, cost, freedom of control, and the assistance they get in finding new land.
- ▶ Colonization and state nationalization of land have undermined the chiefs' role in the customary tenure system, particularly in the peri-urban area, and further created ambiguity regarding who holds ultimate responsibility for land allocation. Individuals seeking land to establish a commercial farm or a game ranch are directed by the MOL to the chiefs and rural councils. Chiefs in certain areas are willing to designate lands, but other chiefs who have seen their control over land erode with time lack the willingness to do so. Once allocations are made by the chiefs, the MOL still maintains the right to disapprove any contract negotiated.

Very little rigorous empirical work has been done on the issue of tenure security in Zambia. Examples are reported, however, of people being unwilling to invest in the land because of concerns that the chief will reallocate or sell the land of a current holder to another. Inheritance law under the indigenous system also appears to confer tenure insecurity, in that the landholder does not have assurance that land or property can be passed onto kin. In one case reported by his son, the father who lived on the land for more than 20 years one day discovered that the chief had sold the entire farm to an outsider. The son tried to register the land as a leaseholder to keep the sale from going through but without success. Two other cases have been reported where chiefs sold large blocks (one of 56,000 hectares, the second of 14,000 hectares) of land to outside investors. In both cases the sale failed to materialize because of the land ceiling imposed by the district authorities when the buyers tried to register the land. Nevertheless, such occurrences can have a ripple effect on communities throughout the region.

Some individuals, having established residences, become concerned about the possible loss of their home and improvements in the land. The steep investments required to open new lands—land clearing, boreholes, fencing, and buildings for livestock and place of residence—increase the felt need for title to increase security of rights. In addition to investors' inability to acquire land, those who manage to borrow land from fellow villagers fear that the land can be grabbed back by the owners without notice of justification (see, for example, the following article published in the *Zambia Daily Mail*, 1994).

For a long time, would-be investors in Western province have been complaining about the tenure system which they accuse of failing them to acquire land for development....For those who manage to borrow land from fellow villagers, [the] possibility of the owners...grabbing [it] back is more than 80 per cent. [A] teacher...complained that the land...he had borrowed was later grabbed from him by the owner.... [A]fter a successful season which saw his family harvest quite a number of bags of rice, the owner suddenly withdrew the land on the pretext that his family was under land pressure....[D]espite these rigidities,...certain influential individuals have broken the barrier and [claimed]...massive pieces of land.

It is certainly a matter of concern that borrowers are feeling insecure in their rights, but lenders as owners are within their rights to repossess the land. The more important issue is the lack of long-term transfer rights and contracts that provide security for both lender and borrower. It also is difficult to assess from the anecdotal evidence whether the landholders being evicted are local inhabitants or recent arrivals. All that is evident is that certain landholders are experiencing tenure insecurity under customary tenure arrangements. In other instances, land grabbing by outsiders, sometimes armed with official titles, is precipitating tenure insecurity in rural areas as illustrated in the following article (*Daily Mail*, 14 January 1994):

In Zambia...land is being dished out to foreigners and investors without considering the long-term consequences such action will have on the peopleZambia has entered a phase where land grabbing is escalating at an alarming rate....In Chief Kabamba's area, for instance, Serenje district council has already given out 4,800 hectares of land to a South African investor on grounds...this will bring development to the district... North-Western province which is probably the richest in terms of forest resources is said to be attracting many foreign investors....Traditionally,...people managed agriculture based on land rotation.... However, things have been changing over the last few years. People from outside the province are coming to stake claims to land in the name of development and local people cannot fight Lusaka businessmen or South African investors.

There is no doubt that tenure insecurity is occurring in some cases where title is absent in Zambia. But that question in itself is not sufficient to encourage widespread titling. The spotty and anecdotal information available simply isn't detailed enough to determine whether the insecurity is arising in the more densely populated areas, in instances of high or rapid commercial development, on the expanding frontier of the agricultural zone, or whether title itself may in some cases be generating the tenure insecurity through improper adjudication of rights.

Three sources of tenure insecurity thus seem to be present or at risk of occurring. First, the leasehold system itself is the cause of large land allocations to outsiders that, when driven by pressures to "privatize," can result in tenure insecurity for those lacking title or the means to acquire it. Second, there is the misadministration of the customary sector by some chiefs on Reserve and Trust Lands, characterized by chiefs allocating or selling large tracts of land to outsiders, chiefs reallocating or selling land of existing claimants to a higher bidder or someone with influence, or chiefs preventing one from bequeathing land to heirs or otherwise preventing the transfer of land to another. Third, there is the potential risk of conflict between registered and customary systems. Sporadic titling systems relying on voluntary registration are susceptible to generating landlessness or displacement of rights by existing holders, particularly in situations of rising land value, acute land scarcity, and

situations where the state is either unable (due to fiscal constraints or excessive work) or unwilling to completely adjudicate all rights of landholders.

2. Credit access

It is difficult to conclude from the data on existing mortgages and agricultural charges placed on titles that registration has had a significant effect on credit access. Agricultural charges include credit issued under the Agricultural Act for crops and farm implements. Mortgages include credit disbursed for land purchase and long-term capital improvements. As indicated in table 1.9, mortgages where title was secured for collateral generally remained stagnant or declined from 1989 to 1992, ranging from a high of 879 to a low of 677. Agricultural charges have varied widely. From a high of 10,947 charges in 1989, the total dropped to 517 in the drought year of 1991, before rebounding to 2,137 in 1992. Compared with the total number of commercial farms nationwide (145,170 in 1989, table 1.4), the number of agricultural charges does not seem particularly impressive. However, compared with the 740 large-scale farms which likely possess title, the data would suggest a strong linkage between title and credit access. Which farms are acquiring the credit is a crucial question.

There is no doubt that perceptions of title being needed to gain access to credit has been an important factor driving leasehold demand. Discussions with two agricultural lending banks give some insight into the perceived importance of title in enhancing credit access.

Lima Bank is a state bank with no private capital or private investors. Its principle operating objective is disbursing agricultural credit to increase production and incomes in rural areas. Credit is predominantly given to small farmers; 96 percent of the total clients are small farming units, 3 percent are medium-scale farming units, and 1 percent are large-scale commercial farming units. In the current year, the bank disbursed K8 billion of credit, 85 percent being short-term seasonal loans, 10 percent medium-term loans and 5 percent long-term loans. Sixty percent of this credit went to roughly 18,000 smallholders nationwide. The remaining 40 percent was disbursed to roughly 3,000 medium- and large-scale farmers. Demand for credit increased sharply around 1980 with the increase in the large number of "emergent" farmers entering commercial agriculture. While the bank used to extend credit without title as collateral, and still does to a limited extent, it is now reaching the point where title is a prerequisite. In normal years, the bank experiences 30 percent loan losses on its seasonal loans, one half of which is usually recovered through legal action, late repayments, or foreclosures on property. Rarely has the bank had to engage in foreclosures, however. For those loans secured by title, titleholders are reportedly extremely reluctant to part with the title once they have it and resort to other sources to pay back loans. In the 1970s, the bank had to advertise foreclosed farms for sale or auction. However, because of a very robust land market, the bank no longer has to advertise. A list of potential buyers is maintained by the bank that is purportedly much longer than the supply of foreclosed properties, and properties are liquidated quickly.¹⁴

The Zambia National Commercial Bank has the backing of 98 percent public capital and 2 percent private capital from shareholders. The bank's agricultural portfolio is smaller than that of

¹⁴ Whether this process of foreclosing on farms is good or bad is not easy to assess. There is always the possibility that farms are resold to insiders and those with political influence. One wonders whether properties should not be foreclosed via an auction, even if fair market value is not paid, to minimize the potential for corruption and any appearance of impropriety. Separate sources in the ministry indicated that foreclosures were in fact nearly impossible to achieve.

Lima Bank and has been erratic in recent years due to the drought. About K2.8 billion were disbursed in the last agricultural season. Of this total, roughly 60 percent went to 120 large commercial and corporate farmers, and roughly 40 percent to 1,025 smallholders and 52 "emerging" commercial smallholders (table 1.12). All credit has a 5-year term or less to minimize exposure to inflation. Defaults vary in the vicinity of 15 percent in normal to good years, but can be 40 percent or worse in drought years (as occurred in 1989-91) (table 1.11). Most of the credit being extended to smallholders is not secured by title. Rather, the individual's credit history is the principle guarantee. For newcomers, credit will initially be disbursed for seasonal inputs sufficient for 2 hectares of land (approximately K250,000 for a package of inputs). If repayment is made, the borrower is eligible to increase the size of borrowing the next season to an amount sufficient to buy inputs for 4 hectares, and so on up to around 40 hectares. Beyond that size limit, more intensive capital inputs (i.e., tractors) are generally needed and the bank is reluctant to extend such credit without title as collateral. While smallholders do get access to credit without title, it takes a considerable number of years to build the credit history and to reach medium commercial size.

Table 1.11: Direct agricultural financing, Zambia National Commercial Bank

	Number of clients	Amount of credit (K1,000)	Recovery rate (%)
1987/88	1,374	47,475	83
1988/89	2,340	110,000	87
1989/90	2,737	304,768	60
1990/91	1,238	391,493	65
1991/92	1,140	743,552	45
1992/93	1,197	2,825,402	

Source: Zambia National Commercial Bank.

In the past, banks were able to effect charge and stop orders that enabled the bank to claim the crop in the field to ensure repayment, or to place a lien on crop sales at the local cooperative. With market liberalization, however, farmers have the freedom to sell where they wish, greatly reducing the effectiveness of such orders as collateral. Title's role in guaranteeing credit has increased as a result. Title helps to secure the loan in case of default. Even without foreclosure, the landholder is unable to go to another bank to get credit as long as the title is held by the former bank. Sooner or later, the borrower will have to repay the loan to regain borrowing status.

Both banks expressed the need to help the rural population for sake of development and, no doubt, partially due to development mandates imposed by government. Both banks are expected to be privatized soon. It would be difficult to predict how the agricultural component in either bank's portfolio will fare after privatization. Both banks have reported sizable defaults in recent years, yet both report profitable operations from their agricultural lending activities. It is difficult to see how the Lima Bank, which charges 47 percent interest on its loans, can earn income in an inflation environment well in excess of 100 percent, along with the 15 percent losses reported earlier. Either lending operations are being subsidized through indirect transfers from the state or its capital base is eroding. On the positive side, both banks feel that land title is a strong form of guarantee and that a strong land market enables easy liquidation of foreclosed property, thereby reducing lending costs.

Table 1.12: Credit by number of farms, Zambia National Commercial Bank

	Total farming units (#)	SSF (#)	ECF (N)	LCF (N)	C (#)
1987/88	1,374	1,266	100	5	3
1988/89	2,340	2,142	180	10	8
1989/90	2,737	2,500	200	20	17
1990/91	1,239	1,100	84	38	16
1991/92	1,140	1,015	60	45	20
1992/93	1,197	1,025	52	79	41

SSF =small scale farmers. ECF =emergent commercial farmers. LCF=large commercial farms. C=corporate companies.

Source: Zambia National Commercial Bank.

These structural developments in the financial market have important implications for future title demand. Should agricultural lending by banks stagnate in the new private market era, then a strong case can be made for the emergence of credit rationing to titleholders. In Kenya, for example, it is nearly impossible to get an agricultural loan without title, but roughly 2 percent of titleholders get credit. Once one moves out of the registered former white highlands in Kenya, and the areas of large-scale commercial farming, the use of commercial credit declines sharply for a number of reasons: economies of size in mechanization and demand for intensive capital investment by large farms; the diseconomies associated with smallholders gaining access to credit; and the difficulty banks have had in foreclosing on leasehold properties in rural areas. There are preliminary indications that credit demand is beginning to outpace credit supply in Zambia. While Lima Bank, for example, extended K8 billion in credit in the last season, it received applications for more than K20 billion.

Should the pace of title issuances outpace the growth in credit supply, future credit access will depend heavily on three factors: title ownership, farm size, and non-farm incomes or other forms of collateral that banks might use as a guarantee. Larger farms with title and other sources of capital will continue to get credit. But small "emerging" farmers will be squeezed on the one hand by tenure insecurity from lack of title (due to administrative bottlenecks), and on the other by lack of capital that is necessary to undertake the land improvements to make farming profitable.

VII. Proposed land policy reforms

A. MMD Manifesto

The MMD government in its manifesto called for the following reforms in its land policy:

The MMD shall institutionalize a modern, coherent, simplified and relevant land law code intended to ensure the fundamental right to private ownership of land as well as to be an integral part of a more efficient land delivery system. To this end an MMD government will address itself to the following fundamental land issues. A review of the Land (Conversion of Titles) Acts of 1975 and 1985, the Trust Lands and Reserves Orders-in-Council of 1928-1947, the Land Survey Act, and the Town and Country

Planning Act, in order to bring about a more efficient and equitable system of tenure conversion and land allocation in customary lands; land adjudication legislation will be enacted and be co-ordinated in such a way that confidence shall be restored in land investors; the land planning system and related legislation shall evolve such land strategy as not only to merge Reserve and Trust Lands, but also to meet varied development needs in the country. The MMD government will attach economic value to undeveloped land, encourage private real estate agency business, promote the regular issuance of title deeds to productive landowners in both rural and urban areas, and clear the backlog of cadastral surveys and mapping.

B. Ministry of Lands proposal

In response to the policy directives issued by the MMD government, the MOL in the document "National Conference on Land Policy and Assistance From The Donor Community in the Implementation of Proposed Projects" proposes to strengthen the operations of the Lands and Survey departments through reorganization, increasing capacity, staff training, and identifying more land for development. The government is giving very high priority to the issuance of title deeds to facilitate its program of privatization and liberalization. The cabinet has already approved a proposal for amendments of land laws and a change in land policy to make land easily available to both local and foreign investors. Real estate agencies should be allowed to operate freely in bringing buyers and sellers together. It is the government's policy also to increase revenue; in accordance with this aim, monetary value for land will be introduced by charging an economic ground rent on leasehold property. It is envisioned that an efficient land registration system and proper records would simplify conveyancing procedures and issuance of title deeds and facilitate revenues. Only 4 percent of the nation's land area is on the register. The MOL is actively seeking or identifying land within urban, peri-urban, and rural areas to meet the surging demand for land nationwide. In essence, the government's policy is to amend the land laws and decentralize the functions of both the Lands and Survey departments to facilitate issuance of title deeds.

1. Land tenure reforms

The MOL, in a 10th September 1993 memorandum, "Amendment to Land Laws," has drafted amendments to the Land Titles Act and the Lands and Deeds Registry Act. There is need to update and modernize legislation, instill greater harmony in the laws, remove inconsistencies, and create a more unified body of legislation. What remains to be done, according to the MOL, is the drafting of new land laws after existing laws have been reviewed and, most importantly, to see through their implementation in the next three to four years.

2. Decentralization

The Lands Department now consists of two separate units: the Commissioner of Lands' Office and the Lands and Deeds Registry. The former's function is to allocate land while the latter's main function is to register documents and issue certificates of title. The bottlenecks in issuance and transfer of land title stem from three sources: (1) delays in application from the councils to the central registry; (2) delays and costs associated with channeling leases through one central registry in the country; and (3) onerous leasehold procedures. The MOL proposed that both functions of land allocation and registration be decentralized to two additional sites in the next five years. A regional office has recently been set up in Ndola in the Copperbelt to cater to the four provinces in the northern half of

the country. By 1994, it is proposed that another regional office be established in Lusaka for the five provinces in the southern half of the country. By 1995, a third fully decentralized office is planned for either Kasama or Chipata. A direct link will need to be established between the decentralized offices and the central registry. Assistance is requested by the ministry in the form of equipment, computer software, staff training, and personnel. As it would be impossible to transfer all documents from the current central registry to the regional offices, it is proposed that a system be developed whereby relevant documents and title deeds can be scanned and information stored in optical memory connected to a desktop computer.¹⁵ The MOL is requesting workstations, laser printers, scanner, modems, desktop computers, photocopy machines, facsimile machines, typewriters, safes, cabinets, and other office equipment.

3. Land identification body

An urgent need is felt by the MOL to create a formal body with committees in all the provinces to carry out the function of land identification for future agricultural expansion. This body, at both headquarters and provinces, would comprise senior members from the relevant ministries and departments. The body would also be expected to advise on general land policy matters. A section within the Lands Department would be needed for the demarcation of identified land and the preparation of layout plans. The MOL further hopes that through an act of parliament, legal powers will be granted to strengthen the body's role in coordinating and implementing such a land identification program.¹⁶

4. Personnel, training, coordination, and implementation

Trained labor will be needed to operate and manage the system of decentralized offices and the computer-aided registry system. At present, only three public and seven private licensed surveyors (plus or minus one or two) can be found nationwide. A program is envisioned that trains both existing staff and new recruits. The government has already committed to doubling the size of the MOL's staff. Additional financial assistance is requested of donors to support a project coordinator and implementor, an experienced land lawyer, two officer's experienced in land management and land law to assist on short term consultancy, one officer experienced in estates management to establish an estate management section with a view to generating revenue from fixing rents on land, and one officer qualified in surveying methods and making plans for identification of land for issuance of title deeds. The principal aim is to find a suitable, cheaper, but reliable method of leasehold registration. Scholarships and training are needed in land administration, land valuation, planning and surveying, and land laws and registration. Vehicles are needed. Finally, additional assistance is required for short-term consultancies, seminars, and conferences.

C. 1993 Land Policy Conference

The National Conference on Land Policy and Legal Reform (20-22 July 1993) specified a number of reforms, some of which required immediate action while others were to take place over many years. The MMD called for immediate repeal of Act No. 15 of 1985 which prohibited land from

¹⁵ The rationale for this is unclear. Records in the registry systems of most developed and developing countries are decentralized.

¹⁶ Chapter 2 discusses in some detail the concerns associated with this proposal.

being granted, transferred, alienated, or leased to non-Zambians, and repeal of Section 10 of the 1975 Land Act which stated that bare land per se has no commercial value (Place and Twinomukunzi 1993:27)¹⁷ Furthermore, reentry of private real estate firms would be encouraged to improve land market efficiency. Other reforms were proposed that would be initiated within a period of one year: (a) Combine Reserve and Trust Land categories into a single customary land category; (b) allow for uniform 99-year leaseholds on all land;¹⁸ (c) identify unutilized land to be made available to all investors;¹⁹ (d) permit mortgaging and leasehold transfers of one year to take place without presidential consent; (e) formally recognize customary rights;²⁰ (f) increase the rent or tax charged on leaseholds; (g) extend an automatic renewal of 99-year leaseholds provided that lease conditions are met; (h) facilitate requests for leaseholds in customary land; (i) allow for leaseholds of separate units in buildings; and (j) repeal all undesirable land legislation and replace with two primary acts: Land Act (covering State Land and Customary Land) and Registration Act. With respect to land delivery, the MMD called for decentralization, creation of a land development fund (LDF) for local public investment from ground rents, and acceptance of cheaper survey techniques.

A number of papers referred to "major land reforms" being undertaken in the longer run without specifying their nature. The conference concluded with 10 resolutions or principles on land tenure presented in figure 1.2 (the entire text of the resolutions is reproduced in annex 1.1 below).

¹⁷ A lively debate followed on the issue of opening land to foreigners. Chiefs and church groups expressed serious concerns about "truckloads" of foreigners seeking land and the risk of wealthy foreigners and rising land prices resulting in a high degree of foreign **land control**.

¹⁸ **Lengthy** debates followed on the issue of leaseholds versus freehold. Many professionals and the Farmers' Union asserted the need for freehold property to minimize insecurity as the expiration of the leasehold draws near, and out of distrust that government would not keep its pledge for automatic renewal. Counter arguments were raised by nearly all political parties that the freehold system would create dispossession for the poor, lead to excessive concentration of land holdings, and result in underutilization of land. Fear of foreign control was a principal factor in support of leaseholds over freeholds.

¹⁹ Some participants argued that rights exist over almost all land in customary areas, and some chiefs questioned whether land in customary areas can be found without disturbing villagers. The MMD assured the chiefs that villages would not be disrupted, while at the same time chiefs were charged by government officials and the church as being greedy or uncooperative in helping to locate land for resettlement or allocation.

²⁰ One proposal from the Faculty of Law called for a Record of Rights in rural areas that would simply record existing rights to land.

Figure 1.2: Land tenure resolutions, 1993 Conference on Land Policy and Legal Reform

1. METHODOLOGY. Both short-term and long-term approaches are needed in tenure reform, for example, seminars in the short term and establishment of a Commission of Enquiry in the longer term. It is recommended that a working group be established immediately to devote more time to the issues raised and that a permanent body be established over time.

2. CLASSIFICATION OF LAND. The classification of **land should** reflect **both national** and customary interests **and** should consist of two classes: State Land and Customary Land. The tenure should be a 99-year leasehold in State Land **and** the duration should vary according to intended use in Customary Land.

3. REGISTRATION SYSTEMS. There should be a **decentralization** of both land administration and surveys. There should also be continued computerization of title registration and the development of a land information system.

4. ALLOCATION AND ADMINISTRATION OF LAND. The administration of land should be improved through decentralization of activities. All relevant parties must be consulted prior to **undertaking** decisions. Allocation boards should be established at the local level.

5. ROLE OF CHIEFS. The role of chiefs should be formally recognized and the government should make efforts to enable them to better conduct their tasks.

6. LAW REFORM AND CONSOLIDATION OF LEGISLATION. The Orders in Council 1928-64 should be repealed. The Commissioner of Lands along with other selected participants should identify all statutes related to land and review them for the purpose of revision. The outcome should be a single bill dealing with land and another for registration.

7. STATUS OF WOMEN. The universal principle of equality for women and other disadvantaged groups should be formally recognized.

8. SECURITY AND CREDIT. The government should explore the development of alternative facilities to improve access to credit.

9. LAND UTILIZATION AND REGULATION. Professional assessments of land use should be made on commercial and farming land. Land use rules should be enforced. Urban settlements should be improved or relocated to alternative sites. Efforts should be made to improve conditions in rural areas to mitigate migration. The Land Development Committee should be strengthened. Taxation **and** rent charges should be used to discourage underutilization of land.

10. LAND VALUATION. The market should determine the price of land in State Land. In Customary Land, valuation procedures should evolve according to local conditions.

D. Assessment

The government's proposal to liberalize the land market and expand the supply of leaseholds is a sound policy. Leasehold tenure of 99 years, while less satisfactory than freehold tenure, can provide adequate security for long-term investment and credit. However, leasehold will not confer the

same sense of ownership as freehold property, and the concerns expressed by the Farmers' Union about government expropriation without due process are reasonable. If the government is to adopt leaseholds as its main land tenure instrument, then land use regulations and the Land Acquisition Act need to be carefully rewritten to ensure that landholders do not perceive genuine risk of loss of property. The resolutions in figure 1.2 are not comforting in this regard. Such resolutions as providing leaseholds of variable duration in customary areas, making professional land assessments, and enforcing land use rules act to create insecurity, increase the costs of farming, and create yet more government bureaucracy in the land market. Eliminating land use conditions, levying an economic ground rent pegged to market value, and reducing costs in the land market would act to reduce speculation, increase land utilization, and reduce demands for government oversight of land use—demands that it likely will never keep due to scarce resources.

It is extremely difficult to estimate the true demand for title as title acquisition in the past was highly subsidized and linked with free land access—a policy environment conducive for anyone of sound mind to request land title and a plot of land. Once ground rents are increased nearer to their economic value and their collections are enforced with penalty of repossession upon default (after 3 years on non-payment), it would be expected that the current demand will be curtailed, and reentries and surrenders will increase, a process that is already occurring. Nevertheless, demand-size policies alone will not suffice; it is important to increase the efficiency of survey and registration services through decentralization and administrative reforms.

The long overdue program of decentralization to the Ndola office and eventually to district levels would help increase the supply of titles to smallholders and "emerging" small-scale farmers and help reduce the costs and delays associated with registration at present. The institutional capacity for land administration (land survey and registry systems) is weak. The current capacity is more or less the same as that of the pre-independence era when the various ministries had only to deal with the management of leaseholds on State Lands (6 percent of total land area). The MOL is now being asked to extend its services to the Reserve and Trust Lands in all nine provinces. Staffing, facilities and equipment simply are not sufficient for the MOL to expand its scope of operations to the entire country (yet it is crucial that it does) or to keep pace with the flood of demand for new leaseholds since independence. Actions will need to be taken to expand the staffing of public sector surveyors, but there is also a critical need to expand private sector involvement in land surveying. The conference resolutions again raise a number of concerns about the government's ability to reduce registration delays. Such resolutions as "consulting all relevant parties prior to undertaking decisions" and integrating chiefs into land matters, while politically necessary, run counter to the need to reduce steps and streamline the process. Controls are necessary to ensure customary rights on land held under customary law, but once land has been identified, the procedure for allocation and registration needs to be considerably simplified.

In areas with higher population densities and a better-developed transportation network, the customary tenure system does not appear to be providing the tenure security necessary for long-term investment. Customary systems seemed to have weakened for three reasons: (1) rising land values, increased competition for land, and increased rent-seeking by chiefs and others controlling land allocation; (2) little incentive to make long-term improvements without clearly defined long-term land use and testacy rights; and (3) increased central government control and reduced powers of local leaders. While the extension of leasehold tenure is appropriate for these situations, the government will need to deal with customary land rights outside leasehold areas, and carefully consider how to minimize overlapping rights and conflicts between the customary and leasehold systems. Conflicts

under a sporadic system of registration will inevitably arise and will worsen with increases in growth of leasehold issuances. Customary systems in most rural areas are generally superior in ensuring a subsistence livelihood and tenure security. But in practical terms, even with massive investments in leasehold registration, government's long-term targets call for the registration of only 20 percent of the nation's land area. The government has no other recourse but to design a strategy for strengthening the ability of the customary system to govern the remaining lands. The recommendation of the MMD government to move more slowly with land tenure reform in customary areas and to engage in a long-term program of research to better understand customary land rights, transfers, and dispute processes is a sound approach.

Although the State Lands will continue to draw attention to the necessity of intensifying the productivity of existing cultivated area, the long-term future of Zambian agriculture lies in the far more extensive Reserve and Trust Lands. Here resolution of the most fundamental tenure problems will need to go hand in hand with major investments in public infrastructure and marketing. The real challenge lies in planning the effective development of these lands. Land use surveys, community and regional development plans, along with field research on land use patterns, management practices, market access, and land tenure are needed. In addition, government will need a stronger revenue base to provide the infrastructure necessary to open up rural areas and to plan the development of new agricultural lands. Roads, schools, clinics, and utilities will be needed to either encourage urban dwellers to move to more remote areas or to keep settlers on the land. To provide these funds, the government proposes the establishment of the Land Development Fund (LDF) to support such infrastructure and regional development.²¹ Such development expenses would normally be provided out of the central budget, but the limited size of the overall budget combined with overly restrictive past allocations to the MOL has forced the ministry to rethink ways to raise revenues and earmark funds for development. The funds would be derived from economic ground rents charged on leasehold property. Much more thought needs to be given to such issues as the structure of land taxes/rents nationwide, valuation of property in the absence of well-functioning markets, and fiscal management to ensure accountability and transparency.

The government sees itself as a facilitator of development. It envisions an increase in the number of titles nationwide from roughly 70,000 to 100,000 at present to somewhere in the range of 500,000 to 1,000,000. No long-term date has been set for achieving this target. Eighty percent of these titles would fall in the peri-urban zone and 20 percent in rural commercial areas. Opening the rural areas would require money for land clearing, construction of roads, extending utilities, and the provision of boreholes, clinics, and schools. The experience of past settlement schemes has apparently been one of some settlers returning to the city because of lack of adequate physical and social infrastructure. The urban population, now accustomed to the amenities of urban living, cannot be expected to move easily to rural areas. The government thus sees its role as creating an enabling environment in rural areas and providing incentives to help families move.

The proposal to increase the economic ground rent to support the state in opening new lands and in paying for physical infrastructure is an area of concern. Any form of annual rent increases the

²¹ Rents on current leaseholds are reportedly approaching K1 billion per annum. By increasing the number of leaseholds from 70,000 to 500,000 or 1,000,000, the MOL envisions the potential for generating huge financial resources that can then be directed to develop rural infrastructure and open new lands. The costs of leasehold issuances and rent collection would have to be kept modest relative to revenue generation for such a surplus to occur. A financial analysis is advised to assess the viability of such a system.

disincentives for registering land or re-registering transfers of leasehold property. The use of leasehold rents to pay for general rural development expenditures imposes on leaseholders a disproportionate share of the cost burden. There is further risk of double taxation resulting from ground rents and property taxes being levied on the same piece of property (chapter 4). The MOL may be correct in arguing that it now has a record-keeping system that makes a land-based tax feasible, and at a lower administrative cost than alternative forms of taxation. However, these claims should be discounted and a push made for a more careful and general review of the tax system (of which the land tax would be a part), for an evaluation of alternative approaches for financing rural development, and for a general institutional review of agencies (including the rural councils) and their appropriate roles in tax collection and expenditures. In the end, the MOL may play a greater role in tax collection, but every attempt should be made to divorce the land rent for purposes of enhancing property rights from general taxation of land value.

The MOL's plan to pay up front the costs of developing new lands then recouping the costs through annual leases is problematic on another front. The leaseholder would bear none of the development costs, or at least would be required to put little personal capital into the holding. Once the title is in hand, the leaseholder is eligible for short- to medium-term credit. Should the banks foreclose, the government or the bank is left bearing all the costs of land development, while the leaseholder gains tremendous financial leverage from investing little or no personal capital in the land. Rather than amortizing the development costs into the lease rent, a strong argument can be made for auctioning properties to recoup part of the development expense from the land purchaser up front. Such a policy would limit land demand, but would help minimize risks of land speculation solely for the purpose of increasing credit access.

VIII. Proposed actions

A. Land tenure reforms

There is wide consensus within government of the need for land tenure reform to increase private sector development, private and foreign investment, and capitalization of the farm and non-farm sectors. The existing land legislation needs to be comprehensively reviewed with the overall aim of simplifying the legislation, achieving a more unified body of legislation, and identifying fundamental changes necessary to facilitate the development of the land market. Indicative changes, that are by no means exhaustive, are outlined below:

Zambia (State Land and Reserves) Orders, 1928 to 1964. This act as currently written suffers from at least three major deficiencies. First, while it addresses the role of district councils and the conversion of land into leasehold property, it administratively ignores the land rights of natives and nonnatives to customary lands outside of leased land. Second, the term "native" is ambiguous and difficult to argue in a court of law. Third, restrictions limiting leasehold property of charitable organizations to 33 years and nonnatives to 5 years of occupancy does not provide sufficient duration for long-term investments or planning. In addition, the Commercial Farmers Bureau raises concerns about the commissioner's powers to set legal area maximums on leasehold property. The ceiling of 250 hectares, according to the Bureau, is too small for large-scale commercial farming, particularly for beef cattle or game ranching. The central issue that government must address is whether it wishes to control the size of farms, particularly if the demand for land by foreigners increases in response to current Zambian policies aimed at attracting foreign investment.

Land (Conversion of Titles) Act of 1975. Currently, the State Land and Reserve Orders govern the tenure on Reserve and Trust Land while the Conversion of Titles Act governs the tenure on State Land. There is need to both modernize this legislation and to create one comprehensive act dealing with land in State, Reserve, and Trust areas. Several specific changes are also in order: (1) customary rights on non-leasehold land in the Reserves and Trust lands need to be articulated, including the role of chiefs; (2) greater attention needs to be given to issues of dispute resolution; currently, disputes can only be taken to the high court creating administrative bottlenecks; (3) provisions preventing the valuing of land (i.e., permitting value to be charged on only the unexhausted value of improvements) need to be revised to permit the market to establish land prices for determining "fair" and "just" compensation and for setting lease rents; (4) any restrictions on land transfers need to be **thoroughly** reviewed with the aim of liberalizing land markets including abolishment of presidential consent; (5) as a term lease of 99 years is usually quite sufficient for long-term tenure security as long as use conditions are not attached to the lease, it is recommended that land use conditions be eliminated; and (6) careful consideration should be given to a progressive system of rents/taxes on leases to prevent excessive land accumulation and land underutilization.²¹

Land Registry Act and Survey Act. The current legislation lays out rigorous survey standards for preparing maps for leases. Attention is currently given to consideration of new technologies (general boundaries surveys approach, modern computer and GPS mapping) to reduce surveying costs and to speed surveying time. First, legislation will need to be updated to accommodate these new technologies. Second, a legal base is needed that will accommodate registration of documents by computer and introducing and enabling the registration of separate units of blocks of flats or offices (sectional registrations). Third, the problem of the 14-year leasehold will need to be addressed. Either the relaxed survey requirements need to be provided for in the legislation (i.e., permitting simpler sketch maps), or eliminated to unify leaseholds around a standard 99-year lease. Fourth, the duration of the 14-year lease should be increased, preferably to 99 years.

Land Acquisition Act. The sweeping powers granted to the president should be reduced, and the rights of landholders clarified and strengthened to reduce abuses associated with land expropriation (and on the basis of "unreasonably" low compensation) that occurred in the past. Compulsory acquisitions for the public good should be based on willing buyer/willing seller provisions, and should provide for right of appeal.²²

Subdivision policy. Because policies aimed at curbing subdivisions tend to restrict the land market, this study would tend to repeal any subdivision legislation that may exist. However, should there be valid reasons for government monitoring and control of subdivisions, the onus should be on

²¹ The National Lands Committee, in its 27 April 1994 comment to this report, maintains that such land use covenants are essential and should even be fortified. Furthermore, lease renewal should not be automatic but instead based on fulfillment of the covenants contained in the lease.

²³ The MOL sees also the need for a provision enabling the land development fund. A strong case has not yet been made why such a fund is needed versus funneling ground rents through the central government to be allocated along with other public funds. See chapter 4 for further elaboration on the strengths and weaknesses of this proposal.

²⁴ The Land Committee, in its comments to this report of 27 April 1994, proposes that the act be modified so that: the only land to be repossessed is that required for public use or a national scheme; the lessee is served with adequate notice, at least 6 months; the compensation should be based on the current market value of the land; and the appeal should be with the Supreme Court where it has not been resolved in the lower courts.

government to provide the resources to make the appraisals on a timely basis, and a limited time frame should be specified in the regulations for completing its decision, barring which the landholder has the right to move forward with the transaction. Clear and verifiable data should be kept on number of applications, and the number and location of approvals and rejections. Should the data indicate a constrained land market, a very strong case would have to be made for retaining such a policy.

It is remarkable that Zambia is still working with land, property, and inheritance laws that are based on 1911 English law that even the British saw fit to reform in 1925. In addition to the above legislation, an entire replacement is needed of the Conveyancing Acts, Statute of Frauds, Probate and other inheritance laws, laws of Property Act, Chancery Amendment Act, Common Law Procedure Act, and Laws of Equity, Married Women's Property Act, and Land Registration Act, among others. Land tenure reforms resulting in amendments to a few provisions is not the answer. Rather, a wholesale revamping and modernizing of the entire set of antiquated property, inheritance, and registration laws is needed. In addition, careful reviews need to be made of the Town and Country Planning Act, Local Government Act, Forestry Act, Landlord Tenants Acts, Law of Succession, and Power of Attorneys Act.

There is a temptation in light of the current atmosphere of policy reforms and desire for private investment to rush forward with legal reforms. Such motivations, while understandable, are fraught with risk. Land tenure, particularly in the customary areas, is a sensitive issue, and sound policy advice is hampered by a dearth of field-level research. A number of key amendments to existing legislation in the short-run are advised (e.g., amendments permitting land to have value, converting leases to 99-years in duration, and easing subdivision requirements). However, focusing too much on short-term changes runs the risk of undermining the process of wholesale reforms that are needed, and misdirecting energies away from producing a comprehensive and quality body of legislation. Already, draft legislation has been prepared by several groups in Zambia in absence of careful review, advisement, and consensus building. The current rush to adopt a few key amendments has opened the door for various ministries to push amendments and legal changes based on self-interest (e.g., relaxing restrictions on foreign ownership to increase private capital investment). Meanwhile the MOL feels compelled to undertake reforms that dispel notions that it is sitting idle on land matters. This situation has all the makings for bad policy: dispersion of land functions among multiple agencies, multiple ministries suggesting legal reforms, widespread demands for immediate policy changes and quick fixes, a sense of urgency, a ministry that feels compelled to act, and basic disagreements between central and local authorities regarding responsibilities in land policy.

The approach recommended by the World Bank is probably the best strategy under the circumstances: adopt a few key amendments to free up the land market in the State Lands (permitting land to have value, facilitating subdivision and real estate transactions, reducing land and property taxes). These legal actions would be followed by a more gradual period of research in state lands and customary areas, institutionalization of a land policy and research unit, increasing the capacity for land delivery, and carefully designing and promulgating a comprehensive set of legislation over a four to five year period.

A gradual approach is not likely to appeal to the business community. The MOL must currently bear the brunt of accusations that it is dragging its feet on land policy matters—an environment that is far from conducive for setting thoughtful policy. It is recommended that government assert the need for a longer-term approach, clearly specify a strategy for reforms, then designate an interministerial committee to coordinate land policy and collectively bear the heat for not

moving quickly on land reforms. This strategy is not intended to put foreign investment or private commercial interests on hold. Land titles may still be issued to viable commercial interests and even be given special treatment but in moderate measure, with transparency, and with careful monitoring.

A special body with wide powers for designing new legislation under wide advisement should be appointed (e.g., the standing law reform commission, a land tenure reform commission, or the law school) with the sole responsibility for drafting the new legislation. The current process whereby a person or department designs and submits for review legislative acts is not the process of legal reforms that this study recommends. Hearings and local workshops with interested parties should be held to hear the views of citizens on land policy needs, legislation outside Zambia should be thoroughly reviewed, legislation should be drafted, hearings and local workshops should again be held to review the legislation, changes will again need to be made, and finally the legislation will have to be enacted. This process, while requiring considerable effort, will stand a much better chance of developing a policy that is acceptable to government, the people, and the business community alike, than the top-down legislation that is easily enacted by government but is rendered ineffective by noncompliance and illicit activity.

B. Land administration

Specific proposals on decentralization and land administration are presented in chapter 3, and on land valuation, in chapter 4.

C. Research

The process of land tenure reform will need to be complemented by a program of policy-relevant research. The below-mentioned research activities are indicative, and neither exhaustive nor mutually exclusive. Chapter 3 covers further research issues related to land registration, chapter 4 on land markets, and chapter 7 on data.

1. Land tenure in customary lands. There is an inadequate understanding of land rights, inheritance, dispute processes, land markets, and resource management in the customary areas that will need to be alleviated before any legal changes affecting rural areas are considered. Detailed field-level research is needed in different areas of the country and under various socioeconomic contexts (peri-urban versus rural). Answers need to be sought to such indicative questions: Is tenure security robust or weakening, and by whom, for whom, and where? Is tenure insecurity constraining commercial and agricultural investment? To what extent are chiefs encumbering land transfers, undermining security of transfers, or resisting title? To what extent is the expansion of the leasehold system undermining the security of producers under customary arrangements? Do women and minorities have equal and free access to land or are they constrained by customary norms and traditions?

2. Land tenure at the periphery of titled areas. The conversion of customary land into State Land represents a second priority area of research. Land is converted through the process of sporadic land allocations and acquisitions, demarcations, and allocations of newly opened lands and through resettlement schemes. It is at the periphery of these transfers that potential conflicts between state and customary tenures will be evident and where equity issues will be most manifest. Priority questions include: What are the characteristics of groups and individuals acquiring land in resettlement schemes and newly opened farming areas? To what extent have women and minorities been able to

participate in the land-acquisition process? What is the relationship between titling, agricultural expansion, land utilization, productivity, and credit use?

3. Informal settlement. In addition to formal structured programs aimed at moving people from urban to rural areas, spontaneous settlement is occurring through informal markets as indicated by the rapid increase in small- to medium-scale emergent farmers. Land use planners in the MOL contend that the result is irregular and dispersed settlements that increase private and social costs in the longer run through inefficient land use, poor resource management, and higher land disputes from encroachment. The highly aggregated CSO data would not provide sufficient detail on land market processes or resulting land degradation problems should they exist. A rigorous program of field study is required to evaluate rates of agrarian expansion, how land is being acquired, what property rights are being transferred, whether tenures are secure, and how productivity and market access compare with those people involved under more formal modes of settlement.

4. Productivity and resource management on newly opened lands. The ability to function in the land market will depend on size and access to capital, thereby influencing the viability of smaller farms. To the extent that title is increasing access to financial services and farm size is enhancing access to markets and technology, targeted smallholder assistance would be required to ensure land access and maintain competitiveness in the marketplace. High rates of land underutilization and absenteeism on settlement schemes would suggest the need for measures to improve on settler selection and to increase land utilization through land market reforms and enhanced market access. Nowhere in the data available is there detailed information on types of agricultural activities, output, input use or incomes of the settlers, or indicators of land resource conservation. Among priority questions are the following: How do land use and market access vary among regions and farm-size categories, and what factors explain the differences? To what extent is land underutilization and productivity (customary and state areas) caused by land market constraints and inadequate property rights to land and water versus other factors? What scale-economies exist in Zambian agriculture? Is the expansion that is occurring from opening new lands resulting in unacceptable levels or risk of environmental degradation? How are differences in resource access, technology, extension services, input distribution, commodity marketing, and tenures affecting resource management?

5. Gender. The Zambian constitution or land legislation do not make explicit gender biases. Nevertheless, there is anecdotal evidence suggesting voluntary or involuntary biases in land administration under both formal and informal tenures that are affecting women's access to land, title, land markets, and participation in settlement schemes. In-depth empirical research at all levels of land administration is needed to assess the scope and depth of the gender problem. Biases may require either explicit legal provisions ensuring and protecting women's rights, administrative changes in the current process of formal land allocation and title, or special programs to assist women and minorities in gaining access to land.

Annex 1.1: Resolutions of the conference

I. Methodology

1. On the subject of Land Policy and Legal Reform, it is important to adopt short-term and long-term approaches.
2. In the short term, use should be made of seminars, workshops, and random research studies as a method of consultation.
3. In the long term, appointment of a commission of enquiry is a more appropriate and long established method of exhaustively probing, by way of wider consultation, all pertinent issues and problems relating to the subject of land.
4. In the current and urgent context of the exercise there is need to constitute a representative group of about fifteen (15) from participants in this conference to devote a little more attention to the issues raised in the papers presented and resolutions agreed to before submitting final conclusions.
5. There is need of establishing a **permanent body which would supervise**, monitor, and study recurrent issues relating to land on a more systematic and routine basis.

II. Classification of land type or interest and duration in customary land and state land

1. That it be recognized that historical and colonial considerations in the molding of the current categories of land are out-dated, that therefore consideration be given to the reclassification of land to serve contemporary needs and requirements of the country.
2. That the nature of the interest in the reclassified land tenure system reflect customary as well as national interest thereof bearing in mind that interest in perpetuity may pose problems of regulation and the reversion of the residue to the National State of Zambia.
3. That there be two classes of land, namely state land and customary land, and the respective interests be a ninety-nine (99) year lease with provision for automatic renewal and customary interests that can be subject to specific grants of specific durations to be determined according to the purpose for which the grant is made.

III. Land registration system

1. There is need to strengthen the land registration system by decentralizing both the functions of the Lands Department and Survey Department to the provincial level.
2. Multi-holding of land should be introduced to facilitate acquisition of sectional titles.
3. There is a need to develop a land information system.
4. There is need for legal provision to support computerized registration of titles.

IV. Allocation of land and land administration

1. The land allocation system be strengthened and improved upon *through* decentralization of functions and powers of the Commissioner of Lands by provision of adequate personnel, facilities, and resources.
2. In the allocation of land all relevant institutions and authorities be consulted to take part in influencing decisions on the subject.
3. That in the customary land sector in particular, consultation should be extended to the traditional authorities.
4. Land allocation boards be set up at provincial and district levels to advise on allocation of land.

V. Role of chiefs

That the role of Chiefs in policy formulation and their participation in allocation of land in the customary sector or domain be explicitly recognized and further provision, administrative or otherwise, be made to enhance their participation in planning and development of land at both district and provincial levels.

(Annex 1.1: Resolutions of the conference, cont.)

- VI. Law reform **and** consolidation of statutes relating to land
- A. Minor amendments
1. State, Reserves, and Trust Land Orders of **1928-1964** be immediately repealed and a new **land** bill initiated to take **account of the new classification of land and the interest therein.**
 2. That the Commissioner of Lands in consultation with all interested groups, in particular the Ministry of Legal Affairs, Law Development Commission, and Law Association of Zambia, identify all statutes relating to land which require immediate revision and effect the necessary amendments.
- B. Major law reform and policy
- That a completed consolidation of Land Laws and Statutes be undertaken culminating in a comprehensive land bill and land registration bill discarding all outstanding anomalies.
- VII. Status of women and vulnerable groups
- That the universal principle of equality be applied to the ownership of land by women and vulnerable groups which entail a prohibition of discrimination of women and vulnerable groups in the ownership of land.
- Further, administrative and legislative measures, if necessary, be put in place to remove any discriminating practices and other laws.
- VIII. Security and credit facilities
- Government should urgently explore access to financial facilities which have been beyond the reach of either land holders or developers outside the formal commercial sector.
- IX. Land utilization and regulations
1. Agricultural, commercial, and emergent farmers:
 - a. Professional assessment of land use in all categories of land should apply before allocation.
 - b. National land use plans should be adopted to reinforce utilization of all categories.
 - c. Existing regulations of land use in all categories of land should be enforced.
 2. Urban and rural human settlements:
 - a. Existing settlements should be upgraded whereas new ones should be regulated and planned for to curb rural-urban migration.
 - b. Government should also allocate those settlements where upgrading is impossible to more orderly planned ones.
 - c. Conducive conditions should be created in rural areas to retain people.
 3. Land development fund: We strongly recommend that this fund be created to improve infrastructure in rural areas to facilitate settlement.
 4. Taxation, consideration of ground rent: Taxation and ground rent should encourage development and discourage underutilization of land.
- X. Land value
1. In State Land, market forces should determine the price. In certain circumstances Government should provide concessionary price for land to those vulnerable groups of the population.
 2. In customary land, a system of pricing, if need be, should be left to evolve according to rural conditions.

Chapter 2:

Land Administration: Processes and Constraints

by

John Bruce, Fortune Kachamba, and Michelo Hansungule¹

I. Current framework for land administration

All land in Zambia is vested in the president, in trust for the people of Zambia, under the Land (Conversion of Titles) Act, 1975 (see p. 16), SECTION 4. The president has delegated land administration to the Commissioner of Lands under Statutory Instrument No. 7 of 1964 and Gazette Notice No. 1345 of 1975, as amended. Land in Zambia is divided into State (formerly crown), Reserve, and Trust Lands, as well as park reserves.

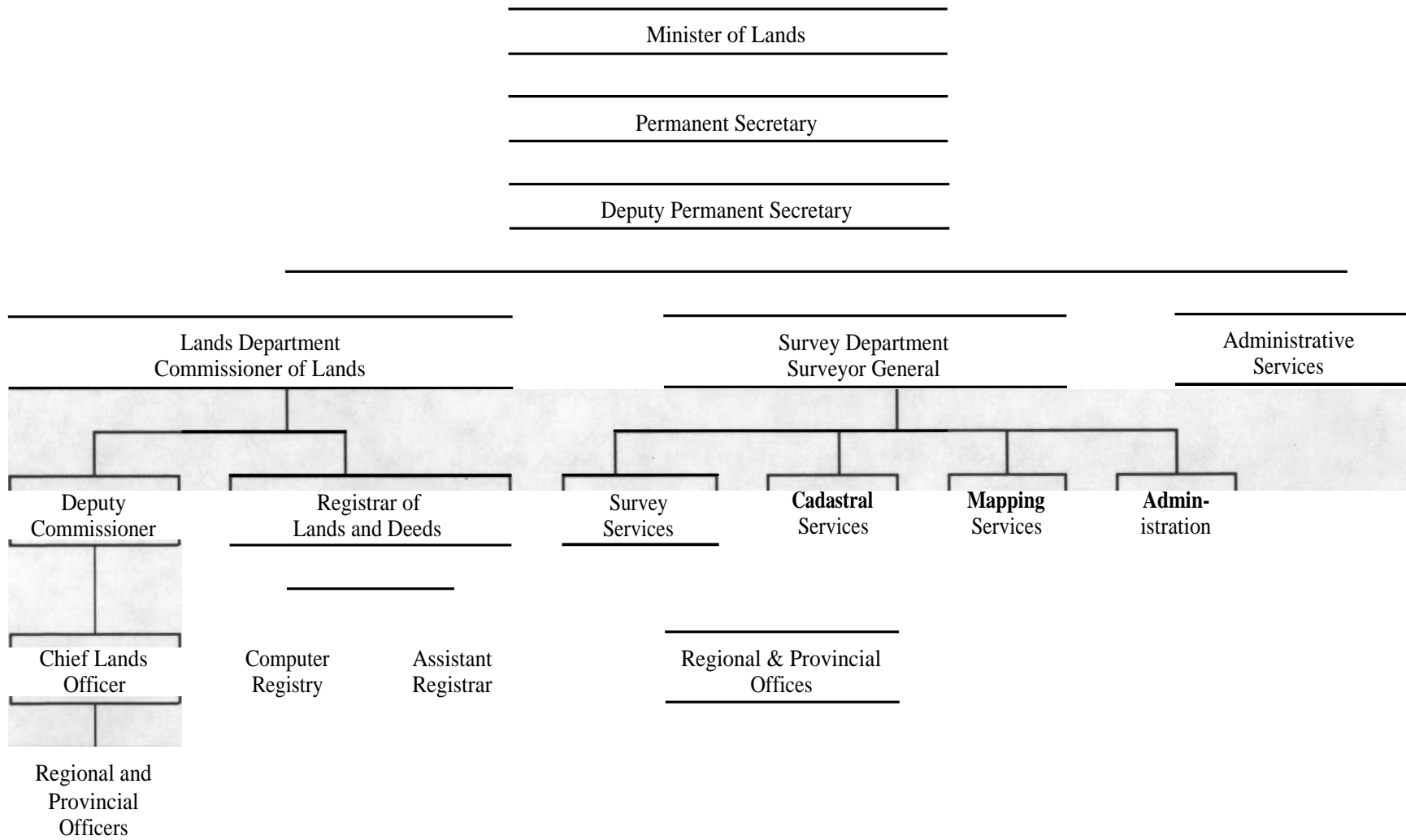
The Commissioner of Lands administers the State Land, appropriated by the colonial power for settlement of whites. The commissioner allocates this land as farms and agricultural smallholdings, and as stands for buildings and other uses, all under leasehold. There is also a state-farm and parastatal sector. The entire State Land amounts to less than 6 percent of the total land area of Zambia, but it is relatively good-quality land, advantageously located near the rail lines. All land in municipalities is also State Land. The larger municipalities now administer land independently under the Housing (Statutory and Improvement Areas) Act, 1976, i.e., statutory land and housing land.

In the Trust and Reserve Lands access to land is governed by customary law and institutions. The Reserve Lands were set aside for the original inhabitants of Zambia by the colonial authorities. The Trust Lands were at one time destined for white settlement but white settlement did not materialize to the extent anticipated. In both the Reserve and Trust Lands, land has been in the hands of traditional land users. The government, following the example during the colonial period, has for the most part continued to rely on traditional authorities for the allocation of that land to farming households. However, the Commissioner of Lands also allocates land in these areas directly to other users, such as outside investors.

The work of the MOL consists of the allocation, survey, and registration of leasehold titles in the State, Trust, and Reserve Lands, and in both urban and rural land. Under the legal breakdown of responsibilities, allocation is handled by the Lands Department (headed by the Commissioner of Lands), survey by the Survey Department (headed by the surveyor general), and registration by the Lands and Deeds Registry (headed by the Chief Registrar) under the Commissioner of Lands. See figure 2.1 for an organization chart. Recently, the former minister created a committee chaired by the deputy permanent secretary to review allocations, and asserted authority in the P.S. to make allocations, but this has no basis in law.

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Figure 2.1: Organizational chart of Ministry of Lands



The ministry has historically carried out its functions in a highly centralized fashion, and despite a several-year-old policy of decentralization, it continues to do so. Lack of funds and lack of qualified staff are cited as causes of the slow progress. As will be seen later, some ministry staff are now posted to each province, but decision-making and record-keeping have not yet been decentralized.

Leasehold was the dominant tenure for titling from the colonial period. The very small amount of freehold land, amounting to less than 1 percent of the land, was converted to 100-year leasehold by the Conversion Act. Leasehold tenure is today available from the state as follows. The commissioner grants leases of up to 99 years on State Land. In Reserve Lands, Zambian nationals can also receive leases up to 99 years in duration. In the Trust Lands, they can be granted a right of occupancy up to 99 years.

There are significant restrictions upon the right of noncitizens to hold land. Under Amendment No. 15 of 1985 to the Conversion Act, no noncitizen may receive a lease, unless the noncitizen is an investor within the terms of the 1993 Investment Act, and the application has been approved in writing by the president. In Reserve Lands, "nonnatives" cannot receive lands for more than 5 years, except in the case of a religious or charitable organization, in which case the lease can be for up to 33 years. There are no special restrictions as regards the Trusts Lands, but the president's consent is necessary in all cases.

The leases are heavily concentrated in the State Land, where a 99-year lease is typical. To be registered, a 99-year lease requires a survey which complies with the relatively rigorous accuracy requirements provided for under the Survey Act. The MOL does not have the necessary technically competent staff to meet the demand for survey at this standard. When a Survey Act survey is not feasible, a 14-year leasehold is granted and registered on the basis of a sketch map (see section VII below). The 14-year leases have been widely used in a number of contexts: in settlement schemes on State, Trust, and Reserve Lands, on land in municipalities, and for leaseholds granted in the Trust and Reserve Lands.

Leases are granted with only a charge for services. Ground rents, despite several increases, have been so nominal that they have not been worth collecting. The rents remain nominal because raises do not keep pace with inflation. Ground rents are paid sporadically, tending to be paid only when the land is to be mortgaged or transferred, by which time the value of the rent has been decreased by inflation. There are no penalties for late payment. Current ground rents are presented elsewhere in this report.

Land is administratively allocated. When State Land becomes available, it is advertised and applications for leasehold requested. Availability generally comes about through abandonment or resumption by government for failure to comply with leasehold conditions, but there is also a small amount of unallocated State Land. The land can be allocated to anyone who is Zambian; beyond that, there are no clear legal criteria. A Land Allocation Committee within the ministry advises on allocation decisions (see section III below).

On Trust and Reserve Lands, a similar procedure is followed in settlement-scheme situations. But in most instances outside the settlement scheme context, a sole applicant for the lease identifies the land requested. A new ministry regulation seeks to require at least three applicants for each leasehold, but this may not be practical in Trust and Reserve Land situations, and it is clearly inappropriate where the applicant is already the customary owner. The ministry requires that the chief

of the area where the land is located consent in writing to the lease and that the local council must also concur in the lease.

The appropriate size for allocation is decided according to administrative guidelines developed within the ministry. They call for an estimation of the applicant's present and anticipated income, and relate it to investment costs, an evaluation of the applicant's management capability, and land availability in the area concerned. The guidelines are undated, but they envisage appropriate sizes for ranching (2,000 hectares), mixed farming (1,000 hectares), dairy (100 hectares), horticulture (200 hectares), and small stock (100 hectares). The guidelines predate the 250 hectare limitation in the land circular of 1985, but that limit can be and is surpassed with the consent of the minister.² The guidelines are reproduced in annex 2.1.

Lessees can assign their leases to others or mortgage them only with the consent of the Commissioner of Lands (SECTION 13 of the Conversion Act). In the case of scheduled farms under the Agricultural Lands Act, the Agricultural Land Board is required to approve such transactions, but it is now defunct and the consent is provided by the commissioner. There is no requirement of consultation with the chief or council.

Leasehold documents require certain development of the land by the lessee. Failure to meet these conditions constitutes breach of the lease, allowing termination after six months' notice to the lessee of the government's intention to terminate. The ministry appears to read these conditions as not only requiring the initial investment specified, but the maintenance of that investment over the life of the lease. At the same time, because of a lack of staff and transport, there is no systematic inspection for compliance with these conditions, and breaches are commonly identified by persons seeking to have the land taken from the lessee and made available to them.

II. Lessons from the African experience

At independence, a great many countries in Africa opted for state ownership of land and leasehold tenure rather than freehold tenure. The latter was associated with white ownership of land in many countries. State leasehold, if sufficiently long-term, was considered to provide adequate tenure security and economic incentives to households for land development, while at the same time allowing the state to maintain control of the landholding structure. To some, there were parallels to customary land tenure, with the state assuming the role of the chief, holding land in trust for its people and allocating it according to need (Bruce 1989).

The experience with state leaseholds has been troubled, however. The problems do not stem from the necessary characteristics of a leasehold (since it is possible to draft a lease which is virtually a freehold except in the most formal sense), but rather lie in the policies which are implemented through leasehold tenure.

² The National Lands Committee in its 27 April 1994 comments to this report suggested a maximum of 100 hectares per applicant because land is limited and there is danger that chiefs become carried away with promises of development and begin allocating large tracts to local and foreign investors.

In most leasehold systems (including that of Zambia), land is provided at little or no charge, and subsequently the value of the land is not allowed to be reflected in transactions. Land may be said, as was the case in Zambia, to have no value, indicating that government as a matter of policy refuses to recognize its value. This raises several problems. There are distortions in land use created when market forces are not allowed to determine the allocation of land. Land near Lusaka is often underused precisely because it has been treated as a free good. There are problems with urban elites, both governmental and commercial, grabbing land from rural people. Because the land is virtually a free good, cost puts no brake on their ambitions. In some counties, such as Guinea-Bissau, this landgrabbing has been extensive (Bruce and Tanner 1992), and in a number of countries it has caused serious, often interethnic, conflict (Bruce 1989; Platteau 1992; Binswanger et al. 1993).

Such systems, almost inevitably, have serious corruption problems and encourage rent-seeking behavior. The tendency towards corruption is strong because a limited amount of a valuable good is being administratively rationed and allocated virtually for free. The gap between the real value—what someone would pay to get the land—and the value recognized by government is the amount which those seeking land will be willing to pay in bribes.

In addition, because state leasehold systems do not rely on market forces to exert economic pressure for land development, they must instead rely upon contractual development conditions. Development conditions have in practice proven very problematic. If they require a specific type of development, for instance a coffee farm or a petrol station, they are too rigid and impose economically irrational limits on behavior as rapidly changing economic circumstances alter the most profitable use of land. On the other hand, if the development conditions are vague, they are difficult to enforce. There is a tendency for holders to be harassed by reports of noncompliance from those seeking to replace them on the land, and again there is great potential for corruption in the evaluation of compliance. In many countries, political dissent has caused a review of the dissenter's compliance with development conditions. In fact, there has been almost complete failure in most countries to systematically and fairly evaluate the fulfillment of development conditions. The requisite staff and resources, especially transport, are usually not available. Alternatives to development conditions include less-direct land use controls, such as zoning enforced through fines, plus mechanisms such as economic ground rents which exert pressure on landholders to either place their land in economically profitable uses or, if they cannot afford to do so, to transfer the land to someone who can develop it.

Finally, the experience with leasehold systems shows that it is simply difficult to find the resources for a national system of land administration. It is one thing to implement a leasehold system in a settlement scheme, quite another to imagine the costs and staff requirements of bringing all the land in a country under such a system. Even a freehold system requires an administrative infrastructure—the cadastral and registry system—and cannot be expanded without concern for costs.

In light of these problems, there is a growing realization that it is not feasible to broadly replace indigenous tenure systems with leasehold (and to a lesser extent freehold) in the short or even intermediate term. The need is to identify what the priority areas should be for the limited tenure "replacement" which can be afforded. Replacement is likely to be most effective in rather limited geographic areas where market forces, including produce markets for relatively high-value commercial crops and rural financial markets, are well developed. For other areas, the need is for tenure-change strategies which stress more evolutionary processes and may involve continued reliance for some time on the relatively cost-effective customary institutions of land administration.

Zambian experience and needs will be examined with these issues in mind.

III. State leasehold process

The process of getting an initial lease of land from the ministry is set out in the ministry's circular No. 1 (see p. 21). The circular is a set of instructions addressed to all provincial permanent secretaries and district executive secretaries. It includes the forms to be used in applying for land and imposes certain important limitations. There is a basic pattern which is common regardless of the location of the land, but details differ.

For Trust and Reserve Lands, the applicant for a lease begins with the local headman and chief in whose territory the land is located. The State Land and Reserves Orders, SECTION 6A(1), and the Trust Land Orders, SECTION 5(2), require that the president consult local authorities before granting a lease or a license in their area. The circular requires that the chief consent to a lease and that the lease be considered by the appropriate subcommittee of the rural council and then approved by a meeting of the full council. In the case of a resident villager, there is no need for the headman to identify his land, only to review the lease application.

For a stranger or nonvillager seeking land, the process begins with the headman of a particular village (there may be a dozen or many more in a chiefs area) who receives the application for land under a lease.¹ Applicants seeking land may go to a particular headman because they have friends there or someone (e.g., a district agricultural officer) indicates the village has good land available. After discussion in the village, if inclined to recommend the land and lease, the headman takes the applicant to meet the chief. There may be 2-5 chiefs in a district. After discussion with council, the chief may give consent to the application. This usually takes the form of a simple letter to the local council.

Before the application can be presented to the council, however, there must be a sketch plan of the land for which application is made. This will generally be done by an agricultural assistant from the Ministry of Agriculture's Land Use Planning Office, who usually comes from the provincial office for this purpose. The assistant has access to a 1:50,000 topographic map, on which the applicant locates the land. The assistant then visits the parcel, verifies the location, and clears a 2-4 meter swath around the boundary. Sometimes this is done in the presence of the headman, at other times in his or her absence. This is a critical step in making sure everyone understands which land and how much is involved. A sketch map is prepared at the office based on the field visit and the topographic map base. The applicant will have the sketch plan signed by the chief. Until recently, the Ministry of Agriculture provided this service for free but now has begun to charge for its services.

In the case of settlement schemes on Trust and Reserve Lands, the land for the entire settlement is obtained from the chief at the outset. The chief is not involved in the process further, nor in subsequent leases to the settlers. The parcels are demarcated and assigned to the settlers. At the end of a two- or three-year probationary period they can apply for leases to the Commissioner of Lands through the council.

In the case of any State Land, there is no need for a chiefs consent. It is the municipal survey officer who will do the sketch map, or failing such an officer, a staffer from Town and Country

¹As indicated in chapter 5, either the headman or the chief may be responsible for allocating land, depending on the region. Hence in certain instances the application process may start with the chief.

Planning, often from a Regional Planning Authority. While the wording of the circular suggests that there are likely to be predemarcated stands to be allocated, this is often not the case.

In all the above situations, a sketch map is the basis for a 14-year lease. If a 99-year lease is desired, the applicant must apply for a survey by the Survey Department of the MOL, either from Lusaka or a provincial office, or from a private surveyor (see section VII below). The former is more expensive, the latter involves long delays. The ministry's charge is K40,000/day, including both fieldwork and office work, plus expenses such as transportation, accommodation, and food as may be necessary. It is not possible to give a specific figure for these costs, which tend to be negotiated on a case-by-case basis. Moreover, some elements are provided directly by the applicant, for instance, use of a vehicle. (See figure 2.2 for a list of ministry fees.)

The process up to this point will have taken several months, sometimes years, since the process involves convincing local people of one's serious intentions to develop the land.

At the council, a K2,000 fee for paper is charged. The application is first considered by the Plans, Works and Development Committee, a subcommittee of the council. The committee will interview the applicant and may visit the parcel, especially if none of the councilors is familiar with the location. This committee will make its recommendation to the full council, which must give final approval. The full council may meet only every three or four months, partly because this time frame is so stipulated in Council Standing Orders, and partly because of the costs of bringing councilors from different parts of the district. The result is considerable delays in application approvals. A council may, if it chooses to do so, meet on special issues or hold extraordinary sessions.

The council then forwards the application to the ministry's provincial office or the ministry's headquarters in Lusaka. The provincial office lands officer is not actually in the line of authority for land allocation, and if it receives an application from council, it can only inspect the paperwork to make sure that it is in order then pass it on to the Lands Department in Lusaka. For settlements, the paperwork goes through the provincial agricultural officer.

The applications normally travel by mail, which is regarded as reliable and reasonably prompt. When the office concerned has no stamps, the application may wait to be hand-carried by an official travelling to Lusaka. On arrival in the Lands Department, it goes to the Registry, which gives the application a temporary number and sends it to the relevant regional office in the Lands Department. Within the Lands Department in Lusaka, the work is divided into a Northern region (Eastern, Western, Copperbelt, and North-Western provinces, and part of Lusaka province) and a Southern region (Southern, Central, Luapula, and Northern provinces, and part of Lusaka province).

The regional officer reviews the file to determine if everything is in order. Roughly one in ten is returned to the district because of problems with paperwork. If there is no such problem, the regional office sends the file through the Registry to the Land Department's Folio Section (the Map Room). All files moving between offices in the ministry move through the Registry, primarily to ensure that the location of a file can be determined at any time, but also, since records are computerized, to allow the relevant acts to be recorded in the computer file at the Registry. In the Folio Section, the map accompanying the application is plotted onto a master map on which all other leased parcels are shown to make sure the parcel is available and that there are no overlaps with existing parcels. This process in the Lands Department takes about one week.

Figure 2.2: Survey Department fees and charges, 1 August 1993**Cadastral fees**

1) *Daily rate.* Excluding subsistence and transport costs, for each survey team including related office and drawing work shall be 40,000.00 (prorated when more than one parcel).

2) *Subsistence.* A land surveyor **engaged** on a survey away from headquarters shall, when free board and lodging are not provided, charge reasonable hotel or subsistence expenses.

3) *Transport.* Actual costs to include fuel and oil or public transport used in the course of the survey.

Surveyor general's charges

1) *Land surveyor's license.* In accordance with subsection 9 of the act shall be 3,000.00. Surveyor general may remit this fee for a license issued to a land surveyor in government service but the fee shall become due should the surveyor leave government service and continue to practice in Zambia.

2) *Taxing account.* For taxing a land surveyor's account, the fee shall be , 2.5 percent.

3) *Examination fee.* Examination of survey records, general, and working plans the fee shall be 1,600.00 each stand; 1,600.00 each lot or farm in urban areas, and 3,200.00 each lot or farm outside urban areas.

4) *Cadastral drawing charge.* For work involved in the preparation of certified true copies of plans or diagrams, the compilation of plan and diagrams where fieldwork is not required, the drawing of plans and diagrams for private surveyors, and any other miscellaneous drawing work, the charge shall be 1,600 per hour for each **draughtsman** excluding materials (at cost).

5) *Photogrammetric survey charge.* Aerial triangulation, plotting, and other office-based photogrammetric work shall be 48,000.00/day per photogrammetrist excluding materials and new aerial photography (at cost).

Noncadastral fees

Printed Maps: price payable by all map users within Zambia including departments (postage at cost).

Topographic Maps	1,000.00
Street Plans and Tourist Maps	1,500.00
ICAO Charts	1,500.00

Miscellaneous and Atlas Charts

International and Regional	1,500.00
National	1,000.00
Prices payable by all map users outside Zambia	US\$10.00

Dyeline prints (charges per square decimeter for paper/film)

Materials supplied by Survey Department	30.00/90.00
Materials supplied by customer	10.00/40.00

Photographic products (Materials supplied by customer/client, half the total cost shall be charged)

Contact prints	1,700.00
Paper P/DM ²	120.00 (single weight)/140.00 (double weight)
1 m x 1m paper	12,000.00 (single weight)/14,000.00 (double weight)
Diapositives 25cm ²	2,000.00
Film P/DM ²	200.00
Dyeline paper copy P/DM ²	100.00
Ozalar film P/DM ²	250.00
Computer printouts of survey data	800.00 per page
Photocopies	80.00 per A4 page and 160.00 per A3 page

Nonstandard services (survey and mapping projects, other than cadastral, including field survey, cartography, and map-related photo-reproduction or photogrammetry)

Field survey, each field team per day	40,000.00
Cartographer, per day excluding materials	20,000.00
Photo reproduction staff, per day, excluding materials	20,000.00
Photogrammetrist, per day, to include stereo plotting but excluding materials	US\$110.00
Photogrammetrist, per day (planning, sorting, and preparations)	12,000.00

All figures in Zambian currency unless otherwise noted. Source: Survey Department, PO Box 50337, Lusaka.

If the parcel is available, the file is sent via the Registry to the Surveys Department, where it is checked against a master map in the Property Registration Section (Plan Room), then given a number and returned via the Registry to Folios for the number to be noted. This may take one month. Folios then sends the file back to the regional office for presentation of the case to the Land Allocation Committee (LAC), which meets weekly. The LAC will advise the commissioner who makes the final decision. The new committee chaired by the deputy permanent secretary has taken over this function, and makes its recommendations to the permanent secretary. (For "scheduled farms" listed in a schedule or annex to the Agricultural Lands Act, the appropriate agency for the allocation would be the Agricultural Lands Board, but this board no longer functions.) If the allocation is approved, the regional office or headquarters then sends a letter of offer to the applicant by post, stipulating the amount of the lease charges the applicant is expected to pay. This takes a minimum of two weeks, and often much longer.

If State Land is involved, especially in a town, planning permission may be needed before an offer can be made. If the council where the land is located is itself a Planning Authority, this will have been handled earlier, but it may be necessary for the applicant to pay certain service charges to the authority before he or she can get a certificate of title. If the council is not a Planning Authority, the offer is an offer in principle and requires the applicant to obtain planning permission. Only when that permission is obtained and communicated to the Commissioner of Lands will an offer be given. The time to obtain planning permission will vary considerably depending on the particular planning authority. The Lusaka provincial planning authority is quite prompt, but one also hears of other cases in which the time needed could be as much as five months. It can be much longer if the land must be repossessed before it can be reallocated.

If there is not a need to obtain planning permission, the applicant accepts the offer by paying the lease charges. Unless there are special reasons for delays (such as the applicant having difficulty finding the funds for the payment or confusion as to the roles played by different agencies, as when the council is also the planner), this is usually accomplished about two months after the letter of offer is mailed. Once the offer is accepted, the regional office requests the Surveys Department to prepare a sketch plan for the lease agreement itself. Where the land has been surveyed, the regional office will request a survey diagram rather than a sketch plan. On receipt of the plan, the regional office prepares a lease agreement for the successful applicant and mails it to him or her to sign. Another two months may elapse.

The applicant signs the lease and returns it to the regional office and sends it through the Registry for the commissioner's signature. After signing, it is sent through the Registry to the Chief Lands Officer, who witnesses the signature and returns it through the Registry to Folios. Folios records the lease and then sends it on to the Lands and Deeds Registry for registration. There, the lease is received by the Lodgement Desk and then forwarded to the registrar. The registrar reviews the lease for completeness and, if it is complete, signs a processing schedule. The lease is entered in the register. A title deed is prepared by the registrar and sent to the Commissioner of Lands, who sends it to the regional office who mails it to the applicant. This process, after the applicant returns the signed lease to the ministry, may take ten days.

The process is largely the same for the different categories of land, except that chief's permission must be obtained for Trust and Reserve Lands and planning permission becomes an issue in many State-Land contexts.

The processes for consents to transactions concerning leases are more expeditious. All transactions concerning leases must have the state's consent under SECTION 13 of the Conversion Act. The consents are available only in the head office of the ministry. No consents from chiefs or district authorities are necessary. The structure of consent fees at various periods from 1985 to newly proposed rates for 1994 are summarized in table 2.1.

Table 2.1: Structure of revenue of the Lands Department: Consent application fees^s

Year	Assign/sell transfer	Sublease	Mortgage/ charge	Subdivide
101 /01 /85	K100	K100	K50	K50
01/01/88	i) K100 for CMV below K100,000. ii) K300 for CMV between K100,000 and K300,000. iii) K500 for CMV above K300,000.	i) K100 for annual rent K10,000 and below. ii) K300 for annual rent between K10,000 and K30,000. iii) K500 for annual rent above K30,000.	K100	K100
01/01/91	i) K300 for CMV K100,000 and below. ii) K600 for CMV between K100,000 and K300,000. iii) K1,000 for CMV above K300,000.	i) K600 for annual rent K10,000 and below. ii) K600 for annual rent between K10,000 and K30,000. iii) K1,000 for annual rent K30,000 and above.	K250	K1,000
01/07/91	i) K600 for CMV K10,000 and below. ii) K1,200 for CMV between K10,000 and K30,000. iii) K2,000 for CMV above K30,000.	K2,000	K500	K5,000
01/01/94	K25,000	K25,000	K5,000	K50,000

- a. The consent application fees came into effect on 26th January 1985. Prior to that date all consent applications for dealings in land were free of charge. Figures in the table are the respective fees as they were being reviewed upward from time to time.

For an assignment or transfer of the lease, the applicant must pay a K2,000 consent fee (1993 rate). He or she must produce photocopies of the national registration card of the buyer, if an individual, or, if a company, form 23 from the company's registry, and copies of the national registration cards of all the shareholders. Alternatively, an investment certificate from the Investment Centre can be produced to establish that the applicant is a Zambian or qualified to hold land in Zambia. The applicant must also show that the ground rent is paid up to date and that he or she is not

in breach of **any** of the covenants in the lease. The file is sent to the Valuation Department in the Housing Conglomerate for assessment of the "unexhausted value of improvements." A property transfer tax of 5 percent of the value must be paid. The commissioner will grant consent if the applicant has fulfilled these conditions. The process may take five weeks to one year. The onus of registering the transaction is on the parties to the transaction.

Consents are similarly required for subleasing, mortgaging, and subdividing leaseholds. The consent fee for subleasing is K2,000, for mortgaging K500, and for subdividing K5,000 (1993 rates). The process is the same, except that in the case of a subdivision the applicant must provide an approved sketch plan showing the proposed subdivisions. In the case of a subdivision, the onus is on the individuals to get the proposed subdivisions numbered and surveyed by the surveyor general.

In general, the processes for consents are fairly straightforward. Rather, the issue is why they are needed at all, except perhaps as a means of collecting ground rents and the property transfer tax. If land values were recognized and self-declaration of the consideration used as the basis for a property transfer tax, the declared price could by law be made the base for compensation in case of a taking by the government, and underreporting would cease to be a major problem.

The basic problems lie in the process for initial grants of lease. No one step seems to take an unreasonable amount of time, yet in the field, one regularly hears stories of files that have been sent to Lusaka and then nothing heard for years. The various parts of the MOL tend to blame one another for delays, and the ministry as a whole emphasizes the delays that occur before the application even reaches the ministry and the delays caused by reliance on staff from other ministries or the municipalities. The process usually goes well enough so long as all is in order, but once a mistake is noted and the case moves back down through the system, it often goes into administrative limbo. It was estimated a few years ago that there are between 25,000 and 50,000 applications pending, some from many years ago (ODA 1989).

IV. Overcentralization and overarticulation

The leasehold system is too centralized, and the procedures for leasing reviewed above involve far too many separate stages and decision-makers. Each step in and of itself is not very time consuming, but at each stage there are possibilities for delay caused by backlog of work, absence of officials, clerical error, or any number of other reasons. The process emphasizes precise compliance with all requirements, and so it is not uncommon for files to be sent back down the chain to remedy errors and omissions. Once confusion develops in this many-staged process, it is very difficult to resolve. Troubled cases cycle up and down in the system, fraught with misunderstanding of what is required, and very substantial amounts of time must be devoted to them over several years before they are finally resolved.

Part of the answer lies in decentralization. When applicants can come to the office in the Lands Department where their papers are being processed, confusion can more readily be resolved than through an exchange of documents through the mail. Though it is not in theory necessary, those seeking action by the ministry very often have to follow up in person. Proximity to the client is an important factor and reduces follow-up costs to the client. These considerations also apply to some extent, though less forcefully, to the work of the Land and Deeds Registry. For the Department of

Surveys, the existence of a survey capability closer to the land to be surveyed obviously can reduce costs, which have been the major obstacle to applicants' obtaining 99-year leases.

The ministry has for the last several years been opening offices in provincial capitals. Both the Lands Department and the Department of Surveys now have some staff in each provincial capital, though these are skeleton staffs. At present, the Department of Surveys has offices in Kabwe, Ndola, Livingstone, and Kasama. The Department of Lands now has some staff in every provincial capital. There are plans to move the Northern Regional Office from headquarters to Ndola, and to establish a Lands and Deeds Registry there for the northern provinces. The pace of the process has been constrained by a lack of funding and qualified staff.⁴ Support for establishment costs for provincial offices is a clear priority for donor assistance, provided the ministry demonstrates that it can generate the revenues necessary to maintain the system.

But there are also some questions that need to be raised about the decentralization process to date. First, the purpose and implementation of the opening of the new offices has not always been well thought out. There is, for instance, no centralized supervision of Lands Department and Survey Department offices at the provincial level. They operate as if they were from different ministries, each reporting to its home department in Lusaka. The Lands Department's provincial-level staff lacks vehicles and, more important, clear terms of reference. While staff have been decentralized, decision-making has not. The provincial office simply examines the papers and if they are in order, passes them on to Lusaka. The result is simply to interpose a new layer in the process with no clear rationale for its existence.

The program must also be examined carefully with a view not just to moving ministry personnel physically closer to the land concerned but to reducing the number of steps involved where possible, or at least never increasing the number of steps. To date, there is not a true decentralization program.

While a presence at provincial level is obviously potentially useful, the shortage of trained staff has inclined the ministry to think in terms of a regional solution. There is the beginning of a regional office for the north in Ndola and one for the south in Kabwe. Before proceeding much further there is a need to rethink the relationship among these offices and the head office and where final decision-making will be located.

The issues involved are not simple. It would be convenient to selectively delegate final decisions which are more complex or technically demanding than others to lower-level officials. But there are also compelling reasons why the authoritative records of those final decisions need to be maintained at one level, to permit easy cross-referencing and communication among the decision-makers. Some possible approaches are suggested in section XI below.

⁴ The Ministry of Lands in late 1993 authorized the Lands Department to double the size of its staff in order to carry out the decentralization.

V. Institutional coordination

Another reason for the poor performance of the system is that the MOL must rely on numerous other government agencies. Difficulties in coordination with those agencies account for considerable delay and confusion. The point is not to place blame, as too much time is already spent pointing fingers. Rather, it is important to understand what flaws in the system lead to such great delays.

Having to rely on planning approval and services from local authorities is a first problem area identified by ministry staff. For the planning of stands for various purposes, the Lands Department relies on Municipal Planning offices, where they exist, or alternatively on the Department of Town and Country Planning in smaller towns and in rural projects such as settlement schemes. When the Lands Department makes an offer in principle relating to an area for which a plan exists, the applicant must obtain planning permission before a final offer can be made. This is often a source of considerable delay over which the ministry has no control. In addition, these local authorities are responsible for servicing plots. Unserviced plots are commonly allocated in towns, and rates are charged even before services are provided. This has caused problems in the implementation of development conditions, allowing leaseholders to plead the town's failure to provide services as an excuse for nonfulfillment of the conditions.

A second problem area involves the MOL's dependence on the Ministry of Agriculture staff for preparation of sketch plans for 14-year leases. The Survey Department cannot meet the demand for Survey Act surveys, and in fact few holders are anxious to incur the cost for such surveys. Since that department has failed to move quickly to develop a program utilizing less precise but more cost-effective survey methods, the Lands Department has relied upon the staff of other ministries to produce sketch maps. In small towns, this is the town and country planning staff, but in rural areas they are prepared by the provincial staff of the Ministry of Agriculture, usually based in the Department of Lands and Irrigation in the ministry's provincial office. In some areas, the preparation of such sketch plans has become their major role. This reliance on the staff of another ministry means that the MOL lacks control over the rate of land delivery in rural areas. On the other hand, the sketch maps prepared appear adequate for the 14-year leases, and in fact for longer tenure. The issue appears to be why this function, in the case of rural lands, should not be performed by the Survey Department, rather than a section of the Ministry of Agriculture.⁵

Problems of coordination exist within the MOL as well, constituting a third problem area. The Lands Department and Survey Department within the ministry have not always worked well together to provide cost-effective access to land. In particular, the Survey Department has enjoyed a remarkable degree of autonomy, with the surveyor general at an equivalent level with the Commissioner of Lands. The department delayed for decades the introduction of more cost-effective methods of parcel demarcation and identification used successfully in other countries for rural titling, such as the general boundaries system linked to aerial photography. The Survey Department must be seen as an integral part of the land-delivery system, as a service section for the Lands Department which actually allocates land. In the process of decentralization, it is important that the provincial or regional offices

⁵ One answer is that the Ministry of Agriculture has staff posted in all districts, while the Survey Department has a critical shortage of staff. Under current restructuring plans, consideration is being given to transferring some staff from the land use **planning** section of the Ministry of Agriculture **to the Survey Department**.

have integrated management at that level rather than separate lines of authority running back to the respective departments in Lusaka.

A further area of concern is the requirement of consent by chiefs and councils for certain leases. Because the MOL does not generally have a presence at the district level, it relies heavily on local political institutions for decisions about the availability of land, the viability of proposed land development, and the reliability of proposed lessees. This is not just an administrative convenience. It is entirely appropriate that local authorities, in closer contact with local opinion, should make decisions about land allocation in their areas. These decisions should not be centralized in the MOL. On the other hand, some important questions can be asked about the present arrangements. There is significant demand for leaseholds in some Reserve/Trust Land areas, especially near towns and along major roads. The popular attitude toward leasehold tenure from the state is effectively blocking the development of leasehold tenure in these areas. This may be expressed as opposition from chiefs, but it has a broader base and extends to some councils. The councils may delay or ignore lease applications, and in one case a council suspended consideration of applications for leases two years ago. When the councils are willing, they lack the staff and administrative systems necessary to play their role properly.

A number of other problems hamper the land administrative system as well. In the areas visited, the poor state of rural infrastructure and the rather desperate financial situation of rural councils was striking. Both the chiefs and councils have a virtual veto over any application for a lease in a Reserve/Trust area. Further, they do not have a good working relationship, and there is often a difference of perspective about the utility and future of leasehold tenure. At present, there is no forum for discussion and compromise, which would lead to the development of a common vision of the future of land tenure in these areas. This problem is discussed further in section IX below, but in time, there will need to be significant institutional changes at the local level to permit effective land administration.

VI. Ignorance of correct procedures

Another source of problems is the widespread public ignorance of correct procedures. As far as the local participants are concerned, all the procedures of which they need be aware are outlined in one document: the MOL's circular (see p. 21). But some officials at both district and provincial level are not familiar with the circular and could not locate a copy in their offices. In addition, the fact that many important steps in the process involve staff of government agencies other than the MOL makes these procedures more difficult to communicate. This appears to be a particular problem in settlement schemes, in which Ministry of Agriculture or Directorate of Settlement personnel are the primary source of information on how settlers can apply for leasehold titles after the successful completion of their probationary periods.

It also seems that no attempt has been made to provide chiefs with copies of the circular. All consulted at village and district level expressed enthusiasm for the possibility of seminars and popular education on leaseholds and titling. One chief remembered a 1988 Pickwe seminar at which these issues had been discussed. While the wider distribution of the circular is one element in such a program, it would be important to produce and distribute more informal instructions. These should discuss not only procedures, but the rationale for the system. Translation of such materials into local languages should be considered.

The lack of understanding of the system is strikingly pervasive. In a full meeting of the Chibombo Rural Council at Kabwe, councilors were unable to repeat the procedures governing applications for titles. Often, they confused their powers over land with those of the Commissioner of Lands. None of them knew that Trust and Reserve Lands, just like State Land, was vested in the president. Nor were they aware of the existence of the circular.

Similarly, officers of Chongwe Rural Council east of Lusaka did not have a clear understanding of the titling process in settlement schemes. They considered that they did not have the authority to process applications for titles in resettlement schemes, although no applications for such titles can be considered by the commissioner unless recommended by the council.

In a random interview of ten civil servants and ordinary citizens, nine thought a house could be bought in the same way as a car, i.e., without the requirement for a deed. Of those nine, five absolutely rejected the suggestion that the MOL played a role in property transfer at all. One of them confessed to having already paid the full purchase price to a vendor for a house and land in Ngwerere farming area even before the transaction was completed.

The Swedish International Development Agency (SIDA) has discussed an awareness campaign as an important component in its future assistance with the ministry. It is an important initiative, but it is important that the work be approached not just as a one-way transfer of information. The ministry and its staff need to engage in serious conversations with rural people about the advantages and disadvantages of leasehold tenure and titling and be willing to modify its actions accordingly. But the ministry has no capacity to do this alone. Villagers need to be presented with the advantages and disadvantages of various customary tenures as well as statutory tenure and be granted choice to make their best educated decisions. The University of Zambia's law school and other extension services could play an important role in performing these functions.

VII. Survey standards and the 14-year lease

A further source of problems in the system of land administration concerns appropriate survey standards and the 14-year lease. The Lands and Deeds Registration Act (CAP 287) in SECTION 12 requires a diagram under the Survey Act (CAP 293) to be presented with any document relating to land presented for registration. The Survey Regulations, 1971, define normal acceptable standards of error in terms of maximum acceptable misclosure of a traverse, requiring different standards for different types of land: a maximum of 1:12,000 for surveys to determine the position of township control or reference points, 1:8,000 for surveys in townships, and 1:4,000 for all other cases, including agricultural lands. These are relatively rigorous standards of accuracy and can be achieved only by well-trained survey staff.

Due to a shortage of such staff, the ministry's inability to provide surveys to that standard became the major bottleneck in the system of land delivery and titling. In 1973, the backlog of survey work was estimated as twenty to thirty years surveying at present staff levels (Swedish University of Agriculture 1976). To deal with this problem, the MOL has increasingly resorted to a 14-year lease, for which it requires only a sketch plan instead of a Survey Act survey. The legal basis for this is not clear, but the reasoning seems to be that a more limited tenure could make do with a lesser degree of accuracy. The 14-year leases have been utilized in a wide range of cases: urban developments,

settlement schemes, isolated parcels placed under leasehold in Reserve/Trust areas, and any circumstance in which a Survey Act survey would take too long or cost too much.

The 14-year leases are of very questionable value. It is clear that they have done nothing to provide better access to credit (see chapter 3), it is doubtful that there is much of a market in them, and they provide only limited security of tenure. The option of a 14-year lease may have hampered the ultimate obtaining of 99-year leases by creating a longer and more complex road to that end. It is further difficult to justify them as a reasonable response to 'a lack of well-trained survey staff, as they have been presented.' One must justify titling in terms of its economic and financial impacts, and a 14-year lease seems to have little of either. Their widening use appears prompted by an overemphasis on accuracy and classic ground-survey methods.

As has been noted in consultancy reports going **back** more than ten years, the surveyor general's office has insisted on an unnecessarily high and uneconomic standard of accuracy and has been slow to adopt new methods such as the marking of boundaries on aerial photos for situations with lower accuracy requirements (e.g., Swedish University of Agriculture 1976; Bruce and Dorner 1982). While it is sometimes suggested that greater flexibility requires legal changes, the standards of survey are in regulations which could be changed by the minister. The Survey Act (SECTION 38) does allow use of aerial photography as a basis for boundaries, provided the surveyor general gives prior written permission. And SECTION 12 of the Lands and Deeds Registry Act gives the surveyor general the ability to allow lesser standards of accuracy where a normal survey is impractical, by approving a sufficiently detailed plan as a basis for registration.

The reason given for the backlog in survey work—a lack of qualified personnel—would lessen in importance if more appropriate standards and methods of survey are accepted.

A 1993 draft amendment of the Lands and Deeds Registry Act prepared by the MMD committee on land issues provides for description of land in a document presented for registration to be by a plan or "verbal description" which satisfies the surveyor general. The verbal description is too extreme a reaction to the past; what is needed is simply a clear statement of the surveyor general's legal discretion to utilize whatever survey means appropriate and economic in a particular situation. This will include use of aerial photography in some situations, but for some work there should soon be a shift to survey by GPS (global positioning system), which relies on hand-held units to establish precise position by fixes from multiple satellites. That technology could be particularly important for isolated parcels in Reserve/Trust lands, where the geodetic network for conventional survey is poorly developed.

The sketch plans prepared for the 14-year leases and located on the 1:50,000 contour maps provide a perfectly acceptable standard of accuracy for large parcels of low-value rural land. Based on broadly accepted international standards, they are an acceptable basis for the registration of 99-year leases. For urban areas, where access to survey should be relatively easy, the survey should be done either to Survey Act standards or by aerial photography, which results in some size distortion but is entirely reliable for boundary verification. There, on more high-value land, 99-year leases should have been issued, with conditions concerning later upgrading of survey standards. The recommendations

^e To some extent, more work is placed on the limited numbers of learned staff, as the volume of turnover is high.

below suggest the conversion of all 14-year leases to 99-year leases. A proposal for 30-year leases does not go far enough.

VIII. Land management principles: plan and market

Zambia's land management style has been that of a planned economy with direct administrative control, rather than through managed markets and control of land use through regulation as in market economies. It has involved state ownership of land; administrative rather than market determination of land allocation; reliance upon development conditions; restrictions on transactions; and undervaluing of land in the context of both transactions and taxation. These policy decisions have impoverished Zambia's public sector and undermined development in its private sector. The government has denied itself income from the country's most valuable resource—land. The MOL, anxious for donor assistance, has failed to generate the revenues that could easily have come from land. Ground rents are uneconomic and not regularly collected. Land is allocated for nominal amounts.

There is substantial evidence that the current system is not allocating land to those who will use it efficiently. The MAFF/World Bank 1993 evaluation of use levels on State Land found 652,000 hectares underutilized, of which 60 percent (400,000 hectares) is good arable land (see chapter 1). It found that 150,000 hectares are available from the state farm and parastatal sector, between 100,000 and 200,000 from privately owned farms, and substantial unutilized land from the settlement sector. An examination of the state of use of Reserve/Trust Lands recently allocated under leasehold might reveal even higher levels of underutilization.

Many allocations have been requested purely for status and speculation, and development conditions have failed to prevent holders from keeping the land idle. In light of the experience of other countries with such conditions, this is hardly surprising. It is important that attempts to encourage land development shift from reliance on a development-condition approach to reliance on economic incentives, creating economic costs for land that make it disadvantageous to hold land without developing it.

It is equally important to reestablish public confidence in the probity of the MOL. As in any system which allocates a scarce and valuable good for free or nearly free, opportunities for corruption abound. Not surprisingly, it is popularly believed that favoritism, abuse of insider information, and the acceptance of bribes are rife in the MOL. Officials of other government agencies which act on behalf of the ministry at local levels are subject to similar temptations.

Clearly one of the most fundamental requirements of reform is the recognition of the value of land. This must be done through the expansion of the role of market forces rather than through administratively set prices. Government must make land available for economic cost and allow the market a major, if not necessarily exclusive, role in determining its distribution. Constraints on the market, such as restrictions on subdivision, must be removed.

IX. Problems of confidence and vision: Trust and Reserve Lands

If the problems of the State Land are considerable, it is relatively easy to see the directions that must be taken. It is land policy with respect to Reserve and Trust Lands that is most genuinely

problematic. To date, land policy seems to anticipate the gradual conversion of the land under customary tenure to leasehold tenure. But such policies have worked out badly in many countries. Administrative allocation of land has often been used to deprive indigenous people of their land. Those who lose the land are not compensated. Often the land is allocated to those who use it poorly, resulting in resentment.

Zambia has been no exception to this pattern. Zambia's Land (Acquisition) Act, 1975, is a textbook example of a callous disregard for rights in land. Allocations made by the ministry to date have induced cynicism about government's intentions on the part of local people. In rural areas in Eastern and Northern provinces, complaints were heard of land-grabbing and a failure to bring the land under production. In one location, an 8,000-hectare allocation to a former commissioner was said to be undeveloped, but now is being subdivided and sold. In other places, huge areas of land taken by the government for unsound development projects, for instance the ill-conceived council farms, are sitting idle. There are bitter complaints about the abuse of the ministry's power to allocate land. Land-grabbing has emerged as an issue in the local press (*Daily Mail*, 14 January 1994) as the result of a critical report from the Southern African Non-Governmental Organizations Network (see p. 29 in chapter 1 for an extract from the *Daily Mail*).

The current titling system, which is in theory open to traditional farmers in the rural areas, is by reasons of expense and complexity really open only to the relatively wealthy, well-informed, and influential. It is exceptional for traditional farmers to apply for or receive titles. The system as it is now working is not solely or even primarily a system for providing title as evidence of rights to land, but a mechanism for taking land away from communities which customarily have had access to it and allocating it to new governmental and commercial elites, both Zambians and foreigners.

If the land is actually allocated to those who will develop it, if reasonable compensation is provided to the community that loses access to it, and if the community consents, some such transfers may be appropriate. There are areas of unutilized land in Reserve and Trust regions which local communities will not need for the foreseeable future. If the land is developed, local communities can potentially profit through new jobs, new technologies, and new sources of revenue. However, as rural people look at the current system, they see no end to this process of deduction from their land. It occurs not only through leasehold titling but through the declaration of protected areas and reserves for environmental purposes. In some areas, at least, they feel threatened. The vast majority of traditional farmers do not understand the pros and cons of leasehold tenure and are not in a position to evaluate its relevance to the development of their land. While most traditional farmers seem to have no felt need for titles, there are exceptions, especially in areas near towns and along main roads.

Chiefs see the gradual erosion of their authority over land as seriously undermining their power and a harbinger of landlessness and social disintegration. They react in very different ways, and it is worth reviewing their comments on these issues.

Headman Mang'ang'auka, Chief Sianjalika, Mazabuka, said that he could not allow title deeds in his village, arguing that the traditional systems of tenure would not allow it. Land, despite allocation, remains community land. He said he held the land for the community which, by implication, would cease to be a community if individuals acquired title deeds for their land:

I am holding this land for you in town.... [W]hen you die, I must find land to bury you here as I should when you return home to settle. Where will you stay when you come back if I allowed people to get title deeds to our land?

Headman Mwambula of Chieftainess Nkomesha also rejected the notion of land titles and said he never consents to them for his subjects. His chieftainess, Chieftainess Nkomesha, has recommended people for title deeds but has watched her authority over that land erode and considers that a strong case must be made by a potential investor to justify her granting a title deed.

Senior Chief W. Tafuna, in Mbala, was willing to consider requests to title deeds and has consented to several, including some to foreign nationals. They are given land away from the villagers' cultivation. But, he stressed, "we do not really understand title deeds, and are not clear on the relationship between farms and title deeds."

Paramount Chief Chitimukulu, near Kasama, argued the importance of title deeds, and said that he encouraged his subjects to obtain them. He was not enthusiastic about titling for investors coming from outside, however, and while land is plentiful in the area he worried about possible lessees who would bring new systems of land use, such as livestock herding, and take up large amounts of land quickly. He reacted favorably, at least tentatively, toward the suggestion of a program of systematic survey and titling of existing farm holdings.

Indeed, the full range of opinion was present, from chiefs who said they would never consent to a lease in their territory under any circumstances, to chiefs who had selectively approved leaseholds for outside investors but made the allocations well away from traditional areas of cultivation to prevent conflicts with traditional tenure rights, to chiefs who wanted titles for all their subjects in order to protect their land rights and foreclose the possibility of the ministry allocating the land to outsiders.

Government has taken two steps in this area. The first is the limitation of grants of leaseholds to 250 hectares in the Reserve/Trust Lands (D(v) of the circular).⁷ This is a critical step in limiting abuses, but it is undermined by the understanding that exceptions can be made with the consent of the minister, with no clear criteria for those exceptions. It also may effectively preclude cattle ranching or extensive mixed farming systems in certain regions where there are sizable economies of scale. The second positive step is the requirement of prior consent to any allocation by both the local chief and the local council. This is an important step towards more local control over the use of land and other natural resources.

What is needed is a clear vision of the future that reassures traditional farmers. One option would be systematic, compulsory registration of customary titles as leaseholds. But experience from other countries suggests that this would be expensive and difficult to justify in cost/benefit terms. Considerable flexibility is needed. There is a need to provide for systematic registration for limited areas where commercial development is relatively advanced, for instance in areas closely associated with State Land farms along the rail lines. There may be a need to provide for some means by which local residents can overcome the reluctance of their chiefs to approve leaseholds, especially in the

⁷ The policy debate does not yet seem to have contemplated restriction on the number of leaseholds. As indicated in chapter 3 (table 3.6), multiple parcels are held, making it possible, even likely, that the 250 hectare limit could be contravened by acquiring two or more leaseholds.

vicinity of towns and along major roads. Incentives for local communities must be created which allow them to continue to view land under leasehold as part of their community resource base. For instance, ground rents might be collected by municipalities and chiefs with a portion retained for local development projects.

Arrangements will to some extent need to be worked out locally and the various interests effectively represented. It is not clear that any forum for this exists at this time. The MMD has talked about an increase in the powers and responsibilities of chiefs, and there is a need to take better advantage of the respect and authority that these traditional authorities still enjoy in many areas. Moreover, the need is not simply to strengthen one side or the other in a struggle for control of land but to create institutional arrangements within which the various interests are represented and have incentives to work together and strike the needed compromises.

X. Policy debate: July 1993 Land Policy Conference

The electoral victory of the MMD in the 1993 elections provided the first opportunity in twenty years to question in a fundamental way the land policies of post-independence Zambia under UNIP. The MMD had campaigned on a platform which suggested it would promote basic changes, such as the reintroduction of freehold tenure.

The July 1993 conference (see chapter 1), supported in part by USAID, provided the opportunity for a first frank exchange of opinion on the issues. Conference participants discussed the presidential power to acquire land and agreed that it should be clarified if not curtailed. They discussed a need for two land statutes, one dealing with State Land and one for land under customary tenure, without any distinction between Trusts and Reserves. They noted that discrimination against women was common both in the allocation of State Land and in the Trust and Reserve areas. There was broad agreement that the issues of land under customary tenure deserve more careful study, with increased input from traditional leaders. It was questioned how much customary land was available for allocation to investors, and whether customary land tenure itself needed reform.

Participants also debated the relative merits of leasehold and freehold titles. Those who supported the freehold system argued that leaseholds became insecure as they neared the end of their term. Freeholds, they argued, could be regulated to achieve many of the same ends desired in the case of leaseholds. Those who supported the leasehold system argued that freehold would, through land transactions, lead to the dispossession of the poor and excessive land concentration, especially in the hands of foreign interests. They argued that it would lead to uncontrolled land speculation and underutilization. In the end, a large majority of the participants favored a leasehold system.

Discussion of land concentration led to discussion of the effectiveness of ceilings on landholdings and of the impact of auctions of land. It was agreed that the economic value of land needed to be recognized in the form of increased ground rents, but there was no consensus as to whether land should in the future be allocated by government or sold.

For land in urban areas, the discussions focused on the issue of squatters, the housing shortage, and protection to landlords and tenants in their dealings with one another. In the domain of land administration, the participants urged decentralization of Lands and Surveys and a greater

emphasis on dissemination of information about the titling process, especially to traditional rulers. Cheaper, less-precise means of survey were urged for rural areas.

The final resolutions of the conference are listed in figure 1.2. While they are not binding on government, they will be influential in framing policy.

XI. Recommendations

1. The Lands and Deeds Registry Act should be amended to confer broad discretion on the registrar to accept and certify any economic and appropriate parcel description as adequate for the purposes of registration.

The system to date has been too conservative about what it will accept as the parcel description for a registration. The need is not to specify new standards—technologies in this area are developing with incredible rapidity—but rather to make clear the discretion of the Registrar and to provide the resources that ensure that Surveys will have access to these new technologies.

2. All 14-year leases should be automatically converted to 99-year leases, by law and without ground inspection or further survey.

These leases are too short for any useful purpose, and their renewal is already becoming a burden on the system. Proposals for a 30-year lease do not go far enough. The sketch plans on which the 14-year leases were based are in fact accurate enough for a 99-year leasehold. At a later date the leaseholder could pay for a more precise survey, if there were a need. Beyond this, the current report will make no recommendations on survey. The ministry is being ably advised by a very competent Swedish team.

3. All future leases of State Land outside agricultural settlement schemes and urban squatter upgrading schemes should be offered at public auction. Within those exceptions, clear criteria for selection must be developed.

The MOL manages a vastly valuable resource and cannot expect foreign donor assistance while it continues to give the resource away. Moreover, allowing the true value of the resource—and differences in prices depending on potential and location—to be recognized is a critical first step toward allowing the market to determine the most economically effective use of the land. An auction strategy is far simpler with freehold. If the government decides to continue a leasehold system, it is still important that an auction system be used. But to do so, it will be necessary to drop development conditions. With those present, it is unlikely anyone will feel it is worthwhile to bid any substantial amount. The bidding would be on a premium which represents the scarcity value of the lease over and above that recognized in the ground rent. It would test the relationship between the ground rent and actual market value.

4. In order to facilitate the operation of a market in leasehold rights, the requirements for government consent to transactions, including subdivisions, should be eliminated, with the possible exception of lease assignments to non-Zambians.

Already, these approvals are a formality, an occasion for collecting a consent fee which hardly covers the cost of processing, and for collecting ground rents unpaid over many years and the property transfer tax. Provision could be made instead that proof of payment of ground taxes and a property transfer tax must be proved to the Registrar before the transaction is registered. The issue of non-Zambian ownership of resources arouses strong passions. It may be best to preserve the principle of control through a consent requirement, even though that consent will be readily given to attract investment. However, the 5-year limitation on leases to foreign companies on Trust Land should be eliminated.

5. Development conditions should be eliminated from leases and reliance placed instead upon economic disincentives for holding land idle, such as ground rents.

Zambia's experience with development conditions is little different from that of other countries in Africa. They are not enforced systematically and are most often raised as an issue by someone who hopes to displace the exiting holder. They create insecurity, without achieving their objectives. Rather than worry about development conditions, ground rents should be increased to economic levels to bring pressure to bear for the development of the land in a profitable fashion.

6. If in some cases development conditions are still considered necessary, they should only require a specific investment or construction in the short term, for instance five years. The development condition should be considered met if notice of default is not given by the ministry or other relevant authority such as a municipality within that period. Default should be punished by fines rather than by retaking the land. Beyond that time, only a prohibition of abandonment should apply, and in that case a retaking should be subject to compensation for the land and improvements.

A set of development conditions along these lines would be less harmful than the present conditions.

7. Further increases in ground rents should be considered as the economic value of land becomes clearer through the auction process. Penalties should be imposed for late payment of ground rents.

These rents can provide government with much-needed revenue and can in large measure substitute for far less satisfactory means of ensuring that land will not be held idle, including development conditions. It is not a good idea, as recommended in the ODA report (1989), to increase the property transfer tax: this acts as a drag on the land market.

8. The MOL, given its limited staff and facilities, should carefully consider the economic and financial impacts of the allocation of its staff to particular tasks and to particular regions and tenure sectors.

The ministry, like many other Ministries of Lands in Africa, must cease to think in terms of providing a uniform set of services nationally. It must begin to heed the

economics of land administration, focusing efforts on activities that can be characterized as high-return in terms of development or revenue.

9. Using these criteria, the highest priority should be getting land and titles into the hands of cultivators within the State Land sector.

This should be the priority because (a) there are large amounts of good arable land there, (b) its proximity to the rail lines and other facilities will increase the probabilities of profitable operations there, (c) its higher value can produce more revenue, and (d) it is relatively accessible for survey by the ministry.

10. Within the State Land, first priority should be given to reallocation of the land of State Farms and parastatal holdings, second to resettlement schemes, and third to private holdings. If a land identification committee or similar body is created to identify land for investors, it should for the first several years focus its attention on the State Lands and these particular areas.

The State Farms and parastatal holdings will decline, and prompt action will be needed to ensure a sound scheme for distribution, before the land can be occupied by squatters. A land identification committee could also work out a repossession strategy and targets based on the World Bank-funded study of land utilization in the State Lands, initiate the reviews suggested in recommendation 32 below, recommend retakings for failure to pay ground rents, and recommend penalties for late payment.

- 11.** In terms of resolving titling difficulties for land already allocated, the resettlement sector deserves special attention. A crash program for dealing with this sector should be considered and put forward for donor funding.

There appears to have been especially serious confusion in the titling process in this sector, in part as a result of inadequate information. Few settlers have received leases. Because these holdings are clustered geographically, the titling situation could be sorted out relatively expeditiously through a field operation, with scheme officials present to provide planning consent and Lands and Survey officials on the ground empowered to certify plans and sign leases. A field adjudication procedure to determine entitlements would be necessary because of the confusion which has developed in some settlement schemes through departure and replacement of settlers.

12. For selected areas of considerable commercial development in Reserve and Trust Lands, the ministry should seek to develop a procedure for systematic titling of all holdings, along the lines of that incorporated in the repealed Lands (Adjudication of Titles) Act, 1962.

The priority need for titling in the Reserve/Trust Lands is not so much to make land available to outsiders, since more accessible land is available in the State Lands, but to develop an approach in areas where commercialization justifies title registration. Yet, smallholders are being disadvantaged in obtaining title. These areas are likely to be near existing State Lands. Work under such a system should initially be on a pilot basis.

13. There is a need to create a Policy Analysis and Studies Unit directly under the Permanent Secretary's Office of the MOL.

When the MOL was split from the Ministry of Agriculture, the research capability remained with the latter ministry, and there is no capacity for sustained, informed thinking about policy within a ministry preoccupied with delivering land and titles.

14. There is a need to rethink the present structure of the ministry's senior management to reflect a broader concept of the ministry.

As it stands, the ministry is a structure to deliver lands and titles and little more. Organizational structures in other Ministries of Lands and agencies with similar responsibilities in the region should be examined. Possibilities include a bifurcation into divisions under an Undersecretary (Urban) and an Undersecretary (Rural) and the creation of a post of Director-General for Provincial Land Administration. Among other needs, it is important to ensure that the Survey Department serves the needs of the Department of Lands, rather than pursuing a separate agenda.

15. There is a need to redesign the land allocation committee and the office of the commissioner.

The commissioner should be appointed by the president subject to approval by parliament, and serve a 10-year term. The land allocation committee should be composed of prominent citizens selected in the same fashion, not bureaucrats. The committee should decide allocations, with the commissioner as chair with a tie-breaking vote.

16. The most critical aspect of decentralization is the transfer of responsibility for urban lands to municipalities.

The bulk of the ministry's work concerns urban land and reducing its workload can most effectively be accomplished by establishing the necessary skills and record keeping at municipal level.

17. Regional and provincial offices of the ministry should be fully integrated, with a single officer in charge, rather than divided into departments with separate lines of authority running to Lusaka.

Decentralization cannot be expected to work unless this is achieved. At present, the provincial office of the Lands Department and the Survey Department make their own arrangements for office space, have their own vehicles, etc.

18. The regional office of the ministry in Ndola should be primarily a Land and Deeds Registry, while decentralization of other Lands Department and Survey Department activities should be to provincial level.

Regional offices are still considerably removed from the location of most lands and clients. The provincial level is a more appropriate level to which to decentralize most ministry functions. After offer of a lease, land development tends to begin without

waiting for completion of the registration process and will not be delayed by lodging the registration at the regional level.

19. The final decision on all leases for under 250 hectares should be delegated to provincial level. Auctions should be held at provincial level, though advertised nationally. The ministry's provincial office should issue both in-principle and final offers, be responsible for sketch maps, and collaborate with the relevant planning authority. A master parcel map would need to be maintained at provincial level to permit checking of possible overlaps and numbering of the parcel. The numbering system would need to reflect location by province and district.

If decentralization is to be tackled seriously, it must be done at least at the provincial level. This implies new resources for the ministry, but provincial offices already exist in many provinces and the new resources needed are within the realm of possibility.

20. Delegation of authority to make final offers for leases to the district level is technically feasible. This would require the posting at that level of a district lands officer. When resources allow, the ministry should begin to build such a cadre on a pilot basis.

If sketch maps as presently done are accepted as an adequate basis for all leases, not just 14-year leases, there is no serious obstacle to delegation of final offers to the district level. This would require the creation of a cadre of district lands officers for the ministry, which would in turn mean new recruitment, but this is in any case necessary for this understaffed ministry. Master map numbering of parcels could be reported up the line for parallel maps at provincial and regional level. The district lands officer would do sketch maps and act as the planning officer for rural grants. Once the council approved the application, the ministry's district officer could make the offer in principal and, once fees were paid (at district level) and any other necessary planning permission received, could make the final offer. Access to vehicles might be the major constraint to the development of operations at district level. Council vehicles could be utilized in some districts, with costs shared.

21. For the time being, the roles played by councils and chiefs should remain as they are but should be studied to determine whether alternative institutional arrangements exist, which require a more collaborative mode between the council and chiefs.

The involvement of chiefs and councils in the approval of leaseholds is a very positive element in the present system. However, chiefs may not adequately represent the interest of all their people and give too heavy an emphasis to preservation of their traditional prerogatives. It is possible to imagine elimination of the consent requirement by either the chief or the council in certain circumstances, where the applicant holds the land as ancestral land. It is also possible that the process could be improved upon significantly by providing an institutional forum in which traditional authorities and elected councilors could interact and discuss policy. But such changes should be based on careful study. Research is urgently needed to explore the possibilities and must begin by obtaining a better understanding of traditional land administration.

22. The process for initial leasing of land could be shortened at the district level by altering the provision of circular No. 1 to allow a subcommittee of the council to act finally in approving a lease without requiring the matter to go before the full council. A special lands subcommittee should be created for this purpose. The powers of the subcommittee and the criteria that they are to use in approving an application should be set out in law, possibly as part of a revision of the Conversion Act.

This is very necessary in light of very infrequent meeting of the full council, only 3-4 times a year in many rural districts.

23. The master map now maintained in Folios in the Lands Department should be turned over to the Survey Department so that checking the parcel for conflicting allocations and numbering the parcel could be done as one process.

At present, the file goes to Folios to be checked for conflicts, then to Surveys for a number, then back to Folios for that number to be recorded. It seems that this could be done in a single step in Surveys.

24. Offers in principle should be eliminated. A final offer should be made initially, to be accepted by payment of fees.

At present, the Lands Department sends out an offer in principle wherever planning permission is required and does not send a final offer until permission has been obtained. It is not clear why this is necessary. This process may have been based in the notion that the development conditions could not be agreed upon until planning consent was required, but if development conditions are dropped or made more general in nature, as is recommended here, this is not a factor.

25. The process could be further expedited by making the final offer the lease itself. On its return, signed by the applicant, with the necessary fees, it could be signed by the commissioner, registered, and sent back to the applicant with the title deed in one mailing.

Currently, once the offer is sent and accepted, a lease is sent to the applicant to sign and return, and then once it is registered, a title deed is prepared and sent to the applicant. The process seems unusually cumbersome. If it is legally required by any act or received law, then this should be amended.

26. Personnel, vehicles, and budget now devoted by the Ministry of Agriculture to the preparation of sketch maps to support applications for leasehold should be transferred to the provincial offices of the MOL. Serious consideration should be given to transferring to the MOL the entire Land Use Planning operation from the Ministry of Agriculture and the Evaluation Section of the Housing Conglomerate.

There is little sense in this work remaining within another ministry. But if the personnel and responsibility for the work is to be transferred, it is essential that the vehicles and budget for salaries and fuel be transferred at the same time.

27. Rural councils and municipal councils should be made responsible for the collection of all grounds rents in towns and on State Lands and should be able to retain a portion of those rents, perhaps half, for local development projects in return for providing this service. It would also be useful to explore

how chiefs might collect ground rents in their areas of Trust and Reserve Lands and similarly retain a portion of those rents for local development projects.

The ministry should not attempt to develop an independent capability for ground rent collection. It must take advantage of the capabilities of these other institutions but will be able to do so effectively only if they themselves have some direct interest in the revenues to be collected.

28. There is a need for the ministry to develop an effective program of training and public information concerning land policy generally and titling specifically. This implies the creation of a training and information unit within the ministry.

There is a need to give the circular much broader distribution but also a need to provide more "how-to" information, which might be disseminated not just through the ministry but through an NGO such as the National Farmers Association of Zambia. **In** the Trust and Reserve Lands in particular, the need is not just for information but for genuine exchanges on the role of titling. The ministry will need to carry out more formal training in procedures and record-keeping for its own provincial staff and for employees of other agencies on which they must rely, especially council staff.

29. In framing land policy for Trust and Reserve areas, there is a need for a frank admission that abuse of the titling process for land-grabbing is not just a potential problem. It has been taking place, permitted by inadequate safeguards within the ministry's land allocation system. The 250 hectare limit from the circular should be enacted in law for farms; clear criteria should be created for exceptions to this limit; and the approval of such exceptions be entrusted to a national board consisting of respected figures.

The ministry should set up a task force to think through how landgrabbing can be avoided in the future. An effective and economic ground rent will be the first need, but even then difficult cases will arise. There will be requests which tax the ability of officials to estimate real land needs, like one currently pending at district level in Northern province for a 15,000 hectare game ranch. Should the commercial farm community find that this ceiling is prohibitively low, a study should be commissioned to arrive at a more efficient and acceptable standard or set of standards.

30. For Trust and Reserve areas, the supply of titles and land delivery for outside investors, though an important element, should be secondary to the development of a viable strategy for protecting and enhancing the land rights of local farmers and communities.

To date, policy has focused almost entirely on the supply of titles, which is in no sense a comprehensive land policy for these areas. Such a policy needs to be developed. There is time to step back and think through the needs of these areas more systematically than in the past, time provided in part by the availability of considerable good, arable land in the State Lands.

31. The recognition of value in land should be an element in this policy as it is in State Lands. Government (and donors) must recognize customary property rights and should pay compensation for land taken for development by others.

When government passes land on to outside investors, they should bear the cost of making the land available. Similar costs should not be placed on local land users and their communities when they seek title to land they already use, in recognition of their land rights under customary law.

32. There should be a systematic review of leaseholds or parcels in the Trust and Reserve Lands 50 hectares or larger held by government, and over 100 hectares held by private individuals or companies. Where this land is unused, government should consider retaking it and returning it to local communities unless the communities can agree with the ministry on some other use for the land.

Too often, local communities have been asked (and pressured) to provide land for ill-conceived development efforts (e.g., the Council Farms), then watch the land sit idle for years. Where such land exists and cannot be put to the use for which it was provided, it should be returned. This would do a good deal for the ministry's poor credibility in the rural areas. In each case, the displacement of traditional users should be noted, and they should be given priority to return to the land.

33. Broad local consultations should be undertaken by the ministry to help it think through the future of tenure in the Trust and Reserve areas.

Those consultations should be linked to educational activities; framed to allow a genuine exchange on the pros and cons of leaseholds and their grant to either local people, outside investors, or both; and framed to include farmers and other productive land users as well as officials and traditional authorities. Participatory rural appraisal methods and focus group approaches would be useful. The recent national consultations on land policy in Tanzania by the Presidential Commission on Land Matters which reported in 1992 should be examined as a model.

34. The ministry should consider further work on systematic titling activities in some quite limited Trust and Reserve areas with good market access where a lack of title may be a binding constraint on investment.

See recommendation 13 above.

35. A program of studies should be undertaken in several carefully selected areas to explore new approaches to customary tenure and local organization for the administration of land.

Our information base on customary land administration is very poor. Each area should include the lands of a group of three or four villages in a district, and the studies should examine not only rights and dealings in farmland but rights in common-property resources shared by community members and by more than one community. The studies should utilize a variety of methodologies: participatory rural appraisal, dispute studies, and household surveys. The studies should develop plans for follow-up pilot work on land rights and administration in these areas.

36. A comprehensive study of the terms of access by women to productive resources should be carried out.

The resolutions of the July 1993 conference (figure 1.2) stress the need for equality of treatment of women. In spite of important legal changes such as the 1989 amendments to the Wills and Administration of Testate Estates Act, there is a vast gap between the aspirations of the resolution and the facts on the ground, where women are seriously disadvantaged both under national statute and customary laws and where implementation of reforms is highly problematic. The purpose of the study would be to devise a realistic and effective strategy for increasing women's rights and opportunities.

37. A study should be carried out to determine the relationship between the rapid expansion of cultivated land in the last decades and the expansion of the leasehold system.

It should not be assumed that the two are directly related as there is some evidence to the contrary. There is a need to understand how access to land for expansion is obtained.

Annex 2.1: Guidelines for determining the size of landholding for farming purposes

Chapter 1. The Formula **and Explanation** set out below are **designed** to help District Councils and their Staffs, District **Agricultural** Officers, **and** District Executive Secretaries determine the size of **undemarcated land granted** to a prospective farmer. Before this formula can be implemented the following data must be available:

2.
 1. Land **capability**, at semi-detailed level
 2. Location of farm (**peri-urban** or rural)
 3. Relative pressure on the land
 4. Pattern of settlement in the **adjacent** area to the proposed farm (commercial, **traditional, emergent agriculture, peri-urban, urban**)
 5. Pattern of **past urban** drift **and consequential past population** density
 6. **Traditional land** use **patterns** — **provincial** strategy
 7. Recommended future land use pattern — provincial strategy
 8. Proximity to economic centers and markets
 9. Proximity to power
 10. State of roads plus their development.

3.
 1. The present income of the prospective farmer
 2. The size and education of his family and whether they will be part of the farming unit or independent
 3. Capital available for immediate investment
 4. Plant and equipment available to support the proposed program
 5. Proposed source and extent of funding
 6. General ability of the prospective farmer to succeed. By combining the above data we are able to determine the size of farm within any given planning area suitable for a prospective farmer.

This pre-supposes that the province has already had a development strategy plan drawn up. (This has yet to be done for Southern province.) It is the basic ingredient of *any* coherent development plan. Thus the following principles are applied for guiding prospective farmers to the right location and right size farm for themselves:

4.
 1. Is the farmer self-sufficient? Can he survive in the bush by himself? If not, he must be in an area where he can receive support services.
 2. Does he require:
 - a. Ranching operation
 - b. Mixed fanning
 - c. Dairy
 - d. Horticulture
 - e. Small stock only.

These items are graded in the degree of return per hectare of land, i.e., land use intensity. Therefore, a small stock specialist can expect more than K1,000.00 per hectare of land if properly used. A ranching operation can only expect a return of K200 per hectare on intensively grazed improved pastures properly managed. (This scheme takes no amount of traditional methods as these are not economic.)

5. Therefore, the process works as follows:
The income that a prospective farmer can reasonably expect is calculated from his past performance in whatever sector he comes from and his income for the past five years before he applied for a farm. His future expectations of income are based upon what his previous

expectations were, i.e., a civil servant who has successfully reached the top of his career can reasonably be expected to achieve the same level of success in farming but is unlikely to expect more than a safe income as he is probably not an experienced entrepreneur. Therefore, if his present income is approximately K8,500.00 with subsidized housing and transport, we would expect him to be able to command a gross income of K100,000.00 which would allow him a disposable income of K10,000.00 per annum.

Therefore, if we apply our income criteria to the five types of farming we would recommend landholding as follows:

a.	Ranching	500 hectares	
b.	Mixed farming	300 hectares	Average net income
c.	Dairy	300 hectares	K10,000.00
d.	Horticulture	100 hectares	
e.	Small stock	20 hectares	

N.B. Holdings smaller than 20 hectares would not normally be planned for Commercial Sector Farmers.

6. In respect of traditional farmers there is not much of a problem as they only apply for title deeds when they need to become commercial. Therefore, the size of holding surveyed for title deeds will be restricted by the present income of the farmer projected back over the last five years and a professional estimate of the level that he will achieve over the next 10 years based upon the size of loan he is likely to get.
7. By far the greatest call on the land is from workers wishing to ensure their future. In the case of large companies applying for land they are usually encouraged to move to the areas where they will contribute to the reversal of the rural urban migration. Apart from this provincial policy, the same formula applies, i.e., the amount of money available for investment is compiled, along with the borrowing from various sources so that a total investment figure is available and a program may be involved for a five- or ten-year period of investment plus development leading to an established expectation of income at the end of this period. It must be mandatory that all such programs be certified as within the financial resources of the company concerned, by an independent firm of chartered accountants who will be held professionally responsible if they mislead the settlement committee. All such costs are naturally borne by the prospective farmer.
8. In any case, all holdings of more than 2500 hectares of arable land, i.e., 4—5000 hectares gross, will be presented to Provincial Council for public scrutiny and approved before being finally recommended for title deeds. Therefore, a company wishing to invest K1,000,000.00 in mixed farming will be calculated as follows:
 - K1,000,000.00 investment = income 250,000.00
 - Ranching = 2000 hectares, which includes 500 hectare development allowances
 - Mixed farming = 1000 hectares
 - Dairy = 100 hectares
 - Horticulture = 200 hectares
 - Small stock = 100 hectares
9. In conclusion we should say that land should be granted in:
 - a. proportion to the investment expected and income anticipated;
 - b. the level of competence of the lender;
 - c. the strategic needs of the province;
 - d. the demographic expectancy of the area in which the land is granted.

Chapter 3:

Agrarian Structure, Land Markets, and Property Transfers

by

Michael Roth, Paula Despina, and Peter Kangwa¹

I. Introduction

This chapter assembles and analyzes official time series information on agrarian structure, official property transfers, and issuances of leaseholds in State, Reserve, and Trust Lands. Unofficial data on property transfers and an analysis of land valuation issues are treated in chapter 4. Data are presented on the number and size of reported property transfers and land prices paid. Changes in agrarian structure are evaluated to assess net growth in the number and area of farming units by land tenure category, trends in farm size, and growth in demand for leasehold property. The analysis shows that the number and area of farming units varies widely over time, in part due to changing trends in population settlement and agricultural expansion but also due to unexplainable swings in the data. A high demand for leaseholds is apparent, but most of the demand is originating from properties in the urban and peri-urban areas under residential and commercial uses. Land as collateral is increasing credit use by the largest farms, but most credit is being funneled to urban and peri-urban properties for mainly nonagricultural uses. The analysis further suggests that capacity limits may be constraining the expansion in leasehold issuances. The fact that leasehold activity has plateaued at 2,000 issuances annually over a reasonably long period of time indicates a sustainable level of demand for registry services but also possible constraints that warrant investment in surveying and registration capacity.

II. Agrarian structure

A. Land base

Zambia possesses an abundance of natural resources. Of its 75,261,200 hectares nationwide, 18.4 percent of the land area is located in game management areas (GMAs), 8.8 percent in state forest reserves, 8.7 percent in national parks, and 1.2 percent in lakes (table 3.1). GMAs along with the other natural resource categories (excluding lakes) are broadly distributed nationwide, but 23.3 percent can be found in Eastern province, another 21.4 percent in North-Western province, and 15.6 percent in Central province. The predominant share of state forest lands are located in North-Western (36.4 percent), Northern (14.4 percent), and Eastern (13.2 percent) provinces, while national park land is concentrated in Northern province (27.0 percent), followed by Central (16.5 percent), Southern (14.7 percent), and Western (13.7 percent) provinces.

Data series on landownership by farms are presented in the second half of table 3.1 for two categories of farms: (1) MAFF forecast survey data of arable land which, at least in principle, are

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supposed to include commercial farms; and (2) the total area under large-scale commercial farms reported in the Commercial Production Series. A comparison of columns G and I indicates that column I cannot be inclusive within G as the area under commercial farms exceeds the MAFF data in certain years. One logical explanation is that the MAFF land reported is only arable land, not the total land area of the holding. Column H shows the percentage of arable land area on MAFF farms relative to available land outside natural resource reserves, while Column I compares the total land area under commercial farms in each province with the same.

Outside of the natural resource reserves, an abundant supply of land would seem to be available for future expansion of crop and livestock production. Of the 47,244,800 hectares not included in state forests, national parks, GMAs, or lakes, only 2.7 percent is occupied by farming units based on the MAFF data and 3.2 percent based on the commercial farm series. Assuming, as in chapter 1, that about 13 percent of the nation's land area is potentially arable, then around 6,141,800 hectares of land would be available for crop cultivation. Assuming further that the MAFF data represent arable farmland, then the data suggest that only about 21.0 percent of the arable land base is currently under crop cultivation, leaving ample scope for agricultural expansion. Furthermore, as reported in chapters 1 and 2, a high percentage of land under commercial farms is underutilized, suggesting that even these figures are overestimates of area under cultivation. Certain provinces (e.g., the more-remote Northern, Western, and North-Western) experience lower rates of occupation than others. Unfortunately, data are not available on areas of urban land, making it difficult to interpret the data for Lusaka and Copperbelt.

B. Crop land utilization

As described in greater detail in chapter 8, the most recent data on area cultivated for the commercial farm sector are disaggregated into four provinces—Central, Lusaka, Southern, and Copperbelt, the latter of which includes data for the remaining provinces. The data series for the noncommercial sector, which in principle include all farms in the agricultural sector other than commercial farms, were last published in 1985. The MAFF agricultural data series based on area forecasts theoretically include all farms and, while comprising a relatively complete time series back to 1976, include data mainly on crop area, production, and yields.

Provincial level data on total farming area and cultivated land are provided in table 3.2 for commercial farms based on the commercial sector data series and all farms (noncommercial and commercial) based on the MAFF series. Area cultivated in the commercial farm sector represents on average only 10.6 percent of total farming area, a figure consistent with the high rates of underutilization reported in a recent World Bank study (MAFF/WB 1993) (see chapter 1). Utilization ranges from a low of 3.8 percent in Southern province to a high of 19.2 percent in Copperbelt province—estimates that on the surface would appear exactly opposite the regional findings reached by the MAFF/WB report and summarized in table 1.5.

Table 3.1: Arable land area (000 hectares)

Province	Total land area ^a	State forest reserves ^b (1974)	National parks ^c (1974)	Lake areas ^d (1974)	Game mgmt areas ^e (1973)	Net total land area	MAFF reported owned land ^f	Total land area (%)	Land area of comm. farms ^g	Total land area (%)
	A	B	C	D	E	F = A-B-C-D-E	G	H=G/F	I	J=I/F
Central	9439.4	577.0	1,081.8	-	2170.7	5609.9	150.2	2.7	471.8	8.4
Copperbelt ^h	3,132.8	585.0	-	-	-	2547.8	59.4	2.3	125.0	4.9
Eastern	6,910.6	887.0	410.2	-	3236.0	2377.4	314.1	13.2	44.3	1.9
Luapula	5,056.7	137.0	138.9	409.0	490.2	3881.6	90.7	2.3	6.3	0.2
Lusaka	2,189.6	*	600.0**	-	1250.0	339.6	36.3	10.7	177.9	52.4
Northern	14,782.6	965.0	1,765.5	265.0	1076.7	10710.4	279.2	2.6	0.0	.0
North-Western	12,582.6	2,432.0	693.3	-	2964.0	6493.3	55.3	0.9	35.5	0.5
Southern	8,528.3	655.0	958.6	248.0	1906.9	4759.8	185.7	3.9	665.4	14.0
Western	12,638.6	442.0	893.6	-	778.0	10525.0	117.0	1.1	5.2	.0
Zambia	75,261.2	6,680.0	6,541.9	922.0	13,872.5	47,244.8	1,288.0	2.7	1,531.4	3.2

a. Source: Ministry of Lands, Survey Department, 1993.

b. Source: J. Schultz, *Explanatory Study to the Land Use Map of Zambia*, Ministry of Rural Development, Lusaka, 1974 (**adjusted** to reflect 1993 MOL figures).

c. Source: Schultz, op cit.

d. Central province includes some national park area located in Lusaka province.

e. Source: USAID, *Zambia - Natural Resource Management Projects - Project Amendment*, Game Management Area Descriptions, 1993.

f. Source: Ministry of Lands, Annual report of the Forest Department, 1987.

g. Landholdings on commercial farms as of 30 September 1990, Commercial Farms series.

h. MAFF planning division, survey data, 1990.

* Essentially nil.

** Estimated. Reported under Central province.

Table 3.2: Percentage of total farm unit cultivated, 1987-88

	Commercial farms			All farms (MAFF series)		
	Total farming area 1987-88 (ha)	Cultivated land 1987-88 (ha)	Percent cultivated (%)	Reported arable land 1987-88 (ha)	Cultivated land 1987-88 (ha)	Percent cultivated (%)
Central	453,279	59,924	13.2	150,194.2	114,387.0	76.2
Copperbelt'	311,506	59,763	19.2	59,395.6	41,590.5	70.0
Eastern				314,138.1	273,692.2	87.1
Luapula				90,701.3	56,369.5	62.1
Lusaka	265,739	30,079	11.3	36,340.1	29,838.8	82.1
Northern				279,200.3	177,302.6	63.5
North-Western				55,347.5	26,585.1	48.0
Southern	601,228	23,136	3.8	185,663.0	160,893.9	86.7
Western				117,017.5	93,779.1	80.1
Zambia total	1,631,752	172,902	10.6	1,287,997.6	974,438.5	75.7

a. For the commercial farms, Copperbelt province figures include all other provinces except for those separately listed. This is the case for every year except 1990.

Source: Commercial Farm Series Data, 1987-88.

Rates of utilization in the MAFF survey are much higher at 75.7 percent nationwide, but range from a low of 48.0 percent in North-Western province to a high of 87.1 percent in Eastern province. Allowing for grazing uses and land left idle for waste, site of homestead, natural forest, and public infrastructure, these figures suggest a fairly high rate of utilization by small farms which dominate the MAFF sampling frame. But conclusions hinge on the definition of "reported arable land," for which data provided by respondents are guesses, not estimates taken from area surveys. Furthermore, farms that are completely underutilized, as indicated in chapter 1, may very well be due to absentee landlords who are impossible to locate at the time of the survey.

The extent of farm utilization is also linked with farm size, as indicated in table 3.3. Land utilization in the smallest farm size category (0-79 hectares) is 35.1 percent of the total farming area. Rates of land utilization decline with further increases in farm size: 20.5 percent for the 80-199 hectare category, 8.1 percent in the 200-399 hectare category, 14.4 percent in the 400-799 hectare category, 12.3 percent in the 800-1,999 hectare category, and **8.8** percent on farms 2,000 hectares and above.

3.3: Percentage of total commercial farm units cultivated by farm size, 191 7-88

Farm size	Total farming area (ha)	Cultivated land (ha)	Cultivated (%)
0-79 ha	36,978	12,978	35.1
80-199 ha	38,655	7,913	20.5
200-399 ha	37,468	3,019	8.1
400-799 ha	74,192	10,667	14.4
800-1,999 ha	304,556	37,554	12.3
2,000+ ha	1,139,903	100,771	8.8

Source: Commercial Farm Series data, 1987-88.

C. Livestock grazing utilization

Land not in crop production, parks, or forests is not necessarily idle, due to the possibility of livestock grazing. Table 3.4 recapitulates data on net total land area from table 3.1 and cultivated area from table 3.2. In addition, it provides data on the number of cattle held reported in the 1984-1985 commercial farm and noncommercial farm series. Jeanes (1986) gives grazing requirements (per head of cattle) under a wide range of agroclimatic and farm management conditions based on a synthesis of research. One head requires 5-8 hectares on munga woodland in upland areas receiving less than 1,000 mm rainfall, and 6-10 in wetter areas. On dambo land (ranging from palatable grasses and legumes to sedges), grazing requirements range from 4-8 ha/head depending on soil acidity. Grazing rates under improved management on upland pasture range from 1-7 ha/head depending on topography and intensity of forage management. Rough grazing rates in valley areas range from 4-12 ha/head, 8-16 ha/head in Kalahari sand areas, and 4-8 ha/head in floodplain areas.

Based on these estimates, rates of grazing intensity (i.e., percentage of net land not in forests, parks, lakes, game management areas, or crops that is used for livestock grazing) are calculated for three hypothetical stocking rates—12 ha/head for low stocking, 8 ha/head for medium stocking, and 4 ha/head for high stocking. Lusaka, the second most densely settled province, and Southern province, the heart of the commercial farming sector with the highest land use efficiency (table 1.5), have high levels of grazing utilization, as expected, even without excluding the normal 5-15 percent of land area that is usually taken up by roads, buildings, and wasteland. However, Copperbelt province, with the highest population density nationwide and with substantial land in commercial production, has a very low grazing intensity even at a very conservative grazing requirement of 12 ha/head. Other provinces have very low rates of grazing intensity (less than 14 percent at 12 ha/head), in particular, Luapula, Northern, and North-Western provinces. Thus, there appears to be a great deal of variation in the degree to which potential grazing areas are in fact grazed. It would be speculative to state a priori that issuing leaseholds to newcomers or opening new stands runs the risk of displacing livestock herders due to the very aggregate nature of the data examined. Yet it would be equally negligent to assume that open areas are "idle" and can be brought into crop, residential, game ranching, or livestock use without the risk of displacing current stockholders, particularly in Eastern, Lusaka, and Southern provinces.

Table 3.4: Cattle holdings and estimated rates of grazing intensity

Province	Net total land area ^a (000 ha)	Cultivated land, 1977-88 ^b (MAFF series)	Commercial sector		Noncommercial	Grazing		
			cattle held, (000 head)		sector cattle held ^d 1984-85 (000 head)	Low	Medium	High
			Beef	Dairy				
	(A)	(B)	(C)	(D)	(E) (F=12 ha/hd)	(F=8 ha/hd)	(F=4 ha/hd)	
Central	5,609.9	114.4	46.2	2.2	112.1	35.0	23.4	11.7
Copperbelt	2,547.8	41.6	22.5 ^f	16.6 ^f	9.3	23.2	15.4	7.7
Eastern	2,377.4	273.7			224.6	128.1	85.4	42.7
Luapula	3,881.6	56.4			3.3	1.0	0.7	0.3
Lusaka	339.6	29.8	51.8	5.1	37.6	366.0	244.0	122.0
Northern	10,710.4	177.3			102.4	11.7	7.8	3.9
North-Western	6,493.3	26.6			74.1	13.8	9.2	4.6
Southern	4,759.8	160.9	148.6	8.7	898.3	275.4	183.6	91.8
Western	10,525.0	93.8			311.1	35.8	23.9	11.9
Zambia	47,244.8	974.4	269.2	32.7	1,772.8	53.8	35.9	17.9

a. Total land less State forest reserves, national parks, lakes, and game management areas in table 3.1

b. MAFF series from table 3.2.

c. Commercial farms data series.

d. Noncommercial farms data series.

e. $GI = (F(C+D+E) \pm A - B) + 100$.

f. Copperbelt and others.

For many areas of the country, there thus appears to be potential arable land that is not cropped (although perhaps in cattle) and large potential grazing areas that are not grazed. These low rates of utilization—despite high rates of urbanization—raise fundamental questions about causes, whether due to poor management, more lucrative nonfarm opportunities, or lack of marketing infrastructure, market access, credit, price incentives, or need. In the present system where lease rents are low (state sector) or nonexistent (customary sector), there is no disincentive to underutilization. This situation is further exacerbated by resettlement schemes and land allocations on newly opened lands by government where the landholder bears little or no share of the land cost. The land market should theoretically act to reallocate underutilized land, but subdivisions and land market controls have acted to dampen transfers, while there is weak evidence that capacity constraints may be reached in terms of processing transfer applications within the ministry. In general, it is disturbing that so much emphasis is being placed on opening new lands and expanding leasehold issuances when high rates of land underutilization prevail in the state sector.

D. Type of farming unit

Information on crop area, livestock numbers, and rates of change in land use are evaluated in detail in chapter 7. Data on number of farms by principal type of farming operation in table 3.5 provide a preliminary sense of the importance of various subsections or farm types in the Zambian agricultural economy. Of the 815,326 total farms reporting nationwide, very few (195,841 or 24.0 percent) rely solely on cropping operations. The majority have mixed cropping and livestock activities or are engaged in commercial activities: 0.1 percent are strictly livestock operations, 2.1 percent are poultry farms, 4.6 percent are mixed crop and livestock operations, 40.6 percent are mixed crop and poultry operations, 22.8 percent are mixed poultry and livestock operations, and 5.8 percent are nonfarming operations. Theoretically, one would expect poultry operations to be located nearer to urban centers, and livestock in more extensive rural areas. The evidence in table 3.5 reflects this to some degree, but generally the various farming enterprises tend to be dispersed among all provinces.

E. Parcel holdings

The previous data on number of farming units disguise the fact that multiple farms or parcels may be farmed by one operator. A frequency distribution of number of parcels held by farming units (commercial and noncommercial) in different provinces of the country is reported in table 3.6 for the period 1987-88 (two-year average). Of the 737,603 crop growing households reporting, 49.5 percent held one parcel, 24.9 percent two parcels, 13.2 percent three parcels, 6.3 percent four parcels, 2.8 percent five parcels, and 3.2 percent six parcels or more.

The number of parcel holdings appears to be positively associated with population density and degree of commercialization. In the registered and more peri-urban environments of Copperbelt and Lusaka provinces, 91.6 percent and 96.2 percent of farming units, respectively, comprised 2 parcels or less, reflecting the combined effect of higher land prices and mixed agricultural and residential land uses. Conversely, in the more rural areas of the country, farming units tend to consist of more holdings: 69.2 percent have two parcels or less in Western province, 61.2 percent Central, 61.0 percent Luapula, and 49.3 percent Northern. A high degree of fragmentation is apparent in the Central (11.9 percent of farming units with 6+ holdings) and Northern (6.2 percent) provinces. However, the urban and rural split based on population density is not completely deterministic as three provinces—Southern province with many large farms in rural areas (88.4 percent), Eastern province

Table 3.5: Distribution of rural households by type of agricultural activity and province, 1987-88 (number)

Province	Crop only	Livestock only	Poultry only	Crops & livestock only	Crops & poultry only	Livestock & poultry only	Non-agricultural	Total rural households
Central	10,808	97	2,773	1,121	30,427	16,850	6,680	68,756
Copperbelt	19,632	23	1,779	950	28,400	5,022	4,208	60,014
Eastern	29,350	71	436	17,701	47,743	64,103	1,595	160,999
Luapula	20,899	80	4,462	1,255	37,182	6,306	6,291	76,475
Lusaka	6,693	37	933	657	10,020	4,297	8,307	30,944
Northern	28,782	4	802	1,855	89,234	23,670	1,602	145,949
North-western	17,991	142	982	2,058	25,060	7,771	2,731	56,735
Southern	18,598	95	3,336	5,840	28,377	42,561	7,549	106,356
Western	43,088	228	1,541	6,229	34,252	15,642	8,118	109,098
Zambia Total	195,841	777	17,044	37,666	330,695	186,222	47,081	815,326

Source: CSO, unpublished data

Table 3.6: Distribution of crop-growing farming units by parcel holdings and province, 1987-88

Crop-growing households reporting (it)	1 parcel	2 parcels	3 parcels	4 parcels	5 parcels	6+ parcels	
Central	71,021	43,457	15,343	2,807	664	263	8,487
Copperbelt	53,466	28,875	20,106	3,746	577	154	8
Eastern	124,694	103,075	3,701	12,033	4,405	1,313	167
Luapula	69,761	24,907	17,644	12,532	7,960	3,794	2,924
Lusaka	23,595	16,063	6,646	778	108		
Northern	147,374	30,114	42,544	33,344	20,106	12,061	9,205
North-western	52,071	22,544	20,432	6,712	1,883	153	347
Southern	96,182	58,349	26,655	7,622	2,470	681	405
Western	99,439	37,866	30,960	17,873	8,649	2,035	2,056
Zambia Total	737,603 ^b	365,250	184,031	97,447	46,822	20,454	23,599

a. Calculated data representing the sum of the columns differ from printed data in official reports.

b. Data are only for those farms reporting, not the number of farming units nationwide.

Source: CSO, post-harvest survey, 1987-88.

(85.6 percent), and North-Western province with numerous and scattered small farms (82.5 percent)—with high land/resident ratios still have a high degree of fragmentation.

These data showing a prevalence of multiparcel farming units justify concerns over any policy that attempts to restrict the number of leaseholds per farming unit or ration leases to individuals who currently lack title. Any tenure insecurity, should it be present, would likely apply to all parcels containing arable land rather than a single farm within a farming unit. Furthermore, they place in perspective the potential population of lease titles required should the government seek to pursue its goal of registering 500,000 to 1,000,000 titles nationwide (chapter 1). Based on the total number of farming units (815,326 rural households) in table 3.5 and 1.5 parcels per household (weighted average calculated from table 3.6), the total potential demand for rural leaseholds is 1,222,989.

It seems inconceivable that all these farms or even the majority would require or even want title. This number of potential registrations would sharply increase if strictly urban and commercial uses were included as well (as indicated shortly, the majority of lease issuances are in fact principally for residential and commercial uses), but it remains questionable whether these titles should be handled by the MOL. City and municipal councils already operate registries for statutory and improvement areas within their jurisdictions under the Housing (Statutory and Improvement Areas) Act, 1986. As municipal governments are developed and/or strengthened, strong arguments can be made for the municipal registries to handle the residential and commercial registrations within their jurisdictions, while the MOL retains responsibility for leases in the more rural or extensive areas. This of course hinges on the state of the registry system and human skills in various municipalities and highlights the need for a review of alternatives to gradually shift these titles out of the MOL to the municipal level (see chapter 2 recommendations). Further, should the MOL's portfolio be restructured to emphasize rural properties, the above data would suggest that a far more modest scale of registration activity within the MOL is justified and even advised given the current bottlenecks being experienced in registration activities.

III. Current structure, commercial farm sector

The Zambian agricultural economy comprises two principal sectors: commercial and noncommercial. Farmers were considered commercial in 1987-88 if they had done any of the following in the previous year:

- (1) sold to the National Agricultural Marketing Board (NAMBOARD), or any other cooperative union, any crops whose value was equivalent to 150x90 kg bags or more of maize at the ruling producer price;
- (2) grew tobacco in their own name and were registered with the National Tobacco Company of Zambia Ltd;
- (3) sold to the Dairy Produce Board;
- (4) bred, reared, and/or fattened cattle or poultry and sold them to the Cold Storage Corporation of Zambia, Poultry Processing Company Ltd, or to any licensed butcher;
- (5) reared and/or fattened pigs and sold them to the Zambia Pork Products Company, the Cold Storage Corporation of Zambia, or any licensed butcher or supermarket;
- (6) bred hybrid poultry; and/or,
- (7) were state farmers for the Agricultural Division of Zimco and other agencies on a commercial basis.

A noncommercial farm, according to the above criteria, are those farms not selling the minimum quantities to any of the parastatal agencies mentioned. Numbers and areas of commercial farms (and noncommercial farms as the remainder) would tend to fluctuate from year to year as farms swing from one sector to the other, depending on whether the threshold quantities are produced or whether the produce is sold through state or informal channels.

According to data published in the Commercial Farms Series, the distribution of land among farms in the commercial sector is highly skewed (table 3.7). Although small farms with 0-199 hectares account for 42.9 percent of total commercial farms in 1989-90, the most recent year for which complete data were available, they control only 2.1 percent of cultivated area in the sector. In contrast, farms of over 2,000 hectares occupy 65.8 percent of the land even though only 11.4 percent of all farms are of this size. The remaining 31.2 percent and 14.6 percent of farms in the 200-799 and 800-1,999 hectare range cultivate 13.5 percent and 18.6 percent of the land in the sector.

Table 3.7: Number and size of farms, commercial farm sector, 1990

	Size category	Number of farms	Percent of total number	Area of farms (ha)	Percent of total number
Zambia total	0-199	806	42.9	32,363	2.1
	200-799	586	31.2	206,978	13.5
	800-1,999	274	14.6	285,102	18.6
	2,000+	214	11.4	1,007,118	65.8
	Total	1,880	100.0	1,531,561	100.0

Source: Commercial Farm Series data.

Since 1975, 1990 is the first year in the time series that data are reported for all provinces. Prior to this date, provincial data except those for Central, Southern, and Lusaka regions were collapsed into the category Copperbelt/Others as illustrated in annex 3.1. Unfortunately, in 1989, data for farm sizes were reduced from six to four categories: the 0-79 and 80-199 categories became one category; and the 200-399 and 400-799 categories were merged into a second new category. Presumably this change was meant to economize on data collection and reporting. Unfortunately, collapsing the two smallest farm categories into one (i.e., 0-199 hectares) will make it difficult to monitor and assess rates of expansion by the emerging small- and medium-scale commercial farms which, as indicated in chapter 1, are reportedly expanding at a rapid pace. Many of these farms are 10-20 hectares. By including them with farms up to 199 hectares, it is difficult to assess the extent to which small- and medium-scale farms are affecting the composition of farms in the commercial sector, and the extent to which they are fully being captured in the CSO sampling frame.

Table 3.8 illustrates some important regional differences in the distribution of commercial farms. In terms of numbers, most are located in the more-densely settled Central (577 farms, 30.7 percent of the total), followed by North-Western (500 farms, 26.6 percent), and Southern provinces

Table 3.8: Provincial breakdown of number and size of farms, commercial farm sector, 1990

Province	Size category	Number of farms (it)	Percent of total (%)	Area (ha)	Percent of total (%)
Central	0-199	189	10.1	14,745	1.0
	200-799	231	12.3	98,544	6.4
	800-1,999	88	4.7	107,025	7.0
	2,000+	69	3.7	251,448	16.4
	Total	577	30.7	471,762	30.8
Copperbelt	0-199	93	4.9	5,054	0.3
	200-799	76	4.0	28,276	1.8
	800-1,999	28	0.0	91,765	0.0
	2,000+	197	1.5	125,095	6.0
	Total		10.5		8.2
Eastern	0-199	16	0.9	1,123	0.1
	200-799	18	1.0	6,990	0.5
	800-1,999	4	0.2	3,312	0.2
	2,000+	3	0.2	32,880	2.1
	Total	41	2.2	44,305	2.9
Luapula	0-199	12	0.6	1,612	0.1
	200-799	11	0.6	4,730	0.3
	800-1,999	0	0.0	0	0.0
	2,000+	0	0.0	0	0.0
	Total	23	1.2	6,342	0.4
Lusaka	0-199	97	5.2	6,071	0.4
	200-799	76	4.0	34,916	2.3
	800-1,999	35	1.9	42,744	2.8
	2,000+	27	1.4	94,215	6.2
	Total	235	12.5	177,946	11.6
North-Western	0-199	345	18.4	-	-
	200-799	100	5.3	-	.0
	800-1,999	50	2.7	-	-
	2,000+	5	0.3	35,500	2.3
	Total	500	26.6	35,500	2.3
Southern	0-199	29	1.5	1,758	0.1
	200-799	63	3.4	30,288	2.0
	800-1,999	97	5.2	132,021	8.6
	2,000+	82	4.4	501,310	32.7
	Total	271	14.4	665,377	43.4
Western	0-199	25	1.3	2,000	0.1
	200-799	11	0.6	3,234	0.2
	800-1,999	0	0.0	0	0.0
	2,000+	0	0.0	0	0.0
	Total	36	1.9	5,234	0.3
National total		1,880	100.0	1,531,561	100.0

(271 farms, 14.4 percent). However, in terms of area, commercial farms are most extensive in the southern regions (665,377 hectares, 43.4 percent), followed by Central (471,762 hectares, 30.8 percent) and Lusaka (177,946 hectares, 11.6 percent) provinces.

Southern province has the majority of the large farms with 38.3 percent of those with 2,000 hectares or more and 35.4 percent of those in the 800-1,999 hectare range. Only 3.5 percent of the small farms and 10.7 percent of the mid-size farms in 200-799 category are located there however.² Central province has another 32.2 percent of the two largest farm size categories, 39.4 percent of the mid-size farms (200-799 hectares), but only 23.4 percent of the small farms. Lusaka and the Copperbelt, which together comprise 23.0 percent of all farms, each have another 10-15 percent of the largest farms with Eastern and North-Western provinces each having a few. Lusaka and the Copperbelt are also the most urbanized and densely populated areas of the country with 39.9 and 31.7 people per km² versus less than 10 people per km² for the rest of the country (CSO 1991).³ The small farms are relatively evenly distributed across regions although North-Western province, which has only a few large farms, has 42.8 percent of the farms in the 0-199 category and 26.6 percent of all farms.

The skewed distribution of farm numbers versus farming area described above is also apparent when one examines the regional figures. While most regions have roughly the same percent of total farm numbers as total area, North-Western and Southern provinces are exceptions. North-Western province, for example, has 26.6 percent of all farms but only 2.3 percent of the total land base. In contrast, Southern province which is dominated by large commercial farms has only 14.4 percent of the total number of farms but 43.4 percent of the total land area. It, like the Central region, is located primarily in agroecological zone IIA which is characterized by a mean rainfall of 800-1,000 mm annually, 100-140 day growing season, and 5-6 hours of sunshine per day. Despite some soil limitations, it is the primary agricultural area (according to an unpublished report on agroecological zones).

IV. Changes over time in farm structure

The change in the number of farms over time has been rather stochastic according to the figures reported in annex 3.1 on the number of commercial farms by province for the period 1976 to 1990. The time series data begin in 1976 with 1,527 farms nationally. One year later, the number jumps to 2,242, drops again to 1,566 in 1979, before surging again to 1,894 in 1980. A steady decline in the number of farms nationally occurred from 1980 to 1985, when a low of 1,102 was reached. In 1986, the reported number of farms rebounded to 1,972 and held steady around the 2,000 mark thereafter through 1990. These trends are illustrated in figure 3.1 for national totals and figure 3.3 for farms in the 0-79 hectare category. The Copperbelt/Others region seems to have enjoyed a long-term gradual increase in the number of farms. The Central and Southern regions exhibited more instability, with a fall in the mid-1970s from which they rebounded again in the mid-1980s. The Central region seems to have included Lusaka prior to 1981 which may account for part of the dip

² See footnote on number of farms over time and Southern province below.

³ Population densities were calculated based on the 1990 census data and were reported in the CSO 1991 booklet, "Women and Men in Zambia." The provincial population densities per square kilometer are as follows: Copperbelt, 39.9; Lusaka, 31.7; Eastern, 9.4; Luapula, 8.3; Southern, 7.9; Central, 5.4; Northern, 4.6; North-Western, 3.9; and Western, 2.4.

in the early 1980s. Annex 3.2 containing data on the area of commercial farms bears this relationship out as well, particularly for the smallest farm size category (0-79 hectares, figure 3.4). The peaks and valleys are much more pronounced in the Central and Southern regions despite the fact that, as noted above, the Southern region only possesses 3.5 percent of the farms in this category and 14.4 percent of all farms.⁴

Data on number of farms by size category are illustrated in figure 3.5 for the period 1976 to 1988. Associated data on farm area over the same period are contained in figure 3.6. The two smallest farm sizes—0-79 hectares and 80-199 hectares—are experiencing the most volatile changes. The farms in the 0-79 hectare range are particularly variable in number and clearly seem to account for most of the corresponding national jumps and declines. There is a fairly steady decline in their number from 1977 to 1985 and then a phenomenal increase in 1986. One possible explanation is a demand response by small farmers to price and marketing reforms instituted in the 1980s. A more telling but analytically elusive possibility is the influence of statistical methodology including possible changes in the definitions of commercial farms. Small farms are particularly likely to be overlooked in survey administration. They also may fall in and out of the commercial category to the extent that market and climate characteristics drive their production below the threshold for commercial farms. Overall there has been an increase: the average number of farms in the two smallest farm sizes increased from 1,023 in 1976-78 to 1,214 in 1988-90, a 19 percent increase.

Although the other farm sizes tend to follow the national pattern, their lines are extremely smoothed vis-a-vis the overall trend line and that for the smaller farms. The largest fluctuation occurs in 1985. Farms in the 200-799 hectare range are relatively stable with 372 in 1976-78 and 397 in 1988-90, a change of 7 percent. Farms of 800-1,999 hectares are also somewhat constant in number and seem to escape the sharp decline felt in the other farm sizes in 1985. They have, however, steadily decreased in number over time with 307 on average for 1976-78 and only 256 in 1988-90, a drop of 17 percent. The largest farms, those with at least 2,000 hectares, also decline in number over time. The low point is in 1985 with 160 farms and the change in the averages from 1976-78 to 1988-90 is 14 percent, with 225 and 193 farms, respectively.

Data reflecting changes in the area of farms over time tell a similar story. The area of commercial farms in 1976, according to the Commercial Farm Series Data, was 1,877,490 hectares, which is roughly 2.5 percent of the 75,261,167 total hectares in Zambia. As with the number of farms, the area under farming increased dramatically in 1977 to 2,494,960 hectares then fell again in 1978 to 1,434,876 hectares. There was another peak in 1980 of 1,861,280 hectares but only 1,298,030 hectares in 1981—a major drop from which the sector has yet to recover. By 1984, the area had risen to 1,689,083 hectares where it hovered for the next six years. Surprisingly in 1985, when the number of farms plummeted dramatically, area did not change significantly with 1,661,825 hectares operated. By 1990, 1,531,561 hectares were farmed, 345,929 hectares less than in 1976. In fact, the average from 1976-78 dropped from 1,935,775 to 1,514,233 hectares in 1988-90, a 22 percent decline. Because data from the early to mid-1970s could not be located, it is not clear if this represents a significant trend towards shrinkage of farm sizes in the sector overall or if the figures for the late 1970s were simply anomalous.

⁴ Note that the 3.5% figure is taken for 1990 when only 29 farms were reporting. However, in 1989, 415 farms were reporting, a drop of 386. In fact, the decline in total number of farms from 2,185 to 1,880, a difference of 305, seems to be largely attributable to the change in this region.

Figure 3.1: Number of total farms by province, 1976-1990

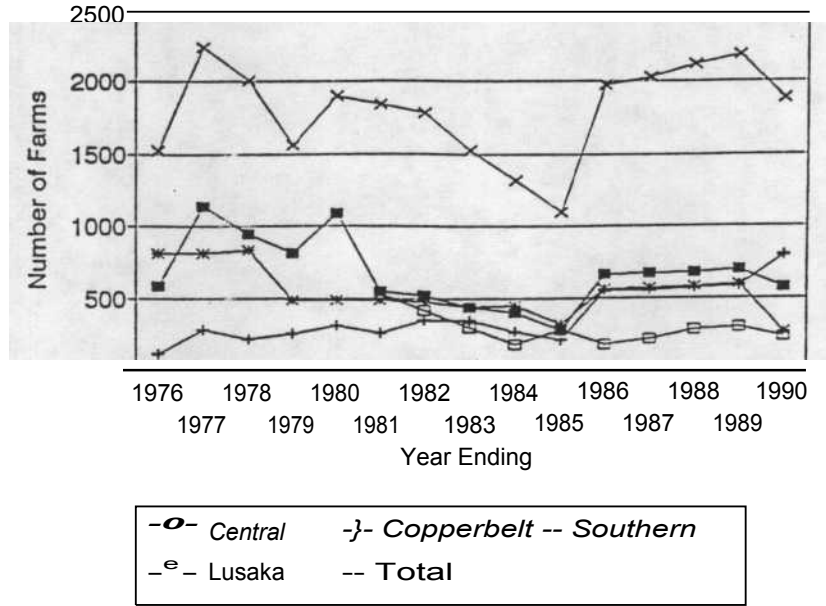


Figure 3.2: Area of total farms by province, 1976-1990

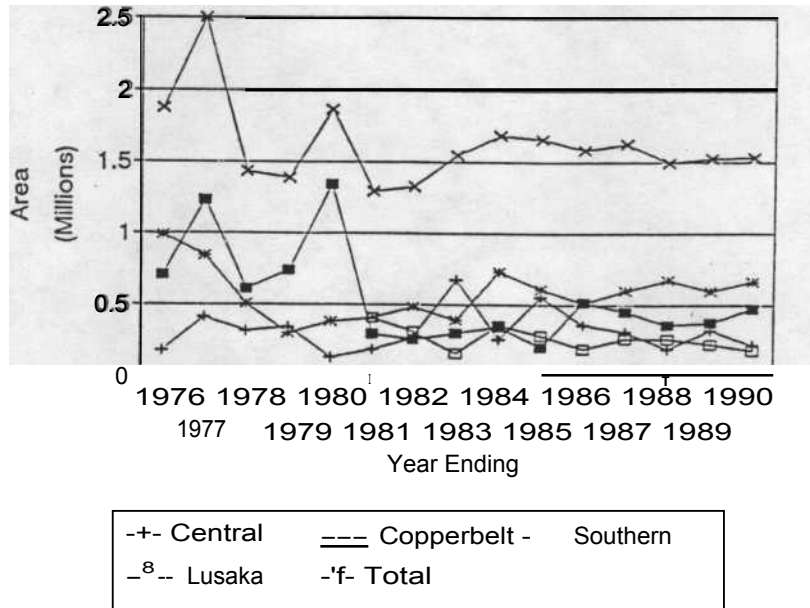
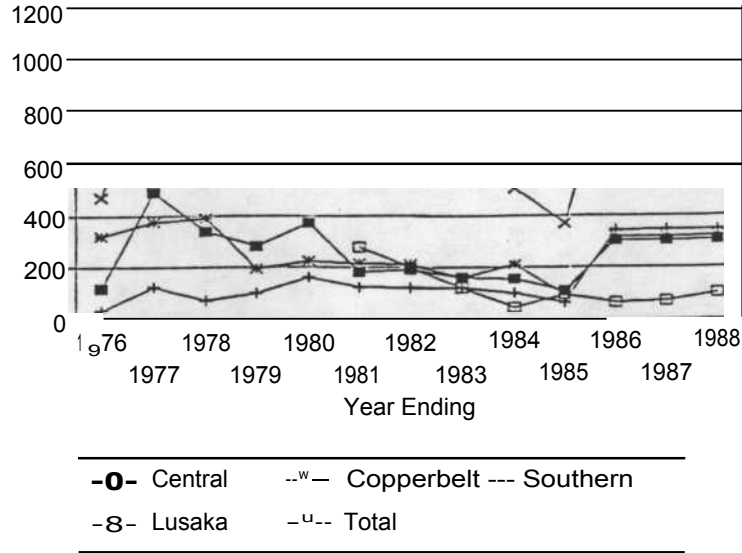


Figure 3.3: Number of 0-79 ha farms by province, 1976-1988^a



a. Copperbelt province includes unlisted provinces.

Figure 3.4: Area of 0-79 ha farms by province, 1976-1988

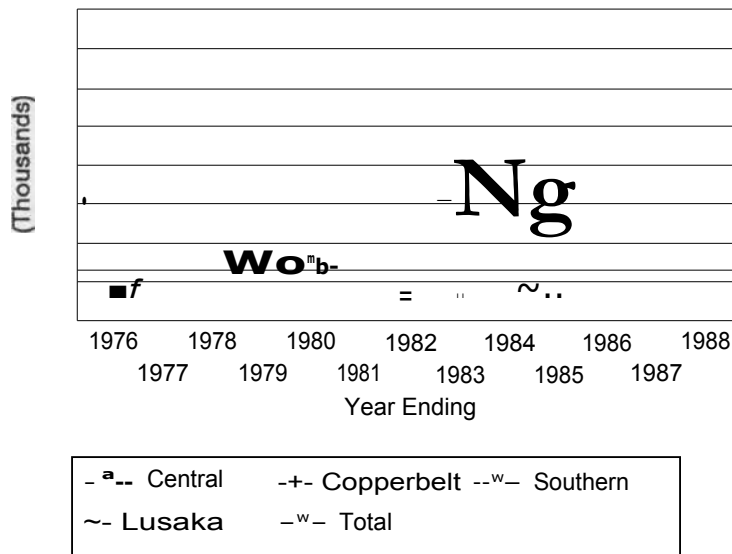
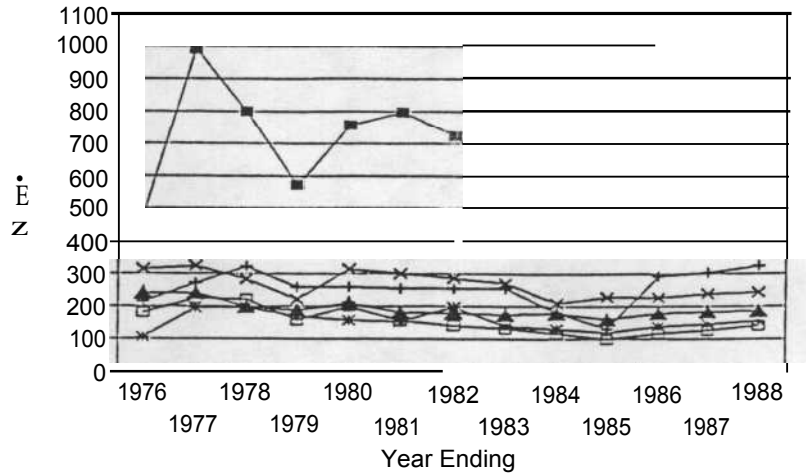
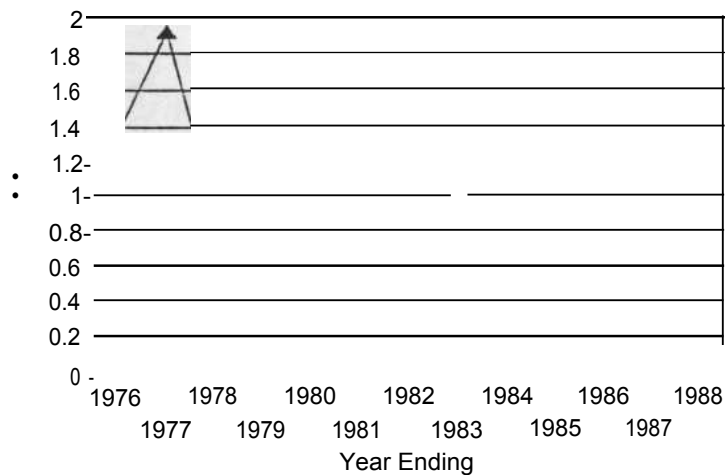


Figure 33: Number of total farms by farm size category, 1976-1988



- +- 0-79 hectares --- 80-199 hectares == 200-399 hectares
 - 400-799 hectares - 800-999 hectares -A- 2000 or more ha.

Figure 3.6: Area of total farms by farm size category, 1976-1988



-;- 0-79 hectares --4- 80-199 hectares --40- 200-399 hectares
 -s-- 400-799 hectares -04- 800-999 hectares -A- 2000 or more ha.

The average area of the small farm sector (0-199 hectares) was 43,890 hectares for 1976-78 but rose to 65,326 hectares in 1988-90—an increase of 49 percent. Much of this increase was from smaller farms (0-79 hectares) which had risen from an average of 20,231 hectares in 1976-78 to 33,942 in 1985-87, a dramatic increase of 67 percent. The increase over the corresponding period for farms in the 80-199 range is 55 percent. The only major fluctuation was 1985 when both farm sizes shrunk to nearly half the area they had in 1983. In contrast, the area controlled by farms with 2,000 hectares or more was very stochastic as shown in figure 3.4. Overall, the largest farms shrunk in area from 1,381,623 hectares in 1976-78 to 1,016,766 hectares in 1988-90, a decline of 26 percent.

V. Private transfers

The land market is the mechanism by which farming units change in number and size. Data on official transfers, i.e., transactions in leasehold properties and other legal transfers under the oversight of the MOL, are quite limited in scope and duration. The information that is available is reviewed below in section VI. The data on private transfers analyzed in this section have been taken from the commercial farm series collection for the period 1976-1990, formally known as the Annual Census of Agricultural and Pastoral Production.⁵ There is no indication how many of the transfers reported in the commercial farm surveys have also been registered with the MOL. Accordingly, no attempt will be made to formally reconcile the two sets of data.

The 1988-90 three-year averages indicate a relatively low level of land market transfers for the region (table 3.9). With regard to annual figures for Zambia as a whole, roughly 9,198.6 hectares (0.7 percent of the total land area) were purchased and 29,264.0 hectares (2.1 percent) were rented-in or leased-in,⁶ compared with purchases of around 4.0 percent per annum in the Republic of South Africa (Roth et al. 1993). There is, however, a discrepancy between the amount purchased and the amount sold and similarly between the amount leased-in and the amount leased-out. Normally one would expect the land-in and land-out figures to be roughly equal. As leases not fully utilized can be reassigned or claimed by outsiders, there is some incentive to underreport rental data. Also absentee landlords would not usually lease-out land, particularly to outsiders. Further, they would be the most difficult group to locate should underreporting be a serious problem in survey design. Unfortunately, it is impossible to ascertain the determining factors from the data provided.

Most of the land market activity is occurring in Southern province with 60.9 percent of the purchases nationwide and 40.9 percent of the leases. Copperbelt comprises 22.3 percent of the purchases but only 4.4 percent of the leases which may be accounted for by the presence of many small farms in this region, although Lusaka province (also with many small farms) has figures of 8.8 percent and 26.7 percent, respectively. Central province has 8.1 percent of the purchases and 28.0 percent of the leases.

⁵ Only area figures are reported. There is no information on the number of transfers.

⁶ Hereafter "lease" shall stand for lease or rental transactions. The data for most years does not distinguish between the two, so this report shall avoid doing so as well.

Table 3.9: Private transfers, commercial sector, 1988-90 average (hectares)

	Land owned at start of year	Purchases	Ratio of purchases to land area	Rented-in/ leased-in	Rental market/land area ratio	Rented-out/ leased-out	Sales
Central							
0-199	18,863.7	73.3	0.4	1,077.3	5.7	65.7	0.0
200-799	64,081.0	667.7	1.0	2,151.3	3.4	62.3	0.0
800-1,999	13,840.7	0.0	0.0	3,905.7	3.4	15.7	2,643.7
2,000 or more	206,957.7	0.0	0.0	1,045.3	0.5	0.0	0.0
Copperbelt & others							
0-199	22,956.3	248.7	1.1	267.7	1.2	138.7	0.0
200-799	29,039.0	0.0	0.0	1,017.0	3.5	95.3	0.0
800-1,999	21,422.0	1,800.0	8.4	0.0	0.0	0.0	0.0
2,000 or more	170,442.7	0.0	0.0	0.0	0.0	493.7	480.0
Lusaka							
0-199	5,920.7	60.0	1.0	926.7	15.7	99.3	8.3
200-799	25,247.0	750.3	3.0	1,564.3	6.2	0.0	500.7
800-1,999	65,189.3	0.0	0.0	0.0	0.0	0.0	0.0
2,000 or more	125,811.7	0.0	0.0	5,333.3	4.2	0.0	0.0
Southern							
0-199	17,585.7	173.3	1.0	322.0	1.8	0.0	122.0
200-799	24,214.7	2,168.0	9.0	93.3	0.4	22.0	91.3
800-1,999	89,106.7	0.0	0.0	7,103.0	8.0	46.3	0.0
2,000 or more	513,554.3	3,257.3	0.6	4,456.7	0.9	1,172.3	928.7
Zambia total							
0-199	65,326.0	555.0	0.8	2,594.0	4.0	304.0	130.0
200-799	142,582.0	3,586.0	2.5	4,826.0	3.0	180.0	592.0
800-1,999	189,559.0	1,800.0	0.9	11,009.0	6.0	62.0	2,644.0
2,000 or more	1,016,766.0	3,257.0	0.3	10,835.0	1.0	1,666.0	1,409.0
Total	1,414,233.0	9,198.0	0.7	29,264.0	2.0	2,212.0	4,775.0

Land purchases, relative to total area, were concentrated in the 200-799 hectare and 2,000 plus hectare ranges with 40.0 percent and 35.4 percent of the area transferred respectively nationwide. Of the total land area in the 200-799 hectare size category (142,582 hectares), 2.5 percent was purchased and 3.4 percent was leased-in. Land markets appear to be particularly dynamic in the Southern region, where a full 9.0 percent of the land base in this farm size category was purchased. In the Copperbelt/Others region, 8.4 percent of the land base of 800-1,999 hectare farms was purchased, despite the fact that the earlier analysis indicated that small farms were changing the most in number. Moreover, as seen above, the area occupied by large farms over 2,000 hectares experienced the greatest change, yet only 0.3 (0.1) percent of the land base of the largest farms was reported purchased (sold), and another 1.0 (0.1) percent was reported as leased-in (leased-out). A very high proportion (15.7 percent) of Lusaka's total land base was leased-in by farms in the 0-199 hectare category. The 0-199 hectare farms in every province appear to be most active, usually with 3-6 percent of their area being transferred each year.

The area purchased dropped dramatically during most of the early to mid-1980s with several years of 0 hectares purchased in each of the provinces (annex 3.3). It is not clear whether this is due to reporting error or structural changes in the land market. In Central province, 11,593.6 hectares over 1976-78 were purchased on average, which was 1.36 percent of the land base, while only 2,223.0 hectares were purchased on average in the 1988-90 period, a decline of 80.8 percent despite far less change in total farm area. Similarly, purchases in the Copperbelt/Other region averaged 12,327 hectares for 1976-78 but dropped to 2,048.6 hectares per annum by the 1988-90 period—an 83 percent decline. The change in purchases for Lusaka could not be measured over the same period due to missing data, but there was a drop from the 1981-83 average of 4,221.6 hectares to an average of 810.3 hectares in 1988-90. Southern province, in contrast, had only 174.3 hectares purchased on average in 1976-78 but had 5,598.6 hectares purchased per annum in 1988-90. No purchases were reported for several years. Small farms in all provinces, described in table 3.10, exhibit the same tendencies with 0 hectares purchased in 1983 and 1987 and under 20 in 1985 and 1986.

Table 3.10: Small farms (0-79 ha), private transfers, 1981-1990

	1981	1982	1983	1984	1985	1986	1987	1988
Number of farms	798	722	560	503	366	1,024	1,035	1,070
Land owned at start of year (ha)	20,215	20,597	18,460	13,281	10,368	33,909	36,216	31,703
Purchases (ha)	246	223	0	241	17	19	0	444
Rented/leased-in (ha)	1,479	1,586	1,957	4,080	1,885	185	995	1,530
Sold (ha)	785	0	0	0	0	0	233	366
Rented/leased-out (ha)	95	31	193	142	12	422	0	0
Land operated	21,060	22,375	20,224	17,460	12,258	33,691	36,978	33,311
Difference between operated & owned	845	1,778	1,764	4,179	1,890	-218	762	1,608

The amount of hectares leased also suffered a decline during the 1980s and an overall decline for the data period. Comparing the periods 1976-78 with 1988-90, the leased-in area of 62,313.3 hectares in 1976-78 declined to 8,179.6 hectares in Central province; from 74,347.6 hectares to 1,284.6 hectares in the Copperbelt/others; from 75,537 hectares to 11,975 hectares in Southern province; and a less dramatic 8,776.3 hectares (1981-83) to 7,824.3 in Lusaka, despite the fact that land area in the sector remains relatively constant.

Overall, land purchases tend to be undertaken by farms in the larger farm size categories (800-1,999 and 200-799 hectares) and principally in Southern and the Copperbelt/Other provinces. Leasing-in tends to be more common on farms less than 2,000 hectares, and particularly on the smallest farms in Lusaka province (0-199 hectares, 15.7 percent) and Southern province. In contrast, sales and leasing-out tend to be widely dispersed among all provinces and, on the basis of area, tend to be concentrated in the larger farm size categories. These data further suggest a land market that, while quite important in the commercial sector, is still constrained compared with other countries in the region. Most farms appear to renting-in land from other individuals or groups that fall outside the

commercial farm definition, either absentee landlords or chiefs, although the cause remains an empirical question. Large farms over 2,000 hectares do not lease-in appreciable quantities of land. While this is not surprising, it is somewhat unexpected that they do not lease-out significant quantities either.

Most intriguing is the drastic decline in land purchases and leases over time compared with area, especially given the fact that land market controls appear to have eased considerably since the 1975 Conversion Act (see p. 16) was adopted. It is not a matter of simply underreporting, as total land area is rising slightly. It is possible that high land transfer fees and MOL bottlenecks in the late 1980s have begun to exact a toll on volume of transfers. The late 1970s and early 1980s was also a period associated with "white flight" following independence, and the volume of transfers may have experienced an upward surge as a result. Tenure insecurity may also be affecting transfers in certain regions. Finally, the shrinkage in the large farm sectors over time and the expansion of smaller farms may have simply moved purchases and rentals out of the sampling frame. None of these explanations, either individually or collectively, is satisfactory. Field-level research will be required if these questions are to be sorted out.

Given the apparent increase in small- and medium-scale commercial farms, one would have expected: (1) a much more rapid growth in the number of small farms (0-79 hectares) than is observed in annex 3.1; and (2) a greater number of land purchases and/or leasing by this group. While land markets appear to very dynamic in certain peri-urban settings (e.g., Lusaka), this does not seem to be the case in other areas. In fact, the wild swings from zero to thousands of hectares suggest fundamental problems. First, the current data-collection methodology is underreporting land transfers by existing farms. Second, the rapid expansion of new commercial farming units is not being captured in survey designs; in fact, there is little indication of it in the data. Unfortunately, lack of data on land transfers in the noncommercial sector limits insight into the sources of land for the lease and purchase markets being reported, the expansion of farms that is ostensibly occurring, or the mechanisms used to acquire land.

VI. Official land transfers

The MOL routinely maintains records for at least twelve categories of official land transfers in Zambia:

- ▶ *Assignment*: the sale of registered and unregistered property usually involving a price. From 1975 to 1992, the government set values through the Government Valuation Department or via other appraisals. Prices have been market determined since 1992.
- ▶ *Assignment of subdivision* (or simply subdivision): the transfer of a portion of a plot of land, usually involving a price.
- ▶ *Transfer*: official change in ownership that occurs through inheritance or gift, usually without a value ascribed.
- ▶ *Deed of gift*: transfer declared as a bequest or gift, usually with no value attached.
- ▶ *Reserve lease*: lease issued on Reserve Land.

- ▶ *State lease*: lease issued on State Land.
- ▶ *Right of occupancy*: lease issued on Trust Land.
- ▶ *Sublease*: sublease on either State, Trust, or Reserve Land.
- ▶ *Deed of guarantee*: lien placed on property by building societies or other official agencies, guaranteed by the Ministry of Finance.
- ▶ *Mortgage*: lien placed on property by banks or other formal lending institutions for long-term credit involving land or fixed land improvements.
- ▶ *Surrender*: voluntary surrender of a lease. This may mean either giving up a lease or converting from an unsurveyed 14-year lease to a surveyed 99-year lease.
- ▶ *Reentry*: repossession of a leasehold because the lease conditions are not met (e.g., the rent is not paid or the plot is not developed).

Data for all transfers are recorded and filed on a computerized database maintained in the MOL. Efforts to construct the computerized database began in 1990. Data on leases were automated back to roughly 1987, but the reliability of the data is questionable as there is no guarantee of completeness in data entry. To conserve time, the decision was made to omit entering data on mortgages and offers prior to 1990. In the ministry's current usage, assignments, transfers, subleases, mortgages, and deeds of guarantee all refer to leasehold property. Under the Lands Department's current practices, there is no dealing in land held under customary law (e.g., areas of Reserve Land). All categories are theoretically unique in that no transfer is allowed to be included in more than one category. The extent to which mutual exclusivity is maintained is difficult to assess, but, on the surface, records since 1990 appear well maintained thanks in large part to assistance provided by SIDA in computerizing records.

A. Regional distribution of transfers

Detailed data for the period 1990 to 1993 (July) are reported for total number of transfers, total area of transfers, average area transferred, and the average price (only for assignments, subdivisions, deed of gift and transfers) in annex 3.4 for property transfers, annex 3.5 for lease issuances, annex 3.6 for reentries and surrenders, and annex 3.7 for liens and mortgages. Percentages of each type of transfer by region, and total number and area of leases nationwide are reported in table 3.11.

The level of activity is very similar to that found above for private transfers which suggests that private and official markets are picking up the same dynamics, or the two markets are in fact partially inclusive. Between the period 1 January 1990 and 31 July 1993, the government issued 6,013 state leases, 98 reserve leases, 237 rights of occupancy, conducted 2,972 assignments, and 215 subdivisions. Moreover, 530 leaseholders voluntarily surrendered their leases, while the government

Table 11: Regional disaggregation of principal property transfers and leases in the commercial sector, 1990-93

Percentage of number of leases	Assignments	Sub-divisions	Reserve leases	Right of occupancy	State lease	Subleases	Transfer	Mortgage	Re-entry	Surrender
Central	0.0629	0.0372	0.3776	0.2363	0.0891	0.0290	0.0576	0.1378	0.1225	0.1038
Copperbelt	0.3183	0.0651	0.3163	0.0886	0.2074	0.1739	0.0976	0.2616	0.1624	0.1491
Eastern	0.0242	0.0093	0.0306	0.0464	0.0717	0.0145	0.0277	0.0301	0.0085	0.1113
Luapula	0.0111	0.0000	0.0000	0.1730	0.0338	0.0000	0.0154	0.0078	0.0057	0.0132
Lusaka	0.5182	0.8558	0.0612	0.0338	0.3627	0.7101	0.7040	0.4069	0.5869	0.4528
Northern	0.0074	0.0000	0.0204	0.2700	0.0397	0.0000	0.0062	0.0236	0.0142	0.0453
North-Western	0.0027	0.0000	0.0000	0.0844	0.0230	0.0000	0.0051	0.0039	0.0000	0.0094
Southern	0.0505	0.0326	0.1429	0.0633	0.1074	0.0725	0.0771	0.1206	0.0684	0.0868
Western	0.0047	0.0000	0.0510	0.0042	0.0652	0.0000	0.0092	0.0078	0.0313	0.0283
Total No: Leases	2972.00	215.00	98.00	237.00	6013.00	69.00	973.00	3092.00	351.00	530.00
Percentage of Area of Leases	Assignments	Sub-divisions	Reserve leases	Right of occupancy	State leases	Subleases	Transfer	Mortgage	Re-entry	Surrender
Central	0.4696	0.5354	0.3039	0.2728	0.2880	0.0001	0.2564	0.3330	0.5012	0.1622
Copperbelt	0.0766	0.0015	0.2551	0.1086	0.1613	0.0008	0.2430	0.2742	0.0965	0.2275
Eastern	0.0110	0.0040	0.0074	0.0286	0.0445	0.0061	0.0520	0.0203	0.0483	0.0165
Luapula	0.0021	0.0000	0.0000	0.1284	0.0094	0.0000	0.0055	0.0094	0.0000	0.0197
Lusaka	0.1637	0.2141	0.0620	0.0858	0.1573	0.0045	0.1676	0.0673	0.2870	0.3658
Northern	0.0096	0.0000	0.0133	0.2295	0.0394	0.0000	0.0092	0.0132	0.0269	0.0411
North-Western	0.0000	0.0000	0.0000	0.1006	0.0026	0.0000	0.0001	0.0003	0.0000	0.0001
Southern	0.2581	0.2451	0.3410	0.0447	0.2835	0.9886	0.2604	0.2816	0.0400	0.1671
Western	0.0092	0.0000	0.0173	0.0010	0.0139	0.0000	0.0058	0.0006	0.0001	0.0001
Total No: has	118329	6368.11	37770.95	58108.45	154164.7	2966.8	46286.52	752729.3	25303.32	55772.86

a. Data was only available through July of 1993.

repossessed 351 leases. Without knowing the total number of leases issued nationwide, it is difficult to evaluate the magnitude of these transfers, but, given the evidence presented in the earlier section, the volume of assignments and subdivisions would seem very low.⁷

Much of the activity in assignments, transfers, and subdivisions was in peri-urban areas. While Copperbelt (32 percent) and Lusaka (52 percent) had the majority of assignments, the main farming regions of Central (47 percent) and Southern (26 percent) had the majority of the area transferred. With regard to subdivisions, Lusaka had 86.0 percent of the number but only 21 percent of the area. It also had 70 percent of the transfers but only 17 percent of their area.

State leases and subleases also seemed to be issued to small farms and properties in peri-urban areas with the majority occurring in the Lusaka, Copperbelt, and Northern regions while Central and Southern regions again dominate in area. Lusaka has 71 percent and Copperbelt 17 percent of the subleases implying mainly the residential and commercial character of leases in these regions (reviewed shortly). Reserve leases and rights of occupancy seem, however, to have been issued for agricultural properties in Central, Copperbelt, and Lusaka. The greatest number of reentries and surrenders appears to be occurring in the more urban and residential areas of Lusaka (58.7 percent of reentries, 45.3 percent of surrenders), Copperbelt (16.2 percent, 14.9 percent), and Central (12.2 percent, 10.4 percent) provinces, roughly in accord with the regional distribution of state leases, but the high percentage for Lusaka suggests the possibility of greater enforcement of land use conditions due no doubt to the close proximity of the region to government and the central registry.

Lusaka had 40 percent of the number of mortgages placed on leases but only 7 percent of the area under mortgages, which clearly indicates the majority of these loans are going for small, peri-urban properties. The Central (14 percent), Southern (12 percent), and Copperbelt (26 percent) regions seemed to have received some loans for larger agricultural properties with 33 percent, 28 percent, and 27 percent of the area respectively. Average sizes reported in table 3.12 are particularly large in the Central region with 1,396.1 hectares for deeds of guarantee and 588.4 hectares for mortgages, the largest of any region. Southern province also reported a 568.3 hectare average size for mortgages although no deeds of guarantee were issued there during the reporting period. The low numbers of such issuances vis-a-vis mortgages bears this out. Nonetheless, the larger farms in these two provinces seem to be able to access formal channels of credit more easily than smaller farms.

These conclusions about the type and distribution of transfers are borne out by table 3.12, which reports the regional disaggregation of land values and sizes transferred in the commercial sector. The average size of all transactions in Lusaka was uniformly small with the exception of reserve leases (390.2 hectares) and rights of occupancy (622.9 hectares). In contrast, the areas transferred for the Central and Southern regions were substantial ranging from 165 to 1,396 hectares and 42 to 587 hectares respectively. These numbers are particularly interesting for the deed of gift and transfer categories with very large parcels (roughly 200 to 1,000 hectares) being offered for no price. Nonetheless, as reported in annex 3.4 on the figures for transfers from 1990-93, the average size of all four categories of transfers ranged from only 16-93 hectares.

⁷ The issue of rent payment aside, the volume of reentries appears quite high. However, considering the low payment rates on lease, the MOL through enforcement of lease rents could justify a much higher rate.

Table 3.12: Regional disaggregation of land values and sizes transferred in the commercial sector, 1990-93^a

Average size of transfer (ha)	Assignments	Sub-division	Deed of gift	Reserve lease	Right of occupancy	State lease	Sublease	Transfer	Deed of guarantee	Mortgage	Re-entry	Surrender
Central	297.15	426.18	217.83	310.18	283.11	82.84	0.15	211.91	1396.09	588.35	294.93	164.50
Copperbelt	9.58	0.67	2.54	310.84	300.52	19.94	0.19	118.40	5.98	255.13	42.86	160.59
Eastern	18.09	12.64	0.76	93.67	151.04	15.93	18.00	89.16	0.00	164.63	407.35	15.56
Luapula	7.70	0.00	0.08	0.00	181.98	7.14	0.00	16.82	250.00	296.37	0.21	156.60
Lusaka	12.58	7.41	7.43	390.23	622.94	11.12	0.27	11.32	7.08	40.27	35.25	85.01
Northern	51.66	0.00	0.00	251.19	208.38	25.45	0.00	71.28	0.00	136.32	136.03	95.50
North-Western	0.58	0.00	0.02	0.00	292.42	2.93	0.00	0.79	0.00	16.46	0.00	0.97
Southern	203.57	222.96	344.84	919.89	173.03	67.64	586.59	160.70	0.00	568.31	42.15	202.64
Western	78.18	0.00	0.00	131.00	57.18	5.47	0.00	30.04	0.00	20.13	0.22	0.23
Average land value/price (K,000/ha)	Assignments	Sub-division	Transfer	Average land value/price (K000/ha)	Assignments	Sub-division	Transfer					
Central	6.57	0.13	0.04	Northern	19.94	0.00	0.11					
Copperbelt	193.78	912.91	0.21	North-Western	1997.83	0.00	0.00					
Eastern	59.62	31.46	0.01	Southern	5.48	4.18	0.03					
Luapula	38.71	0.00	0.20	Western	3.28	0.00	0.00					
Lusaka	251.28	62.66	5.04									

a. Data was only available through July of 1993. Average size of transfer was **calculated** by summing the number of transfers in each category across 1990-93 and summing the number of hectares across the same period and dividing. Average value was calculated in the same manner.

B. Average values

Lack of data obscures the numbers for average value of land reported in table 3.12. There is much disparity in average land prices across regions. It is clear from a comparison of average size vis-a-vis average value that the far higher prices for Copperbelt, Lusaka, and North-Western generally represent transactions in urban land with its higher value. The few transactions over the reporting period in North-Western province, in all likelihood involving urban land, resulted in an average value of K1,997,830 for assignments versus K251,280 for Lusaka and K6,570 for Central province. No clear pattern is evident except that subdivisions and assignments have a higher average price than transfers and deeds of gifts (see also annex 3.4). Even adjusting for inflation via the consumer price index (CPI), the real price of assignment and subdivision appear to have increased in real terms from 1990 to 1993 and increased more dramatically than the other categories. Prices for transfers are negligible for the most part with the exception of Lusaka where the average price was K5,040.

C. Lease issuances

The number, aggregate, and average areas of leases reported in annex 3.5 are much larger than those for transfers but appear to also be relatively static, suggesting the presence of supply constraints. Most lease activity seems to involve peri-urban properties, although there is some heterogeneity across lease types. State leases tend to be issued to smaller, peri-urban properties. Reserve and rights of occupancy, however, are most often going for agricultural land. According to the data reported in annex 3.5 on lease issuances from 1990-93, state leases dominate with 1,397 (52,761 hectares) issued in 1993 (partial year) versus 65 (15,424 hectares) rights of occupancy and only 17 (5,163 hectares) reserve leases. The average areas for state leases are much smaller than for the other categories, with approximately 22 hectares in 1990 and 38 hectares in 1993, which again suggests peri-urban activity. Significantly, 36 percent of state leases were issued in Lusaka and 21 percent in the Copperbelt. The largest amounts in terms of area were in the Central and Southern regions, although these were still only 82.8 and 67.6 hectares in size respectively. Subleases are also very small with the exception of those in the Southern region which are unusually large at 586.6 hectares. This region in fact has 99 percent of the area of subleases though only 7 percent of the total number. As noted above, this region has a disproportionate number of the largest farms.

Reserve leases in contrast had average areas of roughly 300 hectares for three of the four years in question. Rights of occupancy are also very large in general with an average area of 150 hectares or more, mostly between 200-300 hectares. According to table 3.11, the main farming regions of Central, Southern, and Copperbelt provinces lead, in area terms, in the issuance of reserve and right of occupancy leases. While Luapula and North-Western provinces listed no reserve leases over the period, Southern province had a reported average size of 919.9 hectares. Central, Copperbelt, Northern, and Lusaka provinces had sizes between 250 and 400 hectares. The 390.2 hectares reported for Lusaka is particularly surprising given the urbanized nature of the province and the small (6-8 percent) number of the leases occurring there. Without the data on distribution of Reserve, State, and Trust Lands across provinces, it is difficult to say more about the reasons for dominance of one province or another in lease types.

The reentries and surrenders reported in annex 3.6 are significantly larger than the state lease sizes, indicating that most of these are occurring on Reserve and Trust Lands or are reentries of larger state leaseholds issued in prior years. The ratio of reentries and surrenders to lease issuances is high. In 1992, the ratio of lease issuances to reentries was 21:1 and the ratio of lease issuances to surrenders

was roughly 9:1. In 1991, the equivalent ratios in terms of area were 13:1 and 5:1. As stated earlier with respect to rates of utilization, it seems remarkable that the government and donors are pushing to expand the number of leaseholds at the same time that reentries are climbing.

D. Mortgages and the credit market

According to annex 3.7, mortgages showed more change than the other official transfers: 905 were issued in 1990, 825 in 1991, and 784 in 1992. The major change in area occurred between 1990 and 1991 when the area shrunk to half its previous size, from 364,041 to 145,827 hectares. Data not reported here from the MOL indicate that 71 percent of the mortgages (numbers) involved parcels of less than 6 hectares. Unfortunately records are not computerized on the value of mortgages, but conceivably these figure would be misleading as large farms, while having few mortgages, could capture a large share of the total volume of credit as indicated in chapter 1. Given the greater tenure security associated with 99-year leases compared with 14-year leases, one would expect a strong association between mortgages and lease duration. Of a total of 1,285 mortgages over the period 1 January 1990 to 31 July 1993 on 14-year and 99-year leases, the vast majority of the leases were recorded on State Land (95.1 percent), followed by rights of occupancy on Trust Land (3.3 percent), and reserve leases (1.6 percent). With regard to duration of leases, the majority are issued for 99-years (84.0 percent) followed by 14-year leases (16.0 percent). Care should be taken in interpreting these numbers as 99-year leases tend to be highly correlated with state leases which tend to be located on better lands with superior access to input and credit markets. Leaseholders also tend to be better established with perhaps superior ability to overcome information and transaction costs associated with taking out a mortgage. These factors would tend to skew mortgages toward state leases, most of which are 99 years.

VII. Land use

The land use data contained in table 3.13 bear out earlier conclusions about the types of uses dominating various transfers. For all types of transactions, residential uses overshadow other uses everywhere but the major farming regions of Central and Southern provinces. The majority of official transfers (assignments, subdivisions, and transfers) in 1990-93 were for residential uses with exception of Central province. In Copperbelt province, they accounted for 62 percent, Luapula 67 percent, North-Western 85 percent, Western 52 percent, Lusaka 50 percent, Eastern 42 percent, Northern 39 percent, and Southern 33 percent. Commercial uses accounted for another 20-30 percent in Copperbelt, Eastern, Luapula, Southern, and Western provinces. Agriculture was the major use only in Central province at 60 percent, but did account for roughly 30 percent in Eastern, Northern, Southern, and Lusaka provinces. Industry was less important, with only 1-5 percent of transfers occurring in that land use (with the exception of Northern province, where 18 percent of the transfers involved industrial properties).

Residential uses figured importantly in lease issuances during this period in all the provinces but particularly North-Western, Luapula, Western, and Eastern areas, with approximately 60-75 percent of their lease issuances. Agricultural uses accounted for 30-35 percent of lease issuances in Copperbelt, Lusaka, Northern, and Southern provinces and 46 percent in Central province. In Southern province, 20 percent of the leases were issued for properties classified as "other." There is no indication as to what might be included in this category. Commercial uses accounted for 7-10 percent of all leases except for Luapula, where 17 percent of leases were for commercial properties,

Table 3.13: Percentage of transfers, by land use and province

	Residential	Commercial	Industrial	Agriculture	Other	Total number
Transfers (includes assignments, subdivisions, and transfers)						
Central	0.2470	0.1315	0.0120	0.6016	0.0080	251
Copperbelt	0.6181	0.2000	0.0353	0.1113	0.0353	1,105
Eastern	0.4158	0.2772	0.0198	0.2871	0.0000	101
Luapula	0.6667	0.2292	0.0208	0.0417	0.0417	28
Lusaka	0.4972	0.0992	0.0533	0.2845	0.0658	2,309
Northern	0.3929	0.1429	0.1786	0.2857	0.0000	28
North-Western	0.8462	0.1538	0.0000	0.0000	0.0000	13
Southern	0.3319	0.2155	0.0129	0.3276	0.1121	232
Western	0.5217	0.2609	0.0000	0.2174	0.0000	23
Total Number	2,078	584	176	1,051	221	4,110
Leases (includes reserve leases, rights of occupancy, and state leases)						
Central	0.4308	0.0700	0.0111	0.4658	0.0223	629
Copperbelt	0.4904	0.0978	0.0446	0.3364	0.0308	1,299
Eastern	0.7079	0.1348	0.0270	0.1056	0.0247	445
Luapula	0.5943	0.1721	0.0082	0.1885	0.0369	244
Lusaka	0.4333	0.0970	0.0907	0.3581	0.0210	2,195
Northern	0.4984	0.1191	0.0125	0.3041	0.0658	319
North-Western	0.6772	0.0886	0.0063	0.1772	0.0506	158
Southern	0.3640	0.1081	0.0161	0.3168	0.1950	805
Western	0.7995	0.1320	0.0127	0.0305	0.0254	394
Total Number	3,193	677	301	2,001	316	6,488
Mortgages						
Central	0.1620	0.0798	0.0188	0.7347	0.0047	426
Copperbelt	0.5241	0.2386	0.1001	0.1100	0.0272	809
Eastern	0.3871	0.0538	0.0108	0.5484	0.0000	93
Luapula	0.5417	0.1667	0.0417	0.2500	0.0000	24
Lusaka	0.5119	0.0922	0.0851	0.2695	0.0413	1,258
Northern	0.3973	0.2603	0.0411	0.2466	0.0548	73
North-Western	0.5000	0.2500	0.1667	0.0833	0.0000	12
Southern	0.1546	0.1031	0.0474	0.3938	0.3010	485
Western	0.6000	0.2800	0.0400	0.0800	0.0000	25
Total Number	1,311	431	227	1,010	226	3,205

Source: CSO data averaged over 1990-93.

and Eastern and Western provinces, where 13 percent were for commercial properties. Industrial uses were not terribly important, accounting for only 1-5 percent of leases everywhere except for Lusaka, which had 9 percent of its leases issued for industrial properties.

The distribution of mortgages across land uses was more varied. Residential uses accounted for roughly 40-55 percent of mortgages in Copperbelt, Eastern, Luapula, Lusaka, Northern, and North-Western provinces. While 60 percent of the mortgages were placed on residential properties in Western province, they constituted only 15-16 percent of those in Southern and Central provinces. Agricultural properties accounted for 70 percent in Central province and 39 percent in Southern province. In the latter, 30 percent of the mortgages were also placed on properties categorized as "other." Luapula, Lusaka, and Northern provinces also had roughly one quarter of their mortgages placed on agricultural lands. All provinces except for the Eastern region (5 percent) had one quarter of the mortgages placed on commercial properties. Industrial uses received another 10-16 percent of the mortgages.

Overall, the data indicate that land transfers, whether assignments, subdivisions, or lease issuances, are generally for residential and commercial properties. Agriculture makes up over 45 percent only in Central province. Mortgages for agricultural uses are important (8.0 percent to 39.4 percent, excluding Eastern and Central provinces), but residential and commercial properties still predominate. Arguments raised in chapter 1 that title is needed to obtain credit are not inconsistent with these data, but the use data suggest that residential and commercial, rather than agricultural uses, are driving demand.

VIII. Size distribution of leases

Table 3.14 lists the number of leases issued by size category totaled over the period 1990-93. The vast majority (81.9 percent) of state leases are issued to farms less than 6 hectares in size. This accords with the findings above but shrinks the size from the range 0-79 to the more precise 0-6 hectares. This suggests the significance of peri-urban activity and the possible filling-in of pockets of unregistered land in areas largely registered. Due to the dominance of state leases over reserve leases and rights of occupancy, 78 percent of all leases are issued for properties less than 6 hectares in size.

The 100-250 hectare size is more important for reserve leases and rights of occupancy, with 29.6 percent of the former and 48.1 percent of the latter. Most of the leases in this category were issued for properties between 50-500 hectares in size, with a surprisingly large number (25.5 percent of reserve leases and 16.5 percent of rights of occupancy) issued in excess of the 250 hectares ceiling set by the MOL to avoid land concentration.⁸

Data on the percentage of leases for each farm size by province are reported in table 3.15. Only four provinces garnered more than 10 percent of the leases for any given farm size. The medium and large farm leases seem to have been issued largely in the main commercial farming regions.

⁸The minister has discretionary powers to issue leases for areas in excess of this amount, particularly for certain uses (e.g., ranching) where a larger size makes economic sense.

Table 3.14: Numbers of leases by size category, 1990-93 totals

	State leases (#)	Percent of state leases	Reserve leases (#)	Percent of reserve leases	Right of occupancy (#)	Percent of right of occupancies	Total (#)	Percent of total
0-2	4,215	70.1	5	5.1	9	3.8	4,229	66.6
2-6	707	11.8	9	9.2	8	3.4	724	11.4
6-11	233	3.9	4	4.1	2	0.8	239	3.8
11-21	151	2.5	4	4.1	12	5.1	167	2.6
21-50	213	3.5	12	12.2	21	8.9	246	3.9
50-100	171	2.8	10	10.2	32	13.5	213	3.4
100-250	207	3.4	29	29.6	114	48.1	350	5.5
250-500	52	0.9	17	17.3	25	10.5	94	1.5
500-1,000	43	0.7	2	2.0	5	2.1	50	0.8
1,000-2,500	18	0.3	2	2.0	7	3.0	27	0.4
2,500-5,000	1	0.0	2	2.0	2	0.8	5	0.1
5,000 or more	2	0.0	2	2.0	0	0.0	4	0.1
Total	6,013	100.0	98	100.0	237	100.0	6,348	100.0

Table 3.15: Regional disaggregation of leases by farm size, 1990-93 percentages

	Hectares											
	0-2	2-6	6-11	11-21	21-50	50-100	100-250	250-500	500-1,000	1000-2500	2500-5000	5000+
Central	7.6	2.9	3.8	12.6	18.7	28.2	22.9	44.7	42.0	18.5	40.0	25.0
Copperbelt	19.8	7.6	35.6	51.5	48.0	16.9	17.4	11.7	2.0	25.9	0.0	25.0
Eastern	9.0	2.3	1.7	2.4	2.4	4.2	4.3	3.2	12.0	0.0	0.0	0.0
Luapula	4.6	0.3	0.4	1.8	2.4	1.9	8.0	2.1	4.0	0.0	0.0	0.0
Lusaka	33.1	80.0	49.0	18.6	12.2	6.1	3.4	3.2	12.0	3.7	0.0	25.0
Northern	5.0	0.8	1.3	4.8	4.1	7.5	10.6	7.4	2.0	14.8	40.0	0.0
North-Western	2.8	2.2	0.4	0.6	1.2	1.9	2.3	3.2	0.0	7.4	0.0	0.0
Southern	9.0	3.5	7.9	6.6	9.3	31.9	30.3	24.5	20.0	29.6	20.0	25.0
Western	9.0	0.4	0.0	1.2	1.6	1.4	0.9	0.0	6.0	0.0	0.0	0.0
Total number	4,229	724	239	167	246	213	350	94	50	27	5	4

Central province, which led in the percentage of area of leases, tends to have a significant percentage of the leases in the medium- to large-size farms: 28 percent of those in the 50-100 hectare category, 23 percent of those 100-250 hectares, 45 percent of those 250-500 hectares, 42 percent of those 500-1,000 hectares, 19 percent of those 1,000-2,500 hectares, 40 percent of the few 2,500-5,000 hectare leases, and 1 of the 4 farms over 5,000 hectares. Southern province, which also led in percentage of the area of leases, had a significant percentage of leases for these farm sizes as well, with 32 percent, 30 percent, 24 percent, 20 percent, 30 percent, 20 percent, and 1 of 4 respectively. In keeping with our earlier findings, Copperbelt and Lusaka provinces were the most important for leases on land 50 hectares and under. The Copperbelt had 20 percent of the 0-2 hectare leases, 7 percent of the 2-6 hectare, 36 percent of the 6-11 hectare, 51 percent of the 11-21 hectare, and 48 percent of the 21-50 hectare leases. Lusaka had 33 percent, 80 percent, 49 percent, 19 percent, and 12 percent of the leases for the same farm sizes. The dramatic dominance of Lusaka in the 2-6 hectare size seems to confirm the hypothesis about the significance of peri-urban activity and in-filling of registered land. The Copperbelt, which also has some sizable areas under agricultural production, had 15-25 percent of the leases in most of the larger farm sizes as well.

IX. Foreign offers

Foreign offers have been an issue of contention in Zambia. There is concern among some government officials that the leasehold process could promote excessive concentration and a growth in foreign ownership if the land market is fully opened to outsiders. Conversely, following 15 or more years of nominally socialist policies, a number of Zambians are expressing the need for private capital growth to develop the economy, and foreign investment is considered the most promising source of this private capital. There is palpable concern from all sides, nonetheless, about possible equity consequences of opening the land market.

Data from official transfer records indicate there may be no foundation for these fears at present, although missing data preclude any strong conclusions. When offers are registered, the offerer is asked to produce a national registration card (NRC),⁹ the last digit of which indicates citizenship status (see chapter 2).¹⁰ The data on foreign ownership in table 3.16 were compiled from a computer listing of the offers. Unfortunately, roughly 15-25 percent of the offerers in every province were missing an NRC with the exception of Lusaka province, where 39.4 percent of offers did not have the proper NRC codes attached. It is possible for foreigners to register land in names of Zambian spouses or other kin which may begin to explain the large number of missing registration cards.

Assuming that only Zambians were missing their cards, no more than 2 percent of the offers were made by non-Zambians (averaged over 1990-93) with the minor exception of Central province (2.9 percent). Assuming the missing cards were evenly distributed between Zambians and non-Zambians, then foreign offers would account for 12-13 percent in most provinces. With the large number of missing cards in Lusaka, the number would rise to **18.8** percent there. In other provinces where one percent or less foreign offers were registered (e.g., Eastern, Luapula, Northern, North-Western, Southern, and Western), this assumption seems a bit strong, particularly when this weighting

⁹ In the ministry usage, "offer" refers to an application that has been approved for registration.

¹⁰ Zambians have a 1 appended and foreigners have a 2 or another digit. The data were sorted according to this criteria. All residents of Zambia are required by law to carry these cards.

of the missing cards makes the percentage jump from 0 to 12.7, as in the case of Northern province. Overall, there seems to be little cause for concern about the number of offers registered by foreigners. On the other hand, there are insufficient data to determine whether large areas of land may be transferring to outsiders.

Table 3.16: Foreign offers registered, average 1990-92

	Total Zambians	% of total Zambian	Total non- Zambians	% of total: non-Zambian	Total missing NRC	% of total: missing NRC
Central	105.3	77.5	4.00	2.9	26.67	19.6
Copperbelt	449.3	77.1	10.00	1.7	123.67	21.2
Eastern	109.7	80.0	0.67	0.5	26.67	19.5
Luapula	75.7	81.9	0.33	0.4	16.33	17.7
Lusaka	444.0	64.5	8.67	1.3	235.67	34.2
Northern	66.0	74.4	0.00	0.0	22.67	25.6
North-Western	51.0	83.6	0.67	1.1	9.33	15.3
Southern	205.0	81.9	1.00	0.4	44.33	17.7
Western	115.0	74.2	0.33	0.2	39.67	25.6
Total	1,621.0	74.0	25.67	1.2	545.00	24.9

Annex 3.1: Number of commercial farms, by province, 1976-1990

	Sae	Number														
		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Central	0-79	119	490	338	280	372	183	188	160	152	112	301	303	305		
	80-199	50	89	146	111	124	95	74	85	51	36	96	98	100	415	189
	200-399	38	65	81	74	89	65	81	42	36	30	43	44	45	110	231
	400-799	102	149	138	99	142	61	35	30	29	30	60	60	63	103	88
	800-1,999	192	228	157	144	239	94	95	80	77	59	100	101	102	71	69
	2,000+	92	116	92	111	124	54	50	42	58	12	70	70	70		
Total		593	1137	952	819	1090	552	523	439	403	279	670	676	685	699	577
Copperbelt & others	0-79	34	126	73	101	162	124	122	120	99	63	342	344	345		
	80-199	19	29	27	55	42	37	58	50	40	27	97	98	100	460	491
	200-399	14	74	58	48	32	22	50	35	39	23	46	48	50	75	216
	400-799	14	9	12	9	20	15	30	25	38	18	20	20	21	24	54
	800-1,999	19	24	23	21	25	40	48	55	30	36	22	22	23	30	36
	2,000+	15	24	27	21	29	26	42	62	27	45	28	28	29		
Total		115	286	220	255	310	264	350	347	273	212	555	560	568	589	797
Southern	0-79	320	374	388	192	223	215	210	160	207	96	316	318	320		
	80-199	146	154	146	94	93	85	83	80	69	48	81	83	85	415	29
	200-399	52	56	54	46	35	31	29	40	35	31	38	39	40	64	63
	400-799	64	66	69	48	39	31	35	40	23	22	17	19	21	55	97
	800-1,999	104	70	104	56	50	66	64	60	52	48	53	53	54	62	82
	2,000+	133	99	77	56	54	62	62	58	70	79	60	60	61		
Total		819	819	838	492	494	490	483	438	456	324	565	572	581	596	271
Lusaka	0-79						276	202	120	45	95	65	70	100		
	80-199						38	40	40	20	19	18	25	37	155	97
	200-399						32	38	20	20	36	9	13	20	60	76
	400-799						46	40	35	25	28	20	27	35	68	35
	800-1,999						99	80	75	50	85	50	60	65	18	27
	2,000+						38	24	12	22	24	20	23	24		
Total							529	424	302	182	287	182	218	281	301	235
Zambia total	0-79	473	990	799	573	757	798	722	560	503	366	1024	1035	1070		
	80-199	215	272	319	260	259	255	255	255	180	130	292	304	322	1445	806
	200-399	104	195	193	168	156	150	198	137	130	120	136	144	155	309	
	400-799	180	224	219	156	201	153	140	130	115	98	117	126	140	250	586
	800-1,999	315	322	284	221	314	299	287	270	209	228	225	236	244	181	274
	2,000+	240	239	196	188	207	180	178	174	177	160	178	181	184	214	
TOTAL		1527	2242	2010	1566	1894	1835	1780	1526	1314	1102	1972	2026	2115	2185	1880

Blank spaces indicate no data reported. It appears that the numbers for Lusaka were included with those for the Central province prior to 1981.

Annex 3.2: Area of commercial farms by province, 1976-1990

Size	Number	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Central																
0-79	3780	12770	8243	6660	9350	6048	6730	6250	4999	4344	12291	11912	12979			
80-199	5550	10200	14424	12410	15460	12101	8622	8845	6746	4006	12152	12863	9529	19338	14745	
200-399	9830	16500	18224	17140	22710	17945	18763	10580	9948	8263	11225	8980	11145			
400-799	44760	90570	59418	45700	73920	31292	16393	19775	15644	18877	37520	36400	31206	51348	98544	
800-1999	196230	254150	198810	153060	276570	87725	101912	95951	92530	72322	126351	126892	122221	112276	107025	
2000+	445080	852780	314380	503950	943570	138761	108108	164574	212761	100951	319046	255237	175630	193795	251448	
Total	705230	1236970	613499	738920	1341580	293872	260528	305975	342628	208763	518585	452284	362710	376757	471762	
Copperbelt & others																
0-79	620	1180	1572	3370	3780	2520	3492	3294	2852	2146	10112	10836	10444			
80-199	2230	2370	2196	6580	5010	3693	6588	5040	4988	2835	9739	11687	11663	36973	9789	
200-399	2500	5790	6077	3870	7960	5582	13190	11055	12295	6319	12647	12732	12800			
400-799	7130	2960	3320	4780	10020	7635	15021	13573	20441	8591	9895	10185	10458	20629	43230	
800-1999	17800	26140	29492	28500	18310	55859	49992	76369	43133	41578	25361	30433	30954	30000	3312	
2000+	150200	372790	274743	295030	91590	113208	181723	566780	174338	495747	292653	234122	117061	234122	160145	
Total	180480	411230	317400	342130	136670	188497	270006	676111	258047	557216	360407	309995	193380	321724	216476	
Southern																
0-79	11120	10910	10497	5870	6750	7136	8292	5566	4259	2604	10287	12028	7055			
80-199	12210	11220	10578	8740	11320	8871	7948	7302	2990	4372	10123	9039	10554	33390	1758	
200-399	11920	14150	11654	14460	8820	6868	5952	8500	9900	8307	10020	11362	10740			
400-799	40520	28220	31396	19090	21880	15978	20351	22640	13211	12228	9133	10467	9610	22006	30288	
800-1999	162260	90100	150866	74320	71320	89328	88016	77439	69894	61906	73087	75980	69685	65614	132021	
2000+	753750	692160	288986	183570	262940	278572	356782	276123	630815	522783	401038	481246	564947	474406	501310	
Total	991780	846760	503977	306050	383030	406753	487341	397570	731069	612200	513688	600122	672591	595416	665377	
Lusaka																
0-79						4511	2083	3350	1171	1274	1219	1440	1225			
80-199						3872	5473	6083	2390	2966	2376	3960	6290	4176	6071	
200-399						7693	11514	6390	4780	11311	2535	4394	5610			
400-799						27800	24176	18913	17562	17297	11970	15600	16670	18545	34916	
800-1999						114574	94906	88584	64880	95754	50692	71280	69795	83029	42744	
2000+						250458	174574	38488	266556	155044	122680	169298	161840	121380	94215	
Total						408908	312726	161808	357339	283646	191472	265972	261430	227130	177946	
Zambia total																
0-79	15520	24860	20312	15900	19880	20215	20597	18460	13281	10368	33909	36216	31703			
80-199	19990	23790	27198	27730	31790	28537	28631	27270	17114	14179	34390	37549	38036	93877	32363	
200-399	24250	36440	35955	35470	39490	38088	49419	36525	36923	34200	36427	37468	40295			
400-799	92410	121750	94134	69570	105820	82705	75941	74901	66858	56993	68518	72652	67944	112528	206978	
800-1999	376290	370390	379168	255880	366200	347486	334826	338343	270437	271560	275491	304585	292655	290919	285102	
2000+	1349030	1917730	878109	982550	1298100	780999	821187	1045965	1284470	1274525	1135417	1139903	1019478	1023703	1007118	
TOTAL	1877490	2494960	1434876	1387100	1861280	1298030	1330601	1541464	1689083	1661825	1584152	1628373	1490111	1521027	1531561	

A blank space indicates no data were reported.

Annex 3.3: **Private transfers, commercial sector, 1976-1990 (000 hectares)**

		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Central	Number	0.6	1.1	1.0	0.8	1.1	0.6	0.5	0.4	0.4	0.3	0.7	0.7	0.7	0.7	0.7	0.6
	Starting land	705.2	1,237.0	613.5	738.9	1,341.6	293.9	260.5	306.0	342.6	208.8	518.6	452.3	362.7	376.8	471.8	
	Purchases	16.0	7.8	10.9	0.8	4.5	21.8	29.1	0.0	0.0	0.0	0.2	0.0	0.2	1.9	0.2	
	Leased-in	49.8	79.6	57.6	81.3	112.0	223	30.5	21.3	0.6	4.4	1.2	1.0	5.8	16.5	2.2	
	Leased-out	4.5	22.6	1.1	36.0	12.7	0.2	0.5	0.4	0.1	0.0	0.6	0.0	0.1	0.3	0.1	
	Sales	49.2	3.2	3.8	6.3	0.9	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0	0.0
Copperbelt & others	Number	0.1	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.6	0.6	0.6	0.6	0.6	0.8
	Starting land	180.5	411.2	317.4	342.1	136.7	188.5	270.0	676.1	258.0	557.2	360.4	310.0	193.4	321.7	216.5	
	Purchases	28.0	1.8	7.2	0.1	0.8	5.7	0.0	0.0	10.0	0.7	0.0	0.0	0.7	5.4	0.0	
	Leased-in	14.7	179.6	28.8	31.3	32.8	15.6	0.0	0.0	3.1	18.2	4.2	2.7	1.5	2.2	0.2	
	Leased-out	0.3	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.4	1.3	0.0	0.0	0.6	1.6	
	Sales	0.1	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.4
Lusaka	Number						0.5	0.4	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.2	
	Starting land						408.9	312.7	161.8	357.3	283.6	191.5	266.0	261.4	227.1	177.9	
	Purchases						2.6	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.1	2.3	
	Leased-in						13.4	9.1	3.8	0.2	10.6	19.4	0.0	19.5	2.3	1.6	
	Leased-out						1.2	1.0	0.1	0.7	0.8	0.0	0.0	0.0	0.0	0.3	
	Sales						0.8	0.0	1.2	1.7	8.2	1.0	0.2	1.4	0.0	0.2	
Southern	Number	0.8	0.8	0.8	0.5	0.5	0.5	0.5	0.4	0.5	0.3	0.6	0.6	0.6	0.6	0.6	0.3
	Starting land	991.8	846.8	504.0	306.1	383.0	406.8	487.3	397.6	731.1	612.2	513.7	600.1	672.6	595.4	665.4	
	Purchases	0.2	0.0	0.4	0.3	2.4	0.9	7.8	0.0	0.5	3.6	0.0	0.0	4.2	12.1	0.5	
	Leased-in	134.1	34.7	57.8	31.8	11.9	15.9	11.4	20.8	19.0	16.0	15.9	1.1	20.0	14.4	1.5	
	Leased-out	15.6	2.2	0.0	4.4	6.6	3.7	0.0	0.0	0.1	2.0	0.0	0.0	0.0	3.5	0.2	
	Sales	6.7	0.0	0.2	0.0	4.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.4	2.8	0.3

Source: Data were taken from the Commercial Farm Series.

Annex 3.4: Property transfers, national total

	Year	Total trans. (#) (A)	Total area of trans. (B)	Average area of trans. (C = B/A)	Average price (D)	CPI-adj. average price
Assignments	1990	659	30,212.87	45.85	10.94	10.94
	1991	598	27,624.25	46.19	29.64	26.75
	1992	999	33,815.50	33.85	74.27	19.67
	1993	716	26,676.76	37.26	135.64	35.92
Subdivision	1990	59	2,432.29	41.23	9.96	9.96
	1991	52	2,100.41	40.39	6.31	5.69
	1992	62	1,009.50	16.28	23.27	6.16
	1993	42	825.91	19.66	49.35	13.07
Deed of gift	1990	18	402.28	22.35	0.00	0.00
	1991	25	1,187.23	47.49	0.00	0.00
	1992	41	2,659.36	64.86	0.00	0.00
	1993	24	371.94	15.50	0.00	0.00
Transfer	1990	186	7,365.21	39.60	0.05	4.74
	1991	311	5,256.67	16.90	0.33	.30
	1992	284	15,839.38	55.77	1.60	.42
	1993	192	17,825.26	92.84	0.84	.22

a. Data was only available through July of 1993.

Annex 3.5: Issuances of leases, national total

	Year	Total transactions () (A)	Total area of transactions (B)	Average area of transactions (C = B/A)
Reserve lease	1990	30	9,200.02	306.6673
	1991	19	5,737.59	301.9784
	1992	32	17,669.36	552.1675
	1993	17	5,163.98	303.7635
Right of occupancy	1990	74	20,734.22	280.1922
	1991	54	9,881.83	182.9969
	1992	44	12,067.74	274.2668
	1993	65	15,424.66	237.3025
State lease	1990	1,347	30,945.74	22.97382
	1991	1,664	35,380.28	21.26219
	1992	1,605	35,077.13	21.85491
	1993	1,397	52,761.52	37.76773
Sublease	1990	21	5.81	0.276667
	1991	15	3.01	0.200667
	1992	22	23.98	1.09
	1993	11	2934	266.7273

Annex 3.6: Reentries and surrenders, national totals

	Year	Total transactions (#) (A)	Total area of transactions (B)	Average area of transactions (C=B/A)
Reentry	1990	91	14,249.64	156.5895
	1991	79	3,980.09	50.38089
	1992	81	2,697.74	33.30543
	1993	100	4,375.85	43.7585
Surrender	1990	119	29,943.82	251.6287
	1991	111	9,525.80	85.81802
	1992	191	10,396.62	54.43257
	1993	109	5,906.62	54.18917

Annex 3.7: Liens and mortgages, national total

	Year	Total transactions (#) (A)	Total area of transactions (B)	Average area of transactions (C = B/A)
Deed of guarantee	1990	11	926.71	84.24636
	1991	3	39.27	13.09
	1992	3	4,959.35	1,653.117
	1993	2	0.40	0.2
Mortgage	1990	905	364,041.20	402.2555
	1991	825	145,827.30	176.7604
	1992	784	109,128.00	139.1938
	1993	578	133,732.90	231.3717

Chapter 4:

Land Valuation and Taxation

by

John Strasma, Sonny P. Mulenga, David Musona, and D.

Siansumo1. Introduction

There has been a land market in Zambia for centuries, just as there has been in every country in the world. Land and the right to use it in specific ways and for specific times are exchanged in many ways, each reflecting custom, local conditions, expected demand for what can be produced with land, and power relationships. In most societies, people get access to land on which to build or to farm in various ways. Some involve a high initial or threshold cost and little or no recurring cost. An example would be to buy a house with freehold title in an area that does not have taxes or rates. Other access to land may have a very low initial or threshold cost but relatively high periodic costs if continued access is desired. In some countries, almost everyone knows from experience and observation whether, where, and on what terms, to obtain land on which to live, work, or both. In other countries, people may be familiar with only one or two ways in which they could obtain access to land. Even in countries that declare the private sale or rental of land illegal, land or housing can usually be obtained in exchange for something.

In customary land tenure areas, access may require the consent of a headman or chief, which is often obtained more easily if one is a relative of families already there. In areas of former European settlement, the market is often more visible, and access available to persons with enough money, regardless of family or other personal characteristics. Even in areas in which the government forbids the private sale or rental of land and housing, market processes work—though with limitations and in ways that not everyone can utilize. Access to housing is sometimes part of an employment contract. Access to land or housing may be bestowed as a favor in exchange for support of a politician or party, or as a reward for superior performance in sports or other activities. Where functionaries decide who gets access to land or housing, access to better land or housing may require payment of a bribe in money, scarce goods, or services.

Much of the genius of modern developed economies is that their societies offer a high degree of personal liberty. They make it possible for almost everyone to choose among several ways in which they could get the use of various kinds of land, in different places, in varying amounts according to their own means and productivity. These societies have prospered largely because their land markets meet five standards of justice and efficiency:

- (1) Everyone, not just a few powerful "insiders," can get access to land at a reasonable initial and recurring cost.

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- (2) Those who invest money and effort in improving land are allowed to collect and enjoy the fruits of their effort.
- (3) Society, usually through government, provides or finances the provision of roads, schools, and other services and productive infrastructure that most people cannot efficiently produce by and for themselves.
- (4) Recurring costs, usually in the form of taxes and interest on borrowed money, are high enough that few people can afford to speculate or control land without putting it to productive use.
- (5) Those who want to use land can identify and choose an available parcel and acquire secure use rights to it quickly, at minimal cost other than what they agree to pay to the person who gives up the right to use the land (i.e., **search and transactions costs** are small).

In an efficient market, people needing land for productive use can identify appropriate parcels, negotiate a price, and complete the transfer with little cost in time, energy, or money other than the amount paid to the person or entity from whom the land is obtained. In Zambia, identifying available parcels is neither easy nor inexpensive, negotiations are difficult, and heavy transfer taxes and administrative deficiencies make transfers slow and costly. Policy changes would greatly reduce the cost of finding and obtaining land; the supply could also be increased by funding council and private projects to service and sell sites.

This chapter reviews the land market in Zambia, to see how it measures up to the above standards. It then considers proposed alternative policy actions to improve its performance, considering both Zambian experience and that of other countries with such policies. In particular, the theory and practice of land valuation, including transfer taxes, annual "rates" on improvements, and ground rents, are addressed. Draft legislative changes are now under discussion, and this chapter includes an analysis of these proposals and suggestions to make them less ambiguous and more effective. Section II looks at transactions costs associated with real estate. Sections III and IV analyze taxation through rates and valuations. Section V covers ground rents as currently applied in Zambia. Section VI then summarizes and analyzes the relevant proposals in draft reform laws currently circulating. Section VII will address the proposed land development fund, an idea introduced at the July 1993 land conference (see chapter 1) and warmly endorsed by the participants. And section VIII will close with conclusions and recommendations.

II. Transfer taxes, fees, and other transactions costs

A. Transfer tax

The Property Transfer Tax Act, No. 12 of 1984, created a transfer duty. At the July 1993 land conference (see chapter 1), and in many interviews, there was a consensus that the present 7.5 percent tax on land transfers, supposedly charged on the actual market price, was unreasonably high and

curtailed transfers.² Assertions were also made that parties have been falsely underdeclaring the actual price at which leaseholds or other interests are changing hands. Theoretically, this tax should be eliminated or reduced to a nominal level, both to encourage more frequent transactions in land and improvements and to remove the present powerful incentive to falsely declare a transfer price below the real price charged and paid.

If accompanied by an adequate educational campaign, it is likely that revenues would actually rise if this rate were to be cut in half. For that to happen, buyers, sellers, and functionaries would have to be informed the government is serious about enforcement of tax collection and accurate reporting of the actual sale price. There are a number of ways to encourage honesty. One is to provide by law that in the event of any property acquisition by government, the purchase price (or compensation if expropriated) may not exceed the amount declared as the purchase price, adjusted for inflation. Another method, used in various Latin American countries, is to forbid banks to lend more than a fraction (say 60 percent) of the declared purchase price when the property is mortgaged to the bank in order to guarantee repayment (see figure 4.1). Fines or penalties represent a third option.

Figure 4.1: Central American experience with tax declarations, bank credit, and compensation for land expropriated in land reforms

Legal requirements linking value declared for tax purposes to bank credit and to compensation in the event of expropriations are common in Central America. For example, in the 1970s, Salvadoran banks still made loans to commercial farmers at interest rates below the expected rate of inflation. In 1976 and 1977, landowners were required to declare the value of their lands for annual property tax purposes. The farms were taxed at a rate of 1 percent a year, on the value declared, with the revenues going mostly to finance road construction and maintenance. When farms larger than 500 hectares were expropriated in the land reform of 1980, it turned out that about 90 percent of the owners had declared values for tax purposes that were clearly less than the market value of the land. On the other hand, about 10 percent of the large farms had been declared at more **than** their **actual** market value. In most cases, this appears to have **happened** because the owners expected to obtain bank loans with the land as collateral. By paying 1 percent a year on inflated declared values, they could increase the amount of money they could borrow at an expected negative real rate of interest on the order of 10 percent.

Since the beneficiaries were supposed to repay, over 30 years, whatever amount of compensation had been paid to the former owners, false overdeclaration years before also meant that the land reform beneficiaries might have to pay more than the land was worth. In practice, however, inflation has cut the real value of prices set at the time of expropriation, and beneficiaries are not actually being asked to pay more than the land is worth, even when a former owner had overdeclared its value in 1976/77.

Source: Strasma 1966 and 1990.

In any event, quite apart from the temptation to declare falsely the price at which leaseholds or improvements change hands, the transfer tax is a poor way to recover government's expenditures to provide access and services in land. The first transfer, from government or traditional authority, is not subjected to the transfer tax, and if the property remains in the hands of the first transferee, no transfer tax is ever collected. It would be far more equitable to lower the rate of the transfer tax, while creating and enforcing a significant annual tax or ground rent.

² It is in fact quite difficult to determine whether the transfer tax has curtailed transfers. A 7.5 percent transfer fee would not be a serious constraint if landholders were allowed to greatly discount or underreport the purchase or sale price.

B. Incidence and shifting of the transfer tax

Zambian law and practice state that the transfer tax is supposed to be paid by the seller. However, the estate agents and functionaries interviewed observed that, in practice, the buyer pays it along with other costs; Zambian real estate has been a seller's market of late, so it appears that sellers can sufficiently raise their asking prices to cover the transfer tax.

Regardless of what the statutes say, a transfer tax actually affects both parties. To the buyer, it is part of the amount he or she must pay in order to acquire the property. To the seller, it is an amount that the buyer is willing to pay but which the seller does not receive. Both share in the tax burden; how much each "pays" depends on their relative bargaining power, which depends largely on how many other people are seeking such properties to buy and how many similar properties are currently for sale. If demand exceeds supply, prices will tend to rise and vice versa.

To analyze the burden of the transfer tax, one must suppose a different world, in which there is no transfer tax but government obtains the same revenue in a more neutral way, such as a value-added tax. In that hypothetical world, the actual market price might be higher or lower than the market prices in the real world (where a transfer tax is charged) depending on the other forces operating on supply and demand at the moment. Economists simply do not have a reliable way to determine the actual incidence of this tax, even in developed countries with excellent statistical data (Musgrave 1960).

C. Revenue yield and tax evasion

According to informal sources, buyer and seller frequently agree to falsely declare the purchase price to avoid paying an "excessively" high transfer tax (7.5 percent in 1993)² The honest buyer and seller are thus penalized, paying much more tax on the transfer than others who buy and sell property of the same market value, but who understate the price.

The Minister of Finance announced, in the 1994 budget message (p. 14), that the government intends to reduce the Property Transfer Tax rate to 2.5 percent, to amend the Property Transfer Tax Act so that the commissioner may use property assessments by the Government Valuation Department, and to amend the Land Conversion of Titles Act revoking the provision stipulating that land has no value. This proposed 2.5 percent tax should be reduced further and perhaps even replaced by a capital gains tax. This will encourage landholders to sell more quickly when their own needs for land diminish and help the economy adjust faster to economic changes. Even so, Zambia's real estate market and institutions will still suffer from sluggish titling and registry services. According to the 1994 budget message (p. 10), the government will take an initiative in 1994 to approve terms of reference for ways of decentralizing to the district-council level and for improving the registration of land transfers and the collection of fees. (See chapter 2 for an assessment of these proposals).

The transfer tax is not the only cost in real estate transactions in Zambia. There are also user fees to be paid to the registry and the costs of survey. Attorney fees and a commission charged by an

³ In comparison, the transfer tax in the United States is only 2 per 1,000 (0.2 percent). The amount of the tax is recorded on the actual record of the transfer, which is open to public inspection. Thus, appraisers, real estate tax assessors, and the public in general can find out rather easily the price at which properties are actually bought and sold.

estate agent may also be involved. All of these costs separate the amount paid by the buyer from the amount received by the seller and make the land market less agile, slowing economic development.

D. Registration fees or stamp duty

The regulations contain a number of prescribed fees set in colonial times that, while generating revenues, have become a nuisance as monetary values have eroded. For example, the stamp duty applied to real estate transfers is a nominal rate held over from colonial times. The Zambian 1994 budget message announced its abolition as of midnight, 28 January 1994.

E. Planning department scrutiny fees

All construction in Zambia, other than on agricultural holdings, requires a permit issued by the relevant city or council, and a scrutiny fee is normally charged for this review. The fees are based on an estimated minimum development investment per square meter and vary among councils. The current scrutiny fee for Lusaka is 0.25 percent. Thus a 100 square meter building costing K115,000 per square meter, or K11.5 million, would require a scrutiny fee of K28,750. A scrutiny fee of K40,000 is charged in Lusaka for the review of subdivision and consolidation.

Various other problems are leftovers from the previous government of Zambia. For instance, there is still a widely shared reluctance to recognize the fact that land values change rapidly and by large amounts when product markets or other relevant data change. Some who write draft legislation regularly propose legal language that is ambiguous. The proposed reforms in the Land Titles Act and the Land Registration Act are good examples of positive draft laws that need sharper focus and clarification.

The problems of the land market will not end with better laws. Those land laws are administered by government entities, some of which have employees who are not dedicated to minimizing cost and maximizing service to taxpayers.

From inertia, tradition, political concerns, or other causes, the Republic of Zambia issues 99-year negotiable leaseholds instead of freehold titles. Freehold tenure would be no more secure, as the Second Republic showed when the president simply decreed that all freehold titles must be converted into 99-year leases. More worrisome is that neither leaseholders nor hypothetical freeholders have very firm guarantees against expropriation or other actions by the state that may take their property without fair prior compensation. The best estimates available so far indicate that recording a sale of a leasehold interest may take several days; seeking, obtaining, and recording a new leasehold with the consent of a tribal chief may take several months or even years (see chapter 2). The actual cost of buying or subleasing land and improvements includes the explicit taxes and fees **plus** the value of the time of the interested parties (or their attorneys or other agents). Based on the above-mentioned time requirements, transfer costs would appear to be considerable.

F. Revenues of the Lands Department

The GOZ collects money from persons to whom state land has been allocated under three headings: registry fees, state consent fees, and annual ground rents. (There was formerly a stamp tax as well, but it was abolished in early 1994.) Table 4.1 shows that the revenues obtained from these sources have varied sharply over time in current kwacha terms. Because the year-to-year changes were

somewhat arbitrary and because the rate of inflation itself varied sharply from year to year, the revenue in real terms has been highly variable. Making matters more confusing, revenues depended on the level of transfer activity as much as on the tax rates themselves. Consent and registry fees depended on the number of transfers and new allocations recorded each year. Ground rents, however, were so low that many leaseholders failed to pay them. The main source of actual receipts was generated by registry demands that ground rents be paid up to date before a transfer would be recorded. Thus revenues in a given year depended on how many property transfers were recorded that year rather than on the rate or amount of ground rent levied.

At well under US\$1 million a year, total receipts from the three forms of revenue do not begin to cover the costs of the MOL, much less make a contribution to government's investment in services and infrastructure on State Land. Equally telling, well over half of the total comes from the Registry fee levied on transfers recorded. The 1994 fee is 1 percent of declared value, and many transactions are underdeclared, probably in order to evade the property transfer tax (see above).

The existing statutes state that persons holding state lands are supposed to pay a ground rent of 4.5 percent on the value of the land, but the land board that is supposed to oversee the process of setting and collecting ground rents through the Lands Department has not met for several years. Since ground rent revenues have been running under 40 percent of the registry fee just on land transferred, it is obvious that the ground rents in place are not remotely near the theoretical 4.5 percent of land values that the statutes direct. All interviewees agreed that ground rents should be raised substantially.

As will be seen shortly, the Hammar report provided by Swedish technical assistance recommends setting ground rent levels at around 5 percent of market values of land for residential stands, and comparable levels for farm, commercial, and industrial parcels. That would be consistent with the 4.5 percent of present law, and would certainly go a long way to help the GOZ cover its budget for land development. The far more difficult problem involves the task of assessing market value given the lack of current information on land prices, land market restrictions that distort prices, high demand for newly opened stands for which land prices are difficult to estimate, and the limited supply of qualified assessors in the private and public sectors.

Further study is needed to determine the impact of a significant ground rent on different types of farms and farmers, to design an automatic updating of rents for inflation (including indexing back rents due so that the amounts actually paid at least reflect the real value of the rents when originally due), and to design a systematic program of adjusting ground rents to reflect fully the actual investments made in roads and services that increase the market value of land. Some progress has been made in computerizing the records of the Lands Department so that when leaseholders visit the office to pay, employees can inform the client immediately how much is owed. However, study is urgently needed to design and implement a system that will induce leaseholders to pay annually when due, rather than only if and when they decide to transfer the land.

Table 4.1: Analysis of Lands Department revenue, Zambia, 1985 to 1992

Nominal revenues							Impact of inflation on real revenues						
Year	Ground rents	% ^a	Deeds registry	% ^a	State consents	% ^a	Total	Nominal change (%)	Inflation ^b (%)	Real revenue change (%)	Exchange rate US\$1 = K	Devaluation rate (%)	Total revenue (US\$)
1985	566,980	30	1,084,440	58	211,123	11	1,862,543				5.70	157.00	326,762
1986	807,281	26	2,028,388	65	306,445	10	3,142,114	69	55	14	12.71	123.00	247,216
1987	1,778,407	32	3,540,247	63	303,640	5	5,622,294	79	47	32	8.69	(46.30)	646,984
1988	1,531,586	20	5,281,878	69	833,396	11	7,646,860	36	54	(18)	8.26	(5.20)	925,770
1989	1,764,175	12	11,383,409	79	1,251,000	9	14,398,584	88	128	(⁴⁰)	13.84	67.60	1,040,360
1990	1,587,616	7	18,581,474	86	1,481,855	7	21,650,945	50	110	(60)	31.40	126.90	689,521
1991	17,863,610	37	26,735,515	56	3,165,962	7	47,765,087	121	118	3	64.63	105.80	739,054
1992	39,882,240	27	96,315,124	65	12,144,958	8	148,342,322	211	200	11	172.21	166.50	861,404
Totals	65,781,895	26	164,950,475	66	19,698,379	8	250,430,749	n/a	n/a	n/a	n/a	n/a	n/a

a. Percent of total annual revenue.

b. Percent change in the CPI during previous year.

III. Taxation of rural and urban improvements ("rates")

A. Form of taxation

Rates and ground rents are both forms of recurring annual costs imposed on the holders or users of real estate. They are quite distinct from consent fees, transfer taxes, and scrutiny fees, which are paid only when land is transferred or when a leaseholder seeks a building permit.

In Zambia, rates are applied to the estimated value of improvements only, while ground rents are applied to the value of the land as such, not including the value of any improvements. Revenues generated by rates accrue to local government (city, municipal, and district councils), while ground rents are paid to the MOL of the central government. Neither applies to land still under customary tenure. Rates apply to the **rateable areas** of each district or city—referring, essentially, to the urban area, but some agricultural land near to or within the urban perimeter may be included.⁵ The fact that rates are applied only to improvements, rather than to market value of land plus improvements, is problematic. A number of economists, from Henry George⁵ to the present, consider this the wrong approach to taxation. They reason it would be far better to exempt improvements (or at least newly built ones) and apply a heavy annual tax on the site value of the land under them, thereby capturing some of the market value that results from government expenditures on infrastructure. As a result of inflation, poor administration, and lack of interest, neither the rate nor the ground rent generates significant revenue—nor has any other economic impact at present.

The current legal and institutional framework for setting and collecting rates is inadequate, but improving, particularly through the work of the Government Valuation Department. The legal and institutional framework for setting and collecting ground rents on urban and rural lands is worse. Government is aware of the problem, and officials have stated their intention to address it, but no improvement is yet in sight. Far less clear is the present and potential revenue generation of rates and ground rents, where little hard information is available. Research is needed to determine the revenues available to traditional authorities, and their relationship, if any, to land allocations and land uses.

B. Speculation

Speculators are investors who buy undeveloped land and hold it without making improvements, hoping to resell it at a higher price in the future. Their activity does not create productive employment for anyone except the speculator; their returns depend on their assessment of market information and the risks they bear in the event that higher land prices do not materialize. Speculators favor any tax that does not apply to the market value of undeveloped land. Because that market value depends almost entirely on location, or on site-specific soil and climate factors, it is often

Zambia has 3 large cities (**Lusaka**, Ndola, and Kitwe) and 9 smaller cities. The rest of the country is divided among some 60 districts. Each of these entities has an elected city or district council, which sets policy, and council employees, who implement it. Below the district council, in communal areas, some authority rests in tribal chiefs, who in turn oversee village headmen.

Henry George, an American whose views appeared in *Progress and Poverty* about 1880, believed so much revenue could be obtained by taxing site values that all other taxes, including the income tax, could be repealed. The movement he founded was thus known as the Single Tax Movement. Some cities in the United States and other English-speaking countries have adopted lower rates on improvements than on land values, and a few exempt new construction completely for a certain time.

called **site value**, meaning the land has value simply because of its location. A heavy tax on land alone, economists argue, will induce owners to invest as needed to improve land quality to its "highest and best use," given its location, attributes, and amenities. Skeptics respond that governments seldom if ever have the technical ability or the political courage to impose taxes high enough to affect landowners (or leaseholders) (Strasma et al. 1987).

This argument is less relevant to Zambia, where the government itself is the legal owner of land and allows individuals and companies to use it on the basis of leaseholdings. Thus as landlord, the government collects rent rather than land tax as such. It bases the rent on the value of the land, since the improvements were generally put in by the lessees. Since the basic model lease is for 99 years, it is implicitly assumed that the lessee's investment will be recovered long before the lease expires.

C. Setting rates

The level of rates in Zambia is determined exactly as in the United States or Canada, except the value of the site or land beneath improvements is theoretically excluded from the taxable value. Each house, shop, factory, or other permanent part of a building is assessed a taxable value. The city or council decides its budget, then subtracts revenues it expects to collect through other taxes, licenses, and fees. The remainder—the amount to be raised from the rates—is divided by the total rateable values for the city or district, giving the actual tax rate to be applied to the assessed value of each property. Lusaka is about three years behind in its accounts, and 1994 figures could not be located for this report. The model that follows in table 4.2 is, therefore, hypothetical.

**Table 4.2: Hypothetical example of rate determination in a city
(kwacha values in billions)**

(A)	Budgeted expenditure for 1994	K100.2
(B)	Other revenues expected	- 20.2
(C)	Amount needed from rates (A-B)	K80.0
(D)	Total value of rateable improvements in the city	K8,000
(E)	Tax rate required to generate the revenues needed for the budget (C ÷ D)	1 %, or 1 ngwee in the kwacha

By law, every city or district is supposed to reevaluate all rateable property every five years. In addition, new buildings constructed or parcels left off the rates list are supposed to be added in a supplementary roll. The owners of these properties pay the same rate that would have been applied had they been valued at the time of the last general roll rather than at the time the supplementary roll properties are actually evaluated. Inflation in Zambia has left the values assigned rateable property far below land market levels. When the next five-year revaluation is performed, it would not be unusual for the total market value of privately held land and improvements to rise substantially. In Lusaka, for example, a revaluation was just completed. The value in kwacha assigned to a typical house rose by about 11 times over the five-year period (1100 percent).

Urban services in Lusaka and other cities appear deficient in many respects, justifying the *need* for additional revenue. Yet, when the values of improvements are raised to adjust for inflation, Zambian taxpayers seem to expect the tax rate to drop, maintaining a constant tax bill in real terms. When a city tries to update the values without a significant drop in the rate, and without negotiations with ratepayers to win acceptance, the result is likely to produce a taxpayer revolt, as happened in Lusaka in 1993. The municipal councils and the public do not appear to understand the rate-setting process.

In practice, urban rates in Zambia fall far short of their revenue potential. First, notices are not always delivered to taxpayers, and second, there are no real penalties for late payment. The one effective collection method does not even involve the municipality; i.e., the registrar requires that persons seeking to record a property transfer bring in **clearances**, or certificates of payment of both rates and ground rents. As a rule, they do not, but the tax is so low that the entire arrears can be paid from pocket change. Actual revenues in any given year thus depend much more on the level of real estate transfer activity than on the total values of rateable improvements or the rate of the levy. Revenues have reportedly risen somewhat in the last two years following computerization of rates due. The MOL (ground rents) and some council offices (rates) are now able to determine instantly how much is owed by someone seeking a tax clearance.

In contrast with Zambian laxness, the United States and a few other countries have an enforcement mechanism for tax collection that is simple and extremely effective. Any property for which the tax is not paid during two years is auctioned off to the highest bidder. The successful bidder is delivered a new property title, and the occupant is evicted. In practice, almost all delinquent taxpayers manage to pay up the back taxes plus interest owed within a day or two before the property is to be auctioned.

As far as could be determined, there are no penalties for late payment in Zambia, no indexing for inflation, or interest on arrears. With inflation in 1993 of approximately 100 percent, any rational taxpayer would postpone payment. The law effecting penalties on tardy payments appears drastic enough. The council may obtain a court order for distraint, which entitles it to seize a building and remove enough furniture or other contents to cover back taxes. It may also auction the building, and if the winning bid exceeds taxes due, the law requires that the difference be paid to the now-former owner. In practice, all interviewees stated that they had never heard of such enforcement ever being practiced on delinquent ratepayers in Zambia.

D. Rate valuations

Between valuations (legally every five years), there is no indexing or other adjustments for inflation or general growth in market values. If inflation raises expenditures, the rateable values remain the same, but the arithmetic causes the tax rate itself to rise. When the next valuation is performed, the tax rate logically falls. The law contemplates supplementary valuation rolls whenever new construction occurs, or for any properties inadvertently left out of the five-year valuation. The opinions of interviewees differed as to whether this was done systematically throughout the country. The Government Valuation Department (GVD) is now able to do it for the rural councils, and does so when requested. The values of new or omitted buildings are set with tables representing kwacha values per square meter of each type of construction used at the last general valuation. This seeks to ensure horizontal equity, with like improvements being taxed alike. However, in practice,

supplementary valuation is spotty; owners who escaped the five-year valuation could well be overlooked for five years.

Most of the 55 cities and municipal and other councils with the legal authority to collect rates have no personnel trained to do valuation, so the revaluations are usually performed by the GVD, a largely autonomous professional entity attached loosely to the Ministry of Works and Supply. This agency has become much more professional and organized in the last two years with the assistance of the Overseas Development Administration (UK). For 1992, the GVD performed 11 complete revaluations (20 percent of the 55 potential client local governments), and 4 supplementary revaluations to add properties overlooked or built since the last revaluation. (See section IV for an analysis of the valuation process.) For taxpayers to accept valuation as fair and objective, it is important to have a means of resolving disputes. This is the task of the Rating Tribunal, which receives administrative support from the GVD. While not perfect, it appears to be more effective in issues of rateable values than are the mechanisms for resolving most other conflicts regarding land.

Lusaka and the other main cities have their own valuation departments, which are understaffed, but may contract with private valuers or with the GVD to help with major valuations. The GVD was not involved in the valuation exercise just completed in Lusaka in 1993, however; all other cities are now asking the GVD to help them supervise or carry out revaluations.

As the capital city, Lusaka has special problems collecting rates. First, many buildings belong to government, which does not pay taxes. The law envisions government payment of a "Contribution in Lieu of Rates." Such payments have been made in the past but have sharply decreased under the current fiscal stringency. When such payments were made, they fell short of the amount that would have been due if the same buildings were privately owned.⁶ Lusaka (city council) itself owns a lot of housing and other property (some 15,000 buildings as reported in chapter 1), but it does not tax itself. Church and nonprofit organizations do have to pay rates on the theory that they receive services. Finally, Lusaka finds that a significant share of the most valuable buildings are occupied by regional agencies and by foreign embassies and consulates. In a bizarre interpretation of international law, if one room in a building is rented to and occupied by a diplomat, the entire building is exempt from paying rates.⁷

E. Nominal and effective rates of taxation

When Lusaka property was revalued in 1993, no official estimate was made of the average increase in assessments. It was also unclear how much of the increased valuation roll was new construction and how much a result of revaluation of improvements that were on the previous roll. Some interviewees claimed that the average increase was between 10 and 40 times. When the owners were advised of the new values, few complained because they were still below actual market values. Owners assumed that the tax rate would fall accordingly, keeping the actual tax constant in purchasing power terms. The 1993 tax rate was 11 percent, leading some ratepayers to assume that the 1994 rate would be 0.25 percent to 0.5 percent. Instead, the city council asked the Ministry of Local

⁶ In 1992, according to the GVD, the central government should have paid K13 million in lieu of rates on government-owned properties in Lusaka. It actually paid K5 million. No payment was made in 1993. (Source: GVD Rating Position Paper, 1993, p. 1.)

⁷ This quirk was reported by several interviewees and affirmed by the Minister of Local Government and Housing in a talk to the Economics Association of Zambia on 12 January 1994.

Government and Housing to approve a rate of 4.0 percent. When owners of valuable properties calculated the amounts owed, they became vociferous, and the city later bowed to their pressure. The Chamber of Commerce and Industry of Lusaka proposed that the rate instead become 0.025 percent, or 1/40 of 1 percent. On 15 January 1994, the Town Clerk of Lusaka published a notice proposing a rate of 1 percent.'

Some local governments discriminate by use of the property. For example, in Chipata, the rate due in 1994 is one half ngwee per kwacha for domestic (residential) improvements, and 3 ngwee per kwacha (3.0 percent) for commercial and industrial improvements.'

IV. Valuation of land and improvements in Zambia

A. Valuation process

The balance sheets of business firms in Zambia show both land and improvements as assets. When a business firm is sold as a going concern, the buyer normally seeks an up-to-date valuation. Banks and other lenders may request a valuation to determine the property's collateral. For such purposes, a valuation surveyor is usually hired, a person trained formally at the University of Zambia, followed by on-the-job practical training in firms of valuation surveyors. In practice, most such valuation surveyors also function as estate agents.

Government frequently needs the estimated value of a piece of land, or of an improvement, or both. The transfer tax is charged on the reported value of the transfer; ground rents are, or ought to be, based on the value of the property if it were rented in the market. When the government needs to acquire land or a house for public purposes, a value is needed as the basis for negotiating compensation. In these cases, the valuation is done by the GVD. Government and private sector planners also need values for land and buildings when preparing feasibility studies and cost-benefit analyses for proposed investment projects. Estimates are often prepared as to the value at present, and also for the value the same land and/or improvements will have once the proposed road, dam, or other project is built.

There is at least one significant investment fund in Zambia that enables individuals and companies to invest in a share of a set of properties.¹⁰ That fund in turn needs a value for each property every quarter for reporting to investors. The fund also redeems investments for cash upon

⁸ The chamber also suggested that rates not be collected at all until the city provides better services, and that rates ought to vary among parts of Lusaka, because some neighborhoods receive more and better city services than others. Complicating matters further, the deputy mayor and the mayor led rival factions of the city council that refused to work together. The Minister of Local Government in early 1994 informed the city council that his ministry would take over city administration if various problems were not solved by 31 March 1994.

⁹ Local usage is ngwee in the **kwacha**; the ngwee is a penny, or 0.01 kwacha. With inflation, the ngwee is no more current than the mill formerly used in the United States to refer to one one-thousandth part of a dollar.

¹⁰ The Meridien Property Fund, managed by Meridien Financial Services Ltd, has been operating since 1987 and, according to its latest annual report (30 September 1993), currently owns 15 commercial, industrial, and residential properties with a total value of K1,111 billion. Of these, 13 are in Lusaka, one in Kitwe, and one in Crescent. The return to investors is a combination of rental income, profit on the sale of properties, and interest earned on cash balances awaiting investment.

request, during a specific period each year. The fund retains the services of a well-established private valuation surveyor for this purpose.

B. Impact of the "Watershed Speech"

In 1975 former president Kenneth Kaunda announced a sweeping new land policy. Blaming real estate brokers and land speculators for recent increases in the market value of land, he announced that since land was a gift of God it should not have market value. An obliging parliament quickly passed a law that canceled all existing freehold titles, replacing them with 99-year leaseholds. All land was nationalized, with responsibility for its management vested in the president. Anyone needing State Land for any acceptable purpose from that point forward had to request it of the Commissioner of Lands who would study the request and **sign a** lease on behalf of the president. Real estate agencies quickly took down their signs and vanished from the commercial telephone directories. From 1975 on, no land transactions were allowed without state consent. Maximum prices charged and paid were fixed by the state. Sellers could not legally ask, nor the buyer agree to pay, prices higher than those fixed. The law further stipulated that prices fixed by the state for private transactions could not be questioned in "court of law or tribunal." In practice, for the first few years after 1975, the GVD, which was responsible for fixing prices, was swamped with requests; it often took six to twelve months before a transfer could be assigned a price and completed.

Enforceability of the Conversion Act of 1975 depended largely on whether the documents were to be registered. The Lands and Deeds Registry Act, 1914, SECTION 4, required registration for all transfers of land or interests in land, if for more than one year. This reportedly led many parties to sign leases for one day less than a year, and thus there was no need to officially decree a price or rent.

Estate agents themselves practically disappeared in 1975. Some emerged as surveyors, as the president had not blamed mapmakers for rising real estate prices. A new specialty arose: valuation surveyor, who specialized in studying and determining what improvements were worth. In 1990, the official 1991 budget speech lifted the ban on estate agency and announced that the Zambian economy would be liberalized. The Surveyors Institute of Zambia promptly held two seminars in 1991, at which speakers urged formulating professional guidelines for estate agency, speeding up the land delivery system, returning to freehold land tenure, and removing SECTION 12 of the Conversion Act (the requirement that no real estate be transferred without state consent). The transfer process has been accelerated somewhat by an administrative decision: the present Commissioner of Lands has begun granting consent automatically where a professional valuation report is attached or when satisfied that the amount declared as the transfer price is reasonable. However, there is no assurance that this simplified procedure will be permanent.

The presidential edict also forced landowners to become leaseholders instead. Freehold titles were ipso facto converted into leaseholds by law. This would not have mattered greatly if possession were secure for the stated term of 99 years. However, an important corollary of the "land has no value" doctrine was the belief that the president, as landlord, could arbitrarily and unilaterally revoke a lease if the lessee was not "using" the land productively. Anyone holding land for future construction had reason to feel vulnerable. Instead of the boom in construction activity that might have been expected, holders of vacant lots and farmland tried to keep a low profile.

Land still had value, especially for location, but persons wanting to buy and sell had to go through new rituals. A would-be buyer had to find land whose holder wanted to sell. This was not as

easy as before because the holders did not deem it prudent to advertise that they had unused land. Had they done so, they correctly reasoned that the Commissioner of Lands might revoke their leasehold and take the land away without compensation. Once a buyer found a holder willing to sell a leasehold (i.e., sublet the property to someone else), they negotiated a price and then had to seek presidential consent to the transfer. The president delegated that decision to the Commissioner of Lands, but there were no clear rules as to when consent was to be granted. This situation of course favored corruption and introduced more murkiness into the land market.

The presidential action drove the land market underground, at least temporarily. However, it did not create more land, nor did it persuade those who owned land to simply give it away free or build more housing for the poor. The first concrete result was that it cut tax revenues. Thereafter, when land transfers were recorded, the Land Commissioner's office told the parties to declare only the value of the improvements on the land. In spite of the obvious fact that some land had enormous market value because of its location, that land could be bought and sold without transfer taxes being paid. Thus, although the high rate of the transfer tax (see section II, above) had already induced chronic underdeclaration of values, the presidential "devaluation" of land led to even greater underdeclaration and hence to lower transfer tax revenues.

C. Reappearance of the market

With the election of the MMD government, whose manifesto included a promise to recognize that land had value, estate agents began to reappear. In general, at least in Lusaka and the Copperbelt, it seems relatively easy to identify a parcel of land and negotiate a market price with the holder. The newspapers once again carry classified and display advertisements offering to sell houses, lots, and farms. Nonetheless, there are still occasional anecdotes suggesting a degree of backsliding from the clear promises of the manifesto. For instance, one estate agent tells of a client who wanted a site for business use one year ago. The agent found someone with suitable vacant land, who was quite willing to sell, and agreement was reached as to the price. However, when consent was sought at the Office of the Commissioner of Lands, the commissioner simply revoked the existing lease—confiscating the land on grounds that it was not being used. In effect, the buyer had to buy the leasehold twice, from the previous lessee and then from the government. There are other cases in which the supposed seller really did not have good title even as a leasehold, or in which the commissioner, thinking the land unassigned, had apparently already promised it as a new land grant to someone else.

The present Commissioner of Lands has stated that although the law still requires the consent of the president for every transfer from one party to another, the process is to be more or less automatic. His office still has a steady flow of petitioners, and delays still appear to be commonplace (see chapter 2). Problems persist of past irregularities such as surveys that do not coincide with boundaries on the ground. In countries where property transfers do not require the paternalistic consent of a functionary, it is common to require a technical scan for such irregularities in the process of recording land transfers. The difference in these countries is that recording the transfer is never forbidden arbitrarily. If a transfer is rejected, the functionary must state what must be done to correct the problem. But all parties know that as soon as the problem is corrected then recording the transfer cannot be denied.

A major problem plaguing the land market in Zambia is the lack of an accessible, low-cost, and rapid method of resolving land conflicts. The only judicial appeal is to the High Courts; anecdotal evidence suggests that this route requires a wait of several years and high costs to the parties seeking

justice. There appear to be numerous cases in which the use of a particular parcel is less than what would appear to be the "highest and best use" simply because there is an unresolved conflict over rights. Further research should establish the feasibility of creating a lands tribunal, as has been done elsewhere, to resolve such conflicts quickly and fairly. Apart from the advantage of not having a docket cluttered with every other type of dispute, the tribunal would be staffed with judges knowledgeable about land law and policy, increasing the speed of resolution as well as the consistency of decisions.

V. Determination of ground rents

A. Existing policy

In theory and in present law, no real estate in Zambia may change hands without the consent of the president. The incumbent has delegated this responsibility to the land commissioner, but a future president could cancel that delegation, or the commissioner could deny consent unreasonably, and the affected party would have little effective recourse. Because State Land is delivered as leasehold interests, holders are supposed to pay ground rent rather than property taxes on land. (Improvements, of course, are subject to the property tax called rates.) While the former government asserted that bare land had no economic value, it nevertheless collected money in the form of ground rent.

Under current law, all private properties are merely improvements, built on land which is the property of the government. However, an existing law attempts to protect tenants by controlling the level of rents charged. (In effect, they live in flats under subleases of parts of buildings built on government-owned lands.)

CAP 438 (the Rent Act), 1972, states that the correct value of rent for buildings rented to tenants by the actual holder of the government lease was 15 percent per year on the sum of the cost of construction and the value of the land. This law was not appealed nor amended when the Conversion Act, which declared in *ARTICLE 12* that bare land has no value," was enacted in 1975. By not repealing CAP 438 (the Rent Act), 1972, the government implicitly accepted the fact that bare land has value to those who control it.

The actual market value of land varies greatly from site to site, depending mainly on its size, location, and services. In Zambia, however, the MOL simply assesses a ground rent that each holder must pay annually to the government for the use of the land. These rents are established arbitrarily and change every few years by administrative decision. In the current version, ground rents per hectare differ between residential, farming, and commercial sites. Little or no effort has been made in the past to adjust the rents for site variances. In a proper ground rent system, rents would be higher on the more valuable locations (e.g., along a major highway or on the shore of a river or lake).

After the inflation of recent years, the rents under present law are so low as to be meaningless. Rent collection, aside from that required at the time of transfer, is rarely enforced. The present ground rents were set in 1991, on the basis of the locality and the land use, at rates per hectare or part of a

" Some functionaries did not see the two laws as contradictory; they put down "zero" as the value of the land, because the president **said** that was its value. They then calculated the maximum legal rent accordingly.

hectare. Residential land is charged at low rates; commercial or industrial interests must pay more (table 4.3). Land held by churches and charitable organizations is not exempt, although it is leased at lower **annual** ground rents. Agricultural land and land in mining areas are subject to ground rents that vary by size of holding and by proximity to the main cities (tables 4.4 and 4.5).

Table 4.3: Ground rent charges for nonagricultural lands, Zambia, as set in Amendment 15 (1991) of the Conversion Act

Location	Ground rent per year, per hectare or part of a hectare		
	Commercial or industrial	Residential	Churches and charities
Lusaka	K5,000	1(2,000	1(500
Ndola and Kitwe	5,000	2,000	200
Municipal councils	5,000	1,500	200
Councils	2,500	500	150
Rural <i>bomas</i>	1,000	200	100

Table 4.4: Ground rent charges for agricultural lands, Zambia, as set in Amendment 15 (1991) to the Conversion Act

Bracket by size	Ground rent per year, per hectare or part of a hectare	
	Within a 12 km radius of the city centers of Lusaka, Kitwe or Ndola	All other areas
First hectare	K1,000	K400
Next 99 ha, each	10	10
Next 150 ha, each	15	15
All over 250 ha, each	20	20

Table 4.5: Ground rent charges for land in mining areas, Zambia, as set in Amendment 15 (1991) to the Conversion Act

	Ground rent per year
Smallholding (2,600 m ² or less)	K300
All others, per hectare or fraction'	100

- a. Presumably, holdings between 2,600 square meters and 3 hectares also pay the minimum ground rent of K300/year.

B. Proposed mechanisms for setting ground rents

Three years ago, the GOZ obtained technical assistance from the Government of Sweden as part of an institutional cooperation contract between the Lands Department of the Ministry of Water, Lands and Natural Resources, and Swedsurvey, the Overseas Agency of the National Land Survey of Sweden, to study current levels of ground rents and recommend a definitive system (study hereafter referred to as the Hammar report). The final report was prepared, but no further action was taken. There is now renewed interest in the study and the Swedish Embassy has been asked to bring the team leader back in the near future.

The following preliminary analysis and recommendations were presented and discussed at a conference attended by the executive leaders of Zambian government departments dealing with land management and planning: the Commissioner of Lands, Acting Assistant Surveyor General, Director of Agriculture, Director of the Government Valuation Department, and the Deputy Commissioner of Town and Country Planning.

1. Conceptual basis for charging ground rents

A lease includes specified forms and conditions, one of which is the payment of an annual ground rent. The basic concept of ground rents is that leaseholders receive substantial benefits from access to the expensive infrastructure built and maintained by the state and ought to make a reasonable contribution toward those costs. The current system assesses the amount of ground rent solely on the basis of the zoning of the area in which the plot of land lies. As the study notes,

The rates are arbitrary and uniform in application. They are not based on any empirical data. The rents charged for all types of land are extremely low and are negligible compared with the economic benefits enjoyed by the users (Hammar 1990, p. 6).

As true as this was in 1990, by 1993, three years of inflation left the rents lower still in real terms—so low that when a leaseholder does bother to pay arrears, it can generally be done out of pocket change.

The study deals diplomatically with the myth that land has no market value, and that there is no market in land:

Only the State can own land in Zambia and, therefore, undeveloped, vacant land is not a saleable commodity....Despite this, it is clear that the leaseholder does attach value to the land depending on, in addition to its size, the privilege of using it, its location, the land capability, and the availability of physical and social infrastructure. The leaseholder does, for rational reasons, attach value to his land despite the fact that he cannot sell it. Thus land has a definite value to the lessee and it is this value that has been adopted as the value concept for this study (Hammar 1990, p. 6).

While vacant, undeveloped land does not generate income and therefore might appear to have no economic value, the exclusive right to use and improve a particularly well-located piece of land

for a stated period of time has enormous value. There is a very active market for leases giving the right to use specific plots of land for specific periods of time (99 years). If the land is said to have no value, the lease that determines who gets to use and improve it certainly does have value. The confusion is not whether God-given land has a price, but rather that the infrastructure built by governments, and the decisions whereby people decide where to live, or to build stores and factories, are what give value to location. And a desirable location will invariably have value, both from natural, God-given attributes such as climate, and from factors that stem from human actions, such as building cities, roads, and ports.

The study proposes that ground rent for agricultural land should be based on the potential annual economic output per hectare of land which is managed in an optimum manner. The leaseholder should pay a fair portion of the expected gross margins as a yearly ground rent to the state; it goes on to suggest that 20 percent would be that fair portion (Hammar 1990, p. 7).

It would appear from the study that the state ought to act like a normal landlord, charging something similar to (though a bit lower than) the going market rental prices for rural land. Around the world, agricultural land in settled farming areas tends to rent for somewhere between a third and a half of the gross value of output. However, out of that the landlord often pays part—sometimes as much as half—of the cost of purchased inputs like fertilizer, seed, and machine services. This is almost always the case when the rent is stated as half of the harvest, the landlord usually pays half of the cost of purchased inputs other than labor. On the other hand, when the rent is paid in cash, at planting time, it tends to be less—often around a third of the normal harvest in the area, and the landlord seldom helps with buying inputs.

For urban rental properties, the rent charged to occupy a flat tends to be closer to 10 to 20 percent of the capital value of the land and buildings. The urban landlord also has expenses to cover, but few of them are related to the land under the building; almost all refer to maintenance of the building, and collection of the rent. Thus, if a separate figure is needed to represent a normal return on investment in the land under a building, it is customary to estimate first the market value of the land, and then regard the rent attributable to the land as basically a return on a financial investment with relatively little risk or cost—perhaps comparable to the return to an insured certificate of deposit at a major bank.

The financial markets in Zambia are far from perfect, particularly because of recent inflation. Even government securities have paid returns as high as 100 percent a year in kwacha, but this cannot be regarded as normal. Adjusted for expected inflation, the real rate of return on capital in safe investments in other countries tends to be on the order of 4 to 6 percent a year, and this would be a reasonable standard to apply in Zambia—but with an effective provision so that actual ground rents would rise from year to year according to the actual rate of inflation.

2. Implementation: urban areas

The Hammar report further suggests that residential stands be charged an economic ground rent based on the optimum permitted use of the property, which is defined by zoning. It estimates that the "land value portion" of the total value of the property would be estimated between 10 percent of the total value of the land plus improvements (for poor quality housing) to 40 percent (for the best quality housing). After estimating the land value portion, the report suggests that the state, as landlord, could reasonably charge 5 percent of that amount per year for a normal residential stand.

At 1989 price levels, table 4.6 shows the recommendations of the Hammar report as to appropriate **annual** ground rents for normal-sized house plots, varying according to location.

Table 4.6: Annual ground rents, residential plots, by location (in 1989 kwacha/plot)

Location	Low cost	Medium cost	High cost	All stands
Lusaka	625	8,000	54,000	
Kitwe	250	2,000	10,000	
Chingola	190	1,500	7,500	
Chililabombwe	160	1,000	5,100	
Provincial towns				1,340
Townships				1,200
Small townships				940
Centers				540

Source: Hammar 1990, p. 8.

Comparing these 1989 figures with those of table 4.3, it is obvious that after inflation, the rates charged starting in 1991 do not come close to the recommended levels in kwacha. With the further inflation since 1991, it is no wonder that the Lands Department does not collect enough annual ground rent to do much (chapter 2). The Hammar report suggests that ground rents, once brought up to date, be adjusted annually by computer, to reflect price levels. The CPI would be used for residential stands, but for agricultural lands it suggests that the price of maize would also be suitable (Hammar 1990, p. 9).

3. Implementation: rural areas

It is proposed in the study that the expected gross margins for farmland, in kwacha per hectare, be estimated on the basis of attributes representing the capability of the land (estimated as the percent of the holding that is arable), the influence of agroecological zone, location with respect to markets, and available infrastructure (table 4.7). Each factor is assigned a set of brackets; for instance, land class is estimated on the basis of the percent arable: 81 percent or more, 41-80 percent, 20-40 percent, or under 20 percent. Market distance is estimated as 1-10 km, 11-30 km, 31-40 km, or over 40 km. Infrastructure is estimated as "best," "fairly good," or "very bad." The study then classifies agricultural land, at the level of regional plans, on the basis of these four factors. The result, based on 1989 price levels, ranges from gross margins of 200 to 3,000 kwacha per hectare. At 20 percent for the state acting as landlord, the annual rents would have ranged from about K40 to about K750 per hectare per year.

Table 4.7: Ground rents in 1989 prices for typical types of leases on farmland

Agroecological zone	Land class (% arable)	Distance to market (lun)	Infrastructure	Annual ground rent due (1989 kwacha/ha)
I	81-100%	1-10	"best"	310
I	41-60%	31-40	"fairly good"	140
I	<20%	>40	"very bad"	35
Iia	81-100%	1-10	"best"	610
Iia	41-60%	31-40	"fairly good"	300
Iia	<20%	>40	"very bad"	70
III	81-100%	1-10	"best"	350
III	41-60%	31-40	"fairly good"	160
III	<20%	>40	"very bad"	40

Source: Hammar 1990, p. 7.

In 1991, Amendment 15 to the Conversion Act raised ground rent charges somewhat (see table 4.4) but did not come anywhere near levels recommended in the Hammar report. The rent was set at 10 to 20 kwacha per hectare for everything above the first hectare. The first hectare was to pay K400, except if the land is within 12 km of the city centers of Lusaka, Kitwe, or Ndola, in which case the rate was raised to K1,000. At present prices, even the first hectare ground rent is scarcely worth the trouble to collect. This is clearly not even close to an appropriate contribution of the leaseholder to the cost of building and maintaining the infrastructure which the land enjoys.¹²

4. Prospective revenues

According to the Hammar report, if the proposed ground rent system is implemented with the suggested levels, as a fair return to the state, the potential revenue in 1989 kwacha would be about 1.1 billion if government-owned housing were included, and 800 million if it were not included (Hammar 1990, p. 9). The report does not state how much actual ground rent was collected in 1989, but it does note that the government's total revenue from all sources that year was only K7,884 million.

C. Preliminary suggestions for ground rents in 1994 and thereafter

This study certainly agrees that ground rents should be raised considerably from present levels. One starting point has been brought forth by Sonny Mulenga, who suggests that 10 percent of the **minimum development value** could be presumed to be the minimum value of the land under the

¹² Of course, like ratepayers in Lusaka, some leaseholders could object that the infrastructure is badly maintained and so not worth much to them. However, potholes and other signs of poor maintenance can be improved fairly quickly. If ground rents are raised to appropriate levels similar to those a private landlord would charge, it would be good politics to spend some money immediately, so that the roads and other services are obviously being improved.

development. That amount would then be assessed an annual ground rent of 4.5 percent, which is approximately the estimated market return on a secure investment in improvable land. For example, consider a 100 square meter house in Lusaka, assigned a minimum development value of K115,000 per m², in 1993 kwacha. The improvement would be estimated to be worth at least K11.5 million. The land value would be estimated to be not less than 10 percent of that, or K1.15 million, 4.5 percent of which would give an annual ground rent due of K51,750 in calendar 1993. For 1994, of course, the ground rent should be adjusted upward by the change in the CPI during 1993. If one were to assume that the land under the average house in Lusaka were worth 25 percent of the price of the improvements,¹³ rather than 10 percent, then the ground rent due during 1993 should have been on average K129,375. However, further research aided by experts on valuation would be needed to determine whether 25 percent is in fact an appropriate estimate. Perhaps it would be feasible to follow the Hammar report model, and categorize each sector of the city into low-, medium-, and high-cost construction areas.

A related question is whether public policy should continue to subsidize residential areas with relatively large gardens behind walls, in which relatively small but high-cost houses sit. Further study should consider a mechanism that will base ground rents on an average amount of land per dwelling but charge more for estates so large that two or more houses could readily occupy the land without losing all the amenities. Eventually, as land values rise in the market, the very large stands will be divided or will be used to build condominium apartment buildings.

A private landlord will not refrain from collecting annual rent from a tenant just because the tenant chooses not to live in, or to till, a dwelling or a piece of farmland. The landlord will collect the rent in any case, since the tenant had by lease the right to dwell or the right to till, excluding anyone else from doing so. Likewise, the state should collect ground rent on vacant lots and idle farmland.

In discussions of the proposed land development fund (following section), it is usually assumed that the fund will have ground rents as an important source of funds with which to operate. It should be noted, therefore, that until and unless economic ground rents are in fact imposed and collected as effectively as a private landlord would impose and collect them, the proposed fund will lack the resources with which to work. At the same time, the state, acting as the landlord, needs to think like a good estate agent. Ground rents collected will need to go into improved road maintenance and other infrastructure investments that in turn justify the significant increase in ground rents.

VI. Proposed tax reforms

Proposed changes in land laws are now circulating in two closely related draft laws: the Land Titles Act and the Land and Deeds Registry Amendment Act. The Land Titles Act draft includes a provision that "any person who holds land under customary tenure may convert it into leasehold tenure." This would add the land in question to the supply of land on which annual ground rents

¹³ **The Hammar study suggests** that over the world, land values tend to be from 10 to 40 percent of the value of improvements on urban residential stands, with the least desirable locations being on the low end and the best locations being on the high end. This is certainly consistent with experience in the United States and in various countries of Latin America and the Caribbean.

payable to the government would be due. Some concern has been expressed about the wisdom of allowing scattered conversion of landholdings in customary areas. A significant increase in annual ground rents would give holders a reason to hesitate before applying for conversion.

The Land Titles Act reform draft also repeals and replaces SECTIONS 10 and 12, dropping assertions that bare land has no economic value. It further provides that the president, when granting land, "may fix consideration and ground rent which may be reasonable depending on the location and the size of the land." This appears to be a prudent provision, that should provide ample authority for needed administrative reforms in valuation and in the setting of initial fees and recurring or annual ground rents.

The draft adds a provision that on expiry of a lease, if all the conditions and covenants in it have been complied with, "the lease shall be deemed to have been extended for a like term. The registrar, on production of a certificate of such compliance from the President, shall issue a Certificate of Title to that effect." To further reassure leaseholders who hesitate to invest as expiration approaches, the law should also allow holders to obtain a compliance certificate and request a 99-year renewal at any time, even if the current lease has not expired.

The draft reform provides that failure to pay ground rent on due dates will triple the amount due, and failure to pay that amount upon demand will entitle the president to enter a certificate of reentry in the register, without notice, in effect canceling the leasehold. This should increase collections, provided the regular ground rent is itself appropriately determined, and that the government acts in a responsible manner. The penalty of lease cancellation, if effectively enforced, should cause mortgage lenders to see that their debtors pay ground rents, and on time, so as not to impair the collateral on their loans.

VII. Land development fund

A. Proposals and assessment

The land conference of July 1993 (see chapter 1) strongly recommended the creation of a land development fund (LDF). There was considerable agreement that it would have as its resources ground rents paid by leaseholders, consent fees charged to the assignees of newly distributed lands, and other receipts from government or private land transactions. An MOL official memorandum suggests that the fund be used for "plot demarcations, roads and bridges construction, provision of water supplies (dams, wells, and boreholes), dip tank construction, conservation works, and fencing. Beneficiaries would repay the investment in annual installments over ten years, with interest. Payments would go back into the fund, which would operate as a revolving fund."¹⁴ It suggests that the fund begin by making such investments in the vast undeveloped areas (former Reserve and Trust Lands), and later include individual emergent farmers who are not in the farming blocks nor in the settlement schemes. Once the fund is serving these first two phases well, it suggests converting it into an autonomous fund that serves commercial farmers in addition to the schemes and emergent farmers. However, the participants did not reach consensus about the fund's objectives and priorities. Various possibilities

¹⁴D. Siansumol., Principal Lands Officer, "Development Fund" memorandum, 20 October 1993.

have been mentioned; the leaders among these are detailed below. It will not be easy to resolve these conflicting demands for the same funds.

1. Increasing the supply of serviced farmlands

When the fund first considers an area for development, it should "freeze" the area to prevent the issuance or registry of any further state or customary consents awarding land to anyone. Otherwise, insiders will grab all the land before the fund opens it up, creating at least the appearance of corruption. This grabbing would also prevent the fund from helping either the best farm operators, redundant state employees, or other disadvantaged persons needing assistance. Secondly, before committing itself to develop a specific area, the fund should **make a** complete inventory of land rights in the area and negotiate with existing holders of leaseholds, firewood or grazing rights, or any other land rights. The fund then would buy out holders who are willing to sell, at the current market value of their holdings (not at the value which those holdings will have after the fund develops the areaa)."

The fund should also negotiate with holders who are not willing to sell, as to the amount of money or land these holders will contribute as their fair share of the investment the fund will make in developing the area. Whenever land is already privately owned or held on long-term leaseholds before government provides improvements, it is entirely reasonable to expect those who profit thereby to contribute most or all of the cost of the improvements. (Colombia, among other countries, makes a formal determination of benefits and assigns a share to each beneficiary at the feasibility study stage of a project [Rhodes 1990]). If the landowners argue that they cannot afford to contribute the amount by which the project feasibility report says they will benefit, the government can then say that the feasibility report is wrong and that the project is not justified, so it won't be built. If the landowners respond that the project should be built anyway, without charging them for part of the increased value it will give to their property, at least their greed is demonstrated.

Payment, of course, can wait until the project is actually built and benefits realized. The amount due from each owner should be documented with promissory notes and a mortgage, properly recorded, and subject to a price index clause to guard against inflation, as well as interest at a normal rate for other investments. If there is no provision for inflation protection through indexing, the interest rate should at least be that rate which the government itself pays when borrowing. In effect, government is lending money to the property owners who benefit from a project, and they repay over time.

In some countries, such as the Dominican Republic, existing holders are required by law to turn over part of their land, without compensation, as their contribution to state-funded irrigation projects. They still benefit, because the irrigation greatly increases the value of their remaining holdings. But by turning over part of their land, they enable the government to share the benefits of that investment with landless laborers or other disadvantaged persons.

¹⁵ Until a much more active market exists in land rights, these values will have to be estimated by capitalizing average potential net incomes. Before construction of improvements actually begins, an independent **authority—perhaps** an elected council, a traditional chief, or an independent auditing firm—would investigate and verify that fair compensation was actually paid to families that lose land or rights, just as is required by the World Bank when families are forced to move for Bank-financed dams and similar projects.

In other cases, when government extends services to privately owned peri-urban land which then becomes valuable residential sites, the owners of the undeveloped tracts are required to donate to the local council suitable sites for schools, clinics, markets, and other services. Their compensation for these sites consists of the state-financed roads, water and electric lines that made their landholdings more valuable. As in the irrigation case, they still gain substantially, but at least the council is not forced to later buy sites at market prices for needed community facilities.

There are several alternative ways in which the LDF could be used to increase the supply of serviced farmlands:

- ▶ improve the idle or underutilized land in the state tenure area, recaptured from those who hold leases now but are not using the land productively (once improved, it would be leased anew, preferably at open, public auction);
- ▶ rehabilitate run-down and unproductive state farms that are to be privatized (actually, we would prefer a cheaper, faster process—auctioning these state farms "as is," letting the bidders develop the land with their own funds);
- ▶ make loans to emergent farmers who do not have access to loans from commercial banks because they are unable to provide sufficient guarantees of repayment (such a plan should begin with serious analysis of alternative schemes that make it likely that the emergent-farmer borrowers will in fact repay the loans,¹⁶ and that enable those farmers to thereafter apply to commercial banks precisely because they have demonstrated creditworthiness);
- ▶ improve newly created leaseholds that government wants to create in customary tenure lands, thereby converting customary into State Lands; or
- ▶ finance improvements to land in traditional villages in customary areas.

2. Who pays for the land and improvements?

There are several approaches the fund could use to finance land and improvements:

- ▶ outright gifts or grants to disadvantaged persons;
- ▶ installment loans which the beneficiaries would have to repay over a period of months or years (the period might vary according to the type of improvement, and incentives such as free life insurance might be provided for those who repaid punctually and in full); or
- ▶ increase the annual ground rent payment required of the leaseholder by enough to recover the amount invested by the fund, with interest (this is similar to the case of a private landholder who finances construction of a house or flat and then rents it to a tenant).¹⁷

3. Who provides the improvements?

In each approach, the state could do the actual construction, contract with private firms to do the work, or make loans to the lessees, with which they would hire the work done (and supervise it). Some types of investment (such as access roads into a new land block) would best be contracted for and supervised by the state. Most on-farm improvements (such as fences, tree crops, wells, and

See, for instance, Strasma 1992.

A form of this, using two accounts (one for normal ground rent, and the other for recovery, at interest, of the premium caused by the LDF improvements), has been used in settlement schemes and in the opening of new labor blocs.

dwellings) might best be financed as long-term credit to farmers, who themselves would hire labor as needed, **and** supervise the job. They would supply part of the labor themselves, as well as provide more effective supervision and quality control than normally occurs with government visits.

4. Other uses of the LDF

All of the previous ideas as to uses of the LDF suppose that its purpose is to develop land. Plot demarcation, roads and bridges, dams, wells and boreholes, dip tank construction, land levelling, conservation works, and fencing were all proposed. However, in interviews, some Zambians have mentioned other possible uses of this money, as a revolving fund of loans oriented largely to increasing production by specific households or groups:

- ▶ production loans to women, redundant state or parastatal employees, and other disadvantaged persons, to enable them to become productive emerging farmers and gradually build up their own working capital;
- ▶ land purchase loans to the disadvantaged, enabling them to purchase leasehold interests from other persons who are unable to put their leased land to productive use; or
- ▶ loans to enable emerging cooperatives or farm supply companies to go into the business of supplying farming inputs and perhaps marketing production as well.

The previous set of ideas on using the LDF for loans would all be dedicated to increasing production. Still other possible uses mentioned would have social elements:

- ▶ finance the building and operating costs of community facilities, clinics, and schools to benefit small farmers in densely populated but poorly serviced rural areas;
- ▶ compensate families who lose grazing, gathering, or similar rights over customary land when it is converted into leaseholds in the state sector;
- ▶ grants or low-cost investment loans to landless rural families in overpopulated areas, to help them move to areas with available land; or
- ▶ loans to councils to help them service town plots, reducing the relative attraction of moving to shantytowns in Lusaka or the Copperbelt.

5. Donor assistance

With so many ideas floating around as to how to use the higher ground rents, consent fees, and other resources obtained by charging rents or fees closer to market values, it is no wonder that the land conference did not yield a consensus on which uses should have priority, nor even on how this would be decided. One final hope expressed by participants was that donor organizations might contribute to a well-managed LDF. These organizations generally favor charging market rents and significant taxes (rates); they might well offer matching contributions to the fund once the government actually implements such policies.

B. Legal reforms: The draft law

The draft Land Titles Act proposes in SEC. 20 to establish a land development fund. The draft proposes sources for its funding, a structure for policymaking for the fund, and its objectives. However, the draft is silent on many aspects that will be critical if the LDF is to be successful.

1. Uses

SEC. 20(7) of the draft states that the moneys of the fund are for "grants to councils situated in rural areas for development of land and making of roads,...opening up of new areas for development,...the improvement and development of **agriculture**,...the supply of water for domestic farming and irrigation purposes,...and generally, such other purposes for the direct benefit of the people in ensuring that more land is made available for development and is developed." These objectives are quite broad and duplicate the objectives of other agencies, provided for in the annual government budget. Improvement and development of agriculture coincides with the objectives of the entire budget of the Ministry of Agriculture. The water-supply objective does the same for government agencies concerned with water projects. Also, the building of local roads is often an activity of local government, funded in part with property taxes (rates). Ground rents could also be channeled through local councils.

If ground rents and other fees collected by the state continue to be taken off to Lusaka and then routed back to some but not all rural areas, through decisions made in Lusaka, the fund may work against the government's announced goal of decentralization. If, on the other hand, the fund is politically necessary as the only way to get ground rents and fees up to economic levels, and hence pressure speculators to put land to productive use, then the fund may still be justified. It might be a good idea to include in the law provision that all moneys raised from land-related fees be invested in the same province where they are raised.

Curiously, however, the draft law does not explicitly allow investing in existing but underutilized state sector leaseholds, nor improving run-down state farms that are sold to commercial farmers, smallholders, or emerging farmers. Surely government could show visible, positive results more swiftly in that area than in opening up new land in customary tenure areas. Still, the objectives are probably broad enough to include this area too. According to the 1994 budget message (p. 10), a pilot scheme to subdivide state-owned farms for commercial use is under way.

The opening of new areas has been a main objective set forth by proponents of the LDF from the beginning, but the draft law is totally silent as to who exactly is to benefit from this. Before an area is opened, the land rights situation should be inventoried. Planning for the project should be specific as to who is expected to benefit and how much they are required to contribute to the cost of the project. Will foreign investors, who likely will have leverage in competitive bidding, be given open and full access or should controls be placed on their actions through quotas or special fees? Will newly improved lands be allocated to political insiders at little or no charge, as in previous republics? Or will ground rents close to market levels be charged, and then an open public auction used to decide who gets the most desirable parcels at those rental levels? The latter would generate far more revenues for the fund, enabling government to develop land much sooner than if land is allocated by administrative discretion. If running projects through the fund instead of the regular budget increases accountability and productivity and helps justify the change to market-level ground rents and fees, this is positive. It remains to be seen whether the fund, as proposed in the draft law, would in fact be accountable and efficiently managed.

One might suggest redrafting these objectives, perhaps based only on the "opening areas" and "other purposes" clauses and setting forth very specific provisions to ensure that (1) more land is made available for development, (2) it is in fact developed, and (3) those who get the land effectively pay market values for it, with a significant cash initial payment and an effective collection mechanism for

the remaining installments. The only exceptions to payment of full value should be persons who are clearly disadvantaged, a category that does not include the high officials and other insiders who have often received lands assigned administratively in the past. Even the disadvantaged should make some payment, and there should be a provision to recapture the subsidy element should they leave the land and sublease or transfer it to someone else.

2. Discretionary investment

SECTION 20(8) says: "Any money which is not immediately required for any of the purposes set out...above, may be invested at the discretion of the Ministers responsible for the administration of the Fund." Given the breadth of the proposed objectives, it is unlikely that the fund would have "moneys not immediately required for any of the purposes set out." However, given the total discretion the draft law offers the ministers, it is not hard to imagine that future ministers, wanting to do something entirely different from the purposes of the LDF, might be tempted to decide not to pursue its purposes, in order to "invest" the money in something else. Worse, this provision appears to allow the four ministers absolute and total discretion. They could decide to invest in banks paying less interest than Treasury bills or less than the highest rates currently available at other banks. It would appear that they could even invest in loans to private businesses. If questioned, the attorney general might be forced to say that this was permitted by the law, if enacted with the present wording. Since this is surely not the intent of the drafters of the law, the wording should be changed to avoid any doubt.

Other countries generally have transparent, professionally managed provisions to invest government agency funds not currently needed. There is no reason to require the managers or directors of the LDF itself to make decisions on short-term investment of government funds. This is part of the job of a treasurer, who manages balances for all government agencies. For example, some countries specify that all funds of parastatals, which the fund somewhat resembles, not required for disbursement within the week, must be held in an account in the central or state bank. This reduces the amount of money in circulation and hence at least contributes to controlling inflation. It also reduces the opportunities for corruption, and lets the fund directors concentrate on their main task, land development.

3. Accountability and transparency

The draft law provides, in SEC. 20(9), for annual financial statements to be provided only to the very government officials in charge of the fund: "The Ministers responsible for the administration of the Fund shall ensure that an annual statement of the income and expenditure is prepared and furnished to the President and all the four Ministers responsible for the Fund." Drafted this way, the law does not provide for:

- ▶ conducting an independent, outside, annual audit of the accounts;
- ▶ making these accounts available to the public through timely publication in the press, as banks do; nor
- ▶ submitting audited financial statements to parliament, nor to anyone other than the very persons who are given authority to spend moneys in the fund.

If these omissions are not corrected, the public will be unable to determine whether funds have been spent honestly and wisely. Given the history of some other state funds, the public might assume

the worst, and respond accordingly in the next elections. The moneys to be spent through the Fund are to be obtained through needed reforms in the present land legislation. However, if the public fears that the money will be squandered, it will not support those needed reforms. The draft provisions for the fund should therefore be modified not only to target fund activities more appropriately, but also in order to ensure support for the other needed land policy reforms.

4. Operation of the LDF

How can the fund make its investment start sooner and go farther, ensure that the disadvantaged participate, and ensure that land it develops is actually tilled? The Privatization Agency might well work closely with the LDF in order to show results quickly. For instance, an existing but unproductive state farm might be divided partly in four commercial family farms. Each would have to pay an annual ground rent at about the same level as a private owner would charge a tenant. These would be auctioned to the highest bidder while the rest of the state farm is split into another 40 smallholder plots.¹⁸ Their ground rent could be a little lower per acre, as a subsidy.

These smaller farms would also be auctioned to the highest bidders; but for them, bidding would be limited to persons owning no other land and who are deemed disadvantaged. For example, bids might be invited from persons who have been declared redundant in state or parastatal employment or fear that they soon will be. In order to bid, they should show some knowledge of farming and promise that they will move onto and cultivate the parcel if their bid wins. Retrenched employees should be allowed to use their separation pay toward payment for the small leaseholds. However, the LDF might also identify qualified disadvantaged persons, such as landless farm laborers, who did not have separation pay to help them bid. They could be given "seed money" grants as initial working capital, though they would still be required to make some kind of down payment in order to show that they have some capacity to save, and that they understand that the parcels are not gifts, as previous government programs have been.¹⁹ In both cases, provision could be made for payment of at least 25 percent of the bid price in cash, with the balance due over 10 years (commercial farms) or 15 years (small parcels), at interest. Interest and repayment should be calculated each year in the current value of maize or other principal crops of the area in order to avoid decapitalization of the LDF through inflation.

Likewise, the sale should include a reversion clause providing that the LDF would inspect all land sold one year after sale, to verify that it is in fact in cultivation and determine whether the owner did in fact live on it. If not, the lease should include full authority for the fund to nullify the sale, evict the unsatisfactory "buyer," and sell to another eligible farmer as part of its next auction. Where specific conditions made the delay justifiable, the fund would make a public finding to that effect, and give an extension of six months or a year to that buyer.

¹⁸ Some team members question the division of large state farms into part-commercial and part-emergent or peasant farms. Others feel that diversity has merit, that each can learn from the other, and that an open land market will in time determine the best mix.

¹⁹ This example is built on a national land fund recently created in Honduras. That fund uses payments made by land reform and squatter titling program beneficiaries to help landless farm laborers buy small parcels in the land market. No one who owns more than 10 ha, including the land being bought, may receive credit from that fund. A 20 percent down payment is required. See Strasma, Meza, and Umana 1993.

However, in practice, the fund should also authorize any buyer to sell the leasehold, even before the year was up, to any person who would have been eligible to buy at the auction. For sales during the first year, the price would be the price originally bid at the auction, less the unpaid debt, which the new buyer would assume. In addition, the new buyer would pay the seller any mutually agreed-upon amount for improvements made since the purchase at auction. The object is to obtain the highest possible price at the auction while ensuring that the land is in fact farmed. If the first buyer is unable for any reason to bring the land into appropriate use, he or she should sell it to someone else who can and will do so. Thus, the fund should seldom, if ever, actually need to recover a farm itself. As long as the parcel has been sold at auction, not given away free to a favored few as in the past, the price on resale will not be very different from the auction price, and hence there is no need to control it. Once the year-end inspection has verified that the buyer has placed the land in production, there would be no further need for supervision. And **any** owner who wanted to sell or sublet the leasehold would be allowed to do so, just like any other small farmer.

5. Potential buyers and sellers

Since a more fluid, transparent land market would enhance Zambian development and the welfare of small farmers, the fund should invite anyone who would like to buy a farm or smallholding that becomes available to put his or her name on a list of candidates. This list would be made available to anyone, not just buyers at auction, that may want to sell land in small parcels. Likewise, the fund should invite other landholders, as well as any of its own buyers who change their minds, to advise the public, estate agents, and others that they are interested in selling and would like to receive offers. In this simple way, the LDF could do much to increase the efficiency of the Zambian land market, and reduce the cost, in time as well as money, required for someone who wants to find and buy a small farm in order to make it produce.

VIII. Summary, conclusions, and recommendations

A. Summary and conclusions

The land market in Zambia is by all accounts more visible than it was three years ago, but it is still far from efficient. People who seek access to land for productive purposes still have trouble identifying some of the land that would serve their needs, and people who think they have secure access to a specific piece of land, but have not yet built a substantial building or are using it, may find that access revoked on ground that they are not "using" it to the satisfaction of government. The converse also applies. A government functionary may decide that a piece of land is not being used and therefore may revoke its lease and promise the land to someone else. However, the new leaseholder may be informed before actually getting possession that the former leaseholder has appealed to the courts, leaving the whole issue without resolution.

In another example of the insecurity of possession of leaseholds on state land, a person who advertises the availability of vacant land suited to commercial or industrial use attracts the attention of a functionary. That functionary may cancel the original leasehold without compensation, on grounds that the previous leaseholder is not using the land, which had been a condition of the lease. Naturally, leaseholders who have not yet developed the land will once again hesitate to advertise their willingness to sell. These incidents happen frequently enough that it is fair to say that the land market is still

somewhat opaque and that secure possession of land with good potential for farming (or of other land not yet improved) is subject to insecurity.

No land may be transferred without permission from some civil authority, be it the chief of a traditional community or the Commissioner of Lands. Despite reforms making the process simpler, there is no guarantee that approval will be granted, nor any published list of conditions to fulfill in order to insure that approval will be granted. Thus a future commissioner might be tempted to fall back into corrupt practices, demanding payment of a bribe to authorize the sale of leasehold interests.

Zambian law provides that cities, towns, and rural councils may collect rates, an annual tax on the value of buildings and other improvements, but not on the value of the land under them. The law also authorizes the central government to collect a fee for assigning state land to an applicant, and then an annual ground rent for that particular land. In practice, both rates and ground rents have lagged far behind inflation and bring in very little revenue. This should be corrected, so that speculators will find it expensive not to develop leaseholds, and so that local governments can finance needed services, roads, schools, or other public goods. Yet, because of the difficulty of separating the value of land from improvements, there is also the risk of excessive double taxation—i.e., setting both rates so high as to make the combined effect regressive to production incentives.

B. Recommendations

1. Abolish impediments to the subdivision of urban or rural land.

Existing law, by requiring presidential consent before any land transfer, also in effect requires that consent be sought before any division into two or more parcels. Implicitly, this law asserts that the government (i.e., the Commissioner of Lands) knows better than anyone else what the correct size and layout of every piece of land ought to be. Since appropriate site sizes change continuously, according to many different factors affecting the supply and demand of land on the market, this requirement is absurd.

This does not mean that government should have no say on land uses and transfers. There is nothing wrong with clear, logical rules that limit land uses in specific areas in order to protect the water sources for a city, or to prevent pollution by certain activities that tend to contaminate soil and groundwater. However, an efficient land market is one in which all landholders (lease or freehold) are able to sell off part of their land, and are equally free to buy a piece of land and annex it to their own holdings in order to create a farm or a site suitable to their needs. The land market in Zambia will become more efficient, and potential investors will feel more secure, when the law is changed to provide that all land divisions or mergers that do not violate existing land-use regulations duly promulgated will be approved automatically.

One could go further, providing by law that if the government agency involved fails to act at all within a certain number of days after presentation of the paperwork, the application is deemed approved. The interested party would then need only to present to an ombudsman or to a lands tribunal proof that the application was presented in the appropriate office on a certain date, and that after the specified number of days, that same office certified that the agency had not made any determination as to whether it was in order. In that case, the ombudsman or tribunal would immediately issue a finding that the application was deemed by law to have been approved.

2. Convert presidential consent into an automatic right of the leaseholder to transfer, subject to clear, written, verifiable, and impersonal criteria.

The act of recording a transfer would constitute documentation of presidential consent. Refusal of the registrar to record a transfer within 90 days of the time presented could be appealed to the land tribunal, which would determine definitively whether the transfer was in order or not and instruct the registrar to proceed accordingly.

3. Create procedures for the renewal of leases upon demand, subject to agreed investments.

Present law states that 14-year leaseholds can be converted into 99-year leases upon demand, by proving that improvements have been built. However, there is as yet no provision for renewal of the 99-year leases. Draft laws state that these leases "may" be renewed, but do not say that they "will" be renewed upon request, nor do the laws state if any conditions are to be imposed on the renewal.

For an efficient land market, the rules for renewal should be clear. It would be logical to provide for renegotiation of the amount of the annual ground rent, for instance. The point is simply that since improvements pass to the government upon expiration of the lease, an investor should have the right to renew a 99-year lease earlier than 99 years if he/she is planning to make a further investment in improvements. Such renewals are routine in Baltimore, Maryland, for example, a US city in which much of the central business district land is leased on a ground rent basis. Owners of the buildings on those sites routinely come to the banks or insurance companies that own the land about 30 or 40 years before leases expire, to negotiate a new 99-year lease. In this way, the person or company that intends to make a major investment in expanding or modernizing knows that it will remain the owner of the building long enough to fully amortize the investment. This recommendation does not necessarily mean a change in the present law; it merely clarifies that a 99-year lease can be renewed for a further 99 years from any time, upon application by the lessee. The present law appears to be silent on the matter, although it does explicitly allow for the conversion of a 14-year lease to a 99-year lease at any time.

4. Update valuations, and index for the future.

As noted above, existing valuations of land and improvements in Zambia are far below market values. Not only should they be updated, it would be prudent to provide for automatic maintenance of that value in real terms in the future. Some governments set values in terms of "fiscal units of value" and then provide by law that the monetary value of the fiscal units will change automatically according to some index of prices that serves as a reference point. This policy does not take notice of changes in market values arising from population growth, economic development, or public investments that enhance the value of specific parcels of land. For that purpose, one still needs a periodic reevaluation of all property. However, Zambia has a legal requirement that this be done every five years for urban rates; that standard should probably simply be extended to annual ground rents as well. Between revaluations, however, rates are currently adjusted by increasing the rate of tax on valuations which quickly become obsolete. There is no similar automatic adjustment of annual ground rents, and there should be. But rather than increase the nominal rate of ground rent on a static market value, it might be easier for the law to specify that the amount of ground rent would be increased or

decreased each year according to the rate of increase in a price index, until the next formal revaluation.

5. Define the rights of leaseholders in the event of unilateral lease cancellation.

The present government has made it fairly clear that it intends to continue the position that it is the ultimate "owner" of land in the state leasehold sector. One reason given by senior officials is that the government has, and should have, the right of a landlord to cancel a lease under certain circumstances. Freehold ownership is not very different: government can still take land held in freehold ownership, but legal systems are usually very clear in stating that the affected owner has the right to full compensation at market value, paid before the land is taken away from its former owner. It would seem appropriate to enact a law providing that in the event that government cancels a lease before its expiration, the lessee should have the same right to full, prior, compensation for the value of improvements made by the lessee. This would then be a curb on unreasonable, arbitrary, or corrupt acts by functionaries. Enactment of such a law would be a valuable first step in the needed revision of the Land Acquisition Act, but it need not await that much lengthier process.

6. Provide for reversion between the state and traditional authorities if land transferred is not in fact developed as promised.

There are reported instances in which chiefs complained that they had assented to the transfer of land to the State based on promises by applicants to make investments and create jobs for the local people, but years later no investments had been made and no jobs created. They later learned that government transferred that land to politicians who were planning a different use for it. Just as the government reserves the right to cancel a lease if investments are not made in the land, perhaps the traditional chiefs should be allowed to write enforceable contracts specifying that if specific conditions in the application are not fulfilled, then the land would revert to the chief's control.

7. Consider declaring customary authorities to be the municipal governments in rural areas (the Peruvian model).

Zambia now has two major sectors of landholdings and two sets of authorities governing land matters: the state and the traditional sectors. It has been proposed that all of Zambia should be considered one sector, with agencies of the government taking over land-related responsibilities. An alternative, invented in Peru in 1970, is to endow the customary authorities with the same legal powers that towns and cities have concerning land matters. This achieves the goal of having similar procedures in both sectors, although (at least in the Peruvian model) the central government respects the existing or traditional forms by which the traditional sector chooses its executive (the chiefs and headmen), rather than imposing a European style of election of authorities. Government may wish to study this variant on the suggestion of extending councils to cover the entire country.

8. Consider extending the concept of rates to include all land allocations as a tax base for local or customary authority budgets.

Present law applies urban rates only to the value of improvements, and only to the value of improvements within the so-called rateable areas of cities, towns, and councils. Taxing only improvements encourages speculative holding of valuable land with minimal improvements, which is

not favorable to development. The government should explore the feasibility of including the value of land in the tax base for rates. In addition, it is clear that there is a great scope for investment to open up rural areas of land with potential for great productivity. It would therefore be reasonable to study the extension of rates to cover improvements outside the present "rateable areas." There is no obvious reason why tourist facilities, large processing facilities, etc., should not be taxed to help finance the roads that enable people and products to get to and from those facilities; further study would therefore be in order.

Chapter 5:

Land Tenure and Agricultural Development in Customary Areas: Results from Eastern and Southern Provinces

by

Frank Place, V.R.N. Chinene, Michelo Hansungule, and Fabian Maimbo¹

I. Introduction

Previous chapters have identified a number of potential tenure constraints to agricultural development in rural areas. This chapter addresses some of these issues by utilizing recent data collected from rural households mainly located in customary areas of Zambia. LTC, in collaboration with ICRAF and the University of Zambia undertook a study of nearly 200 households in Eastern and Southern provinces in 1992-93. The study focused on the link between tenure and on-farm tree planting activities of households. However, the formal questionnaire used for the study included general questions on land tenure as well as some indicators of agricultural productivity/development. Following this introduction, section II contains a brief overview of the research design and description of study sites. Section III presents some of the findings related to land tenure security including data on land acquisition, rights, and disputes. Section IV describes the various agricultural development indicators analyzed in the study. Section V examines the linkages between land tenure and selected agricultural productivity indicators such as adoption of oxen mechanization, use of chemical fertilizers and credit, and presence of various long-term improvements on land, including trees. Finally, section VI summarizes the results and identifies further research needs.

II. Overview of LTC/ICRAF Study

The two provinces selected for study—Eastern and Southern provinces—are situated on a plateau that is characterized by relatively fertile soils and medium rainfall. Characteristics of sample households in each region are given in table 5.1.

Eastern province was chosen because it is host to an ICRAF research station. The province is dominated by mixed maize/livestock farming systems, although maize appears to be by far the most important component. Among crops, it is estimated to occupy over 80 percent of cultivated area (Celis, Milimo, and Wanmali 1991). The Celis study also found that crop income accounted for over 90 percent of household income and this was mainly from maize. Other crops grown include legumes such as groundnut and cash crops such as sunflower and cotton. Livestock is nevertheless important: about 55 percent of sample households had cattle and the median herd size (of those with cattle) was seven. As the province is located quite a distance from the major urban centers of Lusaka (500 kilometers) and the Copperbelt, there are few off-farm income opportunities. Prior to the

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implementation of an agricultural liberalization program, farmers marketed output and purchased inputs through cooperative unions. Among sample households, 81 percent had used chemical fertilizer and over 60 percent had used formal credit within the past five years. Formal credit was obtained from both commercial banks and the government-owned LIMA bank.

Table 5.1: Characteristics of sampled households

Characteristic of household	Southern province	Eastern province
Number sampled	100	98
Percent female-headed	7.0	14.6
Mean household size	7.6	5.4
Median farm size (ha)	6.7	3.1
Percent with cattle	68.8	55.2
Percent using fertilizer (in last 5 years)	93.9	81.3
Percent ethnic groups		
Tonga	98.0	
Chewa		54.0
Ngoni		33.0
Other	2.0	13.0

Southern province was selected as the other site mainly because of tree planting initiatives there. It is more commercialized as indicated by the fact that over one-quarter of total cultivated area is occupied by commercial farmers operating on State Land. The northern part of the province is near to the Lusaka market. Like Eastern province, maize is the predominant farming enterprise, occupying about two-thirds of cultivated area (Cells, Milimo, and Wanmali 1991). Fertilizer use is ubiquitous with 94 percent of sampled farmers having applied fertilizer within the past five years. Nearly 70 percent of households have cattle, but herd sizes were rather low, the median being three. There are few off-farm income opportunities in the province, but there is significant migration to Lusaka and to the minor urban areas of Livingstone, Choma, and Mazabuka, among others.

Selection of research sites within provinces was decided on the basis of traditional descent patterns affecting land transfers and the presence of tree planting activities. In Eastern province, the research team selected broad areas of patrilineal and matrilineal descent patterns in order to contrast tree-planting prospects between the two groups. The greater Chipata and Katete districts were chosen as the focus of the study.² Chipata is the site of a recently established ICRAF on-farm program. It is located just 30 kilometers from the border with Malawi and is inhabited mainly by the patrilineal Ngoni. The Katete region, on the other hand, has a majority of matrilineal people (mainly Chewa) and

² A couple of sites were chosen in Chadiza as well, but the area was minor relative to Chipata and Katete districts.

is located to the southwest of Chipata by about 70 kilometers. Villages were randomly selected in Chipata, Chadiza, and Katete districts, and for the most part households were also randomly selected.' The addition of Southern province provided opportunities for studying multipurpose tree planting. In Mazabuka district, conversion of woodlands led to the initiation of several tree planting projects by the Forestry Department and Family Farms project. The researchers purposefully selected villages and settlements in the district with the intention of capturing a significant percentage of tree planters among the sample of households. The sites within Mazabuka district were the Mazabuka South area (near Magoye) and the Mapangazya area some 90 kilometers to the north of Mazabuka town. Each is about a three-hour drive from Lusaka on the Lusaka-Livingstone road.

Both the number of household members and the size of farms is larger in Southern province. The larger farm size is explained mainly by the inclusion of larger farms on State Land (28 percent of the sample),³ the greater use of oxen which permit extensification, and more accessible commercial markets for output which increase demand for labor.' The greater production also increases household demand for labor which results in more members' and fewer male household heads who seek off-farm employment. There is a larger percentage of female-headed households in Eastern province, including single, divorced, widowed, and polygamous families.

III. Land tenure

A. Land administration

Under the Land (Conversion of Titles) Act of 1975, all land in Zambia was henceforth to be vested in the state. However, land in the Reserves and Trusts was to remain under the administration of traditional authorities (see chapter 1). Land matters in most rural areas continue to fall under the jurisdiction of chiefs and village headmen. **In** many areas of Zambia, chiefs have permitted creation of new villages to accommodate increasing population growth and in-migration. Headmen, who are generally selected by the community in accordance with customary law, are responsible for local governance. Chiefs usually retain customary control over allocation of nonvillage land and settlement of newcomers to the area. Headmen are likely to administer matters over land (e.g., expansion of farms, dispute settlement) in their villages.

Besides the power of allocating land, chiefs or headmen also have the authority to dispossess farmers from their land. However, key informants visited during informal interviews insisted that this is a possibility only in cases of unacceptable behavior on the part of a household member. Once a specific piece of land is allocated, the family expects to control land-use decisions and to pass this right to heirs. There is some variation over the degree to which households can transfer land outside the family and formally register their land. In some areas, individual rights to sell and rent have developed (mainly in peri-urban areas) whereas in others they are strictly forbidden. Likewise, farmers in Reserves face varying degrees of acquiescence on the part of chiefs to requests for individual registration of land.

³ A few households were pre-selected for their planting of multipurpose trees.

It is unclear from the analysis whether these larger farms self-selected registration or whether allocations by the GOZ were larger than the average farm size under customary tenure.

⁶ **Smaller** farm sizes in **Eastern province** are not the result of **lack** of land in the area.

⁶ **Polygamy** is more **prevalent** among the sample in **Southern province** than in Eastern province.

The administration of State Land, applicable to parts of the sample from Southern province, is the jurisdiction of the state. This topic is addressed in chapters 1 and 2.

B. Land acquisition

There are two main types of land acquisition by households in Reserve and Trust Lands in Eastern and Southern provinces: inheritance/gifts from family members and allocation headmen with confirmation of the chief. This is not to say that systems of land transfer are simple or easy to understand. On the contrary, inheritance systems are quite varied in the study sites (see below). While the chief is responsible for allocating land in Eastern province, the village headman performs that function in Southern province with chiefs consulted only in the case of dispute. In addition, there exist scattered temporary land transfers involving seasonal renting or lending.¹ Sales of traditional land are very rare according to survey respondents, although several mentioned chiefs accepting money for some land allocations, making the transactions appear like sales.

In State Land, there are different common modes of land acquisition. In areas where relatively new resettlement programs have occurred, many farmers acquire land through state allocation. In more established State Land areas, inheritance is more common and some purchasing is found. Although markets have been discouraged by government policy (bare land could not be bought or sold), individuals have circumvented this by exaggerating the value of land improvements which can be legally sold.

Table 5.2 shows that over 90 percent of the respondents in Eastern province acquired land by inheritance or other intrafamilial gifts. Inheritance and gift have been lumped together because some respondents used the word inheritance to describe *inter vivos* transfers while others called them gifts. Inheritance and other intrafamily transfers were also the most common among the Southern province sample (65 percent) but not to the same extent as in Eastern province. This is due to the inclusion of State Land farmers in Southern province where purchase and state allocation accounted for 18 percent of land acquisitions. The other common form of land acquisition was through allocation by the chief or village headman, accounting for about 17-18 percent of acquisitions in each province. Purchasing between individuals is rare; only six farmers in Southern province (three each on Reserve and State Land) and one in Eastern province reported purchases.¹ Only one household (in Eastern province) reported ever selling land.

The following sections discuss the important acquisition modes in greater detail.

1. Inheritance

Among the patrilineal Ngoni, land passes from father to son. Traditionally, a father would give all the land to his eldest son (from his first wife in case of multiple wives, Dorner and Bruce 1982). Increasingly, however, land is divided among sons, either as inheritance or gifts, as evidenced

¹ This is true more in Southern province than in Eastern province.

Legally, purchase refers to the transfer of unexhausted improvements, not the land per se, although in practice the buyer and seller implicitly appear to be incorporating land value into the negotiated price as well.

by the large number of respondents in the sample who have inherited land (see table 5.2).⁹ Cross-tabulations show that all household heads below the age of 30 in Eastern province (N=21) had inherited land. Further, 40 of 42 household heads under the age of 40 received inherited land. This strongly suggests that land is normally passed to heirs prior to death of the father and that it is not one but many heirs who receive land.¹⁰ A similar, but more varied, pattern is found among the Tonga of Southern province.

Table 5.2: Percentage distribution of households by method of land acquisition'

Method	Southern province	Eastern province
Inheritance or gift:		
Patrilineal ties	32	64
Matrilineal ties	22	12
Other family ties'	11	20
Allocated by chief or headman	17	18
Purchased	6	1
Allocated by state	12	2
Rented or borrowed	0	2

- a. Nearly all households in Southern province had only one parcel; of the few that had more, the two or more parcels were acquired in the same manner, thus summing to 100 percent. In Eastern province, 19 of 98 households used more than one manner of acquisition, thus the reason for summing to 119 percent. **Unfortunately, parcel-level breakdowns were unavailable for reporting.**
- b. It is not clear from the responses whether "grandparents" or "other relatives" imply a matrilineal or patrilineal pattern.

Those sons who do not receive an inheritance but wish to farm in the village may seek land from the headman, but they must first seek land from within the extended family." Women do not generally inherit land. In the case where the sons are too young at the time of the father's death, the woman may retain the use of family gardens as custodian until the sons reach maturity.

Among the Chewa, various inheritance arrangements can be found. In traditional Chewa society, the institution of uxori-local marriage is common whereby marriage to a nonvillager was promoted and residence taken up in the wife's village. In these cases, the couple will receive an allocation of land from the wife's family. This practice has been modified over time, in some cases

⁹ The data do not permit further analysis of whether the father bequeathed land to multiple sons or to the eldest son, who then allocated land to his brothers. The central point is nonetheless the same—i.e., land does not end up with one heir, which is the general interpretation made in the literature.

¹⁰ Given these high proportions, it should be obvious that the result holds for both the Ngoni and Chewa ethnic groups.

" This policy, along with matching allocation sizes to ability to cultivate, can be viewed as two indigenous methods to discourage underutilization of land. A third is repossessing idle land for reallocation by the chief.

quite radically. In Malawi, the Chewa system of inheritance near Lilongwe seems to have evolved slowly, with initial changes involving "probationary" uxori-local marriage followed by relocation to the husband's village.¹² In Zambia, the transformation has been more pronounced. One Chewa village visited had completely overhauled the traditional system in favor of father-to-son transfers. As shown below, other study villages have also significantly altered their systems of inheritance.

Among the Tonga, land is commonly passed through matrilineal descent rules, in general order of preference to mother's brothers, maternal nephews, maternal grandchildren, and sons. Dorner and Bruce (1982) point out that this is not strictly followed, however, and a great deal of importance was attached to identifying a good farmer."

In both provinces, the matrilineal system of descent shows signs of having eroded. The analysis shows a preponderance of father-to-son transfers of land. Many respondents stated that they obtained land from their fathers and that they intended to pass it to their sons. Of all inherited parcels in the formal survey, 52 percent were from the father, and 22 percent from uncles, brothers, or fathers-in-law among the Chewa (the remainder were from grandparents or other relatives). Among the Tonga, 56 percent of inherited/given parcels were acquired from fathers and 26 percent from matrilineal relations. The data indicate that the conversion of inheritance practices is not a recent phenomenon as the ratio of matrilineal to patrilineal acquisitions is roughly constant over age of household head.

Women do not generally inherit or receive land as permanent gifts. However, there are exceptions in the case of unmarried, divorced, or widowed women. Because land is abundant in Zambia, it is not unheard of for an unmarried woman to be given a small area of land to farm by her father. Divorced women may be able to retain some of the land they had been cultivating depending on the particular circumstances. However, if she originates from another village, it is normally expected that she return to find land in her home area. Upon the death of a husband, some societies would expect the widow to marry one of the husband's brothers, entitling her continued access to land in her former husband's village through matrimony (although not necessarily the land of her former husband). Alternatively, she may be allowed to farm the land until the sons are old enough to take over the farm. In other cases, women have been ejected from the land and forced to find land in their home areas.

2. Allocation from traditional authorities

In Reserve Lands, land not under occupation can be requested from either the chief or the headman. The chief retains paramount power over land allocations, although decisions concerning village residents can often be made by the headman alone. There are two general processes through which land is acquired. The first involves strangers seeking land in the village; the second involves a local resident seeking land. In the first case, a stranger is usually expected to bring a letter explaining his departure from his previous village. Land is normally allocated as long as the chief or headman accepts this explanation, approves of the family, and/or accepts the stranger's reasons for

¹² A companion study in Malawi (Nankumba 1994) found that in most uxori-local marriages, the husband had some land in his village as well.

¹³ According to Michelo Hansungule (personal conversation), old accounts of matrilineal descent rules are out of date due to evolution of the Tonga customary system.

wanting to move to the village.¹⁴ Other terms and conditions, possibly including a token gratuity or grant of money, may also be required. The second scenario is where the applicant is a current or former resident of the village—e.g., a son who has not received land through inheritance, a farmer who wishes to expand farm size, or a male resident who returns to claim land following a long absence. In this case, it may be either the chief or the headman who will allocate the land. In all cases, the size of the allocation is based in large part upon the amount of land the household will be able to cultivate.

Land allocation appears to be an important method of land acquisition in Southern province with 17 percent of households receiving land from chiefs or headmen. Similarly, in Eastern province, allocations from traditional authorities are utilized by 18 percent of households. Within Eastern province allocation is more frequent among households from outside the area (32 percent) than among resident households (8 percent). In Southern province both resident and migrant households were equally likely to obtain land from chiefs or headmen.

3. Temporary acquisitions

Temporary acquisitions include seasonal rentals and borrowings. Because landholdings are large relative to household labor supply, there is normally not a significant demand for additional land for cultivation. However, seasonal capabilities will differ according to access to oxen plows, seeds, or labor. The most common reason for temporary exchanges is lack of maize seed to cultivate the entire plowed holdings. Arrangements will be made with another farmer to till the land in exchange for a portion of the output. The existence of a prepared field, unlike the case of a bare field, is attractive to would-be tillers. Respondents prefer to describe this arrangement as lending rather than renting, perhaps because there is rarely a cash transfer.

None of our respondents in Eastern or Southern province had rented in parcels during the season prior to the interviews. The percentage of households having ever rented out land was also low: 6 percent in Southern province and 3 percent in Eastern province.¹⁵ Only two households reported borrowing land in Eastern province, and both were Chewa.

4. Other acquisitions

In addition to inheritance, state allocation and purchasing were used by households to acquire State Land. Because some settlement areas visited were relatively new, state allocation appears to be an important method of land acquisition with 12 of 28 State Land households using this method.

There were also seven purchases of land in the sample. Six occurred in Southern province, three each in State Land and the Reserves. All seven involved private buyers and sellers.

¹⁴ Allocation of land to strangers can be made by the headman in consultation with his advisors, but not necessarily with the chief, particularly in Southern province.

¹⁵ Percentages for households renting out are not comparable with the same figures for renting in. According to the way the questionnaire was designed, renting in refers only to parcels that households are currently renting, while renting out refers to an action made at any time in history.

C. Rights to land

Questions related to the possession of various rights to land were asked of respondents. For each right, enumerators recorded whether household heads and spouses had unilateral (or unfettered) ability to exercise the right or whether the right was conditional on the permission of others (e.g., the spouse, father, other relative, chief or headman, state, or other).¹⁶ The answers should not be construed as definitive evidence of the existence of various rights. In some cases, the responses were hypothetical, since the respondents were talking about rights they had not exercised. Nonetheless, the responses are indicative of the respondents' sense of security or control over the use and transfer of the land.

Rights of use, transfer, and exclusion are distinguished and discussed first at the level of the household—that is, whether the household head claims certain rights over any farmland." The data reflect the percentage of male-headed households in each region who claim the unfettered ability to exercise each particular right. This data is presented for all enumerated rights in table 5.3. Further analysis is then made with respect to some of these rights in order to compare the involvement in decisions of husbands and their wives (again within male-headed households). This material is presented in table 5.4 only for all male-headed households;¹⁸ the number of female household heads was too small to undertake special statistical analysis on this subgroup.

1. Use rights

Rights of use are highly privatized in both provinces. Table 5.3 shows that rights to cultivate, use inputs, plant trees, and harvest tree products are enjoyed by all but a couple of households in either province. With respect to the right to fence in Eastern province and the right to cut trees in Southern province there is less than unanimity on the ability to exercise use rights. The data also show that respondents were less certain of the right to fallow without losing other rights to the land. While over 80 percent of respondents in Eastern province felt secure in their ability to retain land after long fallows, only 53 percent felt similarly in Southern province.

Household heads have more rights over land use than their spouses. Wives have to get permission from the household head in the majority of cases and are altogether denied rights in many others (see table 5.4). Spouses in Southern province appear to be completely excluded from fencing and tree planting decisions in about half of households. Women are more active in land-use decisions in Eastern province; males appear to involve their wives in most decisions unlike their Southern province counterparts. In about 11 percent of male-headed households, women were able to plant trees without asking permission. Further, women were allowed to plant following permission of the husband in another two-thirds of households.

¹⁶ Usually, only one respondent answered for both the husband and wife.

¹⁷ The analysis is at the household level. Although land rights were collected at the parcel level, respondents claimed to have the same rights over all their parcels.

¹⁸ Sometimes only men were interviewed, sometimes only wives, and sometimes both. Regardless of the gender of the respondent, rights of both husbands and spouses were queried.

¹⁹ This was in contrast to discussions during informal interviews where this concern was not raised.

Table 5.3: Prevalence of household rights over farmland in male-headed households

Rights	Southern province (N = 93)	Eastern province (N = 82)
Use rights:		
Cultivate annual crops	98.9	98.8
Cultivate perennial crops	98.9	96.3
Use inputs	98.9	98.9
Erect a fence	98.9	82.9
Plant trees	98.9	96.3
Cut trees	79.6	94.9
Harvest produce from trees	93.5	98.7
Retain land after long fallow	52.7	81.7
Transfer rights:		
Give trees to other family members	64.5	60.8
Give land to other family members	53.8	76.8
Give or sell land outside the family	40.9	37.8
Exclusion rights:		
Prevent others from growing crops	86.0	96.3
Prevent others from harvesting crops	83.9	97.6
Prevent others from grazing animals	76.3	28.0
Prevent others from growing trees	84.9	96.3
Prevent others from harvesting trees	86.0	91.5

D. Transfer rights

Rights of transfer were the least common of all types of rights. Rights to give land to other family members were claimed by 54 percent of Southern province households and 77 percent of Eastern province households. The most restricted right is that of land alienation outside the family. As seen in table 5.3, sales are rare in the study areas. The percentage of households who claim rights to sell is about 40 percent in each province. Because of the higher frequency of households on State Land in Southern province, one might have expected fewer rights to sell than in Eastern province due to land market restrictions governing statutory tenure on State Lands. However, customary laws forbidding sales might be more strongly enforced, and the lower population density of customary areas may create little demand for purchases.

Table 5.4: Percentage distribution of husbands and wives by selected rights of use and transfer

Right	Husband`		Wife''	
	Southern province	Eastern province	Southern province	Eastern province
Cultivate perennials:				
No rights	1	4	36	9
Yes, without permission	97	36	7	8
Yes, with spousal permission	2	60	57	83
Fence:				
No rights	1	17	55	44
Yes, without permission	98	57	3	4
Yes, with spousal permission	1	26	42	52
Plant trees:				
No rights	1	4	46	23
Yes, without permission	98	49	5	11
Yes, with spousal permission	1	47	49	66
Alienate land from family:				
No rights	59	62	88	65
Yes, without permission	40	11	0	0
Yes, with spousal permission	1	27	12	35

- a. The respondent is the household head commenting on spousal rights. This is a male only in 66 percent of the cases in Southern province **and** 75 percent in Eastern province.

Spousal rights over land transfer are extremely weak. Table 5.4 shows that no spouse has the unilateral right to alienate land outside the family. In Eastern province, wives would be consulted in about one-third of households, but in Southern province only 12 percent of wives would be included in this type of decision.

E. Exclusion rights

The ability to exclude others from using one's farmland was relatively common and suggests a high degree of individualized property rights. In general, nonhousehold members are not permitted to use a household's land for crop or tree cultivation without prior permission of the household head. In addition, chiefs and headmen have established penalties for crop damage and unauthorized tree cutting by others on farmers' own fields. Moreover, farmers claim to have the right to fence off land (see above).

The case of grazing animals appears to be an exception. Farmers were asked whether others had unquestioned rights to graze in their fields. In Southern province, 76 percent of farmers claimed that herders would have to ask their permission before grazing on their lands. This high percentage might be explained by the Tonga custom of permitting one's own animals to graze one's stover before allowing other animals on the property. In contrast, only 28 percent of Eastern province farmers believed that their permission was required before others grazed their land.

F. Tenure security

Tenure security is a difficult concept to measure precisely. It is related to the number of rights held, the duration of rights, and the respect of those rights by others (chapter 2). As indicated above, farmers feel quite secure in their ability to cultivate crops on their land. The high percentage of privatized rights to fence and plant trees also conveys the notion that cultivation rights are long term in nature. Farmers were also asked specifically about the length of time they could continue to farm their plots. With the exception of eight 14-year state leaseholds, virtually all households claimed they could farm the land as long as they wished. Informal interviews corroborated this finding; respondents mentioned that land would only be taken away in the case of "unseemly" behavior on their part.

In addition to long-term rights, the assurance that these rights will be respected by others is also important for creating proper investment incentives. Again, the evidence above suggests that farmers are largely left alone to develop their farms as they wish. One area of concern is open grazing in the off-season coupled with poor supervision of animals. In such systems, the obligation is on the landowner to make additional investments in the form of fencing or guards, thereby raising the cost of land investments.

In summary, security of tenure seems high insofar as long-term rights to land are concerned. There are examples to the contrary, however. Families do not enjoy the right to keep land idle or in fallow for long periods. Women-headed households do not always concur that their tenure is indefinite; during informal interviews, more than one woman reported fear of losing her land to male relatives. One respondent on State Land had rented out land without a written contract for fear that a written document could be used by the tenant to illegally obtain that parcel from the state. Hence, statutory law and the presence of registration themselves can create some insecurity. One farmer on State Land mentioned problems of claims to his land by his extended family who resided on traditional land; the relatives argued that the land was rightfully theirs since the money used to purchase the farm on State Land was earned from output in traditional land. Lastly, there was also a slight fear of government expropriation should a farmer plant enough trees to appear to convert the crop land into forest.

In terms of security for credit access it appears that title deeds are not necessary to obtain loans (see below), and it is questionable as to how much they can help. From a lender's perspective, a title deed is only valuable if the underlying asset (land) can be used to recover loan arrears. This condition is not generally satisfied in the land-abundant Reserves of Zambia where land sales are rare. As is discussed below (table 5.7) more than half of households had obtained credit and only a few

farmers have titles to offer. Banks will often use other assets as collateral, but will even make ~~unsecured~~²⁰ loans if a farmer can establish a sound credit

Enumerators asked all respondents whether they felt title to land would increase their security and whether they expected credit use to increase with title. With respect to security, the results were nearly identical across the two provinces. In Southern province, 36.7 percent of households said that they would be more secure with title and 35.8 percent felt similarly in Eastern province. However, in Southern province, 84 percent of those in State Land replied affirmatively as opposed to only 19 percent of households in the Reserves. The responses with respect to perceived change in credit use from titling differed with about twice as many in Southern province predicting greater use (62 percent) as compared to those in Eastern province (32 percent).

G. Concept of ownership

Even though land belongs to the state under the 1975 Land Act, this was hardly recognized by the respondents when asked who was owner of their farmland. Table 5.5 shows that 54 percent of the respondents in Eastern province said that the household head is the owner of the land, while 31 percent mentioned the chief or headman. Nine percent of respondents said that the land belongs to the extended family. The results in Southern province are virtually identical, despite the fact that 28 households held state leases which stipulate that all land is owned by the state.

Table 5.5: Distribution of households by perceived owner of land

Owner	Southern province	Eastern province
No one	1	3
Household/household head	57	54
Extended family	10	9
Chief, headman, community	28	31
Other	4	2

A cross-tabulation made between the perception of landownership and mode of acquisition indicated that households acquiring land through patrilineal ties are more likely to claim ownership over land than households who have acquired land through matrilineal ascendants. In both provinces, 59 percent of patrilineal households claim ownership rights, while for matrilineal households, the percentage is 36 percent in Eastern province and 32 percent in Southern province. Conversely, matrilineal households are more likely to name the chief as owner. All households located in State Land believed they were the owners of the land.

²⁰ As indicated shortly, easy credit proliferated in days prior to the present market liberalization, where credit from state banking institutions was closely intertwined with purchases and sales through government-controlled input and commodity markets. With the beginning of greater financial scrutiny in loans applied to banks in the early 1990s, title may become a more significant determinant of credit access.

H. Land disputes

Given the relatively low population density, land disputes are not as severe as those found in other areas of sub-Saharan Africa. In fact, few disputes over land ever proceed to formal courts in Eastern province. The disputes that do occur between farmers mainly involve boundary disputes and to a lesser degree disagreements over inheritance.²¹ Boundary disputes arise mainly because plot boundaries are not normally marked owing to large farm sizes. All land disputes are normally settled by the village headmen.

There are other disputes which arise over unlawful use of land such as illegal grazing during the rainy season or cutting of trees. These are sometimes settled by the parties themselves, but can also be decided by the headmen or even chiefs. Penalties are usually in the form of maize, if maize crops were damaged, or animals (e.g., chickens or goats) for other damages.

Results show that around one-fifth of all households in both regions reported having been involved in a land dispute sometime in the past. In both regions, boundary disputes accounted for over half the total. In Eastern province, 11 households are currently involved in a dispute and seven actually lost land as a result of a dispute. In Southern province, 3 percent of households are currently involved in a dispute and 7 percent have lost land as a result of a dispute, the majority of these to other family members.

I. Documentation

The majority of respondents did not have documents or title to land. In Southern province 75 percent of respondents had no form of documentation, and in Eastern province as many as 94 percent did not carry written documentation to land (see table 5.6). Nine respondents in Southern province had a title deed while another 14 carried receipts of transfer while waiting for titles to arrive. Only one Eastern province farmer had obtained a formal title deed. The remainder of the document holders held a letter from the chief.

Table 5.6: Percentage distribution of respondents by type of land documentation held

Type	Southern province	Eastern province
None	75	94
Chief's letter	2	5
Receipt of transfer	14	0
Title deed	9	1

²¹ One Chewa headman said that inheritance disputes were very common before a patrilineal inheritance system was adopted.

IV. Agricultural development indicators

The LTC/ICRAF study did not have as an objective the analysis of links between tenure and agricultural productivity or development. Therefore, the indicators used in this analysis are probably not sufficiently rigorous in measurement or breadth to warrant any definitive conclusions. Further work will certainly need to be undertaken. Nonetheless, the results are useful if for no other reason than to guide future research.

The agricultural development data available exist in the form of binary responses indicating whether a particular investment or activity was undertaken (for example, see tables 5.7, 5.8, and 5.9). For all the measures except for use of formal credit, the time frame is the entire period the farmer has occupied the land. For credit, the incidence refers to the past five years only. The following sections compare indicators among regions, first with respect to credit and oxen use, second with respect to land improvements, and third with respect to tree planting.

A. Credit and use of oxen

Table 5.7 displays some aspects of credit and oxen use among sample households. The majority of households in both provinces obtained formal credit at least once during the previous five years despite the low incidence of title among households. Instead, other forms of collateral were often used to help secure credit, chiefly livestock and crops. The use of crops as collateral was made possible by the state's control over agricultural inputs and outputs. Government banks would issue credit to farmers who would obtain fertilizer from a government supplier. Credit risks were reduced since all produce was marketed through the government as well. With the advent of market liberalization, this degree of control will be lost and lenders will likely not be as keen on using crops as collateral.

Table 5.7: Aspects of credit and oxen use among households

	Southern province	Eastern province
Percent using formal credit ^a	55.0	60.4
Percent of borrowers using land or title as collateral ^b	17.0	0.0
Percent with oxen	58.0	44.8
Median number of head in oxen households	3	2

- a. At least once in previous 5 years.
- b. Percent of all loans secured with land title.

Around 58 percent of households in Southern province own at least one ox, compared with 45 percent in Eastern province. The use of oxen is important in expanding production area of a farm. Studies by Celis, Milimo, and Wanmali (1991) found that the area under cultivation was about twice as high in oxen-owning households as it was in households without oxen. With respect to this study,

oxen households cultivated 16.4 hectares versus 5.8 hectares for nonoxen households in Southern province. No significant difference was found in Eastern province, although a recent outbreak of corridor disease may have affected oxen numbers; also, there is a higher incidence of oxen renting by "non-oxen" households as defined.

B. Land improvements

Given that both study areas are similar in terms of rainfall, topography, and farming system, it is not surprising that the **types** of land improvements made by farmers are similar in the two areas. Table 5.8 shows the percentage of households making various types of land improvements. For convenience, the land improvements have been grouped loosely by purpose. For example, the various earth construction investments (terracing, bunding, and ridging) have been placed next to one another and an aggregate figure for "earthwork" is also provided.

Table 5.8: Percentage distribution of respondents by type of land improvement made

Type of improvement	Southern province	Eastern province
Terracing	5.0	4.1
Bunding	8.0	53.1
Ridging	20.0	1.0
Any earthwork	31.0	56.1
Well	31.0	35.7
Irrigation	1.0	12.2
Drainage	20.0	23.5
Any water improvement	44.0	48.0
Fertilizer	86.0	72.4
Liming	1.0	0.0
Other chemicals	38.0	16.3
Any chemical treatment	88.0	72.4
Manuring	51.0	42.9
Mulching	3.0	3.1
Any organic treatment	52.0	43.9
Fencing	22.0	28.6

There is a similar percentage of households in each province undertaking investments in all water improvements, fencing, terracing, chemical fertilizer, liming, and organic treatments. Generally, the use of chemical fertilizer is high, about half of respondents made a waterwork improvement, half used organic manure, one-quarter had made some fencing improvements, and very few made investments in terracing, mulching, or liming.

There were some important differences between the two provinces as well. Chemicals (i.e., pesticides and herbicides) other than fertilizers are much more commonly used in Southern (38 percent) than Eastern province (16 percent) due to the former's better location relative to the Lusaka market. Farmers in Eastern province were much more likely to construct bunds (53 percent versus 8 percent) and to undertake any earthwork than their counterparts in Southern province. The bunding is used primarily on gently sloping upland fields, but sometimes also in the low-lying wetlands. The higher incidence of earthworks in Eastern province is at least partially explained by its undulating terrain relative to the "flat" topography of Southern province.

C. Tree products and tree planting

This section is a very brief summary of tree planting in the study sites and is adapted from Chinene, Hansungule, and Place (1994). To understand on-farm tree planting, it is first necessary to know what types of tree products and services are used and how households obtain them. Depending on the tree product or service, the main sources will be common woodlands or forests, friends and neighbors, the market, and one's own farm. When a product is plentiful from commonly used areas, there is a reduced incentive to expend one's labor and capital to reproduce it on-farm.²² Table 5.9 shows that there are considerable disincentives to grow trees for some important products, especially in Eastern province where the commons provide the bulk of firewood, poles, and medicines. Fruits, on the other hand, are normally not found in the commons. Specific services from trees such as shade, windbreak, and fencing must necessarily be obtained from on-farm trees.

Table 5.9: Aspects of tree product and tree planting by households

	Southern province	Eastern province
Percentage of households using common lands for:		
Fuelwood	81	87
Poles	64	83
Medicine	36	84
Percentage of households planting:		
Fruit trees	76.0	42.7
Multipurpose trees	46.0	11.5
Any tree in past 5 years	46.0	16.7
Principal fruits	mango, guava, papaya	mango, guava, papaya
Principal multipurpose trees	<i>Cassia siamea</i> <i>Gmelina arborea</i>	none

Fruit trees are by far the most commonly planted trees by households. Mango (*Mangifera indica*) was planted on 55 percent and 33 percent of households in Southern and Eastern province,

²² Assuming that the distance to the common source is not too great.

respectively. Guava (*Psidium guajava*) is the next most popular in each province. No other species was planted by more than 10 percent of households in Eastern province. On the other hand, mulberry (*Morus alba*), *Cassia siamea*, *Gmelina arborea*, and *Leucaena leucocephala* were all planted by more than 10 percent of sampled households in Southern province. *Cassia siamea* was particularly common in the study sites, found on 35 percent of farms visited.

The percentage of households planting trees and the number of trees planted per household were calculated after grouping together species as fruits or MPTs (multipurpose trees).¹ Seventy-six percent of households in Southern province planted fruits and 46 percent MPTs. The percentages of households planting each type within the past five years are lower, at 32 percent and 25 percent, respectively. Among planting households, the average number of trees planted was 19 for fruits and 34 for MPT species. The primary uses of on-farm MPT species are for shade (36.6 percent of MPT plantings), windbreak (18.3 percent), and fuelwood (12.2 percent). Plantings of fruits and MPTs are almost always found near homesteads in blocks, rows, or clusters.

In Eastern province, 42.7 percent of households had planted fruits at any time, but only 11.5 percent planted MPTs. During the past five years, the percentages of households planting were lower, especially for fruits (11.5 percent). The mean number of trees planted per planting household were 18 for fruits and 58 for MPTs. The primary use of on-farm multipurpose trees was shade (37.8 percent), soil fertility (18.9 percent), and poles (16.2 percent).

V. Tenure and agricultural development

A. Methodology

Previous sections demonstrated that virtually all farmers perceived having long-term use rights to their holdings. However, there were tenure differences between farmers concerning how they acquired land, their rights to transfer land, and their perceptions of who owned their farmland. Households have acquired land primarily through patrilineal inheritance, matrilineal inheritance, chiefs or headmen, or through the state. Do these differences matter for tenure security? It is often claimed that incentives for investment are lower in matrilineal systems where the husband may not feel the land is his or have the freedom to pass it to his sons. Between one-half to three-fourths of households claimed ability to permanently transfer land to a family member. About 60 percent of households felt that they owned the land. Are these perceptions related to tenure security and do they have any implications for agricultural development? To answer these questions, three major hypotheses were tested:

- (1) The incidence of agricultural development indicators is lower on matrilineal land than on land acquired by other means.
- (2) The incidence of agricultural development indicators is higher where households claim to have land alienation rights.

¹ The categories included both indigenous and exotic species.

- (3) The incidence of agricultural development indicators is higher where households claim to be the owners of the farmland.

These hypotheses were tested using regression analysis. Due to relationships among the mode of land acquisition, land rights, and landownership perceptions, the hypotheses were tested in alternative regression models. In each model, other nontenure factors were included and were selected on the basis of their likely links to investment. These include size of farm, size of household, age of household head, education level of household head, frequency of extension visits, incidence of livestock, quality of residential house, location of household within study site, and distance to roads, markets, and agricultural offices. These variables were selected because they are hypothesized to affect the agricultural decisions of farmers. A greater likelihood of investment is expected on larger farms, those with more labor, among middle-aged or elderly household heads, among the more educated, those who are in more contact with extension agents, those with greater wealth (livestock, quality of house), and those who are located closer to markets and/or major roads.

It is certain that decisions regarding the various productivity measures are mutually dependent. However, this decision-making process is quite difficult to handle from a statistical point of view. The inclusion of several dependent variables in a simultaneous system requires a large number of observations, while only 100 per region are available in these samples." One method is to use all possible investment combinations or bundles as distinct outcomes.' However, this too requires significant numbers of observations to assure that the number of cases in each investment combination is sufficiently large. An alternative method was used instead. The 11 different improvements enumerated were grouped into 5 categories: organic inputs, chemical inputs, earthwork structures, water structures, and fencing (see table 5.8). Nearly all farmers used chemical inputs (mainly fertilizer) so there was insufficient variation for explanatory analysis. Single equation logit regressions were made using credit use, presence of oxen, use of organic inputs, incidence of earthwork structures, water structures, fencing, fruit tree plantings, and multipurpose tree (i.e., nonfruit) plantings as dependent variables. This grouping does not eliminate the problems of dependent decision-making, but reduces them to some extent since the more important interlinked decisions are likely within groups (e.g., wells and irrigation in water structures).¹

Before proceeding to the empirical results, it should be stressed that the regression analyses indicate associations with variables but should not be taken to imply causal relationships. The reason for this has to do with the aforementioned time frames involved. The actual date of investment is unknown and, therefore, one cannot be certain that any of the independent variables actually caused the outcome (except for variables which are fixed at the time of land acquisition such as how the land was acquired). Furthermore, it is important to point out that because the independent variables reflect current household characteristics (e.g., current size of household), their relationships to land improvement variables can become obscured. Unfortunately, this problem is very difficult to correct since it would require superlative recall powers on the part of respondents (i.e., to provide dates and amounts for investments).

¹ Perhaps more constraining is the lack of software capability to handle large simultaneous systems given that the dependent variable is not continuous.

^u In a multinomial logit framework, for instance.

²⁶ On the other hand, this method is sensible only if the combined improvements are alike and respond to other factors in the same manner.

B. Results

The results are presented by hypothesis rather than by dependent variable, although references to specific tenure-agricultural indicator effects are noted. The results which were found to be significant are indicated in table 5.10. Insignificant or absent relationships are left blank.

Hypothesis 1: Matrilineal inheritance systems

The case of mode of acquisition is complex owing to its multiple possibilities. The significant findings are from Southern province as only one minor finding was obtained in the case of Eastern province. As opposed to households who acquired their land through matrilineal descent patterns, households who acquired their land patrilineally were more likely to use credit and to make earth structures. Those who acquired their land through the chief or headman were more likely to make organic inputs, earthwork structures, or to plant fruit trees (than those who acquired matrilineally). Lastly, those who purchased land or were allocated land from the state were more likely to own oxen, use organic inputs, and to make earthwork structures. These results support the hypothesis in that matrilineal land was found to be inferior to at least one other type of land acquisition for most of the indicators. On the other hand, a superior mode of acquisition does not emerge from the data. The lone result from Eastern province did not support the null hypothesis: the use of formal credit was greater on farms with matrilineal land than on those who acquired from the chief or headman.²⁷

Hypothesis 2: Land alienation rights

The right to alienate land outside the family was significant in only a handful of cases. The right to permanently transfer land was positively related to the use of organic inputs in Southern province, but was negatively related to multipurpose tree planting in the same site and to fruit tree planting in Eastern province. Given the insignificant and mixed nature of the results, it is difficult to draw any strong conclusions about the effects of land rights. The negative relationships with respect to tree planting suggests that tree investment behavior differs from other improvements. One explanation for this is that there tends to be a noticeable input of tree planting project personnel into the observed pattern of on-farm tree planting.

Hypothesis 3: Perception of landownership

In Eastern province, households who felt they owned their land were more likely to own oxen, to make earthwork improvements, and to plant fruit trees. In Southern province the ownership variable was positively linked to use of credit and, again, earthwork structures. The results are supportive of the hypothesis. Because ownership is a perception of households, it may be that it is influenced by certain peculiarities of households (i.e., it is endogenous). If so, there may be other important variables which explain both the perceptions of tenure security and the agricultural indicators. To attempt to elucidate these issues, a regression was made using ownership (household or not) as a dependent variable with several household and farm characteristics as independent variables. A strong relationship was found between household ownership and wealth indicators (including number of cattle and farm size) raising the possibility that the wealth of a household may lead both to more individual claims of tenure control and to more investments.

This may be explained by the fact that the latter households are more likely to come from outside the area.

Table 5.10: Summary of significant regression results for tenure variables

	Matrilineal inheritance	Land alienation rights	Ownership perception
Southern province			
Use of formal credit	negative		positive
Presence of oxen	negative ^b		
Organic fertilizer input	negative ^c	positive	
Earthwork structures	negative ^d		positive
Waterwork structures			
Fencing			
Fruit trees	negative ^e		
Multipurpose trees		negative	
Eastern province			
Use of formal credit	positive ^e		
Presence of oxen			positive
Organic fertilizer			
Earthwork structures			positive
Waterwork structures			
Fencing			
Fruit trees		negative	positive
Multipurpose trees			

a. Compared to patrilineal inheritance.

b. Compared to allocation by the state.

c. Compared to acquisition from the chief **or headman and purchasing**.

d. Compared to acquisition from the chief or headman, patrilineal inheritance, and allocation from the state.

e. Compared to acquisition from the chief or headman or patrilineal acquisition.

Other results

Among other variables, several were significantly related to the incidence of land improvements. In Eastern province, size of farm was the most important explanatory variable. Farm size was positively associated with a greater likelihood of using formal credit, possessing oxen, using organic fertilizer inputs, making earthwork structures, making waterwork structures, making fencing improvements, and planting fruit trees (i.e., all of the dependent variables used). In Southern province size of farm was less important and was linked to organic fertilizer application (negatively) and to planting of multipurpose trees and the presence of oxen (positively).

Other important variables in Eastern province were age and education level of household head, and the size of household labor pool. Improvements in fencing and waterworks were more likely among the middle-aged households than either young or old household heads. At this stage of the household cycle, there usually exists a good balance of labor supply and capital with which to make investments.' Household heads with secondary education were less likely to make waterwork or fencing improvements than those with no formal education. Since age was controlled for, this result is rather surprising, but would indicate that formal education is not strongly linked to the ability to undertake productive investment (e.g., it is not linked to wealth or income). The final notable result is that the size of household labor supply is positively related to the presence of oxen and to earthwork improvements. None of the household location variables were significantly related to the development indicators.

In Southern province, none of the control variables was significantly correlated with land improvements in more than a few cases. Perhaps the strongest of the variables was education. Unlike Eastern province, secondary education was positively linked with investment in earthwork and waterwork structures, and to planting of multipurpose and fruit trees. Household labor was positively associated with the use of formal credit and the presence of oxen.' The frequency of extension visits was positively associated with credit use, but negatively associated with the incidence of waterwork structures. The distance from the household to major roads and agricultural offices was significant but in an inconsistent manner, with each being positively and negatively linked to one type of indicator. Thus, in general it can be concluded that there is no clear relationship between supply incentives (e.g., extension), market incentives (e.g., distance to market), and farm development using these data.

VI. Summary and implications for further research

A. Summary

This chapter has endeavored to describe tenure systems and their links to agricultural development activities of farmers in selected areas of Southern and Eastern provinces. The major findings involving tenure and tenure security can be summarized as follows:

- ▶ Almost all land is acquired through nonmarket means: inheritance, gifts, and allocations by local or state authorities. Markets for land are poor for several reasons but the major reason in the study areas is the relative abundance of land. Households are able to find adequate land on which to satisfy their consumption needs and even to produce a surplus for the market. Government policies have undoubtedly played some role as well. However, evidence from other countries in sub-Saharan Africa indicates that where the demand for land is acute, markets will develop even in restrictive policy environments.
- ▶ Households claim long-term use rights over land. The data clearly show that all but a handful of sampled households perceive the ability to use their land for various purposes. Included among rights claimed were the rights to fence and to grow perennial crops, both of which

¹ Young households normally lack capital while older households lack labor. In land-abundant areas of Zambia, it is not easy to overcome household labor shortages through hiring.

ⁿ A household labor index is derived from the age, sex, and working pattern of each member.

indicate long-term duration rights. All farmers, save several with 14-year leaseholds on State Land, believed they could cultivate their land indefinitely. The only conflicting evidence concerning long-term use of land was a hesitation of Southern province farmers to leave land idle for long periods.

- ▶ Households claim exclusion rights except in the case of livestock grazing. The vast majority of households reported that they can exclude nonhousehold members from engaging in crop or tree growing activities. There was less privatization of land when the subject of off-season grazing was raised.
- ▶ Transfer rights exhibit the lowest level of privatization. The percentage of households who felt empowered to unilaterally make decisions over permanent transfers of land was low relative to other types of rights and relative to other countries in sub-Saharan Africa. Only about 40 percent of households claimed to have the ability to transfer land to someone outside the family. This demonstrates the continued corporate control over land by chiefs and their communities.
- ▶ There is a wide variation among households as to whom they believe is the rightful owner of their land. Nearly 60 percent of households believed that the farmland is their own. This view is consistent with the fact that most have inherited their land from ancestors and plan to bequeath it to descendants. On the other hand, a sizeable number of respondents believed that the land was owned at higher levels such as the extended family, the community, or the chief. The legal position, that land is owned by the State, is simply not felt by rural households.
- ▶ More than half of sampled households have obtained formal credit and very few use land or land title as collateral. It is more often the case that livestock or crops were used by farmers. Past credit use was facilitated by the state cooperative system under which loans were made, inputs delivered, and outputs sold. This may not be feasible under liberalization.
- ▶ Evidence was found indicating that agricultural development was lacking somewhat more on land acquired matrilineally than by other means in Southern province. The indicators which were influenced by acquisition method were use of credit, presence of oxen, use of organic fertilizer, incidence of earthwork structures, and planting of fruit trees. At the same time, no single method of acquisition emerged as being superior to all others.
- ▶ Households that perceived themselves as owners of their farmland tended to adopt more development measures. Household "owners" were more likely to make earthwork improvements in both provinces, to plant fruit trees and have oxen in Eastern province, and to use credit in Southern province. Claims of ownership were found to be related to wealth indicators suggesting that wealth may be an important underlying variable explaining tenure perceptions and development indicators.
- ▶ There was little relationship between the right to alienate land and agricultural development. In most cases the land-rights variable was insignificant in regression analyses while it had opposite effects in the three cases where it was significant.
- ▶ Farm size was a key variable in explaining adoption of productivity measures by households in Eastern province. There was a positive and significant relationship between the size of farm

and the likelihood of adopting all agricultural development indicators in Eastern province. This result is appealing from an economic perspective since it points toward the movements of production factors to achieve economic efficiency. In this case, the greater use of land improvements by larger farms helps to equate land yields across different farm sizes; smaller farms generally apply more labor per unit of land.

B. Implications for further research

This research has provided some insight into rural land tenure arrangements and how they relate to agricultural productivity. But since the LTC/ICRAF study was not designed to tackle the broad and complex issues involved in explaining agricultural productivity, the results are only preliminary. Several recommendations for improvement in methodology and content arise from this study. First, it is obvious that work must be done in a wider geographical area. Second, for all study sites, it is necessary to define tenure security and measure it. A number of recent studies have explored the possibility of using land rights as a proxy. Is this adequate? If so, which rights are most important for agricultural productivity in Zambia? If not, what are the alternatives from an operational point of view? Once this is resolved, it will be crucial to understand which factors are linked to tenure security. This study has found possible links between wealth and tenure security. This issue needs careful attention because it has important implications for the effectiveness of tenure policy change. Once the tenure side of equation is better understood, more attention needs to be given to the productivity measures, where, clearly, better measures need to be developed and used. Relying on binary data is not sufficient, particularly when a particular investment is made by most farmers (e.g., use of chemical fertilizer). Moreover, this study did not consider many important measures such as crop or livestock output. These in turn are related to efficiency per unit of input (e.g., land) as well as the area under production.

The relationship between tenure, grazing, livestock management, land use, land investment, and market access are crucial to understanding the effects of land policy interventions. These linkages all stood beyond the scope and intent of the present study and, in light of the lack of sufficiently rigorous analytical work on such themes elsewhere in Zambia, represent key issues for future research.

Chapter 6:
Settlement Programs

by

Florence Chenoweth, Jane Knowles, and Gertrude Ngenda'

I. Introduction

Zambia's market economy continues to penetrate rural and peri-urban areas of subsistence cultivation. In this environment, where islands of commercial activity are surrounded by a sea of subsistence agriculture, settlement schemes have served as a mechanism for the expansion of the frontier of commercial agriculture.' Zambia has an abundant supply of uncultivated arable land. The land market for private transfers and administrative allocations on newly opened lands will provide the principal mechanism through which people can acquire land in agricultural areas. However, due to historical factors and economic hardship, some segments of the population seeking land for farming will be unable to effectively use these mechanisms.' The GOZ has a long history of settlement programs which they have attempted to use to accommodate the land needs of these people; the desirability of continuing or expanding resettlement depends on the scale and performance of past schemes.

This chapter was undertaken to pull together what is known of the various resettlement schemes. Information was sought on the extent of such schemes, institutions involved, number of settlers, scheme size, area settled, scheme expansion over time, settlement costs, settler characteristics, and scheme performance in terms of production, land use, investment, income, employment, and resource access and use. Data are based primarily on archival research, secondary sources, and some interviews with public officials. Prior to 1991 there were several government institutions responsible for resettlement schemes, including the Zambia National Service (ZNS); the MAFF; the Ministry of Local Government and Housing; the Zambia Consolidated Copper Mines (ZCCM); and the Department of Resettlement. Attempts were made to obtain data from all these institutions except ZCCM. Officials repeatedly acknowledged the availability of data, but despite many informal and formal requests, few data were ever provided due partly to information sanctions stemming from political sensitivities, poor data management, lack of records, and dearth of quality research by outside investigators. The findings in this chapter are thus superficial and, if anything, highlight the need for exhaustive research involving fieldwork in this area.

In referring to the numerous schemes set up by the GOZ to settle people for agricultural purposes, the term resettlement scheme is sometimes used while at other times, frequently in the same document, settlement scheme is used. For the purpose of this chapter, all schemes are referred to as

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² Ray (1977a) uses the example of the Chifwile resettlement scheme in Northern Zambia to examine how such programs can be used as a mechanism for expanding the frontier of commercial agriculture.

³ These segments of the population include the disadvantaged, urban people, and retiring or terminated civil servants.

settlement schemes. Settlement schemes in Zambia fall into three broad categories: schemes set up to settle European emigrants, schemes planned for Africans (Zambians), and schemes put in place to settle refugees, particularly Angolans, Mozambicans, and Namibians, on a temporary basis. Though references will be made to the settlement of Europeans, emphasis in this chapter is on settlement schemes designed for Zambians, in both pre- and postcolonial times, and refugees from war-torn neighboring countries.

II. Historical rationale for settlement schemes

A. Land alienation and reservation schemes

Settling people in designated areas has roots in Zambia's colonial past as well as in the postindependence era. The authority to alienate land and move people was granted at the start of the colonial era in 1894 to the British South African (BSA) Company founded by Cecil Rhodes. This chartered company, which ruled Zambia up to 1924, was granted powers of direct administration in areas north of the Zambezi as well as in Zimbabwe. It secured rights over the entire territory except Barotseland (now Western province) and had the authority to alienate any land to European settlers. Africans occupying the land were obliged to move into designated areas (Kalapula 1984, pp. 27-29).

Alongside the development of the copper mines—its prime reason for being in the region—BSA desired to develop agriculture as an ancillary activity, to provide food for the mine workers and their dependents. The company soon opted to exploit commercial agriculture as a prospective source of revenue generation. The conditions were highly conducive for promoting commercial agriculture including: the railway that ran through millions of acres of prime agricultural land, connecting Zambia to Zimbabwe; the ready local market for food with the potential for export to European markets; the abundance of cheap African labor; the excellent weather and good soils; and the vast land area.

The two choices available to BSA were to rely upon the African population to acquire the knowledge and skills to produce the required agricultural products on a commercial basis, or to encourage European farmers who already possessed the knowledge, skills, and necessary capital for modern agricultural practices to migrate to the area. It chose the latter, and, by 1921, 714 European immigrants were engaged in commercial farming in the area.

The policy option chosen for African agriculture was to keep the natives at their traditional subsistence-production level. The process of alienation and reservation of land that began with the coming of the European settlers had an underlying policy that Europeans would have the best and most productive land reserved for their exclusive use, and that Africans would be concentrated into restricted areas (Native Reserves) set aside for them. Land alienation and the development of the reserves were mainly in the areas along the company-owned railway that ran through choice agricultural lands, the Southern part of what is today the Eastern province, and the area within the company's estates (an area south of Lake Tanganyika). Generally, lands reserved for the Africans were made up of relatively small blocks, had soils of poor quality, and were in remote areas that were often infested with tsetse fly, while the areas reserved for the Europeans (crown land) were the complete opposite (see tables 1.1 and 1.2, chapter 1, above).

Africans displaced from the plateau and from mining areas in the Copperbelt and confined to the reserves lost the population-land balance which allowed them to move onto other available land

in the event of overcrowding. The Africans were from a large number of ethnic groups that included both matrilineal and patrilineal societies. In spite of differences in languages and political organizations among groups, the production practices, technology, and division of labor were very similar, and both men and women played a role and shared in access to land which was in abundance.

With population increase due partly to in-migration of Africans from neighboring areas, and with mal-distribution of population in reserves from the start, the population density in the African reserves soon exceeded the carrying capacity of the land. In some cases, local congestion was so serious that people were no longer able to produce enough food to feed their families and had to be assisted with food by the government.

The problem of serious congestion in Native Reserves continued up to the 1940s while ironically, at the same time, millions of acres of uncultivated land in the crown reserves` and what was referred to as "unsigned land" lay idle. Out of concern for the degradation of the land and forest resources, a large part of the crown land held by the Northern Charter Land Exploration Company in Eastern Zambia was acquired by the government in 1941. In 1942, it was declared Trust Land and made available for native occupation. In 1942, a land commission was appointed by the government to review the issue of agricultural land requirements of the natives. Their work resulted in the reallocation of a further 15,000 square miles of crown land for native occupation countrywide and 160,000 Africans were transferred from overcrowded reserves to new land.

In 1924, BSA divested its control of the territory and a governor was appointed by the British sovereign, but the concept of restricting Africans to special areas remained the same. The policy of the new administration was that Africans were to be resettled so as to reestablish a population-land balance on the basis of traditional land usage and the population level at the time of settlement. Settlement of Africans was not regarded as a substitute for agricultural improvement or as a means of promoting agricultural development, even though simple measures of agricultural control and the beginnings of soil conservation and agricultural improvements were introduced in each of the settlement areas as a condition of occupation.

Settlement was instead to accomplish four immediate objectives: (a) to reduce population pressure on the land in the congested areas and to remove the danger of food shortage and, in some cases, actual starvation; (b) to reduce the urgent agricultural problems of poor land utilization to manageable proportions; (c) to remove the imbalance of land-starved people in the midst of plenty; and (d) to give time for experiment and introduction of new methods of agriculture.

The first scheme that aimed at improvement in African agriculture was introduced in 1946. This scheme was to launch progressive individuals into modern, commercial agriculture on family holdings. A price stabilization fund was established to run the program. Its goal was to create a nucleus of proficient farmers to inspire other Africans to improve their farming and to seek a living from the land (Hellen 1969).

BSA had anticipated a much larger in-migration of European settlers than materialized and, as such, had set aside massive land areas as crown reserves.

In 1949, a revised scheme was introduced, and, with it, the price stabilization fund was renamed the Southern Province African Farmers' Improvement Fund. The fund was to be replenished annually by a levy on all African sales of maize in the province. This new scheme was extended to the railway zone of the Central province and to the Eastern province in 1951 (Kalapula 1984, pp. 37-38).

B. Agricultural settlement schemes

The first agricultural settlement scheme was started in 1950 with the selection of Chipangali, an area under Chief Sayiri, North of Chipata in the Eastern province, to provide alternative land for agricultural development for Ngonis displaced by white settlers in areas of Chipata South that had been declared crown land. The first families moved into the scheme in 1951, but it was not until 1955 that infrastructural developments promised at the beginning were brought to the area. At this time, roads were constructed, wells were sunk, dams were built, the land was demarcated, and staff houses, a school, a dispensary, a welfare hall, and stores were built.

Between 1951 and 1963, other people slowly moved into the Chipangali agricultural settlement area from South Ngoni. Apart from their displeasure over being displaced by the European immigrants, people were reluctant to move to the settlement area because of the long distance from their original home base, and fear that their cattle would not survive in the tsetse infested area. Once there, settlers were registered under the peasant farming scheme and given plots of 40 hectares.

By the end of 1963, 67 of the 86 farm plots were occupied, and the farm families, who had been provided with 6 hectares of cleared land, two oxen, a plough, and a ridge and scotch cart⁵ on loan, were growing groundnuts, maize, and burley tobacco. Even though a few farm families moved out, the number moving into the scheme was larger, and by 1973, 105 farm families were cultivating 12,000 hectares of land (Eardmans 1972).

Shortly after independence, many of the European farmers left Zambia, leaving behind their large landholdings in the crown land areas. The agricultural structure left behind by the colonial rulers was highly dualistic. Settled farmers dominated most marketed crops, and there was little development of small-scale, semi-commercialized African agriculture. The newly independent Zambian state had adopted the philosophy of humanism,⁶ which committed it to the policy of full employment, requiring that every able-bodied person be fully employed in some productive work. At the same time, the government was concerned with the country's food insecurity position. On the one hand, it was a frontline nation and in the past, the country had depended upon imports from the white-ruled south. On the other hand, the country's urban population was growing rapidly, with obvious political significance.

The government embraced the idea of giving land to people who wished to settle for agricultural purposes, through settlement in organized schemes, a move that was politically motivated,⁷ and one that has persisted as a key factor in Zambian agriculture. The farms vacated by

A small two-wheeled cart of southern Africa with a detachable or slanting panel at the back.

⁶ Humanism is a pragmatic form of African socialism which stresses the need to remove "man's exploitation of man" through state control over the "heights of the economy" but still allows private enterprise to continue in most sectors of the economy. See Kaunda (1974), Part II.

⁷ For a more detailed discussion of this viewpoint, see Kean and Woods (1992).

the European farmers were purchased and redistributed by the state and became the site of many of the original settlement schemes. Settled commercial farmers and medium- and small-scale farmers were supported by research, credit, and extension to facilitate expansion of production. At the same time, because of the equity requirement of the humanist philosophy, the government expanded the agricultural extension service and the network of crop marketing depots to cover the whole country, introduced subsidized tractor plowing services countrywide, and increased subsidies on fertilizers and crop collection over a number of years to achieve uniform prices throughout the country.

C. Schemes for Angolan refugees

Beginning in 1966, significant numbers of Angolan refugees poured across the Zambian border seeking shelter from the civil war raging in their country; as of 1989, considerable numbers were still in Zambia. Some of these refugees were settled by the GOZ in the Maheba Scheme of Solwezi district, and some were "self-settled" in villages where they had friends and/or relatives.'

By 1988, approximately 140,000 Angolan refugees were self-settled.' The Zambian Refugees Control Act required that such refugees live in controlled schemes, and, in the 1970s, the government conducted sweeps of villages where it suspected refugees were living to try to move them into the schemes. The government's interest was limited to those who had arrived since 1985, and earlier refugees were largely ignored. These refugees were ineligible to become Zambian citizens, and so they depended on the generosity of their hosts and were ineligible for the subsistence packages (including such basics as blankets) the GOZ provided to refugees in settlement schemes. Their position was precarious.

By 1988, approximately 11,600 Angolan refugees lived in the Maheba Scheme, located on a tarmac highway with good connections to neighboring cities. They enjoyed the start-up packages provided by the GOZ to native resettled subsistence farmers (see section IV below) and were relatively well off and secure in access to their holdings. In many cases, they were poorer materially than the self-settled but were well integrated into the local economy, whereas the self-settled had more material goods but still felt like refugees. Differences between the two groups are summarized in table 6.1. The Angolans represent a special case, but one in which government settlement schemes produced clearly superior results to self-settlement efforts by the refugees, a result the current GOZ may want to focus on and learn from.

D. Postindependence settlement schemes

The postindependence government objectives for settlement programs were based on both economic and political considerations. As indicated above, the equity goal in the humanist philosophy required an increase in African participation in market-oriented agriculture not only for one area or one group of producers, but throughout the country—a requirement which the government was unable to meet. Faced with the problem of rapid out-migration from the rural area and rising unemployment, especially in the peri-urban and urban areas, the notion of settling people in productive

Hansen (1990) compared the well-being of the two groups along five dimensions: (1) economic, (2) integration into the host society and economy, (3) confidence and security, (4) health, and (5) access to infrastructure.

⁹ A settlement scheme known as the "Ukwimi Scheme" was also established in Petauke district of Eastern province to settle Mozambican refugees. The scheme accommodated 25,000 refugees.

Table 6.1: Self-settled versus scheme-settled

Attribute	Self-settled	Scheme-settled
Age	Older than those in schemes. Men older than women.	Younger than the self-settled. Men older than women.
Literacy	Less literate than those in schemes. Host men most literate.	More literate than self-settled, especially women.
Marital status	Less likely to be married than those in schemes, especially women.	More likely to be married than those self-settled, except for women.
House types	Little variation with schemes, though women had poorer dwellings.	Little variation from self-settled dwellings.
Bikes and radios	No one owned either; although a few host men did.	One-quarter of the men and a few women owned one or the other.
Blankets	Most had none; hard to buy and used as shrouds.	Many were given blankets, though some had to sell to buy necessities.
Gross cash income	Men earned more than women, though the differences were small. About one-fifth earned from cash crop sale. Men earned from livestock and fishing. Women earned from beer.	Men earned more than women, though the differences were small. About one-quarter earned from cash crop sale by both women and men, mainly soybeans. Men earned from livestock and fishing. Women earned from beer. Trees, honey, and access to good road important to income earning.
Food and home products	Men more self-sufficient than in schemes; little difference among women. Cassava most important subsistence but infested by mealy bugs. No access to grinding mills, hence little maize.	Men more self-sufficient than self-settled; little difference among women. Maize most important subsistence crop; easy access to grinding mills.
Integration into society	Not well accepted by surrounding villages. About one-half wanted to return to Angola.	Fully integrated into society, even had Zambian registration cards. No one wanted to return to Angola.

agricultural areas and assisting them to develop farm plots demarcated and assigned to them was viewed as the most realistic remedy to unemployment. It would result in greater self-employment in the agricultural sector and reduce unemployment at the national level.

Settlement schemes were also attractive to the government as a favored policy tool aimed at increasing agricultural production, diversifying the economy away from copper mining, and improving the living conditions of some part of the rural farming population. The existence of large amounts of formerly European-owned (and in some cases, developed) land as well as other vast unutilized areas for redistribution made this policy tool an easy one to implement.

A review of the government objectives for settlement programs from independence to 1991 and those of the present government shows they are largely the same. The objectives of the previous government were to:

- ▶ provide people the opportunity to settle permanently in the best agricultural areas available in the provinces, and to enable the farmers if they so wished to obtain leasehold title to their holdings;
- ▶ allow already permanently settled family farmers in some provinces where the population pressures have increased to have the opportunity of acquiring more suitable mixed farming units, where increased production of crops and livestock could take place without detriment to the land;
- ▶ overcome the problems created by the flooding of the Gwembe Valley in Southern province;
- ▶ provide opportunities in selected areas to growers to participate in the production of specific crops such as tobacco, coffee, and sugar cane;
- ▶ survey, plan, and demarcate areas of non-State Land into commercial farming units and have these areas declared State Lands on which people, particularly those members of the public who are unemployed and wish to take up agriculture as a means of livelihood, can settle; and
- ▶ reinforce, indirectly, the program clearing large tracts of land to overcome tsetse fly infestations by settlement of selected areas cleared of the fly.

The present government also views settlement as a vital program, and it has expressed a commitment to continuation of its implementation and support. In an effort to consolidate control and bring about better coordination, responsibility for running the programs has now been placed in the office of the vice president. The day to day administration is under the Department of Resettlement in the vice president's office.

Like the previous government, the present government objectives for the settlement programs are both economic and political. They include:

- ▶ creating opportunities for those retrenched from public service and others that are unemployed;
- ▶ bringing more than 250,000 hectares of arable idle land under cultivation throughout the country, thus increasing household and national food security;
- ▶ creating new focal points for rural investment and rural development; and
- ▶ bringing about more efficient utilization of social services in rural areas through the creation of viable settlements as opposed to unplanned scattered settlements.

III. Institutions involved in the settlement program

Prior to 1993, several government institutions were involved either directly or indirectly in the initiation, planning, and administration of settlement schemes. The ZNS ran 41 Rural Reconstruction Centers scattered throughout the country. The MAFF¹⁰ had a large number of settlement schemes under its control (see annex 6.1); the Ministry of Labor and Social Services was responsible for schemes for the handicapped; the Ministry of Local Government and Housing was involved in identifying settlement areas; the ZCCM ran two settlement schemes for people it retired, and the Department of Resettlement was established to run settlement schemes for other retired people. Cooperative schemes were run by the Department of Co-operatives, and the Ministry of Education schemes served as outlet for the two agricultural colleges established in the 1960s. Schemes to encourage tobacco production were also run.

Settlement of people from urban areas back into their home villages or other villages of their choice was yet another settlement scheme supported by the GOZ. While most of the resettled people have gone to the government-planned settlement schemes, there are some who have resettled in unplanned areas, either due to their traditional beliefs or to their desire to settle back in their villages rather than in one of the established settlement schemes. Frequent reference is made to the fact that those people who have indicated a desire to return to the land for agricultural purposes, but not via settlement schemes, have also been assisted by the government. There is, however, no mention of how many people in this category have been settled, in which areas the settlers are, which organization actually coordinates the program, or what they are doing.

Not only were there many institutions involved in running settlement schemes, but the policies that governed the implementation of the schemes were also quite varied. The data available do not allow for a detail listing of all of the groups and subgroups that were responsible for the various aspects of all of the settlement schemes, but where data do exist, the picture of a layered administrative structure is clear. For example, at the implementation level, ten committees were responsible for the Rural Reconstruction Centers. Table 6.2 below outlines the committees and their functions.

With so many players, it can be assumed that there were divergent views about how the settlement programs were to run, and what policy and implementation strategy were to guide them. Such divergent views in planning, policy formulation, and implementation strategy could only lead to the introduction of conflicting measures that would in turn lead to the failure to achieve any goal.

Also, with the diverse functions of resettlement, it became clear to government that no one ministry could handle the planning for and management of settlement schemes for the entire country. In 1989, a new department—the Department of Resettlement—was established in the office of the prime minister, and full responsibility for planning of settlement programs and coordination of

¹⁰ Formerly the Ministry of Agriculture and Water Development.

¹¹ Land demarcation is performed by the Ministry of Agriculture; water, wells, and boreholes by the Ministry of Energy; and schools, clinics, and social services by the ministries of Education, Health, and Community and Social Services, among others.

Table 6.2: Committees responsible for administration of Rural Reconstruction Centers

Name of committee	Function/responsibility
Administration	All matters of administration.
Political	All matters of politics and political education.
Agricultural Production	Matters of field crops, vegetables, and orchards.
Animal Husbandry	Rearing of livestock and poultry.
Security and Defence	Defense and security of the center.
Skills	Developing such skills as carpentry, bricklaying, blacksmithing , and development plan of centers.
Cultural	Promote Zambian culture in the centers.
Social Welfare	Health, education, sports, and general welfare of center.
Financial	All matters of finance.
Disciplinary	Matters of discipline in the center.

Source: Adapted from E.S. Kalapula, "Back to the **Land: Youth-based Agricultural** Land Settlement Centers for Economic and Social Development in Southern Zambia" (1984), p. 119.

their implementation was turned over to it.¹² While in theory this new department had the responsibility charged to it, in practice it was unable to function effectively because it lacked both trained personnel and resources. As a result, each individual district office took over responsibility for schemes in its area. In 1992, the Department of Resettlement again took responsibility for all schemes, although the staffing situation had not improved substantially. Under the current government, the Department of Resettlement is in the office of the vice president, and the responsibility for planning of all settlement programs and coordination of their implementation rests with it. The department now has a slight improvement in its staffing. However, with the huge responsibility with which it is charged, there is still much need for expansion of resources.

IV. Settler selection procedures and assistance provided

The procedure for selection of settlers involves six steps, which can take several months to complete. People wishing to resettle in land settlement scheme areas are first required to make this known to the government by registering their names at the council office of residence. They then must complete an application form (Form DR 1), which is filled out in triplicate, giving such details as the size of family, profession and skill, and suggested destination/area of settlement.

² Data on the **establishment** of certain schemes were already lacking when files were transferred to this department in 1989, and further data were lost in subsequent transfers.

Step two involves the submission of the completed form by the council to the district executive secretary who retains a copy at the council and distributes one copy each to the district where the applicant intends to settle and the Department of Resettlement in the office of the prime minister.¹³

The third step involves a number of substeps: the town of destination makes a request to the town of origin for information about the applicant; the town of destination is required to make an assessment of the potential of its area to accommodate people from the town of origin; and the settlement area and the estimated cost involved must be identified.

Once these conditions are met, the fourth step involves getting a response on the outcome of the application from the council office in the area of destination to the council where the application originated, and finally to the applicant. If approved for settlement, the applicant is advised to prepare for the move and to inform the district office of expected date of travel.

The fifth step involves the provision of transportation to facilitate the move to the settlement area. Transportation to the settlement area is one item in the incentive package that the government gives to all settlers. Arrangement for transportation for the move from the town of origin is the responsibility of the dispatching council up to the headquarters of the recipient district, which then takes the responsibility for transporting the new settler to the settlement area where he/she is immediately allocated a plot.

Once the settler is in his/her new home area, the rest of the incentive package is made available. The incentives given to settlers have changed over the years and have varied depending on the category of settlement. Prior to 1985, people were being settled either as medium- or small-scale commercial farmers or as subsistence farmers who wanted to relocate and to take advantage of the incentives being offered by the government.

The incentive package for the medium- or small-scale commercial farmers included: soil survey and demarcation of farm plots; access roads to each farm on the scheme; access to communal water supplies and cattle-dipping facilities; access to agricultural extension, credit, supply, and marketing services; sufficient cleared land for the first year of the farming system proposed;¹⁴ subsidies for fencing and water supply at the existing levels; tractor services for plowing; and transportation to the settlement area.

People going into settlement schemes to produce on a subsistence basis were provided with transportation for the family to the settlement area. In addition, they were provided with soil survey and demarcation of farm plots; access roads to each farm on the scheme; access to communal water supplies; access to agricultural extension advice; stumping and windrowing of one hectare (or stumping of two hectares), free of charge; seed, fertilizer, and pesticides for two hectares, free of charge for the first year; the normal subsidies available for fencing and water supply; and tractor service for plowing."

¹³ This department is now in the office of the vice president.

¹⁴ The land clearing cost was to be recovered from the farmer.

¹⁵ **Granting** 14-year leases was only considered after observing and assessing the farmer for at least two years. The major consideration was that the farmer should show progress in terms of clearing land above the initial area cleared by the government.

In 1985, the government began a project to review the level of success and bottlenecks of the settlement programs and, in collaboration with provincial authorities, to identify new areas for settlement. With growing urbanization and unemployment, the government was also seeking ways to make the program more attractive so as to encourage more people to return to the land. At the same time, the government sought ways to make the settlement program more sustainable.

In the process, attention was called to the need to change the target group to include programs for youth, the unemployed, and retirees, and to review the cost structure for running the schemes. The task force concluded that the government approach for developing the settlement led to high investment costs that could not be sustained and, therefore, needed to be changed. Despite this definitive position statement, the committee's report did not indicate cost for the programs with a comparison to other development costs. In fact, there is very little recorded information about the actual cost for establishing the various schemes, and, where some information does exist, it is incomplete. For example, the MAFF annual report for 1987 shows that as at the middle of 1986, the cost of clearing 1 hectare of land in each province was estimated as follows:

▶	Central	K240
▶	Copperbelt	K400
▶	Eastern	K400
▶	Luapula	K400
▶	Lusaka	K240
▶	North-Western	K400
▶	Southern	K240
▶	Western	K240

Alone, these figures tell very little. What would have been useful is a comparison of land clearing cost in settlement areas and other areas, by method of clearing and type of vegetation, and a breakdown of these costs over time. The same information would have been useful for other investment costs.

The committee proposed a low-investment approach that would require that the government provide an incentive package that included only such basic infrastructure as roads, demarcation of plot boundaries, a few communal wells or boreholes, and a dam, leaving the rest of the farm development cost to be borne by the settler.

As part of the exercise, each province was requested to identify possible areas of new land as well as land areas of existing schemes that were underutilized for redistribution to settlers. In the process, vast areas of land including former state farms and the 1.5 million hectare Tazara Corridor were identified for the new schemes.

In 1989, the prime minister informed the national assembly of the changes that the government had proposed to the implementation of the settlement program. In addition to the existing settlement areas, it had been decided that the rural reconstruction centers and areas under the councils be fully utilized for the purpose of resettling people. A requirement, however, was that settlers who were already in place would be given title deeds prior to admitting newcomers. Table 6.3 shows areas that were identified for settlement.

Province	Settlement (^ha)	Rural Reconstruction Centers	Council for Handicapped (ha)	Councils (ha)
Central	44,941	9,276		22,262
Copperbelt	60,103	2,474	137	42,295
Eastern	71,172	7,277	13	
Luapula	7,100	1,200	60	20,000
Lusaka	13,215	1,210	8	-
Northern	69,595	9,010	8	7,500
North-Western	10,650	1,920	81	12,000
Southern	98,275	10,657	11	29,200
Western	840	6,146		
Total	375,840	49,150	318	133,257

Not all figures in this table sum correctly; these errors are in the original documents.

Source: *Land Settlement Information Booklet* (Lusaka: Government Printer, 1987).

Separate incentive packages were approved for the unemployed and retirees who wanted to resettle.¹⁶ The package for the unemployed includes:

- ▶ transportation for all approved settlers up to a maximum of eight persons (inclusive of father and mother) per family, from the point of residence to the settlement area;
- ▶ free food for a period of one year through the provision of maize meal coupons;
- ▶ a grant in kind of K2,000 to each settler (upon certification that they have a minimum cleared land area of 1 hectare) to cover costs of clearing the land, seeds, and fertilizer;"
- ▶ free lease preparation costs and survey fees; and
- ▶ a title deed to the plot for those within settlement schemes. (For those going into villages, the settler had the responsibility to negotiate with the headman and the chief for the title deeds.)

The retirees with earnings of less than K12,000 in terminal benefits are entitled to:

- ▶ all of the incentives applicable to the unemployed;
- ▶ access to social amenities such as schools and clinics with an input of self-help;

¹⁶ Sources for information included: First Ministerial Statement to the National Assembly by The Right Hon. Prime Minister, General M.N. Masheke, "On the Subject of Resettling the Unemployed and Retirees on the Land" (November 1989); and the Department of Resettlement publication, "Land Resettlement Programme of the Retired and Unemployed: What to Do to Resettle" (December 1989).

¹⁷ The money for inputs was paid directly to the supplier.

- ▶ access to agricultural extension services;
- ▶ soil survey and demarcation of farm plots; and
- ▶ access to roads to each farm, communal water supplies, and cattle-dipping facilities.

Under the new program, the councils were assigned as implementing agents of the settlement program. The specific roles assigned to the councils included:

- ▶ demarcation of the settlement plots;
- ▶ provision of wells or boreholes and dipping facilities;
- ▶ provision of access roads and all necessary infrastructure; and
- ▶ coordination of the institutions involved in settlement including the Ministries of Agriculture, Water, Lands and Natural Resources, General Education, Youth and Sports and Works and Supply.

V. Structure and growth of settlement schemes

Information on settlement schemes is so fragmented and out of date that it is difficult to discern even such basic facts as: which schemes actually settled people, the number of such schemes, the number of settlers, which schemes have been abandoned, when and why, which schemes were reorganized and had the name changed, and which agency is currently responsible for running the schemes. As best as can be interpreted from the available material, the Zambian government continued to support the settlement schemes that had been started by the colonial government and commenced soon after independence to organize their own. The first schemes were organized along cooperative farming lines. The January 1965-June 1966 Transitional Development Plan and the First National Development Plan 1966-1970 speak of these.

From the late 1960s to mid-1980, a number of other alternative schemes were attempted including: peasant farmers schemes, master farmer schemes, family farm schemes, area development projects, the intensive development zones program (later changed to the Integrated Rural Development Program), consumer cooperatives, multipurpose cooperatives, tenancy schemes, settlement schemes, resettlement schemes, and crop season credit and minimum package schemes.

The dearth of information about these programs inhibits much elaboration. It might be useful at some future date to compile these if records can be found to do so. The summary below is based on information collected during a rather extensive data search.

- (a) **Rural Reconstruction Centers.**⁵ In 1975, the government commenced the establishment of these centers as settlement schemes with the objective of fitting school-leavers and urban unemployed youth for productive life in the rural sector. Two years later, the government indicated that the program was open to all—boys and girls, men and women—who were not gainfully employed or who were underemployed.

ⁱ The precursors to the Rural Reconstruction Centers in Zambia are in the Zambia Youth Service and the Zambia National Services. All three programs emphasized training of youth in trades, agriculture, and military skills.

According to officials in the Department of Resettlement, government at the time requested land from the councils which in turn sought land from the chiefs. A number of chiefs are now contesting these claims and demanding that the land be returned on grounds that the former chiefs performed their duties improperly in giving the land away.

Various scholars perceived the objective of the program differently and indicated this in their writings. For example, Tiberondwa (1976, p. 4) wrote that the Rural Reconstruction Centers were areas where school-leavers were taken and taught to participate in productive manual work instead of being allowed to loiter in towns. Sakala (1975) indicated that the centers were to serve as nuclei of agricultural and agroindustry development for the government. According to Shepande (in Kalapula 1984), the primary aim and objective of the program was to implement the party and the government policy of rural development.

The planned annual enrollment in the program was 42,000, and every district was to have five centers, with an intake of 800 per center. As noted by the ILO/JASPA Mission (1975),¹⁹ if such a plan had been implemented, 250 centers would have been established in the country as a whole, and this would have involved 216,000 farming families or 1,080,000 to 1,296,000 people, which was equal to one-third of the rural population of Zambia in 1974. The initial estimated cost was K17.5 million a year (Sakala 1975). By 1987, 51 schemes had been started, comprising a total land area of 49,170 hectares. Out of this, 8,208 hectares had been cleared and 1,434 youths settled. Further details are presented in table 6.4 below.

The selection criteria were simple: one had only to be a Zambian youth who had dropped out of school and was unemployed. There was no shortage of such people. In 1987, government figures showed that there were an estimated 1,316,637 unemployed out of a total labor force of 1,966,285. Zambia has a very young population, and the school dropout rate is high. The would be settlers were required to join the Zambian National Service and to become members of the individual center cooperative.

- (b) State Farms. Eighteen farms, comprising a total demarcated land area of 380 thousand hectares. By 1987, only three farms (Mswebe in Lusaka West and Mwembeshi and Mtirizi in Petauke district) were in production. The other fifteen farms comprising 300,000 hectares had by this date been identified as State Land to be subdivided and allocated as small holdings.
- (c) Southern Province Land Commission Farms. These were smallholdings of varying sizes, that covered an estimated 29,642 ha. By 1987, 25,562 hectares had been surveyed, and a decision had been reached by the government to subdivide the area and allocate the farms to people that wanted to settle. Table 6.5 below gives details on the locations, number of farms, and size of each.
- (d) Tazara Corridor projects. A program was started in 1986 to develop commercial farms in an area of about 1.5 million hectares along or near the Tazara railway. Development of the project was hampered by inadequate funding, and as a result, of the 649,000 hectares that had been demarcated in four areas, only 40,000 hectares comprising 486 farms had been developed by 1990. These farms were incorporated into the Land Resettlement Program. Details of the project are presented in table 6.6 below.

¹⁹ Reported in Kalapula 1984. p. 112.

Table 6.4: Land available under Rural Reconstruction Centers

Province	Land (hectares)			Settlers (number)		Cost of clearing the land (K)
	Available	Cleared	Uncleared	Current	Shortfall	
Central						
Serenje	3,818	216	3,602	41	13	864,480
Kabwe	337	327	100	65		24,000
Mumbwa	500	200	300	34	16	72,000
Mkushi	4,621	256	4,365	19	45	1,047,000
Subtotal	9,276	909	8,367	159	74	2,007,480
Copperbelt						
Kitwe	150	130	20	26	7	8,000
Mufulira	200	120	80	20	10	32,000
Chingola	750	700	50	35	140	20,000
Luanshya	208	165	43	27	14	17,200
Ndola	198	98	100	18	7	4,000
Chililabombwe	770	90	680	18	5	272,000
Kalulushi	198	198		18	30	
Subtotal	2,474	1,501	973	162	213	353,200
Eastern						
Chipata	1,058	150	908	31	7	363,200
Petauke	1,000	34	968	30	-	387,200
Katete	1,000	215	785	35	16	314,000
Chadiza	1,000	330	670	34	49	268,000
Chama	1,919	41	1,878	11		751,200
Lundazi	1,300	185	1,115	36	13	446,000
Subtotal	7,277	955	6,324	177	85	2,529,600
Luapula						
Samfya	185	150	35	25	13	14,000
Nchelenge	219	27	192	20	-	76,800
Mansa	386	150	238	48		94,400
Kawambwa	200	158	42	22	18	16,500
Mwense	210	150	60	20	18	24,000
Subtotal	1,200	635	567	135	49	225,700
Lusaka						
Rufunsa	210	70	140	50	-	33,600
Luangwa	1,000	88	912	12	13	218,880
Subtotal	1,210	158	1,052	62	13	252,480

Province	Land (hectares)			Settlers (number)		Cost of clearing the land (K)
	Available	Cleared	Uncleared	Current	Shortfall	
Northern						
Mpika	4,000	209	3,791	57		1,516,400
Isoka	1,165	161	1,004	24	16	401,600
Chinsali	1,500	159	1,341	22	16	536,400
Mporokoso	250	150	100	35	3	40,000
Kaputa	725	40	685	11		274,000
Mbala	150	150		38		
Kasama	1,000	212	788	55		315,200
Luwingu	220	135	85	45	-	34,000
Subtotal	9,010	1,216	7,794	287	35	3,117,600
North-Western						
Solwezi	210	100	110	27	-	44,000
Mwinilunga	174	174		18	26	-
Kabompo	500	40	460	22		184,000
Zambezi	500	50	450	28		180,000
Chizera	300	50	250	12	1	100,000
Kasempa	236	156	80	22	17	32,000
Subtotal	1,920	570	1,350	129	44	540,000
Southern						
Livingstone	1,800	208	1,592	65		382,080
Choma	500	260	240	38	27	57,600
Kalomo	5,333	190	5,143	25	23	1,234,320
Monze	2,181	160	2,021	28	12	485,040
Mazabuka	628	107	521	23	4	125,040
Namwala	150	47	103	7	5	24,720
Sinazongwe	65	57	8	26		1,920
Subtotal	10,657	1,029	9,628	212	71	2,310,720
Western						
Kaoma	360	100	260	15	10	62,400
Mongu	500	500	-	25	100	-
Senanga	4,704	55	4,649	10	4	1,115,760
Sesheke	44	44	-	34	-	-
Kalabo	500	500		10	109	-
Lukulu	38	38		17		-
Subtotal	6,146	1,237	4,909	111	223	1,178,160
Grand total	49,150	8,210	40,964	1,434	807	12,514,940

Table 6.5: Farms recommended for settlement in Southern province^o

District	Farm no.	Hectareage
Mazabuka	32-627,	1,418
	544	324
	125	1,620
	607	1,105
	608	708
Subtotal		5,175
Monze	2-761/RE	163
	584	1,634
Subtotal		1,797
Choma	1024	2,394
	1034	2,331
	1164	116
	2775	2,133
	3114	2,199
	27/RE	1,912
	36a/RE	767
	35a/RE	141
	36/A	367
	2-106	1,870
2-107	1,836	
Subtotal		16,788
Grand total		25,562

^a The figures in this table do not sum correctly; this error is in the original document.

Source: *Land Settlement Information Booklet* (Lusaka: Government Printer, 1987).

Table 6.6: Development of farms in the Tazara Project

Name of area	Total area (ha)	Area developed (ha)	Number of farms created
1. Katikulula	90,000	6,000	60
2. Munte	215,000	10,000	101
3. Manshya	147,000	16,000	182
4. Kanchibiya	197,000	8,000	143
Totals	649,000	40,000	486

Source: National Commission for Development Planning, *Economic Report*, 1990.

Table 6.7: Farm Block Development in Zambia

Province	Name of block	Total area for development (ha)	Area developed (ha)	Farms created (#)
Central				
Copperbelt	Kantolo-Luankuni	4,050	NA`	21
	Luansobe	12,000	NA	36
Eastern	Mwasemphangwe	9,340	NA	NA
	Muchimadzi	4,000	4,000	66
Luapula	Chitondo			
	Mansa	NA	NA	22
Lusaka	Shikabeta	2,900	2,600	69
Northern	Longwe	4,428	4,428	1
	Mwita	9,500	-	
North-Western	Mikilingi	18,526	7,474	12
Southern	NA but in most areas identified	Varied	Varied	644
Western	Kalumwange	21,000	6,000	69
	Lombe Lombe			

a. NA = not available.

b. This block is now part of the resettlement program.

Source: National Commission for Development Planning, *Economic Report, 1990*.

- (e) Farm Block Development Program. This program was started in the mid-1980s to make additional land available for commercial agriculture. Each province identified the location and hectareage of land for inclusion in the program, and, with assistance from the government through the resettlement program, farmers were settled. By the end of 1990, farm blocks had been developed in each of the provinces except the Central province. Table 6.7, above, gives details of the development program up to 1990.
- (f) Settlement schemes. A program launched in 1986 called for the development of new areas in each district for settling people that wanted to develop agricultural plots smaller than those settlements provided for commercial farmers. By 1990, ten schemes had been developed, with at least one in each of the nine provinces. A list of the schemes and their location is presented in table 6.8.
- (g) Settlement schemes for the handicapped. Fourteen settlement farms with a total of 318 hectares and a settler population of approximately 600 had been established by 1985 throughout the country.

Table 6.8: Resettlement schemes, 1986-1990

Province	Name of scheme	District	Number of plots demarcated
Central	Katikulula State Farm	Serenje	442
Copperbelt	Lukanga North	Ndola Rural	563
Eastern	Mtirizi State Farm	Petauke	1
	Chipangali State Farm	Chipata	
Luapula	Mansa Block	Mansa	90 ^a
	Chitondo State Farm	Kawambwa	
Lusaka	Kasenga	Lusaka Rural	292
Northern	Mpika State	Mpika	576
North-Western	Solwezi State Farm	Solwezi	323
Southern	Masasabe State Farm	Namwala	337
Western	Kalumwange	Kaoma	310

a. Figure covers area demarcated in both districts in the province.

Source: National Commission for Development Planning, *Economic Report, 1990*.

VI. Present administration of settlement programs

A department of resettlement in the office of the prime minister was formed in 1989 to facilitate the government's program of settling the unemployed and the retired that resided in towns at the time. As the responsibility for settlement programs have now been assigned to the office of the vice president, the department is also now under the vice president's office. The department was given statutory powers on settlement in "The Statutory Functions, Portfolios and Composition of Government" (*Gazette Notice* no. 46 of 1992). As yet, however, it has been assigned a number of responsibilities including:

- ▶ devise a suitable land settlement policy and procedural guidelines;
- ▶ identify, appraise, and select suitable sites in conjunction with district authorities;
- ▶ initiate the survey and planning of the sites;
- ▶ coordinate all resettlement activities;
- ▶ mobilize resources; and
- ▶ supervise implementation and monitor projects in the settlement areas.

According to officials in the Department of Resettlement, 50 percent of land in current schemes is demarcated in plots less than 10 hectares, which are allocated to smallholders who are unable to provide for themselves. Four families are normally settled to one well or borehole. Another 35 percent of the land is allocated to demarcations 10-20 hectares in size. The remaining 15 percent

is allocated in demarcations 20-50 hectares to those people with sufficient capital to invest in boreholes themselves; applicants in such cases must present confirmation of having 1 million kwacha to demonstrate the means to develop the land. Schemes are provided with schools and other facilities to attract people from urban areas (according to one official, life must be made better than in a typical village or people have no incentive to come or stay). Schemes have had a less than remarkable experience with acquiring 14-year titles to land. Applications are often submitted only to become lost in the system; some files are lost permanently. Inheritances, subdivisions, and transfers have become important issues in many schemes—issues that the department feels inadequate in addressing given the current land policy.

VII. Access by women and minority groups

The achievement of a satisfactory level of self-sufficiency in the production of staple foods has been a long-term goal of the Zambian government. In its Fourth National Development Plan, 1987-91, the basic strategy outlined for achieving this goal was that preferential treatment would be given to small-scale farmers, in line with their greater number, their development potential, and their relatively efficient use of scarce foreign exchange resources.

The majority of small-scale farmers are women, and, in the same Development Plan, there was evidence of the increasing recognition of their development role by the government. The plan contained a full chapter on women in development, including agriculture. Empirical research during the 1970s to 1980s also gives recognition to the important role that women in Zambia play in agriculture.¹

Despite this broad recognition, there is little evidence to suggest that women enjoyed equal rights to development assistance in the agricultural sector. To the contrary, there is some evidence suggesting that they did not.

As mentioned earlier, the first postindependence government chose the cooperative movement as a means of promoting rural development. A program to encourage the formation of cooperative societies began in 1965 with emphasis on the communal cooperatives. A number of marketing cooperatives based on individual farms were, however, also organized.

Rules governing the formation of cooperative societies indicated that any group of ten people could register as a cooperative to carry out a wide range of activities. For agricultural cooperatives where members ran the farm together, the government provided an incentive package that included seasonal and medium-term loans and subsidies for land clearing and research and extension advice on improved production techniques. No food crops could be grown on the farm and incentives for cash crop production were given only to the head of household, the man, and only he was allowed to be a member. Women were therefore denied the opportunity to benefit from the formation of agricultural cooperatives and to get the incentive package for supporting their agricultural ventures. Instead, they and their children were expected to grow food crops unassisted, outside of the schemes.²¹

²⁰ See Allan (1984); Blake (1984); Chenoweth (1984); Due and Mudenda (1984); and Gaobepe and Mwenda (1980).

²¹ Chilivumbo (1982); Keller (1984); Mutamba (1982).

While specific schemes are not identified, Ngenda (1993) mentions that marital status was used in some schemes as a criteria for participation. In those cases, married women could not be considered as individuals to own farms or plots. Single women without children were also not eligible for these schemes unless they were backed by a male figure or had a position in the ruling political party structure at the local level. The available data are not gender specific except in two cases shown in tables 6.9 and 6.10.

Table 6.9: Number of settlers in Rural Reconstruction Centers, December 1979

Province	Male	Female	Total settlers (#)
Central	395	1	396
Copperbelt	589	5	594
Eastern	303	1	304
Luapula	285	1	286
Lusaka	189	-	189
Northern	494	1	495
North-Western	295	5	300
Southern	454	6	460
Western	348	4	352
National totals	3,352	24	3,376

Source: Chambo Kawonga, Technical Paper No. 10, Rural Reconstruction Programme ILO/JASPA (1981), p. 148.

Table 6.10: Farm owners by sex in various settlement schemes

Settlement scheme	Male	Female	Joint	Total
Chitina	45	4		49
Big Concession	68	2		70
Lubombo	63	2		65
Lukulu North	74	-		74
Lusaka	101	9	5	115
Milombwe	117	1	-	118
Mumba	53	5	-	58
Mungwi	144	6		150
Ngwezi	128	2		130
Totals	793	31	5	829

Source: C.N. Himoonga, M. Munachonga, and A. Chanda, "Women's Access to Agricultural Land in Zambia" (1988).

VIII. Desertion of settlement schemes

The information of rate of desertion of settlement schemes is scanty though several references are made to the fact that some people originally settled left the schemes. Also, there is little information about why people left the schemes, and what encouraged those that remained to do so. The only time series data on desertion identified (Mbulo 1983) refer to seven rural reconstruction centers in the Southern province. According to this study, in 1975, the combined settler population was 1,985. By 1982, the number of people still settled in the seven schemes was only 278. See table 6.11.

Table 6.11: Desertion rate from resettlement centers

Settlement scheme	Location	Number of people, 1975	Number of people, 1982
Sibanyati	Choma	315	41
Ngwezi	Kalomo	275	49
Kabuyu	Livingstone	500	58
Nega-Nega	Mazabuka	300	29
Namilongwe	Monze	300	60
Ngabo	Namwala	115	9
Sinazongwe	Sinazongwe	180	32
Totals		1,985	278

Source: M.P. Mbulo, "Some Issues in the Development of Settlement Schemes in the Southern Province" (1983).

IX. Type of production on schemes

Nowhere in the data available to the researchers is there detailed information on types of agricultural activities, output, exact amounts of input or incomes of the settlers. From the vague information gathered, maize was the main crop grown. Other crops included sorghum, tobacco, sugarcane, and vegetables. Livestock included cattle and poultry. This should be an area of research during future study of settlement programs in Zambia. The information would give better insight into issues of desertion, level of enrollment, and why some schemes were abandoned by the government or nongovernmental funding agencies. The best source of such information is a report on the agricultural settlement schemes compiled by Mpenda, Jaboni, Mtonga (1983), which, except for its size (109 pages), would have been attached to this report as an annex. The report, however, is readily available through the University of Zambia Library and should be consulted by researchers carrying out future study.

X. Settlement schemes and conservation issues

Very little is recorded on land resource conservation issues as they relate to settlement schemes in Zambia. What the available information seems to suggest is that those areas for which detailed farm

planning was done prior to settling, and where the plans have been followed, there are no serious soil or water conservation problems. Such is the case with most of the original farms on State Land but not on traditional land. In these areas, soil erosion is said to be evident in most areas, especially in pastoral rural communities. While some livestock owners have shown regard for animal stocking rates and carrying capacities of their holdings and have adopted appropriate farming practices, others have disregarded all such factors, resulting in general land degradation.

The Land Use Planning Section of MAFF indicates that, at present, only about 6 percent of Zambia's arable land is adequately planned for agricultural use. It warns that present land development remains a big threat to overall resource conservation and management, and suggests that appropriate planning and conservation need to focus high on the agenda from now on.' (See table 6.12 for details on existing planned agricultural areas in Zambia.)

Table 6.12: Existing planned agricultural areas in Zambia

Province	RCP°		CCP°		SS''		FBD*	
	No.	Area (km ²)	No.	Area (km ²)	No.	Area (km ²)	No.	Area (km ²)
Central	13	3,525	9	6,842	8	333	3	3,840
Copperbelt	3	1,143	3	1,108	14	1,014	5	801
Eastern	0	0	5	1,184	23	700	2	199
Luapula	0	0	0	0	3	24	5	844
Lusaka	12	3,080	0	0	3	131	1	35
Northern	0	0	0	0	7	296	4	3,677
North-Western	0	0	0	0	4	115	2	365
Southern	29	7,730	20	4,591	25	844	-	620
Western	0	0	0	0	2	30	2	96
All Zambia	57	15,478	37	13,725	89	3,487	24	10,477

a. RCP = Rural Reconstruction Program; CCP = cooperative program; SS = Southern province small block program; FBD = farm block development.

Source: Ministry of Agriculture, Food and Fisheries, Land Use Planning Section, "Statement of Policy and Plan of Action: Final Report" (February 1993).

XI. Concluding remarks

Based on the information available to the authors, attempts have been made to help researchers identify what is known of resettlement schemes in the Zambian literature. Highlights of successes and problems encountered in the various settlement programs have been given. No attempt, however, has been made to draw conclusions on the future of settlement schemes or on ways to improve their

* Ministry of Agriculture, Food and Fisheries, Land Use Planning Section: Statement of Policy and Plan of Action 1993.

efficacy. This was never an intent of the chapter, and to try to do so with the dearth of information available would be unwarranted. What can be concluded is that a huge amount of resources has gone into these endeavors, and settlement programs are still held in favor by many policymakers in Zambia today as a way of providing land for farming and other social services to the disadvantaged population, urban people, and retiring or terminated civil servants. Given the wide number and extent of schemes nationwide, research of the type recommended in this chapter is advised to help improve the sector's performance and better integrate it into the country's national development strategy.

Annex 6.1: Ministry of Agriculture and Water Development settlement scheme

Location	Scheme	Size (ha)	Total farms (#)	Occupied farms (#)	Vacant farms (#)
Western province	Kaoma Dairy	20	8	8	
	Kaoma Tobacco	500	433	433	
	Mushwala	320	19	19	
	Subtotal	840	460	460	
Luapula province	Kamani	5,000	22	22	
	Mulumbi-Mulukuma	1,500	40	40	
	Munganushi	600	22	22	
	Subtotal	7,100	84	84	
Copperbelt province	Ipafu Irrigation	50	42	42	
	Kafubu Dam-West and South	5,183	40	40	
	Luongo State Land	5,528	29	29	
	Miengwe	4,000	125	125	
	Mikata Tobacco	24	30	30	
	Misundu Dairy	218	6	6	
	Mutende Multi-Purpose Co-operative	100	47	47	
	Ngosa Muchinshi Rank	19,000	84	84	
	West Luanshya Development Area	26,000	20	20	
Subtotal	60,103	423	423		
Lusaka province	Chiawa Banana Scheme	68			
	Chipapa Irrigation Scheme	124	26	26	
	Luimba	10,124	43	43	
	Mungu	2,899	26	26	
	Subtotal	13,215	95	95	

Location	Scheme	Size (h a)	Total farms (#)	Occupied farms (#)	Vacant farms (#)
Southern province	Chikola	8,704	51	50	1
	Kayuni	6,100	38	38	
	Kazungula	3,654	38	38	
	Nkungwa (Kalomo)	4,500	45	45	
	Luyala	3,848	9	9	
	Lusitu	54			
	Mbabala	1,496	13	13	
	Magoye (A and B)	2,400	36	36	
	Magoye (C and D)	2,289	24	24	-
	Magoye (E)	805	13	13	
	Mbaya (Mazabuka)	3,815	46	46	
	Muchila (Namwala)	1,050	22	22	
	Musuma (Mazabuka)	1,935	33	33	
	Mwanachingwala	6,141	173	173	
	Naluama	7,750	164	164	
	Nega A	1,175	13	13	
	Nega B	750	41	41	
	Nega Nega C	764	8	8	-
	Ngwezi	8,800	130	130	
	Ngwezi C	1,305	18	-	-
	Siachiteme	12,164	58	-	-
	Sibanyati	1,874	16	-	-
	Silwili	8,797	48	48	
Tara I	1,827	7	7		
Tara II	1,493	12	12		
Upper Kaleya	4,785	46	46	-	
	Subtotal	98,275	1,102	1,009	1
Central province	Chitina	10,627	49	49	-
	Kalola (Kabwe Rural)	600	97	97	
	Kapyanga (Mumbwa)	1,500	72	60	12
	Keembe (Kabwe Rural)	2,000	40	37	3
	Malo (Serenje)	1,500	94	89	5
	Milombwe (Mkushi)	4,500	30	30	
	Mpima (Dairy)(Kabwe Urban)	1,500	31	31	
	Mumbwa	600	57	57	
	Munyama (Kabwe Urban)	10,000	36	36	-
	Mkushi West	12,114	17	17	
	Subtotal	44,941	523	503	20

Location	Scheme	Size (ha)	Total farms (#)	Occupied farms (+#)	Vacant farms (#)
Eastern province	Chipangali	22,565	154	154	
	Chipangali Tobacco	300	25	25	
	Chifunda	200	27	27	
	Chinjara	5,332	60	60	
	Jimoli	665	12	12	
	Kapilingizya	400	76	76	
	Kasinga	2,500	51	6	45
	Katanggalika	300	196	196	
	Katete State Land (New Block)	2,702	21	21	
	Mphangwe	1,565	23	23	
	Chiringodi	2,137	36	36	
	Kalimeta	3,080	21	21	
	Kagwelema	1,904	20	20	
	Lumezi Tobacco	3	13	13	
	Lunthwele	582	10	10	
	Mchimadzi	10,215	163	10	153
	Nganjo	200	52	52	
	North Nyampande (old)	4,100	229	229	
	Nyamphande Ext. Area	1961	75	75	
	Rukuzye	9,500	58	58	
	Simulemba	300	39	39	
	Sinda Misale (Tobacco)	127	30	30	
	Sinda Virginia	-			
	Zemba Tobacco	293	660	660	
Tobacco School	241	60	60		
	Subtotal	71,172	2,111	1,913	198
North- Western province	Jiwundu	61	36	36	
	Kawama	8,000	50	50	
	Nyangombe	79	48	36	12
	Kabukafu SE Kasempa Dev. Area				
	Mpungu South-East Kasempa	1,410	84	84	
	Kasempa Dev. Area	1,100	24	24	
	Lungevungu		15	15	
	Mashivi Zambezi Settlement Scheme		38	30	8
	Towe Zambezi Settlement Scheme		8	8	
	Subtotal	10,650	303	283	20
Northern province	Chamfubu Settlement	1,800	76	71	5
	Chifwile	3,100	36	36	
	Chinsali	50,000	30	21	9
	Kapatu	2,025	33	8	25
	Lubu	1,000	30	30	
	Lukulu North Irrigation	10,000	74	74	
	Mukonge	1,640	135	105	30
	Subtotal	69,565	414	345	69
Grand total					308

Chapter 7:

Land Use Patterns and Growth in Commercial Input Use, Productivity, and Profitability by Farm Size Category

by

Jeffrey A. Cochrane and Michael J. Roth'

I. Introduction

This chapter examines trends in cultivated area and production in order to understand the changing patterns of Zambian land use and management. Reported data suggest that in the commercial farms sector there has been over the past two decades a general diversification of production away from maize and into primarily wheat and soybeans. In the late 1980s, harvested land area under maize has been replaced by these other crops, with the overall harvested area remaining roughly constant. In the noncommercial farms sector, data suggest that production in much of the country has fluctuated greatly with no clearly discernible trend. The principal exception is the far northeastern region of the country where maize production has increased dramatically, particularly from 1976 to 1986. These and other results are discussed below in detail after a preliminary note concerning data sources and their reliability.

II. Data sources

The next chapter provides a detailed discussion of data issues. This section focuses on particular problems affecting the analysis of changes in land use patterns. Table 7.1 summarizes various selected Zambian data sources by year as used in the preparation of this chapter.

For verification and comparison purposes, a number of key national statistics were drawn from the Economic Research Service of the United States Department of Agriculture and from the World Bank. These other sources generally provide national statistics, sometimes broken down by crop, but are based upon primary CSO and other Zambian government data. This report focuses upon results gleaned directly from the primary Zambian sources.

The CSO of the Zambian Government conducted several crop forecasting exercises covering all farms. These provide the most recent data available for our analysis. Forecasts are available for 1991 and 1992,² and the publication for the 1991 crop forecast includes actual production data for the 1990 season, which is not available from any other known source. The 1992 forecast publication breaks down farms into two size categories, the first being a small/medium category and the second covering large farms, though the report does not provide definitions of these categories.

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² Years refer to the beginning of a cropping season.

Table 7.1: Zambia data sources

Year	Commercial farms CSO	Noncommercial farms CSO	All farms ERS ^b	Price series	Forecasts CSO
1961 ^a			X		
1962			X	X	
1963			X	X	
1964			X	X	
1965			X	X	
1966			X	X	
1967			X	X	
1968			X	X	
1969			X	X	
1970			X	X	
1971		X	X	X	
1972		X	X	X	
1973		X	X	X	
1974		X	X	X	
1975	X	X	X	X	
1976	X	X	X	X	
1977	X		X	X	
1978	X		X	X	
1979	X		X	X	
1980	X		X	X	
1981	X		X	X	
1982	X	X	X	X	
1983	X	X	X	X	
1984	X	X	X	X	
1985	X	X	X	X	
1986	X		X	X	
1987	X		X	X	
1988	X		X	X	
1989	X		X	X	
1990			X	X	X
1991					X
1992					X

- a. Years are the **beginning** of the crop season (e.g., 1990 = 1990/91 crop season).
b. ERS: United States Department of Agriculture, Economic Research Service.

Principal time series data are drawn from publications of the CSO annual "Agricultural and Pastoral Production" reports, one each for commercial and noncommercial farms. A quite complete commercial farms series is available from 1975 to 1989. The noncommercial farms series begins in 1971, was interrupted from 1977 to 1981, and resumes for 1982 through 1985. Commercial farms data are generally divided by farm area size categories (0—199 hectares, 200-1,999 hectares, 2,000+ hectares). Data on noncommercial farms are not broken down by size.

Noncommercial farmers are defined in these "Agricultural and Pastoral Production" reports simply to be those farmers who are not commercial farmers. In order to determine who qualifies as a noncommercial farmer, the 1973 noncommercial farms report defines commercial farmers as:

- (a) a farmer who sold maize worth K600 or more at the line of rail prices;
- (b) a farmer who grew **virginia** [*sic*] or **burley** tobacco in his own name and was registered with the Tobacco Board of Zambia;
- (c) a farmer who sold dairy products to, and was registered with, the Dairy Produce Board;
- (d) a farmer who had title to land.

This definition has been amended over time. By the time of the 1982 commercial farms report, the commercial farms classification had been amended to include farms that sold to marketing boards any crops exceeding the value of 150 90kg bags of maize, farms that bred or sold livestock to licensed firms or boards, and state farms.

This classification and separate enumeration of commercial and noncommercial farms poses problems for analysis. For example, as economic conditions change from year to year, a farmer may choose to produce and market tobacco, thereby leaving the noncommercial classification and entering the commercial farms classification. There is also some question as to the reliability of the population lists for each classification, particularly since the mid-1980s when the state reduced its role in the marketplace and as a consequence reduced its ability to monitor market activity. For these reasons, it is difficult to determine whether increases in production of commercial crops is due to expansion of output by existing commercial crops producers, to marketed output by farmers previously classified as noncommercial, or to new market entrants. Better analysis would be possible if there were a more reliable and stable long-term program of farm data collection.

Data on commercial farms production in Zambia are available from 1975 to 1989, and are broken down by province and farm area size classification. These data are based on responses to an annual mailed census sent on average to about 3,000 farming households nationwide. (Response rates were generally low; e.g., 34 percent in 1978.)

The survey is intended to cover all the commercial farmers in the country and questionnaires are mailed on the basis of postal addresses. The response has however been quite poor. Many of the returned questionnaires were only partially completed requiring many imputations for individual reports to be summarized on a representative basis (CSO 1989a, p. iii).

A consultant's report to USAID (Scott 1990) notes, "The [commercial farms] list used is known to be incomplete and the response rate is below 20 percent, so that the purpose of this annual operation is not clear."

Data on noncommercial farms are from an enumerated sample survey conducted annually from 1971 to 1976 and also from 1982 to 1986, with no data collected by the CSO in the period from 1978 to 1981. While data were apparently collected and published for the 1977 season (CSO 1989b), these data are not available. Available data are broken down by province but not by farm area size. Using a two-stage design, a stratified random sample of geographic areas was first selected, with strata corresponding to ecological zone. In the second stage, two random samples were selected, one of households reporting livestock holdings, the other of households not reporting livestock. These details are generally explained in the introductions to the reports. While in most years farmers are asked to provide information on the agricultural period just completed, it should be noted that for a few provinces in 1982, data are based on recalled responses collected as part of the 1983 survey.

Additional limited data were collected on farm expenditures and revenues and are briefly inspected here. Significant difficulties with the consistency of categories in the collection of these data over time make it quite difficult to analyze relationships between prices, input uses, and output. A cursory inspection of these data for commercial farms is provided below.

Price indexes for bundles of consumer goods as well as for numerous commodity groups are available in the CSO's *Monthly Digest of Statistics*. Several editions of these digests have been compiled to compute a price series for the years 1962 to 1990, adjusted to the common base year of 1985. These data are also presented below. Consumer price indexes are used to deflate expenditure and revenue data to permit examination of real price trends independent of inflation. As will be seen, this is particularly important for data from the late 1980s when Zambia experienced significant hyperinflation.

Anomalies are apparent in the data sources. For example, in the 1987 commercial farms report, the same harvested area and production for soybeans in the Copperbelt province is given for two separate farm sizes categories. Such a coincidence seems unlikely. In Luapula province in 1990, farms of one size are reported to have produced one kilogram of wheat but then to have sold 37. Since reports do not distinguish sales from present harvest versus past harvests, it is impossible to determine whether this is an error or due to stock adjustment.

Given problems in data collection and reporting, policy recommendations arising out of analyses of these data should be regarded as tentative and subject to verification in more detailed retrospective studies of selected areas. Longitudinal analyses that follow particular farming households over time seem particularly warranted if an understanding of structural change in agriculture is to be gained.

III. National production trends

The aforementioned problems with the data notwithstanding, a number of important characteristics of production structure in Zambia can be discerned. Table 7.2 presents harvested crop areas for all farms in the nine regions of Zambia as a percentage of national totals. Data in the table are three-year averages drawn from CSO crop forecasts for 1991 and 1992, and from actual area figures for 1990. Of Zambia's 942,362 hectares planted nationwide in 1990-92 (three-year average), 63.8 percent are comprised of maize, followed by groundnuts (8.5 percent), seed cotton (7.3 percent), millet (5.4 percent), sorghum (4.4 percent), sunflower (3.4 percent), soybeans (2.9 percent), mixed beans (2.2 percent), rice (1.4 percent), and assorted other crop enterprises (0.7 percent).¹

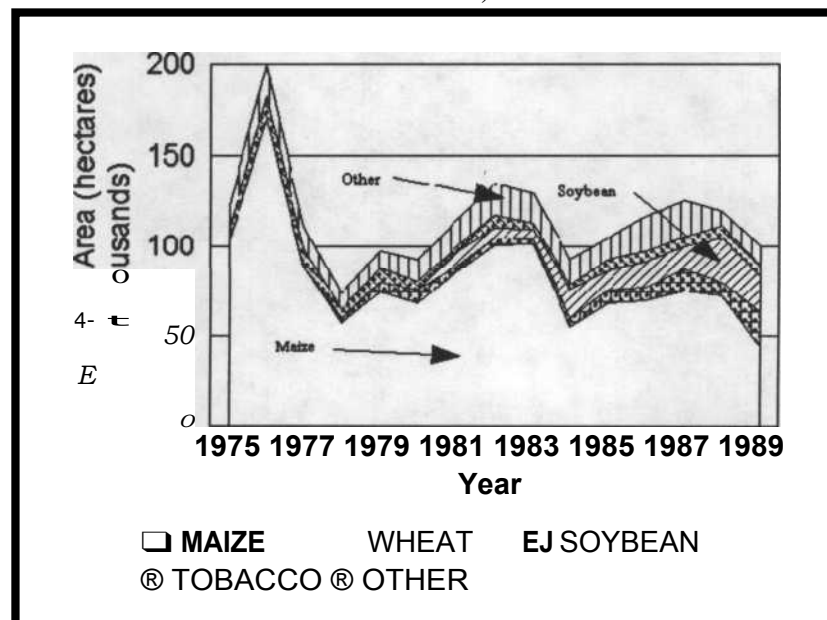
¹Total crop area is based only on data for crops that were reported. Area of unreported crops (horticultural crops, cassava, other vegetables) is not included. Note also that, in official publications, tree crops are reported as numbers of trees rather than area of planting; estimates of tree-crop area are thus not possible.

Provincial-level data from the CSO reveal that the bulk of planted area of cultivated maize, tobacco, sunflower, and seed cotton is situated in the Eastern, Central, and Southern provinces. This is the primary agriculture production region of Zambia, with cultivation based on a hand-hoe farming system, and with oxen used in some areas. Maize is generally the chief staple followed by sorghum, while relish crops are vegetables, beans, and groundnuts. Cash income for most farmers obtains from sales of beer, fish, chicken, and a portion of the maize harvest. Only minimal inputs are used in production (USAID n.d.). In percentage terms, the Eastern province accounts for the bulk of national area allocated to maize (34.8 percent), groundnuts (33.7 percent), and burley tobacco (93.3 percent); the Southern province accounts for the largest area allocated to sorghum (28.7 percent) and sunflowers (43.8 percent); and the Central province contains the most area under production of seed cotton (38.9 percent), rainfed wheat (73.0 percent), and Virginia tobacco (50.2 percent).

IV. Commercial farms sector

Table 7.3 presents time series data on the area harvested of principal crops for the period 1975 to 1989 in the commercial farm sector. These data are depicted in graphical form in figure 7.1 for all crops, and for all crops excluding maize in figure 7.2. Maize clearly dominates the cropping system. The data suggest a complex pattern of crop diversification characterized by three major trends over time: a stagnation in total crop area; a decreasing emphasis on maize; and an increasing emphasis on wheat and soybeans. Aside from the sharp increase in area harvested between 1975 and 1976, followed by the sharp decline from 1976 to 1978, total area harvested appears relatively stable to gradually increasing.

Figure 7.1: Changes in areas of principal crops, cumulative distribution, 1975 to 1989



Source: CSO.

Figure 7.2: Changes in areas of principal crops, excluding maize, cumulative distribution, 1975 to 1989

Source: CSO.

Figure 7.3: Commercial farms production of maize, wheat, and soybean, 1975 to 1989 (in metric tons)

Source: CSO.

Table 7.3: Harvested area (hectares), commercial farm sector, 1975 to 1989

Year	Maize	Wheat	Virginia tobacco	Sun-flower	Soy-bean	Seed maize	Seed cotton	Potato	Cotton	Coffee	Burley tobacco	Total
1975	103,650		7,400	4,970		5,220		2,470	400			124,110
1976	169,860		12,240	5,750		9,130		2,330	590			199,900
1977	88,159		10,360	4,544		5,821		130	2,071			111,085
1978	57,070	2,150	5,340	4,160		3,680		186	630			73,216
1979	74,233	5,213	7,990	3,606		3,824		775	1,333		151	97,125
1980	67,860	7,494	4,874	3,625		4,528		1,541	2,156		94	92,172
1981	84,701	3,390	3,444	8,719	8,150	2,695		422	3,444			114,965
1982	100,859	3,963	5,601	11,146	5,307	3,509		390	2,708		2,287	135,770
1983	101,286	2,645	3,372	6,312	5,758	4,916	2,587	448	2,587		97	130,008
1984	54,922	5,074	2,762	2,947	15,323	8,603		797	1,695		118	92,241
1985	67,739	7,266	5,206	4,316	11,660	5,277		875	2,016		540	104,895
1986	69,477	7,620	6,480	5,234	13,899	8,959		659	1,373	3,137		116,838
1987	74,763	12,168	5,682	5,989	12,868	5,938		627	4,680	3,340		126,055
1988	72,090	7,180	6,293	3,219	25,963			1,172	3,296	894	103	120,210
1989	43,630	19,187	3,003	3,990	20,305	5,697		1,274	201		2,865	100,152

Source: Derived from Zambia CSO data.

Table 7.4: Crop production, commercial farm sector, 1975 to 1989
(thousand metric tons)

Year	Maize	Wheat	Virginia tobacco	Sun-flower	Soy-bean	Seed maize	Seed cotton	Potato	Cotton	Coffee	Burley tobacco
1975	418.31		7.67	4.37		20.86		5.85	.43		
1976	451.33		6.26	5.53		23.00		4.25	.75		
1977	324.10		8.10	2.57		19.79		.66	2.01		
1978	187.82	9.62	4.72	3.94		10.64		1.24	.45		
1979	239.12	16.39	7.19	3.21		11.75		.08	1.36		.06
1980	274.03	16.17	3.72	3.62		17.98		5.24	3.24		.05
1981	245.50	14.41	2.74	6.54	7.23	8.92		.40	2.73		
1982	340.77	13.44	4.60	10.49	6.76	18.05		4.88	2.62		1.99
1983	223.89	10.40	4.07	5.91	7.41	10.42	2.61	5.44	2.61		.06
1984	172.54	26.30	2.69	2.27	23.05	29.25		19.00	1.20		.08
1985	315.01	32.17	5.93	4.03	19.81	20.99		12.78	1.86		.29
1986	315.41	43.53	7.70	6.26	26.09	10.88		10.65	1.33	2.33	
1987	290.80	59.82	7.03	5.05	28.03	31.80		8.62	9.20	1.18	
1988	317.99	38.43	5.57	3.48	24.45			14.51	5.32	.26	.19
1989	153.79	38.87	3.66	4.48	21.82	25.50		1.07	.20		2.70

Source: Derived from Zambia CSO data.

The declining importance of maize relative to other crops in the commercial farms sector is further confirmed by production quantity data. Table 7.4 presents these data in tabular form for all recorded crops, while figure 7.3 illustrates changes in production for the three leading crops in the commercial farms sector: maize, wheat, and soybeans. The graph indicates increases in wheat and soybean production that are large in percentage terms but that do not match the magnitude of the decrease in maize production for the same period. Note, however, that the most recent indicated downturn in maize production (1989) is not substantially greater than previous downturns from which production later recovered.

A more complete analysis of these data would attempt to reconcile fluctuations in production with specific political and economic events such as droughts, changes in government, currency devaluations, or price liberalizations. Such an analysis would require additional data not contained in the CSO reports and is therefore beyond the scope of the present exercise. In the absence of specific statistical controls for such events, a growth rate may nonetheless be calculated, though it matters a great deal where one places the starting and finishing points for the calculation.

The growth rate "r" is derived as follows:

$$(1) \quad Y = a(1+r)^T$$

where Y is either area, production, or yield, depending on which growth rate is desired. The variable T is a time trend.

Equation (1) can be linearized in logs as shown in equation (2):

$$(2) \quad \ln Y = \ln(a) + \ln(1+r)(T) = A + BT$$

Equation (2) then forms the basis for a linear regression of the log of either area, production, or yield on a time trend. The growth rate estimate is then calculated from the ordinary least squares parameter estimate for the trend variable:

$$(3) \quad r = e^B - 1$$

Area growth rates estimated from the data in table 7.3 are presented in table 7.5 for two time periods: a fifteen-year period from 1975 to 1989 and a seven-year period from 1983 to 1989. The data suggest that area under maize has declined at an average annual rate of 4.1 percent since 1974, with the decline accelerating in more recent years. On the other hand, areas under wheat, soybeans, and several other crops have increased at an accelerating rate. Given the volatile nature of the figures, care must be exercised in interpretation.

The CSO data permit further disaggregation of commercial farm data by region, but the way data have been disaggregated has changed over time. In 1975-76, data were disaggregated by Central, Southern, and "Copperbelt and others" categories, along with a national total. In 1981-82, this division was changed to Central, Lusaka, Southern, and "Copperbelt and others," a system of classification that remained unchanged through 1989-90. In order to facilitate statistical computations and conserve on reporting, two regionally disaggregated time series were generated from these data: northwest representing the data from "Copperbelt and others" and including the Western, Northwestern, Copperbelt, Luapula, and Northern provinces; and southeast including the Central,

**Table 7.5: Crop area growth rates commercial farms sector
(percent)**

	1975-1989	1983-1989
Maize	-4.1 ^a	-6.5
Wheat	13.8 ^a	29.1 ^a
Virginia tobacco	-5.2 ^a	5.1
Sunflower	-1.0	-3.1
Soybean	18.0 ^a	19.3 ^a
Seed maize	1.6	-.2
Potato	1.2	13.6 ^b
Cotton	4.8	-17.8
Coffee	-46.6	-46.6
Burley tobacco	15.6	41.2
All crops	-.6	-.2

a. The estimate of B in the regressions is significant at the 5 percent level.

b. The estimate of B in the regressions is significant at the 10 percent level.

Eastern, Lusaka, and Southern provinces. With the exclusion of southern areas of the Western province, the northwest region is generally situated in areas receiving in excess of 1,100 millimeters (or 44 inches) of annual precipitation, while the provinces in the southeast region receive 1,000 millimeters (or 40 inches) of rainfall per year or less.

Data in the commercial farm series are further disaggregated by farm size categories, but the categories have not remained the same over time. In 1975-76, six categories were used: 0-79 hectares, 80-199 hectares, 200-399 hectares, 400-799 hectares, 800-1,999 hectares, and 2,000+ hectares. This classification system was maintained until 1986-87 when the number of categories was reduced to four—0-199 hectares, 200-799 hectares, 800-1,999 hectares, and 2,000+ hectares—and remained so through 1989-90. To ease computation burdens, data series were further consolidated into three categories for purposes of growth rate analysis: small farms (less than or equal to 199 hectares), medium farms (200-1,999 hectares), and large farms (2,000+ hectares).

Table 7.6: Crop area growth rates, commercial farms sector (percent)

	Farm size					
	1975-1989			1983-1989		
	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)
Northwest region¹						
Maize	13.7 ^{**}	-1.7	-2.9	1.1	1.6	-46.3⁻
Wheat ^o	-45.0	3.2	-14.3 ¹	-12.1	58.6	-27.3
Virginia tobacco	-9.0^{**}	-13.5¹	-10.7 ^{**}	-12.8	2.6	-14.6
Sunflower ^o	15.3 ¹	-1.4	33.7	5.0	6.2	
Soybean	5.6	-18.9	8.4	68.1¹	-17.2	-33.4 ⁻
Seed maize ^o	15.2	31.6 ^{**}	-.2	-30.9¹	-49.7	-42.7
Potato	13.4	12.9	-11.1	33.0	70.7	45.7
Cotton ^d	20.1	1.1		73.9 ⁻		31.8
Coffee ^o	-77.2	-43.8	-77.3	-77.2	-43.8	-77.3
Burley tobacco ^d	34.3	-.6	-06.7	147.0		17.2
All crops	13.9	1.2	1.2	00.8	-5.1	-34.3
Southeast region²						
Maize	-3.5	-7.4 [~]	-3.2	4.9	-1.6	-8.4
Wheat	5.4	17.1 ⁻	25.2 ⁻	-6.3	26.3 ^{***}	69.1^{**}
Virginia tobacco	-4.0	-7.7 ^{**}	-.9	43.5	3.0	8.2
Sunflower	-.4	-7 ^{**}	-8.9^{**}	-14.1	6.6	-16.4
Soybean	-6.4	23.9	27.0 ^o	-2.1	25.8 ^{**}	32.4 ^{**}
Seed maize ^o	7.5	-.1	-1.5	62.4	10.1	-2.7
Potato	-3.6	2.3	1.4	30.9	16.9	2.7
Cotton	12.1 ^{**}	-.5	7.6	2.1	-36.6	-8.2
Coffee ^o		-77.1	-49.7^{**}		-77.1	-49.7⁻
Burley tobacco ^o	9.5	40.3	64.8⁻	54.4	178.0	139.0
All crops	-.5	-4.1	1.5	.8	4.4	3.7

The estimate of B in the regressions is significant at the 10 percent level.

The estimate of B in the regressions is significant at the 5 percent level.

- Years with missing data on a particular crop/region combination were excluded.
- Includes Western, Northwestern, and Copperbelt, but not Luapula and Northern provinces.
- Includes Central, Eastern, Lusaka, and Southern provinces.
- Data exist for the following crops/regions/farm sizes in the listed years only: wheat/northwest/small (1982, 86-90); sunflower/northwest/large (1975, 80-82, 88); seedmaize/northwest/small (1976-79, 81, 85-87, 89); seedmaize/southeast/small (1975-81, 84, 86-87, 89); cotton/northwest/medium (1982-83, 86-87); coffee/northwest/small (1987-88), coffee/northwest/medium and large (1986-88), coffee/southeast/medium (1989-90), coffee/southeast/large (1986-88), burley tobacco/northwest/small (1980-85), burley tobacco/northwest/medium (1980, 89), burley tobacco/northwest/large (1979, 82-85, 89), burley tobacco/southeast/small (1979-80, 84, 89), burley tobacco/southeast/medium (1979, 82-84, 89), burley tobacco/southeast/large (1979-80, 85, 88-90).

Source: Derived from Zambia CSO data.

Table 7.7: Crop production growth rates, commercial farms sector (percent)

	Farm size					
	1975-1989			1983-1989		
	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)
Northwest region^o						
Maize	16.7 ^o	-4.1	.7	11.1	.1	-43.1 [*]
Wheat [']	-45.5	15.1	10.4	566.4	116.6	-31.6
Tobacco	-8.4		-14.9	-6.6	-1.3	-28.4 ^{''}
Sunflower [']	22.6 ^o	2.0	21.7	15.8	13.1 [*]	
Soybean	.6	-19.4	14.8	40.9	-23.4	-32.5 ^{''}
Seed maize [']	34.0 [*]	44.7	-14.3	-51.5	-39.3 ^{'''}	-41.3
Potato	8.0	51.3	-1.6	-25.3	130.3	68.4
Cotton [']	10.5	-19.1		39.6	1.9	
Coffee [']	57.0	-38.8 [*]	-90.1	57.0	-38.8	-90.1
Burley tobacco [']	33.3	-1.4	-6.7	142.2		6.5
Southeast region[`]						
Maize	-3.3	-7.1 ^o	00.4	14.0	1.6	1.8
Wheat	8.4	17.2 [']	23.2 ^o	-12.8	32.7 ^o	58.1 ^o
Tobacco	-5.3	-4.9	05.0	19.1	1.8	9.5
Sunflower	2.1	2.1 ^{'''}	-08.8 [*]	-5.2	5.8	-19.2
Soybean	-10.2	30.5	23.9 ^{'''}	-10.3	22.6 ^o	19.3
Seed maize [']	17.7	.1	-01.0	70.1	16.6	20.9
Potato	-8.5	13.8	15.2	-11.2	-15.4	-23.0
Cotton	-6.8	-6	08.9	-53.8	-37.9	-1.8
Coffee [']		-13.1	-43.1 [*]		-13.1	43.1 [*]
Burley tobacco [']	32.9	35.7	73.4 ^o	183.0	312.0	198.8

The estimate of B in the regressions is significant at the 10 percent level.

The estimate of B in the regressions is significant at the 5 percent level.

- Years with missing data on a particular crop/region combination were excluded.
- Includes Western, Northwestern, and **Copperbelt**, but not **Luapula** and Northern provinces.
- Includes Central, Eastern, Lusaka, and Southern provinces.
- Data exist for the following crops/regions/farm sizes in the listed years only: wheat/northwest/small (1982, 86-90); sunflower/northwest/large (1975, 80-82, 88); seedmaize/northwest/small (1976-79, 81, 85-87, 89), seedmaize/southeast/small (1975-81, 84, 86-87, 89); cotton/northwest/medium (1982-83, 86-87); coffee/northwest/small (1987-88), coffee/northwest/medium and large (1986-88), coffee/southeast/medium (1989-90), coffee/southeast/large (1986-88), burley tobacco/northwest/small (1980-85), burley tobacco/northwest/medium (1980, 89), burley tobacco/northwest/large (1979, 82-85, 89), burley tobacco/southeast/small (1979-80, 84, 89), burley tobacco/southeast/medium (1979, 82-84, 89), burley tobacco/southeast/large (1979-80, 85, 88-90).

Source: Derived from Zambia CSO data.

Table 7.8: Crop yield growth rates, commercial farms sector (percent)

	Farm size					
	1975-1989			1983-1989		
	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)	Small (0-199 ha)	Medium (200-1,999 ha)	Large (2,000+ ha)
Northwest region						
Maize	2.7	-2.5	3.7*	9.9 *	-1.5	6.1
Wheat'	-10.0	11.6	28.9 ^o	124.2	36.6	-6.0
Tobacco	.6	-1.0	-4.7	7.0	-3.8	-16.2
Sunflower'	1.4	3.4	-8.9 ^o	10.2		6.5
Soybean	-4.7	- .7	5.9	-16.2`	-7.4	1.3
Seed maize"	16.4"	10.0	-14.2	-29.8 ^o	20.7	2.3
Potato	-6.9	36.8	10.6	-43.9	34.9	15.6
Cotton'	-12.2	-20.0 ^o		-19.7		-22.7
Coffee'	589.5	8.8	-56.2	589.5	8.8	-56.2
Burley tobacco'	-7	-8	.0	-2.0		-9.1
Southeast region						
Maize	.2	.3	3.8*	8.6	3.2	11.2
Wheat	2.9	.1	-1.6	-6.9	5.1	-6.5
Tobacco	-1.3	3.0	6.0 ^{'''}	-17.0	-1.2	1.2
Sunflower	2.5*	2.8	.1	10.4*	-.7	-3.4
Soybean	-4.1	5.4	-2.4	-8.4	-2.5	-9.9
Seed maize"	9.4	.2	.5	4.7	5.9	24.3
Potato	-5.2	11.3	13.6	-32.2	-27.6	-25.1
Cotton	4.7`	-0.1	1.2	22.9*	-2.2	6.9
Coffee'		279.6	13.1		279.6	13.1
Burley tobacco'	21.4	-3.3	5.2	83.3	48.2	25.0

* The estimate of B in the regressions is significant at the 10 percent level.

** The estimate of B in the regressions is significant at the 5 percent level.

- Yields derived from area and production data. Years with missing data on a particular crop/region combination were excluded.
- Includes Western, Northwestern, and Copperbelt, but not Luapula and Northern provinces.
- Includes Central, Eastern, Lusaka, and Southern provinces.
- Data exist for the following crops/regions/farm sizes in the listed years only: wheat/northwest/small (1982, 86-90); sunflower/northwest/large (1975, 80-82, 88); seedmaize/northwest/small (1976-79, 81, 85-87, 89), seedmaize/southeast/small (1975-81, 84, 86-87,89); cotton/northwest/medium (1982-83, 86-87); coffee/northwest/small (1987-88), coffee/northwest/medium and large (1986-88), coffee/southeast/medium (1989-90), coffee/southeast/large (1986-88), burley tobacco/northwest/small (1980-85), burley tobacco/northwest/medium (1980, 89), burley tobacco/northwest/large (1979, 82-85, 89), burley tobacco/southeast/small (1979-80, 84, 89), burley tobacco/southeast/medium (1979, 82-84, 89), burley tobacco/southeast/large (1979-80, 85, 88-90).

Source: Derived from Zambia CSO data.

Results are presented in table 7.6 for area growth rates, table 7.7 for production growth rates, and table 7.8 for yield growth rates. Missing data for some years and crops render interpretation of some rates problematic, but rates are presented whenever at least three years of data are available. A number of findings stand out:

Area harvested

- ▶ Total area cultivated by small farms in the northwest region appears to have been increasing at annualized rate of 13.9 percent since 1975 but has stagnated (0.8 percent) in recent years. Total area cultivated in the southeast appears to have remained relatively flat since 1975.
- ▶ Data suggest that total area cultivated by the largest farms in the northwest region has increased moderately at an annualized rate of 1.2 percent since 1975 but declined 34.4 percent since 1983. In the southeast, total area appears to have remained relatively flat (an increase of 1.5 percent since 1975 and 3.7 percent since 1983).
- ▶ The decline in maize area over time mentioned earlier for national-level figures seems to have been the result primarily of declining maize production on large farms. Maize area cultivated in the northwest region by the smallest farm size category appears to have increased at an average annualized rate of 13.7 percent since 1975 and 1.1 percent since 1983. In contrast, growth in maize area in the same region on the largest farms (2,000+ hectares) appears to have declined at an annualized rate of 2.9 percent since 1975, and data suggest maize area has plummeted (46.3 percent) since 1983. Roughly similar trends are observed for the southeast region.
- ▶ Small farm hectareage of nearly all crops in the northwest region (excluding wheat and Virginia tobacco, where the base is small) seems to have increased rapidly since 1975, particularly so for cotton (20.1 percent), sunflower (15.3 percent), potatoes (13.4 percent), and soybeans (5.6 percent). Growth in cotton area (73.9 percent) and soybeans (68.1 percent) since 1983 appears particularly high and comes at the expense of coffee, wheat, and tobacco. In the southeast region, data suggest growth in cotton area (12.1 percent) and wheat (5.4 percent) is displacing other crops, particularly maize and soybeans.
- ▶ Data suggest that large farms in the southeast have over the long term been shifting emphasis to burley tobacco (64.8 percent), wheat (25.2 percent), soybeans (27.0 percent), and cotton (7.6 percent), and away from maize (-3.2 percent), and sunflower (-8.9 percent). Area growth since 1983 in burley tobacco (139.0 percent), wheat (69.1 percent), and soybeans (32.4 percent) appears particularly robust.

Production and yield

- ▶ *Small farms.* Data from the northwest suggest rapid growth in the production of coffee (57.0 percent), seed maize (34.0 percent), burley tobacco (33.3 percent), sunflower (22.6 percent), maize (16.7 percent), and cotton (10.5 percent) has been achieved by small farms since 1975. Growth in output by small farms in the southeast has been more moderate, with production declines experienced in maize, tobacco, soybeans, potato, and cotton.

- ▶ *Large farms.* Large farms in the northwest region since 1975 appear to have experienced rapid growth in production of wheat (10.4 percent), soybeans (14.8 percent), and sunflowers (21.7 percent), and declining production in seed maize (-14.3 percent), coffee (-90.1 percent), and tobacco (-14.9 percent). In the southeast region, production over the long term seems to have grown most rapidly in wheat (23.2 percent), soybeans (23.9 percent), and burley tobacco (73.4 percent).

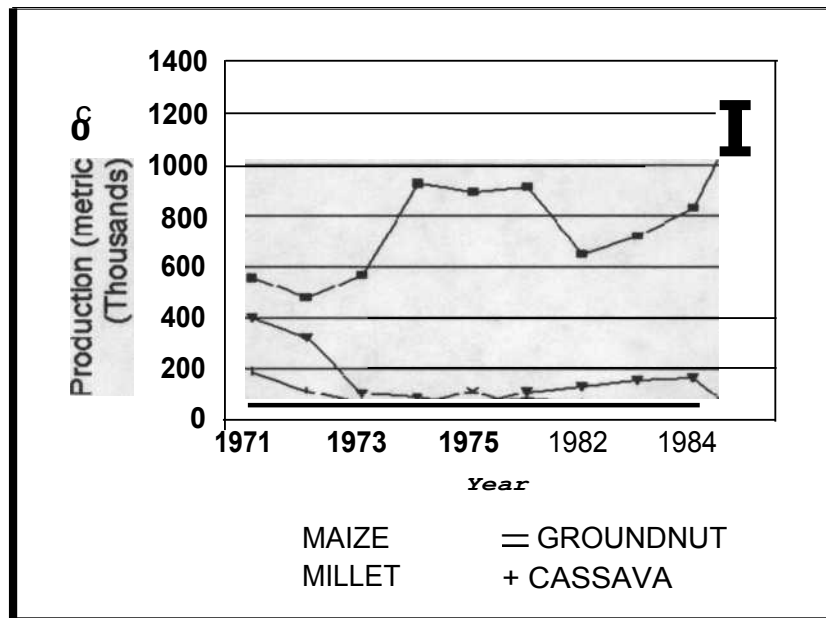
In principle, the sum of growth rates for area and yield should equal that of production. Differences in the tables arise at times due to missing values and rounding errors.

V. Noncommercial farms sector

Production data from the noncommercial farms sector are available from 1971 to 1985, though with a gap from 1977 to 1981. Data on area for this sector are available only in the most recent years, 1982 through 1985. Since yield calculations require data on both area and production, yields can only be calculated for the period 1982 to 1985.

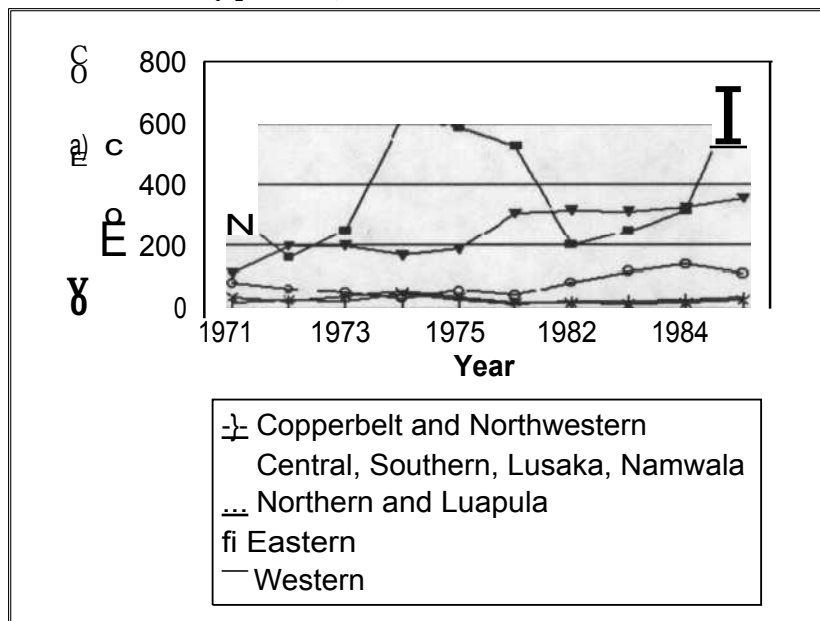
Figure 7.4 depicts changes in the production of maize, groundnuts, millet, and cassava, and suggests that for the noncommercial sector, the diversification story found in the commercial farms sector does not apply. Indeed, the story seems to be precisely the opposite. Instead of a gradual decline in maize production, a dramatic increase is apparent, and other crops generally appear to decline over time.

Figure 7.4: Noncommercial farm production of maize, millet, groundnuts, and cassava, 1971 to 1976 and 1982 to 1986 (000 metric tons)



Source: CSO.

Figure 7.5: Noncommercial farms production of maize by province, 1971 to 1976 and 1982 to 1985



Source: CSO.

There appear to be significant regional variations. Focusing specifically on maize, it can be seen from figure 7.5 that production has increased steadily in the Eastern province, as well as in the North and Luapula provinces.⁴ Production trends have been mixed elsewhere. Table 7.9 presents production growth rates for the 1972-1986 period. Table 7.10 presents growth rates for production, area and yield for the 1983-1986 period.

Regional breakdowns in the data time series vary from year to year; for example, data for the Copperbelt/Northwest region were reported separately sometimes and as one combined total at other times. The regional breakdowns in Tables 7.9 and 7.10 represent the finest level of disaggregation possible from the published data without eliminating data for certain years.

These data are somewhat inconsistent with a report on the Eastern province from the International Food Policy Research Institute that implies growth in maize production only until 1980, at which time production in the Eastern province reportedly began to decline (Cells, Milimo, and Wanmali 1991, p. 24). Data from the CSO are consistent with statistics reported by the Economic Research Service of the US Department of Agriculture, which suggest a growth rate in cereals production in Zambia of roughly 1.1 percent (figure 7.6).

⁴ Production in the combined Central, Southern, and Lusaka provinces has fluctuated greatly but has increased on average 1.3 percent per year.

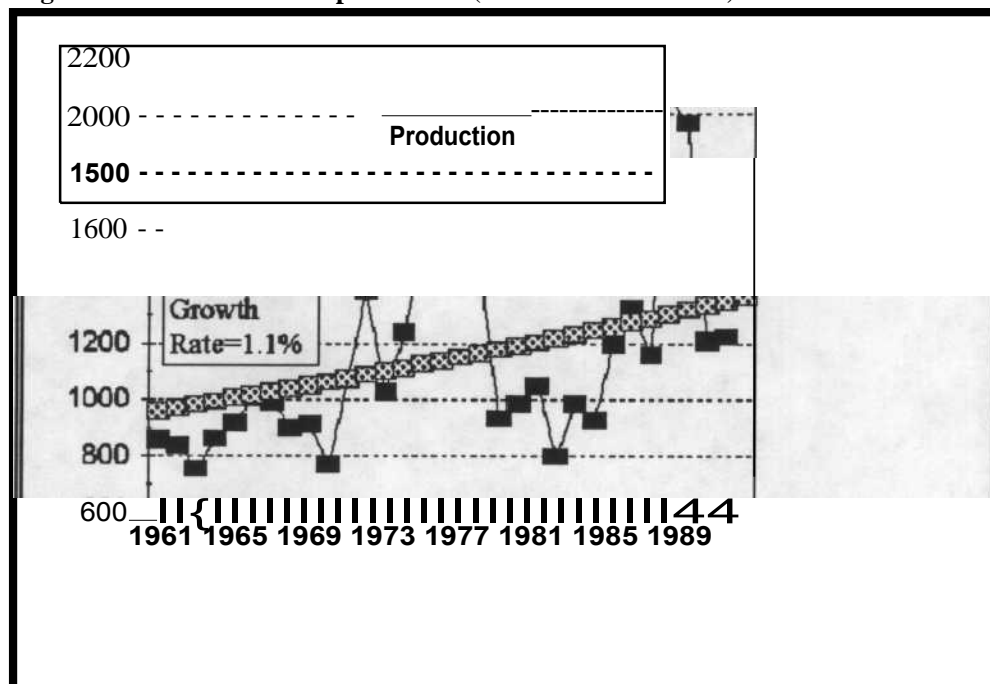
Table 7.9: Production growth rates, 1972 to 1986, noncommercial farms sector

	Copperbelt/ Northwestern	Central/ Southern/Lusaka	Northern/ Luapula	Eastern	Western
Beans	-0.009	-0.066	-0.042	.049	-0.038
Cassava	.015	-0.208'	-0.013	-.109	-.042
Groundnuts	-0.013	-0.118"	-.074"	-.060"	-.039
Maize	.010	.013	-.065"	-.063"	-.052"
Millet	-0.063'	-0.021	-.046'	-.022	-.022
Sorghum	.011	-0.043	-.027	-.001	.036

* The estimate of B in the regressions is significant at the 10 percent level.

The estimate of B in the regressions is **significant at the 5 percent level.

Source: Derived from **Zambia CSO data**.

Figure 7.6: Zambia cereals production (thousand metric tons)

Source: ERS.

Table 7.10: Production, area, and yield growth rates, 1983 to 1986, noncommercial farms sector

	Copperbelt/ Northwestern	Central/ Southern/Lusaka	Northern/ Luapula	Eastern	Western
Production					
Beans	-.010	.624	-.258 [~]	.025	
Cassava	.232	-.154	.054	57.500	.805
Groundnuts	-.056	.338	.050	.178	-.042 ^{'''}
Maize	.167 [°]	.516 [·]	.100	.041	.130
Millet	.258	.249	.051	.024	.322
Sorghum	.329 [*]	.244 ^{''}	.052 [*]	.678 [*]	.468
Area					
Beans	.034	.472	-.254 [°]	.037	
Cassava	.130	-.132	.079	3.800	.706 ^{''}
Groundnuts	-.012	.219	-.036	.016	.039
Maize	.013	.336	.129	-.062	.241
Millet	.354	.071	-.021	.034	.275
Sorghum	.242 [*]	.268 [*]	-.017	.475	.641 [*]
All crops	.026 ^{'''}	.301	-.094	-.046	.218 [·]
Yield					
Beans	-.043	.104	-.006	-.011	
Cassava	.090 [*]	-.026	-.023	11.188	.058
Groundnuts	-.045	.097	.090	.159	-.078
Maize	.152 [*]	.135	-.026	.110	-.090 [*]
Millet	-.071	.166	.074	-.010	.037 [·]
Sorghum	.071	-.019	.070 [*]	.138	-.105

* The estimate of B in the regressions is **significant** at the 10 percent level.

** The estimate of B in the regressions is **significant** at the 5 percent level.

Source: Derived from **Zambia** CSO data.

The World Bank estimates growth rates for the combined set of commercial and noncommercial farms for the period 1974 to 1990 (World Bank 1993b, p. 25). Area and production of maize are reported by the Bank to have increased by 8 and 10 percent, respectively, over the period, with yields declining by about 2 percent. Results here, on the contrary, suggest modest declines in maize production on commercial farms on the order of 3 to 7 percent, and modest increases of from 1 to 6 percent in maize production on noncommercial farms. It should be noted that the World Bank starting point for growth rate calculations is 1974, a momentary trough in output, which may account for the high calculated rates. Again, the highly volatile nature of the data cannot be overemphasized.

A further example of data volatility can be seen by examining the number of reported farming households. In contrast to the commercial farms sector where the number of farming households is reported to fluctuate around a mean of 3,000, significant changes in the number of reported noncommercial farming households appears in the CSO data. From a high near 1.3 million in the early 1970s, the number of households drops to around 1 million for an extended period, until increasing again to near 1.2 million in the mid-1980s (see table 7.11). Fluctuations of 300,000 households in the farming population (plausibly 1 million or more individuals) is difficult to explain except perhaps as a general problem with the data collection system.

Table 7.11: Number of noncommercial farm households

Year	Copperbelt/ Northwestern	Central/ Southern/ Lusaka	Northern/ Luapula	Eastern	Western	All
1971	144,400	273,000	499,600	230,400	148,600	1,296,000
1972	146,400	239,500	488,100	209,000	191,600	1,274,600
1973	97,600	203,300	348,100	273,200	109,000	1,031,200
1974	95,700	232,900	381,900	192,600	158,000	1,061,100
1975	111,800	247,400	318,600	128,500	157,500	963,800
1976	129,700	197,800	372,900	222,600	148,600	1,071,600
1982	124,200	180,580	320,890	208,350	151,900	985,920
1983	124,880	172,710	320,760	222,890	133,600	974,840
1984	135,970	183,360	318,120	247,350	152,120	1,036,920
1985	111,328	260,201	343,651	256,627	189,130	1,160,937

Source: Derived from Zambia CSO data.

VI. Revenues and expenditures

The CSO also provides data on farm expenditures and revenues. Tables 7.12-7.15 present results for the two broad regions of commercial farms defined above, excluding data on farm livestock revenue. They suggest a dramatic nominal increase in the kwacha value of operations in the late 1980s, on both the revenue and the expenditure side, which corresponds to a period of hyperinflation. When nominal values are deflated by a low-income CPI, farm sales and operating expenses for all farm categories are shown to increase in real terms as well, although wide fluctuations are evident. Results are not substantially different if the high-income CPI is used as a deflator. The rather astounding 1989 increase in operating expenses (fertilizer and pesticide applications, machinery, seed, etc.) in the Central, Southern, and Lusaka combined provinces on medium-sized farms cannot readily be explained.

The net effect of these adjustments in commercial farm sales, operating expenses, and wage expenses, are summarized in the partial net revenue figures in table 7.15. Partial net revenue is negative for the small farm sector in nearly all years from 1975 to 1989, partly because of missing income from livestock and the fact that revenues include only farm sales, not the value of home consumption. However, even for medium-scale farms for which auto-consumption should theoretically be much smaller, very large negative figures for net revenue are reported. Only for the large-farm sector is net revenue positive, and then only in the early to mid-1980s. However, by 1988, even the large-scale sector again appeared to be operating in the red, with very large deficits reported for medium-scale farms.

Data presented for CPIs and selected commodity and input price indexes (agricultural wholesale prices, building materials, and fixed capital goods) in table 7.16 reflect rapid inflation in the 1970s and hyperinflation by the late 1980s. The CPI of low income consumers tripled over the period 1970 to 1980, then increased by a factor of 43 between 1980 and 1990. Prices of building materials and capital goods rose faster than the CPI, while the wholesale index of agricultural prices grew at a slower rate suggesting a worsening terms of trade for agriculture in the 1980s. The effect on prices of selected individual farm commodities (maize, tobacco, wheat and cotton) and fertilizer prices (triple super phosphate and urea) are presented in table 7.17. Real output prices of maize, which were relatively constant in the 1970s, tended to rise over the period 1980 to 1986 before falling sharply to a twenty-year low in 1989. Real tobacco and wheat prices declined during the 1970s, fluctuated up and down in the early- to mid-1980s, before also falling precipitously in 1989. Real cotton prices appear to have been in a long-term secular decline from 1970 to 1989. The price of fertilizer over time has tended to be constant to increasing over the period 1971 to 1985-86, before also falling sharply in the late 1980s.

Growth in farm profitability can theoretically occur through a number of sources: (a) increasing production through area expansion; (b) increasing production through technical change; (c) increasing output prices; (d) decreasing tradable input use; and/or (e) decreasing input prices. Data on commercial farms from section IV indicate that over the period 1975 to 1989 (southeast region), production of maize fell, and that of wheat, soybeans, and burley tobacco increased, largely due to crop area adjustments. However, these adjustments moved in directions surprisingly counter to trends in real prices, i.e., rising real maize prices and falling prices for industrial crops. No data were reported on tradable input use, but the above analysis of price indexes suggests rising real costs of fixed and variable capital inputs. Assuming these data are correct, it may be that commercial farms are shifting away from maize not because of price incentives but due to restrictions on marketing that act to limit the amount of maize sold in the marketplace.

The analysis thus suggests that profitability has historically been closely linked with the ability to expand crop area and substitute land for capital inputs. Such strategies would work to the advantage of smaller farms employing oxen and labor-intensive management, and to the disadvantage of larger farms relying on capital-intensive techniques. The data are far from sufficiently reliable to reach strong conclusions (and this analysis is highly speculative), but the analysis does provide some very weak evidence for the increasing area cultivated by small farms, as documented in chapter 3.

Table 7.12: Annual commercial farm sales, nominal and 1985 deflated kwacha

Year	Farm size					
	Small (0-199 ha)		Medium (200-1,999 ha)		Large (2,000+ ha)	
	Nominal	Deflated	Nominal †	Deflated	Nominal	Deflated
Northwest region						
1975	38,560	165,739	637,220	2,738,910	1,104,440	4,747,124
1976	448,350	1,680,493	1,665,740	6,243,480	1,328,070	4,977,835
1977	416,344	1,307,712	2,069,577	6,500,422	2,941,521	9,239,147
1978	627,848	1,672,290	1,246,315	3,319,594	1,411,260	3,758,929
1979	658,883	1,556,307	1,003,442	2,370,169	2,936,569	6,936,291
1980	611,594	1,304,469	2,462,836	5,252,983	4,065,529	8,671,366
1981	653,605	1,234,504	3,646,138	6,886,683	4,782,206	9,032,444
1982	1,318,870	2,200,621	9,864,834	16,460,123	29,800,277	49,723,718
1983	3,253,783	4,669,982	1,810,816	2,598,968	9,856,298	14,146,220
1984	1,112,400	1,332,378	13,282,619	15,909,268	47,298,385	56,651,680
1985	4,488,066	4,488,066	20,943,035	20,943,035	32,592,720	32,592,720
1986	17,859,026	12,911,365	17,775,775	12,851,177	119,197,265	86,174,876
1987	15,982,721	7,758,227	34,139,319	16,571,683	82,152,580	39,877,962
1988	46,204,737	14,854,102	75,727,593	24,345,239	46,938,639	15,090,040
1989	18,737,511	3,017,191	21,125,009	3,401,636	11,381,725	1,832,732
Southeast region						
1975	2,370,840	10,190,387	23,506,790	101,037,309	12,983,680	55,806,687
1976	4,257,440	15,957,617	22,717,360	85,148,569	12,388,240	46,433,252
1977	3,608,362	11,333,656	20,954,172	65,815,842	8,339,458	26,193,755
1978	2,884,862	7,683,908	15,665,928	41,726,624	9,113,582	24,274,273
1979	3,210,976	7,584,451	23,293,395	55,019,911	12,940,515	30,566,003
1980	5,229,649	11,154,318	30,142,149	64,290,186	17,916,608	38,214,331
1981	7,286,861	13,763,138	25,688,377	48,519,203	12,218,440	23,077,712
1982	8,004,097	13,355,361	36,825,758	61,446,194	19,237,815	32,099,557
1983	8,406,376	12,065,224	35,269,976	50,621,119	25,718,732	369,127,27
1984	5,879,813	7,042,551	33,990,139	40,711,718	37,990,810	45,503,525
1985	34,892,784	34,892,784	132,954,469	132,954,469	140,293,368	140,293,368
1986	25,205,982	18,222,921	172,599,774	124,782,763	289,224,028	209,097,455
1987	98,785,330	47,951,722	299,833,301	145,543,099	384,874,747	186,823,356
1988	161,526,275	51,928,176	365,268,613	117,428,158	225,185,002	72,393,464
1989	90,368,388	14,551,488	957,438,581	154,170,687	852,845,309	137,328,650

Source: Derived from Zambia CSO data.

Table 7.13: Annual commercial farm operating expenses, nominal and 1985 deflated kwacha^a

Year	Farm size					
	Small (0-199 ha)		Medium (200-1,999 ha)		Large (2,000+ ha)	
	Nominal	Deflated	Nominal	Deflated	Nominal	Deflated
Northwest region						
1975	1,027,770	4,417,580	1,462,490	6,286,101	846,300	3,637,582
1976	1,831,590	6,865,114	2,856,990	10,708,489	1,481,660	5,553,516
1977	1,425,481	4,477,353	3,530,924	11,090,428	2,315,283	7,272,170
1978	2,064,080	5,497,733	4,320,730	11,508,382	2,637,460	7,024,946
1979	3,654,722	8,632,597	3,192,670	7,541,212	3,986,588	9,416,477
1980	2,536,975	5,411,114	5,600,683	11,945,696	3,535,818	7,541,546
1981	3,786,497	7,151,788	11,343,599	21,425,347	3,631,218	6,858,503
1982	9,689,398	16,167,396	20,307,255	33,883,987	5,762,067	9,614,387
1983	3,687,741	5,292,818	9,219,046	13,231,606	3,680,049	5,281,778
1984	3,261,358	3,906,294	16,100,177	19,284,001	15,771,369	18,890,170
1985	22,134,990	22,134,990	29,068,671	29,068,671	23,956,634	23,956,634
1986	64,114,761	46,352,419	25,787,081	18,643,033	90,599,461	65,499,803
1987	119,172,564	57,847,958	34,375,926	16,686,535	68,086,610	33,050,152
1988	35,214,022	11,320,758	253,260,212	81,419,206	66,526,979	21,387,385
1989	78,757,704	12,681,889	9,271,714,613	1,492,969,515	14,600,470	2,351,028
Southeast region						
1975	3,032,760	13,035,464	18,982,720	81,591,869	18,987,560	81,612,673
1976	2,300,670	8,623,307	29,939,390	112,217,979	17,293,010	64,817,173
1977	4,577,150	14,376,563	20,313,688	63,804,119	28,479,720	89,453,153
1978	4,272,000	11,378,588	24,982,630	66,541,913	34,001,830	90,564,796
1979	4,461,744	10,538,814	35,405,748	83,629,764	34,396,719	81,246,398
1980	4,330,558	9,236,647	44,469,648	94,849,306	29,010,392	61,876,261
1981	13,102,790	24,748,038	43,393,887	81,960,679	29,947,982	56,564,579
1982	13,675,085	22,817,777	43,845,941	73,159,830	25,531,058	42,600,246
1983	14,832,245	21,287,932	42,808,609	61,440,917	44,270,155	63,538,597
1984	16,271,308	19,488,973	56,379,475	67,528,564	77,326,276	92,617,612
1985	22,353,101	22,353,101	89,325,498	89,325,498	101,636,018	101,636,018
1986	33,579,194	24,276,420	157,303,061	113,723,849	212,899,764	153,918,051
1987	85,692,368	41,596,223	295,734,214	143,553,347	232,586,587	112,900,644
1988	783,251,905	251,803,263	500,947,351	161,046,755	225,049,519	72,349,908
1989	418,319,638	67,359,544	1,004,500,030	161,748,715	1,136,914,161	183,070,581

a. **Includes equipment** hire, feed, soil inputs, veterinary supplies, implements, and maintenance. Excludes wages.

Source: Derived from **Zambia CSO data**.

Table 7.14: Annual commercial farm wage bill, nominal and 1985 deflated kwacha

Year	Farm size					
	Small (0-199 ha)		Medium (200-1,999 ha)		Large (2,000+ ha)	
	Nominal	Deflated	Nominal	Deflated	Nominal	Deflated
Northwest region						
1975	266,200	1,144,186	474,990	2,041,611	464,860	1,998,070
1976	857,860	3,215,407	1,558,060	5,839,877	538,580	2,018,690
1977	400,615	1,258,309	1,580,059	4,962,874	1,090,033	3,423,731
1978	1,706,850	4,546,241	766,960	2,042,819	796,210	2,120,727
1979	857,409	2,025,234	1,012,535	2,391,647	1,671,595	3,948,373
1980	1,318,350	2,811,909	1,137,435	2,426,035	1,398,510	2,982,882
1981	956,470	1,806,543	3,021,996	5,707,828	1,905,349	3,598,749
1982	1,310,466	2,186,599	3,731,350	6,226,002	7,735,055	12,906,447
1983	949,639	1,362,966	4,064,313	5,833,292	2,201,807	3,160,136
1984	628,582	752,885	4,206,774	5,038,667	8,280,695	9,918,209
1985	6,389,381	6,389,381	8,036,546	8,036,546	7,883,322	7,883,322
1986	13,168,843	9,520,549	12,701,236	9,182,488	30,394,968	21,974,351
1987	11,677,183	5,668,261	13,107,524	6,362,568	18,560,342	9,009,439
1988	12,044,948	3,872,263	24,647,278	7,923,715	24,298,815	7,811,690
1989	10,479,608	1,687,469	20,579,334	3,313,769	1,237,000	199,187
Southeast region						
1975	917,530	3,943,744	6,151,850	26,441,993	6,385,130	27,444,681
1976	850,800	3,188,945	7,589,380	28,446,300	7,989,370	29,945,532
1977	1,143,089	3,590,376	9,643,821	30,290,684	12,060,667	37,881,858
1978	1,188,430	3,165,416	12,037,390	32,061,915	5,560,690	14,811,049
1979	998,178	2,357,736	17,692,459	41,790,281	11,520,015	27,210,727
1980	1,160,911	2,476,107	19,982,267	42,620,175	9,387,735	20,023,099
1981	2,111,946	3,988,961	9,679,489	18,282,241	7,774,976	14,685,071
1982	2,487,040	4,149,789	16,413,275	27,386,626	4,097,295	6,836,606
1983	3,449,377	4,950,707	9,741,551	13,981,530	13,050,177	18,730,224
1984	4,687,643	5,614,628	17,554,679	21,026,132	26,683,982	31,960,762
1985	4,161,863	4,161,863	20,784,751	20,784,751	17,481,002	17,481,002
1986	5,780,490	4,179,064	29,382,383	21,242,293	37,165,726	26,869,340
1987	11,050,099	5,363,866	65,505,507	31,797,250	45,913,446	22,287,001
1988	124,709,755	40,092,240	187,458,457	60,264,968	53,102,424	17,071,601
1989	28,424,054	4,576,958	217,665,700	35,049,424	209,085,128	33,667,745

Source: Derived from Zambia CSO data.

Table 7.15: Annual commercial farm partial net revenue, nominal and 1985 deflated kwacha^a

Year	Farm size					
	Small (0-199 ha)		Medium (200-1,999 ha)		Large (2,000+ ha)	
	Nominal	Deflated	<u>Nominal</u>	<u>Deflated</u>	Nominal	Deflated
Northwest region						
1975	-1,255,410	-5,396,027	-1,300,260	-5,588,802	-206,720	-888,528
1976	-2,241,100	-8,400,028	-2,749,310	-10,304,886	-692,170	-2,594,371
1977	-1,409,752	-4,427,950	-3,041,406	-9,552,880	-463,795	-1,456,754
1978	-3,143,082	-8,371,684	-3,841,375	-10,231,607	-2,022,410	-5,386,744
1979	-3,853,248	-9,101,524	-3,201,763	-7,562,690	-2,721,614	-6,428,559
1980	-3,243,731	-6,918,554	-4,275,282	-9,118,748	-868,799	-1,853,062
1981	-4,089,362	-7,723,827	-10,719,457	-20,246,492	-754,361	-1,424,808
1982	-9,680,994	-16,153,374	-14,173,771	-23,649,866	16,303,155	27,202,884
1983	-1,383,597	-1,985,802	-11,472,543	-16,465,930	3,974,442	5,704,306
1984	-2,777,540	-3,326,801	-7,024,332	-8,413,400	23,246,321	27,843,301
1985	-24,036,305	-24,036,305	-16,162,182	-16,162,182	752,764	752,764
1986	-59,424,578	-42,961,603	-20,712,542	-14,974,344	-1,797,164	-1,299,278
1987	-114,867,026	-55,757,992	-13,344,131	-6,477,420	-4,494,372	-2,181,629
1988	-1,054,233	-338,919	-202,179,897	-64,997,682	-43,887,155	-14,109,035
1989	-70,499,801	-11,352,167	-9,271,168,938	-1,492,881,648	-4,455,745	-717,483
Southeast region						
1975	-1,579,450	-6,788,821	-1,627,780	-6,996,553	-12,389,010	-53,250,667
1976	1,105,970	4,145,365	-14,811,410	-55,515,710	-12,894,140	-48,329,453
1977	-2,111,877	-6,633,283	-9,003,337	-28,278,961	-32,200,929	-101,141,256
1978	-2,575,568	-6,860,096	-21,354,092	-56,877,204	-30,448,938	-81,101,572
1979	-2,248,946	-5,312,099	-29,804,812	-70,400,134	-32,976,219	-77,891,122
1980	-261,820	-558,436	-34,309,766	-73,179,295	-20,481,519	-43,685,029
1981	-7,927,875	-14,973,861	-27,384,999	-51,723,717	-25,504,518	-48,171,938
1982	-8,158,028	-13,612,205	-23,433,458	-39,100,262	-10,390,538	-17,337,295
1983	-9,875,246	-14,173,415	-17,280,184	-24,801,328	-31,601,600	-45,356,094
1984	-15,079,138	-18,061,050	-39,944,015	-47,842,978	-66,019,448	-79,074,849
1985	8,377,820	8,377,820	22,844,220	22,844,220	21,176,348	21,176,348
1986	-14,153,702	-10,232,563	-14,085,670	-10,183,379	39,158,538	28,310,064
1987	2,042,863	991,633	-61,406,420	-29,807,498	106,374,714	51,635,711
1988	-746,435,385	-239,967,327	-323,137,195	-103,883,565	-52,966,941	-17,028,045
1989	-356,375,304	-57,385,014	-264,727,149	-42,627,452	-493,153,980	-79,409,676

a. Excludes revenue from livestock activities.

Source: Derived from Zambia CSO data.

Table 7.16: Zambia price indexes (1985 = 100)

Year	High income CPI	Low income CPI	Agriculture wholesale PI	Building materials PI	Fixed capital formation goods PI
1962	10.90	9.20			
1963	11.10	9.20			
1964	11.50	9.50			
1965	12.00	10.20			
1966	12.60	11.30			
1967	13.30	11.80	11.50		5.90
1968	14.40	13.10	11.80		6.00
1969	15.10	13.40	12.40		6.10
1970	15.90	13.80	12.50		6.20
1971	16.70	14.60	13.00		6.80
1972	17.60	15.40	13.70		7.40
1973	18.90	16.40	14.30		7.90
1974	20.60	17.70	15.30		9.00
1975	22.40	19.50	17.60	21.40	10.90
1976	26.00	23.10	18.30	25.80	14.50
1977	30.60	27.70	21.10	29.10	18.30
1978	34.20	32.30	24.10	34.00	23.70
1979	38.00	35.40	27.00	38.90	27.90
1980	42.40	39.50	32.40	42.30	31.20
1981	46.80	45.10	44.90	47.50	34.30
1982	53.00	50.70	50.90	55.40	39.40
1983	62.40	60.60	63.00	63.40	48.70
1984	75.30	72.80	68.50	70.40	69.90
1985	100.00	100.00	100.00	100.00	100.00
1986	160.10	154.00	166.90	148.40	283.30
1987	250.30	224.30	201.30	237.00	601.50
1988	375.80	346.90	271.20	300.50	486.10
1989	847.00	793.50	582.10	864.40	764.70
1990	1,695.20	1,674.40	1,124.30	2,062.90	1,963.80

Source: Derived from Zambia CSO data.

Table 7.17: Zambia commodity prices, nominal and 1985 deflated kwacha^a

Year	Maize		Tobacco		Wheat		Cotton		Triple super phosphate		Urea	
	Nominal'	Deflated	Nominal'	Deflated	Nominal'	Deflated	Nominal	Deflated	Nominal	Deflated	Nominal'	Deflated
1970	3.50	25.36	0.81	5.87			0.17	1.23				
1971	4.00	27.40	0.81	5.55			0.17	1.16	4.70	32.19	4.19	28.70
1972	4.30	27.92	0.88	5.71			0.17	1.10	3.13	20.32	2.80	18.18
1973	4.30	26.22	0.88	5.37			0.17	1.04	4.00	24.39	3.55	21.65
1974	4.30	24.29	0.96	5.42			0.25	1.41	3.90	22.03	4.05	22.88
1975	5.00	25.64	0.84	4.31	16.00	82.05	0.30	1.54	3.90	20.00	4.05	20.77
1976	6.30	27.27	0.97	4.20	16.00	69.26	0.40	1.73	6.45	27.92	6.74	29.18
1977	6.30	22.74	1.10	3.97	16.00	57.76	0.40	1.44	6.45	23.29	6.74	24.33
1978	6.30	19.50	1.45	4.49	20.00	61.92	0.46	1.42	6.45	19.97	6.74	20.87
1979	9.00	25.42	1.51	4.27	20.00	56.50	0.46	1.30	13.50	38.14	8.75	24.72
1980	11.70	29.62	1.57	3.97	20.00	50.63	0.46	1.16	11.50	29.11	11.65	29.49
1981	13.50	29.93	1.65	3.66	26.00	57.65	0.46	1.02	13.65	30.27	9.65	21.40
1982	16.00	31.56	2.40	4.73	32.00	63.12	0.47	0.93	16.65	32.84	10.95	21.60
1983	18.30	30.20	2.70	4.46	35.75	58.99	0.52	0.86	25.80	42.57	14.95	24.67
1984	24.50	33.65	2.80	3.85	42.50	58.38	0.58	0.80	28.45	39.08	24.10	33.10
1985	28.32	28.32	3.45	3.45	45.20	45.20	0.67	0.67	28.45	28.45	26.75	26.75
1986	55.00	35.71	5.12	3.32	86.40	56.10	0.84	0.55	64.00	41.56	26.75	17.37
1987	78.00	34.77	6.25	2.79	111.00	49.49	1.60	0.71	64.00	28.53	65.00	28.98
1988	80.00	23.06	14.00	4.04	190.00	54.77	3.00	0.86	64.00	18.45	65.00	18.74
1989	108.00	13.61	14.40	1.81	225.80	28.46	3.60	0.45	77.00	9.70	71.00	8.95

a. Price deflator is the low-income CPI.
Source: Derived from Zambia CSO data.

VII. Conclusions

It should be stressed that these are foundational national data upon which much of the published national statistics found in international sources is based. The reliability of these foundational data has been questioned, suggesting that extreme caution be exercised as statistics based upon these data are used to inform policy. In reporting rather remarkable growth rates from 1974 to 1990 of as much as 78 percent for commodities in Zambia, the World Bank adds in a footnote:

Unfortunately, the data on gross output...do not appear to be consistent with the official data on GDP growth in agriculture.... We include this information, however, because it is the only data on this subject and because the relative importance of land increases and yield increases is consistent with our understanding and other evidence (World Bank 1993b, p. 24).

The "other evidence" that corroborates high growth rates in commodity production in Zambia is not cited by the World Bank. The evidence examined here, problematic as it may be, does not corroborate the World **Bank report**.

Rather than booming growth, analysis here suggests a more complicated story of diversification in the commercial sector, and increased noncommercial maize production centered in the far northern and eastern areas of Zambia. Problems of data quality render more detailed conclusions quite tentative. Longitudinal surveys, both retrospective and into the future, would greatly assist analysis of agrarian structural change in Zambia.

Chapter 8:

Zambia's Agricultural Data System: A Review of the Agricultural Time Series Data

by

John Litschauer and John S. Rowe¹

Although policymakers and other leaders recognize the need for highly accurate and reliable data in order to make sound agricultural development decisions, they do not always give high priority to providing the resources necessary to collect and publish such data. This chapter focuses on the importance of sustaining and improving Zambia's agricultural data system. After presenting a brief summary of four criteria to be used in evaluating an agricultural data system, the two main sources of agricultural data in Zambia are reviewed. In the final section, some suggestions are offered on ways the system might be improved.

It is extremely difficult to initiate and maintain an agricultural data system. High-quality agricultural data are particularly difficult to collect due to the extensive nature of farming areas and the seasonality of production. Maintaining a data series requires sustained dedication by the data collection staff and continued commitment from government. It is with considerable appreciation for the time and energy put into the Zambian agricultural data system that the following comments are made. The data managers and their staff should be recognized for their sustained efforts in producing data series that span years of erratic climatic conditions and rapidly changing economic times.

I. Criteria for evaluating an agricultural data system

The continued production of accurate agricultural estimates needed to build meaningful time series requires the cooperation of many actors in a government setting. Cost-effectiveness, efficiency, accuracy, and timeliness are necessary qualities and criteria for judging the outcome of these interactions.

A. Cost-effectiveness

A data system should be of the proper size and cost for the country. Leaders must recognize the necessity of having high-quality information available for decision-making and they must be willing to allocate the necessary resources. It is important that data managers and policymakers enter into a dialogue that defines the essential data needs for the country. Only data necessary to meet specific information requirements should be collected and summarized. An open door to information requests allows the data-collection and data-handling resources to become overburdened. Data systems should be "demand-driven," with only amply justified data being collected. Policymakers and data managers must work together as gatekeepers in deciding on the cost-effectiveness of the number of surveys and the amount of data collected from each survey.

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B. Efficiency

Once decisions have been made concerning the data to be collected, the technical staff (data managers, statisticians, data collectors, computer technicians, and the like) must collect and publish the data in the most efficient manner possible. Selection of the appropriate survey and sample designs should be based on the type of data needed. Probability designs in which a known portion of the population is sampled should be used when inferential statements about the population are required. Probability surveys allow the calculation of sampling errors and allow survey statisticians to make scientifically valid statements of data precision. If general information is sufficient, a non-probability design may be acceptable. To achieve efficiency in surveys, the technical staff must be properly trained and correctly located. Adequate logistical support must be provided at the appropriate time and place. These requirements are difficult to achieve and often test the administrative and personnel capacities of the survey organization.

C. Timeliness

Much of the value of agricultural data depends on timing. Policymakers need access to current information to enable them to make meaningful decisions. By their nature, information on crop yields, livestock numbers, and market prices must be obtained during the season. It is impossible to determine these numbers once the crop has been harvested or the livestock sold or moved. Country leaders must be sensitive to the needs of producing timely data and support the logistical needs of the data collection units. Unless the amount of data collected is restricted to only the essential numbers, the entire process is slowed—causing losses to both efficiency and timeliness. To provide accurate data, it is essential that data collection, data summarization, and data analysis teams work in concert. The important step of analyzing the data with respect to current economic, climatic, and political conditions must also be done quickly and accurately. This is achieved by making researchers and policy analysts a part of the survey-planning team. It is only through the work of the data analysts that the compiled data become usable information.

D. Accuracy

To state that data must be accurate to be usable in decision-making seems elementary. While no policymaker would willingly accept inaccurate data as a basis for decisions, it is necessary to do just that in too many developing countries. Leaders are forced to use available data, the accuracy of which is seldom known and even less often committed to paper by data managers. Hence the data user is left with the problem of determining whether the data are accurate. This can only be done by understanding the source of the data series' sampling and non-sampling errors. Unfortunately, the data manager's judgement of accuracy is usually clouded by a lack of information.

Before commenting on a data set's accuracy, a manager must have full knowledge of how the data were collected. What were the practices employed by the field enumerators? Were mistakes or oversights made? Were the mistakes unintentional or intentional? Inaccuracies caused by these kinds of mistakes are called **non-sampling errors**. Non-sampling errors are understood and controlled by thorough survey planning followed by intensive training and supervision of staff. While it is not possible to completely eliminate non-sampling errors, a good data manager constantly works to minimize them. Minimizing non-sampling errors is possible only if data managers are able to insist upon high-quality performance from their employees. Survey leaders should strive to create an atmosphere of "expected excellence." However, to do this successfully, a manager must have the

authority to replace employees who do not display a keen interest in maintaining the highest quality standards.

A portion of a data set's accuracy can be measured by calculating the **sampling** errors. This allows a statistician to make statements of the likelihood of a population parameter falling within a certain range of the survey statistic. These calculations are valid only if the survey was designed and carried out as a **probability survey—meaning** that each sampling unit has a known probability of selection. To conduct a probability survey, it is necessary to construct a sampling frame and to follow a scientific sample design.

Accurate information is derived from data that have both low sampling errors and low non-sampling errors. As mentioned above, these errors are impossible to eliminate and difficult to minimize. Data managers should be free to discuss the various sources of errors in a data set and should publish sampling errors and data collection procedures in technical notes.

E. Types of surveys

While agricultural censuses were once believed to be the only certain way of obtaining accurate agricultural information, a wide variety of innovative methods of collecting agricultural data have been developed during the past several decades. Survey organizations have accepted the validity of smaller, more specialized probability surveys and no longer see the need to do a complete enumeration of all farming units. The proliferation of survey types has placed an added responsibility on the data manager and statisticians to choose the most effective survey designs. Careful survey selection is crucial if the four criteria listed above are to be met. For example, it is not possible to meet the need for current food security information with a national census that takes two years to plan and implement. On the other hand, a rapid rural reconnaissance survey will not suffice if detailed structural information on the number of farmers operating under various land tenure arrangements is needed. At times, these decisions may mean abandoning a time-honored survey design in favor of a more efficient, cost-effective alternative.

The most important factor in maintaining efficient surveys is to limit the use of each survey to only the most necessary information. Planners must remain vigilant in the effort to limit data collection to only necessary items. A survey overloaded with data requests slows the process, makes the data less accurate, and wastes time and money; the data provider must endure lengthy interviews and the policymaker must search through extraneous data for the information needed to reach meaningful decisions.

Table 8.1 provides additional information on the interactions and responsibilities necessary in coordinating an agricultural data system. It should be recognized that all the criteria listed have very likely been present at one time or another in the Zambian agricultural data system. The available data series show that donors and the Zambian government have supported data collection efforts rather well for over twenty years.

Table 8.1: Performance criteria for an agricultural data system

Actors	Cost-effectiveness	Efficiency	Accuracy	Timeliness
Decision-makers and policymakers	Understand importance of using current information in decision-making and willing to assist data providers in setting/maintaining data collection priorities.	Willing to provide both moral and administrative support to data systems recommended by technical managers.	Value high-quality data and insist on statements of data accuracy being made available to data users.	Insistence on timely information coupled with a willingness to support the data collection system.
Data system managers	Able to provide policymakers with realistic estimates of time and materials necessary to collect various types of information. Able to reject requests for low priority, non-essential data.	Well organized and able to make decisions on most efficient mix of programs and personnel.	Actively seek to minimize non-sampling errors and sampling errors through sound training and survey design.	Dedicated to providing high-quality information in a time frame that meets the needs of the data users.
Technical support: statisticians, computer programmers, etc.	Able to choose the most appropriate data collection methods for a variety of information needs.	Able to correctly analyze various survey options and select most appropriate data collection method.	Use "total survey design" techniques to minimize both sampling and non-sampling errors. Encourage probability surveys whenever feasible.	Able to design surveys that meet the accuracy and timeliness criteria.
Administrative support	Aware of the importance of administrative support to produce high-quality data.	Able to facilitate the required logistical support.	Acknowledge importance of administrative support in elimination of non-sampling errors.	Understand the importance of providing timely administrative support.
Data collection staff: supervisors and enumerators	Well trained in the various data collection techniques. Dedicated to the collection of high-quality data under adverse conditions.	Motivated to provide the most accurate data in the most timely manner.	Fully trained in importance of following survey plans. Must remain vigilant in the collection of high-quality data—rejecting short cuts or falsification of data.	Dedicated employees willing and able to collect high-quality data as required to meet time constraints.
Data handlers and computer programmers	Able to make realistic estimates of processing requirements and to process data quickly with minimal errors.	Knowledgeable of various computer software packages and equipped at an appropriate level.	Recognize importance of following survey plans. Maintain exacting standard of data handling. Do not hesitate to question entries, return to field for verification.	Able to input, clean, and summarize survey data within the prescribed time requirements.
Data analysts	Thoroughly understand current economic and political climates as well as available data sets; able to provide meaningful data analysis.	Well trained in various data- analysis techniques and equipped with appropriate hardware.	Knowledgeable of the biases present in various data sets. Able to explain and publish information on a data sets' accuracy.	Reviews data and prepares reports that provide requested information within prescribed time.

H. Review of Zambia's agricultural time series data

This section provides a review of the agricultural time series data available from two Zambian government statistics units: the MAFF and the CSO. This review, which focuses on the crop and land area statistics without reviewing the livestock data series, was accomplished by cataloguing the various national surveys and supplying comments on the quality of the data sets. The comments are offered with the admission that data sets are difficult to evaluate without corroborating data from other sources or accompanying notes provided by the survey managers. Unfortunately, there are few comments in MAFF or CSO publications concerning the data quality or technical notes describing survey designs. No mention of calculating sampling errors for the CSO probability surveys was found in the publication notes.

There are four sets of time series data that describe Zambia's agricultural sector: one generated by the MAFF and three compiled by the CSO, the main data gathering agency for the Zambian government. Each of these data sets is described below.

A. MAFF agricultural data series

Prior to 1983, the MAFF published three types of Agricultural Statistical Bulletins on a consistent basis—monthly, quarterly, and annually. Both the quarterly and annual publications provided various agricultural data for multiple years. These data, published at the national and provincial levels, were obtained from parastatals such as the National Agricultural Marketing Board (NAMBoard, the primary parastatal agency vested with the legal right to purchase most crops) and the Tobacco Board of Zambia, and some private organizations and companies. As a result, only sales are reported. Farm numbers, crop production, crop areas, and yields are not available for most crops during these years. Livestock farm numbers are also not available prior to 1983.

The MAFF began its crop forecasting exercise for the entire crop subsector with the support of the Food and Agriculture Organization (FAO) and the ZATPID I Project during the 1982/83 season. The purpose of this exercise, performed by the Statistics Unit (a unit of MAFF's Planning Division) is to provide early warning information on the production of crops at the provincial and national levels. The data series contain area, yield, and production estimates for the major crops. The number of farms growing each of the crops were projected for internal use but not published. With the initiation of crop forecasting, the MAFF continued to publish its annual bulletins, which now contain more complete data series than the crop forecasts, but on an inconsistent basis. The last of these "annual" publications covered the 1988/89 and 1989/90 crop years. Thus, the only data available from the MAFF after 1989/90 are from their annual crop forecasts (table 8.2). Despite the lapses in reporting, a fairly complete data series is available on the agricultural sector from the MAFF for all crop years from 1970/71 onward.

The MAFF crop data are compiled by camp officers through their contacts with local farmers. No sampling frame or probability survey techniques are employed. The data are categorized by size groups: large (more than 20 hectares), medium or emerging (5-20 hectares), and small (less than 5

Table 8.2: Agricultural time series data available in Zambia

Crop year	MAFF agric. statistics/ crop forecasts	CSO crop forecasts	CSO annual survey (noncommercial)	CSO annual survey (commercial)
1970/71	X			n.a. ^b
1971/72	X		X	n.a.
1972/73	X		X	n.a.
1973/74	X		X	n.a.
1974/75	X		X	n.a.
1975/76	X		X	X
1976/77	X		X	X
1977/78	X		n.a.	X
1978/79	X		no survey	X
1979/80	X		no survey	X
1980/81	X		no survey	X
1981/82	X		no survey	X
1982/83	X ^c		X ⁱ	X
1983/84	X		X	X
1984/85	X		X	X
1985/86	X	X ^d	X ^f	X
1986/87	X	n.a.	n.a. ^g	X
1987/88	X	X	n.a.	X
1988/89	X	X	n.a. ^h	X
1989/90	X	X	n.a. ⁱ	X ^j
1990/91	X ^k	X	n.a. ^l	n.a.
1991/92	X ^k	n.a.	n.a. ^l	n.a.
1992/93	X ^k	X	n.a. ^l	n.a.

a. 1971/72 was the first year for this survey.

b. Data available for 1969/70.

c. MAFF crop forecasts began.

d. FAO surveys **began**.

e. CSO crop forecasts **began**.

f. BUCEN surveys **began**.

g. Disks misplaced.

h. Data entered but no expansion factors.

i. Data not entered.

j. From disks, some data missing.

k. Crop Forecast Surveys only.

l. Ag Census, data entry not complete.

hectares). Once the data are listed at the camp level, the agricultural officer forwards them to the ward supervisor.' The ward supervisor reviews the data and aggregates them to the ward level before sending them to the district agricultural officer (DAO).² Special crop-forecasting meetings are held at the district and provincial levels to review the data and to agree upon the forecasts. The data are then forwarded to the central office in Lusaka for final tabulation and review. The annual crop forecasts are published by the Early Warning Unit of the MAFF in May of each year. As an example, table 8.3 lists the MAFF time series data published for maize (Zambia/MAFF 1993).

Table 8.3: Maize time series data published by the MAFF

Maize		MAFF estimates -- All farms					
Year	Area planted	Production (90 kg bags)	Yield (bags/ha)	Sold (90 kg bags)	Percent sold	Value (kwacha)	Average value
80/81	622,550	16,500,180	27	7,832,181	47%		
81/82	456,000	8,162,000	18	5,671,613	69%	103,791,000	18.30
82/83	546,700	10,392,000	19	5,901,824	57%	144,595,000	24.50
83/84	506,500	9,686,000	19	6,347,637	66%	179,765,000	28.32
84/85	581,846	12,470,570	21	7,069,637	57%	200,212,000	28.32
85/86	588,490	13,673,265	23	10,607,414	78%	583,408,000	55.00
86/87	609,529	11,816,096	19	7,296,044	62%	569,091,000	78.00
87/88	723,087	21,591,321	30	14,989,980	69%	1,199,198,000	80.00
88/89	1,020,574	20,499,758	20	13,551,314	66%	1,463,542,000	108.00
89/90	763,277	12,140,784	16	6,678,711	55%	1,896,754,000	284.00

Year	Area (Thousands Hectares)
80/81	622.55
81/82	456.00
82/83	546.70
83/84	506.50
84/85	581.85
85/86	588.49
86/87	609.53
87/88	723.09
88/89	1020.57

Year	Total Production	Amount Sold
80/81	16.5	7.8
81/82	8.2	5.7
82/83	10.4	5.9
83/84	9.7	6.3
84/85	12.5	7.1
85/86	13.7	10.6
86/87	11.8	7.3
87/88	21.6	15.0
88/89	20.5	13.6
89/90	12.1	6.7

MAIZE-MF.WB1

² This **organizational** structure was first developed during the colonial period for purposes of providing extension services to small-scale farmers. The largest local structure **was the "block" and** within each block several "camps" were identified. **Communications** traveled from the district **agricultural** officer **through** the block supervisor to each of the relevant camps. After **independence**, the "blocks" became "wards" (with the exception of the Southern province), and the purpose of the organizational structure became primarily political.

³ The Department of Agriculture's "Crop Forecasting Questionnaire" is used to record individual farm data at the camp level. The "Crop Forecasting **Summary** Sheet" is used to **aggregate** camp-level data before it is sent to the DAO.

Theoretically, all crop farmers in the country are surveyed under this system. However, as far as can be discerned, no quality control efforts are conducted in the field during the exercise, raising doubts whether full coverage is actually attained. Some data users suspect that camp-level figures may be changed for political reasons.⁴ Finally, all tabulations of the data at the ward and DAO levels are done manually. Reports of undetected errors finding their way into final publications are common.

While the published MAFF data may be subject to considerable error, the exercise is valuable in providing timely estimates of annual crop production and early warnings of unusual production patterns. Since the summaries are subject to review and possible manipulation at several administrative levels, the potential for politically motivated self-serving adjustments should be recognized by individuals who wish to use the data as a time series.

B. Central Statistics Office agricultural data series

There are three data series emanating from the CSO. They are the commercial farms, the noncommercial farms, and the crop forecast data. The latter two data series are derived from the same sample agricultural survey. The agricultural statistics publications printed by the CSO can be found in the references.

1. Commercial farms data

Data on commercial farms are collected by the CSO annually via a questionnaire mailed to all known "commercial" farmers. During the early years of the survey the mailing list of commercial farms was based on a membership list obtained from the Commercial Farmers Union. However, this practice was discontinued when it was discovered that many union members were not farmers but had joined to obtain certain products at a preferential price. As a result, by 1969/70, the CSO had redefined a commercial farmer in terms of agricultural activity.

Definition of a commercial farmer, 1969/70

- (1) A farmer who sold maize worth K600 or more at the line of rail prices;
- (2) a farmer who grew Virginia or burley tobacco in his/her own name and was registered with the Tobacco Board;
- (3) a farmer who sold dairy products to and was registered with the Dairy Produce Board; or
- (4) a farmer who had title to land.

In the mid-1970s, the definition of a commercial farmer was expanded to include the widening variety of specialized agricultural producers. By 1975/76, when the currently available data series begins, a commercial farmer was defined as one who satisfied any of the following criteria:

Definition of a commercial farmer, 1975/76

- (1) Any farmer who sold during the previous 12 months to NAMBoard or any other cooperative union any crops the value of which was equivalent to 150 bags (90 kilograms) of maize or more at the ruling producer price;

^o For example, a ward supervisor might revise maize production estimates upward to show an increase from the previous year or to compare more favorably with an adjoining ward.

- (2) any farmer who grew tobacco in his/her own name and was registered with the National Tobacco Company of Zambia Ltd.;
- (3) any farmer who sold to the Dairy Produce Board;
- (4) **any** farmer who bred, reared, and/or fattened cattle or poultry and sold them to the Cold Storage Corporation of Zambia, Poultry Processing Company, Ltd. or to any licensed butcher or supermarket;
- (5) **any** farmer who reared and/or fattened pigs and sold them to the Zambia Pork Products or the Cold Storage Corporation of Zambia or to any licensed butcher or supermarket;
- (6) all hybrid poultry breeders; or
- (7) all state farms operated by the Agriculture Division of ZIMCO and other agencies on a commercial basis.

This definition has continued with minor adjustments until 1990/91.⁵ The data series reviewed here (1975/76 and later) falls entirely under the "modern" definition. Data users who have occasion to use any of the pre-1975 data should be aware of the definition change. While it is reasonable to expect the estimated number of commercial farmers to be somewhat greater after the more inclusive definition was adopted, the published farm numbers are not available to make the comparisons.⁶

Commercial farm data are published at the provincial and national levels by size groups. A wide range of data are collected including: area, yield, production, and sales of major crops; inventory, production, and sales of livestock and poultry; inventory of farm implements; pesticide and fertilizer usage; production expenditures; and farm gate prices. To collect this much information requires a very long survey instrument. It is not difficult to understand why relatively few commercial farmers responded when they received such a long and complex questionnaire in the mail.

The CSO data on commercial farms forms the second longest continuous data series when compared to the other data sets—from 1975 through 1989/90.⁷ Unfortunately, the accuracy of these data is questionable for two reasons: the accuracy of the list frame used and the low response levels to the mailed questionnaires. While it was not possible to evaluate the data sets' accuracy directly, examining the response rates to the mail survey for the years in which the data were obtained along with the number of commercial farms identified to receive the mailed questionnaire indicates problems in both areas (table 8.4).⁸

The number of questionnaires sent to commercial farms increased sharply from 1,603 farms in 1975/76 to 2,595 farms in 1976/77. The number then remained around 2,000 until it dropped suddenly to 1,072 in 1982/83. It is not clear whether these variations were due to incomplete or incorrect lists or were actually correct farm numbers. However, the short time between the sizable gains and losses support the first conclusion. It would have taken a very serious economic event to suddenly halve the number of commercial farms in Zambia.

⁵ No data have been compiled after 1989/90. However, since the 1990/91 Census, the CSO has supposedly changed their emphasis from "commercial" to "large (>20 ha)" farmers. Whether this transition has actually been made is unknown.

⁶ Given the problems noted later in this paper concerning the commercial farm estimates, this change in definition may have had no effect on the published data.

Both the 1988/89 and the 1989/90 data sets have yet to be published. However, preliminary computer summaries are available.

Maize production estimates for commercial farms are available as far back as 1940. See the annex 8.2 for a complete listing of the maize data series.

Table 8.4: Commercial farms survey: numbers of questionnaires mailed and returned and estimated number of farms, by crop year, CSO, Zambia

Crop year	Number of commercial farms. ^a	Questionnaires returned	Response rate (%)	Estimated number of farms ^b
1975/76	1,603	526	33	1,527
1976/77	2,595	578	22	2,242
1977/78	2,025	523	26	2,010
1978/79	1,771	599	34	1,566
1979/80	1,920	657	34	1,894
1980/81	2,143	536	25	1,835
1981/82	2,187	583	27	1,780
1982/83	1,072	276	26	1,103
1983/84	1,231	290	24	1,314
1984/85	1,283	307	24	1,102
1985/86	912	279	31	1,972
1986/87	180	99	55	2,026
1987/88	not specified	-		2,115
1988/89	not available			2,185
1989/90	not available	-		1,444

a. Number of farmers to whom questionnaires were mailed.

b. The CSO **published** estimate of the number of commercial farms.

Source: Zambia CSO (commercial farms) series.

During the same period, response rates to mailed enquiries ranged from 22 to 34 percent. Without a sampling of the nonrespondents, the representativeness of the voluntary respondents is unknown. CSO officials recognized this problem as early as 1970 when they reported on a nonresponse survey in the "1970 Agricultural and Pastoral Production Report." The exercise found that the smaller farms on the commercial farms list had not received a questionnaire in the mail and that the list was out-of-date because of the many changes in ownership.'

Over the last three years for which surveys were published, the number of questionnaires mailed decreased significantly—down to 912 in 1986 and then to 180 in 1987. No numbers were specified for 1988. Consequently, data collected during the last five years of the time series are likely to be even less accurate than those collected during the first 10 years of the commercial farm survey.

While the exact procedures used by the CSO to arrive at the published estimates of commercial agricultural production are not explained in the publications, the most common method, **expanding**

⁹ The reporting of this nonresponse study is the only comment found which indicated an attempt to assess the quality of the commercial farm data.

the data, uses the information provided by the voluntary respondents as indicators of what all farmers are doing. Using this method, the average of the data from the mail responses is calculated and multiplied by the estimated number of commercial farms. Since the CSO commercial farm data were published by farm size within provinces, the procedure would be somewhat more complicated. The statistician would first have to estimate the number of farms in each size group in each province and then apply an appropriate average value to each.

In the 1977/78 report, the data user is warned that the estimation procedure is not totally accurate and that the "maize and other major crops would be the most accurate." This is because there is usually less variability in area, yield, and production data when nearly all the farmers are actively producing the crop. Experiences from other African countries suggest that a direct expansion of data from voluntary respondents may be flawed for a number of reasons. Some amount of overestimation or upward bias was introduced when the smaller commercial farms did not receive a questionnaire and thus were not given a chance to respond. On the other end of the scale, large farmers are notorious for either refusing to report or grossly underreporting their agricultural holdings. Since the commercial farms survey was totally voluntary with no response validation process, it is reasonable to expect that the holdings of the largest farmers are underrepresented. This would cause a downward bias in the estimates derived by expanding the data. While it is impossible to speculate on the impact of the adjustments on the crop estimates, it is fair to say that the low response rate from an unknown and possibly underrepresented portion of the population leaves serious questions about the level of estimated crop production reported. For example, the data series in table 8.4 listing the estimated number of farms shows much variability—changing radically from one year to the next, especially for the three years beginning in 1982/83 and then again in 1989/90. If it is difficult to have confidence in an estimate as basic as the number of farms, it is even more difficult to imagine how the more detailed estimates of crop area and production might be accurate.¹⁰

Another anomaly in the commercial farm survey is the timing of publications. Although the questionnaires continued to be mailed each year, the results are often not published until several years later. In the 1987/88 report (published in September 1990), the director thanks the staff for catching up with 12 years of unpublished data. Evidently the demand for detailed commercial farm data was strong enough to cause the CSO to resurrect and publish data that had not been given a high priority at the time it was collected.

2. CSO noncommercial crop surveys and crop forecasts

To complement the commercial farm data series, the CSO also collects data from the noncommercial farmers (all farmers not falling under the definition of commercial farmers). Attempts to measure the agricultural production of the noncommercial farmers is done via a series of sample surveys. At present, the CSO collects data on the noncommercial farm sector for the purpose of providing both annual crop forecasts as well as more detailed statistics. The crop forecasts focus on the number of farms growing the major crops, the area planted, and expected production. These estimates are published midway through the crop year as part of the early warning process. In contrast, the annual surveys are designed to provide more detailed information on land use, crop production, livestock numbers, and prices received for agricultural produce. Estimates are published

¹⁰ Additional remarks on estimating procedures may be found in the section titled "Setting and Publishing Agricultural Estimates" (see p. 245).

at the provincial and national levels. Table 8.5 lists the published time series data for maize production on noncommercial farms, as an example.

While the annual survey of noncommercial farmers began in 1971/72, the crop forecasting portion of the survey was first initiated with technical and equipment support being provided by the ZATPID II Project (equipment and long-term advisory support) and the US Bureau of Census (BUCEN—training and short-term technical support) in 1985/86. As can be seen in table 8.2, this effort has been less than successful in producing publishable data sets. Despite continuous collection of detailed annual survey data since 1986, only the results from that year have been published." Crop forecasts, however, have been published for the period 1986 through 1993.¹² The following is a description of the evolution of the CSO sample survey in its three iterations.

3. CSO sample surveys, 1972 to 1978

Designed as a probability survey of the entire country, the sampling frame was built by first stratifying the country into urban, peri-urban, and rural areas. The urban stratum contained all principal towns with populations of 30,000 or more; the peri-urban stratum comprised all urban centers with populations less than 30,000 plus all provincial and district administrative centers; the rural stratum comprised the remainder of the country.

Once the rural stratum was identified, a 10 percent sample of basic areas (BAs—the primary sampling unit [PSU] for the survey) was selected. A total of 134 BAs were selected in 1972 out of a total rural population of 1,145 BAs.¹³ Field enumerators listed all of the noncommercial farming households in the sample BAs, and a sample of 10 percent of the households was randomly selected for interviewing. The number of selected BAs ranged from 3 to 28 per province. Fortunately, the amount of data collected under these surveys was reasonable—especially when compared to the magnitude of the present efforts. Copies of the questionnaires used can be found in the back of each publication.

Despite the probability design of the survey which would have permitted sampling errors to be calculated, the publications do not discuss any sampling or non-sampling errors. Given the large size of the PSUs, it is difficult to say what the sampling errors might have been. Normally, a sample size of 10 percent in the second stage of sampling is more than adequate for agricultural surveys. As with most agricultural surveys, the non-sampling errors are a very important part of the estimation procedure and are largely immeasurable. If the survey managers had noted the major data collection problems and how they were handled, it would have provided future data users with some hints concerning the quality of the time series.

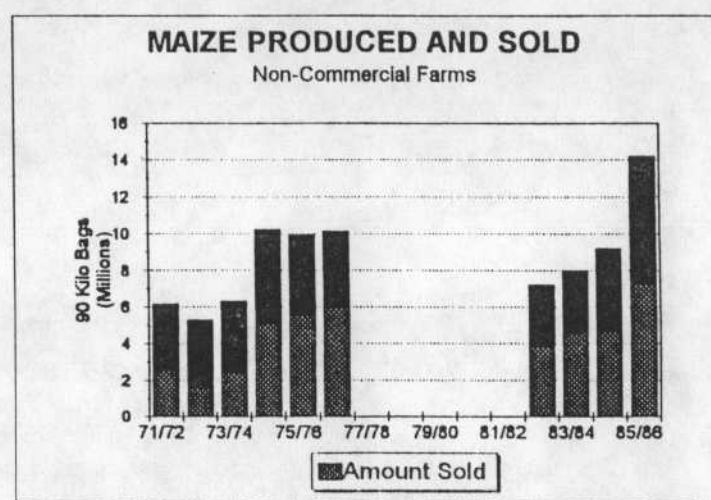
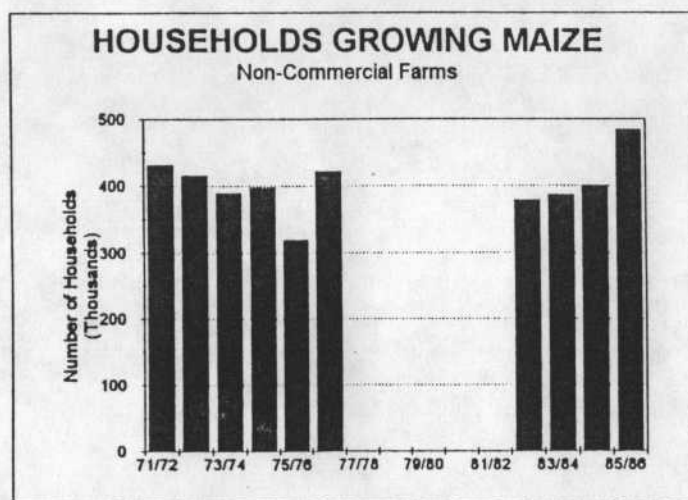
¹¹ Summary tables for both the 1986/87 and 1987/88 surveys have been completed but not published. (Disks containing the 1986/87 summary data have been misplaced.) The 1988/89 raw data have been entered on the computer but have not been summarized because the expansion factors (weights) needed for summarization have not been entered.

¹² Although these data have been published, a complete data set is not available. Some data were able to be recreated from disk backups.

¹³ The size of these BAs must have been huge. If all Zambia was divided into 1,145 BAs, the average size of a BA would have been approximately 65 square kilometers. At present, 9,682 rural survey enumeration areas (SEAs) are used as PSUs. The average size of a SEA is approximately 8 square kilometers.

Table 83: Maize time series data published by the CSO, noncommercial farms

MAIZE		ZAMBIA				NON-COMMERCIAL FARMS				
YEAR	HHS GROWING	AREA PLANTED (ha.)	AREA HARV'D (ha.)	AVE. AREA PER HH (ha.)	PRODUCTION (90 Kilo Bags)	YIELD (Bags ma.)	SOLD (90 Kilo Bags)	PERCENT SOLD	VALUE (Kwacha)	AVERAGE VALUE
71/72	431,700				6,164,600		2,618,900	42%	9,123,800	3.48
72/73	415,400				5,272,000		1,581,700	30%	6,372,500	4.03
73/74	389,200				6,302,800		2,466,200	39%	10,813,800	4.38
74/75	397,100				10,262,800		5,066,600	49%	25,274,500	4.99
75/76	319,300				9,911,200		5,614,100	57%	35,095,900	6.25
76/77	421,500				10,127,400		5,968,500	59%	37,837,300	6.34
77/78										
78/79										
79/80										
80/81										
81/82										
82/83	378,300		358,510	0.95	7,190,000	20	3,857,000	54%	68,666,000	17.80
83/84	386,560		397,020	1.03	7,998,000	20	4,543,000	57%	102,280,000	22.51
84/85	400,210		400,810	1.00	9,229,000	23	4,735,000	51%	126,692,000	26.76
85/86	483,865	660,334	522,157	1.08	14,231,905	27	7,316,004	51%	276,345,000	37.77



4. CSO sample surveys, 1982 to 1985

Following a hiatus in surveys from 1979 to 1982, **annual** surveys were conducted between 1982 and 1985 with assistance from the FAO. In 1981/82, a pilot census of agriculture was carried out in preparation for the census of agriculture that was scheduled to be conducted during the 1982/83 crop season. The actual census was never conducted, and, as a result, the FAO and the CSO agreed to do a sample survey of agriculture on a rotating basis. The four major agricultural provinces—Central, Eastern, Southern, and Lusaka—were actually surveyed in 1982/83. Recall data were collected during the following year to complete the 1982/83 survey in the remaining provinces.

It is not entirely clear how the 1984/85 data were collected. While the authors of the survey publication state that a two-stage sample was used with survey enumeration areas (SEAs) serving as the primary sampling units, they do not provide information on sample size at either the primary or secondary levels. Again, no estimates of sampling errors were calculated or published for the data.

5. CSO sample surveys, 1986 to 1993

Since 1986, the CSO has conducted annual surveys of crop forecasting on the noncommercial sector, initially with technical assistance provided from BUCEN and independently since 1990. Results have been less than spectacular, at least with respect to the publication of the annual surveys. The results of only the 1986 survey have been published. According to CSO officials, crop forecasting data are regarded as confidential until the Minister of Agriculture certifies them acceptable. Publication of such data has been the prerogative of that ministry because the final announcement was a blend of two forecasts collected separately, one by the CSO, and the other by the Ministry of Agriculture. The CSO is thus unable to publish the data themselves without upstaging or contradicting the minister's role.

For these surveys, a new sample design was used which comprised a three-stage sampling system. The sample is used for both the crop forecasting exercise and the annual survey with the goal of publishing data at the district, provincial, and national levels. The first stage of sampling is done from the census supervisory areas (CSAs). Within each CSA, SEAs have been identified based on readily identifiable boundaries. From one to four SEAs are located in each CSA. Sample CSAs are first selected with probability proportional to the number of households located in each based on the 1990 census (1980 census in earlier data-gathering efforts). Once a CSA is selected, a sample SEA is then selected, again based on probability proportional to the number of households. During the earlier years of the survey, 800 SEAs were selected, however the number has been reduced to 400 for recent surveys. Households in each sample SEA are listed and farm households identified.

Following the listing process, farm households are stratified based on area planted to crops. Three strata are identified: small (less than 5 hectares), medium or emerging (5-20 hectares), and large (greater than 20 hectares). Fifteen sample households are systematically selected from each of the small and medium groups. Normally, only a few households are identified as medium-sized farmers in any given sample SEA. If fewer than 15 households qualify as medium-sized, all of these households are selected and the remainder of the intended 15 sample households are reassigned to the small-farm stratum. For example, if a sample SEA contained 100 small farmers and 3 medium farmers, the final sample would include the 3 medium farmers plus 27 of the small farmers. Only if the total number of farmers—small and medium—were less than 30 would the sample size be less than 30. This results in a sample size that nearly always approaches the maximum of 30 per SEA or a total

of 12,000 from 400 sample SEAs. Usually, no large-farm households are identified. If they are identified, data are collected from these households via the commercial farm survey.

After the sample farmers are identified, each is visited three times. During the first visit, which is conducted in January/February, the listing process is completed, sample farmers are identified, and preliminary crop forecast data are collected. During the second visit, which is conducted in March/April, data are collected for the final crop forecast. During the third visit, which is conducted in October/November, a post-harvest survey is completed. This last data set forms the basis for the annual agricultural survey report.

Based on a preliminary analysis of the sample size, the CSO's noncommercial survey is both too small and too large. While a thorough review of the data is necessary to determine the optimum number of samples to be selected at each stage of the survey, experience suggests that a sample size of 400 PSUs would tend to have sampling errors that are too high for data presentation at the district level. At the same time, a secondary sample size of 30 farmers is clearly larger than required at the final stage of sampling. More likely, 5 to 10 small farmers and a 100 percent sample of medium farmers selected from each sample SEA would provide the basis for acceptably accurate provincial and national estimates. This would reduce the data handling load by 75 percent which would greatly facilitate the speed of collection, summarization, and publication. While the data should probably only be published at the provincial and national levels, it may be feasible to provide district estimates for only the larger districts that exhibit reasonable sampling errors.¹⁴

A review of the "Phase 3 Final Crop Forecasting Questionnaire" shows the survey instrument to be of reasonable length. However, the post-harvest survey is extremely detailed with 33 pages. Thus, three sets of data are to be collected from 24,000 (presently 12,000) farmers each year. This means the CSO staff is faced with a total of 72,000 (or 36,000) questionnaires to be entered, edited, and summarized annually. The post-harvest survey questionnaire is far too long and is also not designed for efficient data entry. It should be reduced so only the essential data are being gathered and simplified to allow easier data entry.¹⁵

The large size of the questionnaire is also problematic during the summary phase. Conversations with CSO personnel indicate that corners are cut to speed the summarization process. For example, as far as can be discerned, no computer edits of the data are conducted. Given the pressures of trying to push large amounts of data through a summary system without adequate edit

¹⁴According to officials in the CSO, the government's policy is to encourage development planning in all sectors at least down to the district level. The CSO thus feels compelled to collect and publish data at the district level to help facilitate government planning. Rather than abandoning the current practice, the CSO instead recommends improving the quality and lowering the cost of district-level data collection.

¹⁵While the management of CSO also feels that the questionnaire is probably too long, it stresses that length alone is not a hindrance. Space is provided for capturing all the possible production activities of households, but rarely does a household have more than 4-5 activities (out of 20 in section 2) to report, leaving substantial empty space. Also, few households report information on growing fruit trees in section 3 and vegetables in section 4. Thus, the majority of the questionnaires returned to the CSO have substantial space that has been left blank. Moreover, the CSO management feels that the current data being collected are essential for monitoring purposes. Before discarding items for sake of increasing efficiency, the CSO management advises caution against loss of important information, a point of view shared by the authors.

checks, it is easy to understand why data inconsistencies are routinely seen in the data sets (Zambia/CSO, noncommercial).¹⁶

6. Summary

It is obvious that the CSO, as the premier data collection agency for Zambia, has devoted much time and effort to the continuation of agricultural data series. It is unfortunate that more effort was not spent in assuring the quality of the data. It appears the foundations of the survey organization may be sound, but the current activities are sorely in need of reevaluation and redirection.

C. Comparison of MAFF and CSO estimates

One method of assessing data accuracy is to compare several independent data series. Sometimes two data series will rise and fall in the same general pattern but have minor differences. In these cases, a close comparison may reveal that one series uses a slightly different definition or may contain a bias that accounts for the variations. However, at other times, when more serious differences exist in one or both of the series, little comparability may be present. It is difficult to compare the MAFF and the CSO data series because of differences in methodologies. While both the CSO and the MAFF call their surveys "crop forecast" surveys or exercises, the MAFF series is derived from a grassroots listing of data from all farms. The CSO uses a sample-survey approach. The intent of both is to provide early-warning information during the growing season. In contrast, the CSO's commercial and noncommercial surveys are meant to provide a more comprehensive view of agricultural production without the time constraints of the forecast surveys.

The "final" estimates of the CSO crop forecast (CSO/CF), the MAFF crop forecast (MAFF/CF), and the combined commercial and noncommercial agricultural surveys (CSO/AS) were compared. While it would have been preferable to use basic estimates such as "numbers of farms" or "total land in farms" for comparison, they were not available, so maize was chosen as the crop estimate series which was likely to be most accurate. Data for "area planted," "production," and "sales" were compared. Table 8.6 lists the data and figure 8.1 provides graphic comparisons of the data sets.

Comparisons of maize area planted shows the MAFF/CF to be generally higher than the CSO/CF. In the eight years of comparative data, only in 1984 and 1987 were the MAFF estimates lower (90 and 92 percent respectively) than the CSO. There seems to be no real connection between the CSO/AS data and the CSO/CF data. For the four years, comparisons range from 91 to 126 percent. Special note is made of the 1988-89 MAFF estimate of maize planted, which is substantially higher than any other estimate in any series. The 1,021,000 hectare figure is about 40 percent greater than the MAFF estimates for the years immediately preceding and following.

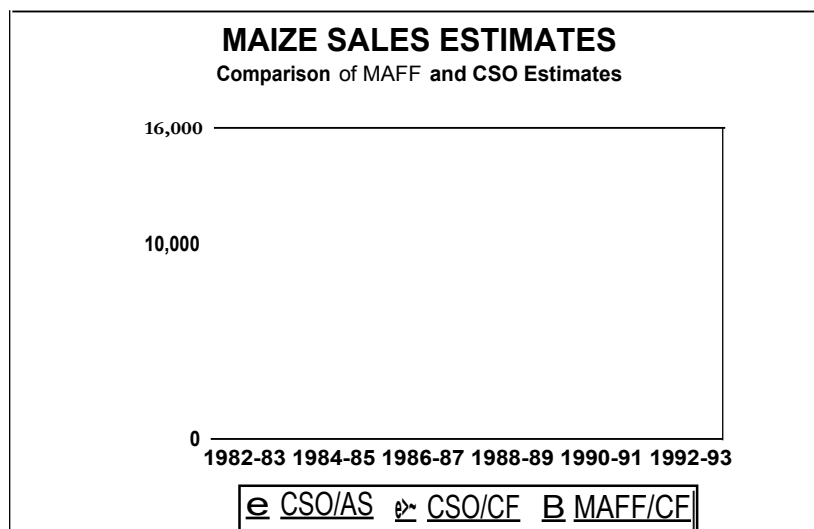
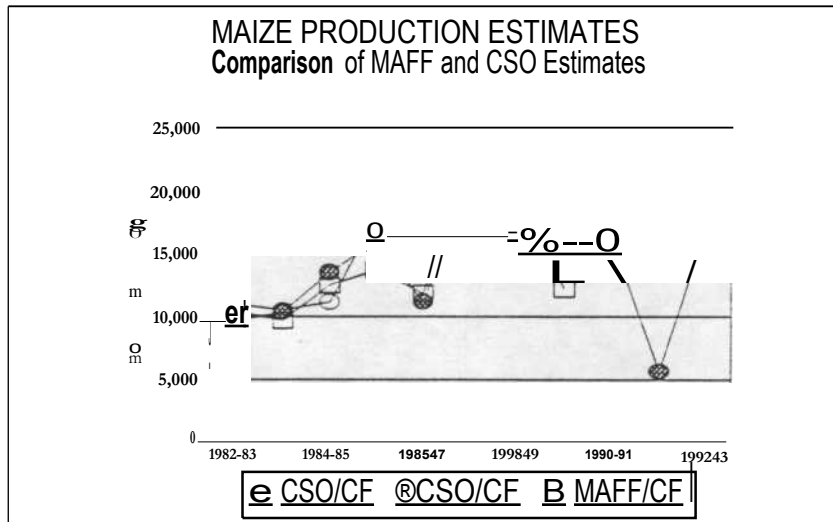
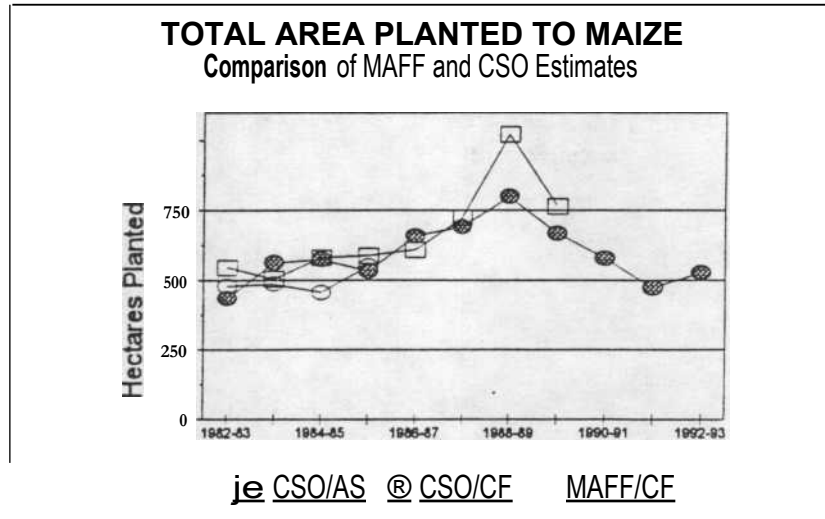
¹⁶ However, questionnaire size is not the sole or even the most important reason for these problems. According to CSO management, the problems encountered during the summary phase stem mainly from the lack of an incentive structure that encourages personnel to properly edit data before summaries are undertaken. An officer who goes to the field to collect data is eligible for an allowance in addition to salary. No such incentive is given to an officer in Lusaka who is responsible for scrutinizing data to detect and eliminate data errors. It is generally the case that data processing personnel are left alone to resolve inconsistencies without proper guidance from the statisticians—the outcome being inadequate editing and short-cut methods employed to speed the summarization process.

Table 8.6: Comparison of the CSO and MAFF maize estimates

Year	CSO/AS°	CSO/CF	Columns	MAFF/CF	Columns	Columns
	(a)	(b)	(b/a)	(c)	(c/b)	(c/a)
	(000 ha)	(000 ha)	(%)	(000 ha)	(%)	(%)
Maize area estimates						
1980-81				623		
1981-82				456		
1982-83	479	434	91%	547	126%	114%
1983-84	488	564	116 %	507	90 %	104 %
1984-85	455	575	126 %	582	101 %	128 %
1985-86	552	532	97 %	588	111 %	107 %
1986-87		659		610	92%	
1987-88		692		723	105 %	
1988-89		797		1,021	128 %	
1989-90		668		763	114%	
1990-91		579				
1991-92		472				
1992-93		527				
Maize production estimates						
1980-81				16,500		
1981-82	10,976	9,628	88%	8,162	108%	95%
1982-83	10,486	10,330	99%	10,392	94%	92%
1983-84	11,146	13,492	121%	9,686	92%	112%
1984-85	17,732	15,855	89%	12,471	86%	77%
1985-86		11,146		13,673	106%	
1986-87		20,378		11,816	106%	
1987-88		22,188		21,591	92%	
1988-89		16,267		20,500	75%	
1989-90		16,087		12,141		
1990-91		5,628				
1991-92		17,229				
1992-93						
Maize sales estimates						
1980-81				7,832		
1981-82	7,513	4,944	66 %	5,672	119 %	79 %
1982-83	6,685	6,749	101%	5,902	94 %	95 %
1983-84	6,593	7,227	110 %	6,348	98 %	107 %
1984-85	10,729	9,794	91 %	7,070	108%	99 %
1985-86		6,886		10,607	106 %	
1986-87		12,947		7,296	116 %	
1987-88		15,115		14,990	90 %	
1988-89		9,921		13,551	67 %	
1989-90		9,000		6,679		
1990-91		3,229				
1991-92		9,326				
1992-93						

a. Total of CSO commercial and noncommercial estimates.

Figure 8.1: Comparison of the CSO and MAFF maize estimates



It is difficult to recognize any discernable patterns between the maize production data series. Comparisons between the MAFF and the CSO data range from 75 to 108 percent. Comparisons between the two CSO series vary from 88 to 121 percent. The MAFF estimates for maize production in 1989 and 1990 are substantially greater than preceding or following years.

As with maize production, comparisons between the series show little similarity for the maize sold estimates. It appears that the MAFF series of maize sales and the CSO series listed in its "1992/1993 Final Crop Forecast" are the official estimates of sales.

Beginning with the 1993/94 agricultural season, the separate crop forecasting surveys of the CSO and MAFF were merged. The survey method is that used by the CSO as outlined in the previous section.

D. Publishing agricultural estimates

Statistical organizations have a choice of either publishing data as collected or using them as indicators in an estimation process. Governmental organizations rely on survey data as indicators for setting their published estimates of agricultural production. This method allows the survey statisticians to adjust for anomalies in the survey data. The result is a smoother set of survey estimates which show reasonable (believable) changes over time. If the organization publishes "raw" survey data (or data with little review) the users are forced to make their own interpretation of how questionable data are to be used. For instance, most agriculturalists would find it difficult to imagine a set of circumstances that would result in the numbers of commercial farms (or the average area planted to maize) fluctuating as much as is indicated by the CSO data. The graphs in the appendix illustrate the dramatic amount of variation in the commercial farms data series. Normally averages for a group of farms change slowly over time unless there are severe political, economic, or climatic events.

Agricultural statisticians agonize over how much they should adjust survey data. On one hand, they do not want to be accused of "manipulating" data, but they are also reluctant to publish data series that show inconsistencies. The CSO has had difficulty in choosing just how much intervention they wish to impose in reporting their survey results. It appears they should have been more willing to control for the variability caused by both sampling and non-sampling errors in the commercial farms surveys. If the CSO statisticians had written technical notes about problems and the procedures they followed in correcting them, it would have provided both a consistent data series for the many users who just "need a number" and a basis for further study for the in-depth analysts. However, simply expending more time writing technical notes will prove ineffective in correcting the problem without a commensurate improvement in salary structures that provide office staff sufficient incentive to scrutinize data and make necessary corrections.

After reviewing data series such as those published by the CSO and the MAFF, external reviewers often face the dilemma of deciding whether to state that the data series are too fraught with errors to be usable or to be more understanding and merely warn data users that the series contain many unexplained inconsistencies. The first alternative is seldom taken because data are so badly needed and are deemed to be "the best there are." Fortunately, an understanding of statistical organization and training exists in Zambia that can be used as a basis for reviving the system if the government decides to move toward fewer, more accurate statistics.

III. Suggestions and recommendations

As mentioned at the outset, Zambia has a large data system which has received support from various donors over the years. Unfortunately, donor support has been spasmodic and not sustained. The system has not been held to high standards of cost-effectiveness, efficiency, accuracy, or timeliness. The following are some suggestions of how to improve performance in these areas.

A. Improving cost-effectiveness

The overriding need in the Zambian agricultural data system is to work toward a more cohesive, organized data system that emphasizes collecting **only** data that has been substantially justified. Currently, too many resources are flowing into a system that produces many, but not necessarily usable, results." It appears the system has been allowed to accept more and more requests for data without a thorough review of necessity. Publications are often delayed due to the inability to summarize the unwieldy quantity of data.

It is not uncommon for large national surveys to become vehicles for collecting increasing amounts of data. The CSO's survey questionnaires have become laden with many interesting but inappropriate questions. To rectify the situation, every survey instrument used in Zambia should be forced to pass a rigorous evaluation process that would allow only the most essential items to remain on the questionnaires.¹⁸ Eliminating questions that have been on questionnaires for a number of years will be difficult, but it is an essential step in making the surveys more accurate sources of information. Even when troubles are well known, problems of institutional rigidity, lack of resources, lack of skills, or complacency lead to inaction. Scott mentions a CSO "user-producer seminar on government statistics" scheduled for May 1990 (Scott 1990). According to CSO management, that seminar was held, but no changes were made to the surveys by way of follow-through.

Data collection should be trimmed to an absolute minimum. The specific data to be collected should be determined at a series of data user conferences where the realities of data collection and publication are discussed. Organizations requesting data must be convinced that less-extensive, higher-quality data sets are of more value than the more detailed, but questionable, statistics currently being collected. Data users who want to maintain current levels of data collection should be asked for specific examples of where published data are used. Only those data sets which have a proven current use should be allowed to continue. It is difficult to believe that the detailed structural/size group data collected by both the MAFF and the CSO are necessary every year. Usually collection of these data every three to five years is sufficient. Following thorough review, data from other sources, such as parastatals and marketing boards, should continue to be published by the CSO. These data provide the only comparisons to the survey data published in Zambia.

¹⁷ Based on requests it has received from users, CSO officials believe that most of the data collected is usable. Rather, it is the long **lag** between data collection and publication that diminishes the data's usefulness.

¹⁸ The CSO's comprehensive agricultural survey described by Scott (1990) was not reviewed as a part of this study. Given the extreme amount of data collected by the survey, the exercise sounds like an ill-conceived use of resources. The level of detail collected by the survey is normally restricted to specialized research studies and is seldom deemed cost-effective at the national level.

A sampling frame should be developed which allows for the collection of data at various administrative, ecological, and geographical levels. This would facilitate the initiation of smaller, more cost-effective survey designs to collect detailed data for specific needs.

With a accurate sampling frame in place, most future surveys should be based on probability designs. Probability surveys allow the statistician to make statements about the estimates' precision. These statements in turn allow the data users to calculate a band of confidence in using the data. Decision-makers would gain confidence in both the MAFF and the CSO if the organizations moved to more probability surveys and concentrated on collecting and summarizing fewer, higher-quality data sets.

Scott suggests that some movement has begun within the CSO to combine the noncommercial and commercial surveys. This is an excellent idea. When combined, the resulting survey should be much more cost-effective and efficient than the existing separate surveys. However, as of April 1994, separate questionnaires were still being administered to the two categories of farms. One small improvement has been made. Instead of sending and receiving commercial questionnaires by post, the forms are now being delivered by enumerators and later collected by them.

B. Improving efficiency

Survey efficiency is gained through the proper management of resources. All survey managers should be well trained and should be vested with the authority to respond quickly to unexpected field conditions—adjusting logistics and personnel accordingly. Extra salary incentives that encourage fieldwork over central office work are detrimental to both the efficiency and the accuracy of the surveys. The extra time spent in the field not only lessens the amount of time spent in cleaning and summarizing the data, it allows more data to be collected, thus adding even more to the burden of work to be done in the central office. Staff working on the agricultural data have not yet systematically collected, entered, analyzed, and published data as one continuous and coherent process. The emphasis on data collection has pulled resources away from analysis—the outcome being piles of unprocessed data. Reducing data collection to the essentials will go a long way toward solving the central office staffing problems, but incentive structures need to be modified to encourage office work in Lusaka on analysis and publication.

C. Improving timeliness

The inability to publish timely reports has been most obvious in the CSO commercial farm surveys. Many of the reports are published well after the year in which the data were collected. One reason for delay is the imbalance between field and central office staff discussed earlier. Reorganization may be necessary to assure that each survey unit has a data entry and computing staff capable of handling the current data collection activities. The speed with which data are handled can be greatly enhanced with proper data entry/computer editing programs. Modern microcomputer processing is available to overcome many of the time and accuracy problems of out-of-date systems. Data summary and analyses can also be made more timely through the proper addition of computer techniques.

Late reports are also often the result of ill-defined priorities. If the data managers do not have a clear sense of priorities, it is easy to allow outside requests for data to overcome what should be ongoing data series. To maintain proper focus on the priorities, a clear mandate must be agreed upon

and realistic budgets and human resource support must be provided. Without the insistence of top government officials on timely publications, the timing will inevitably slip. Data managers must see their mission as providing **high-quality** information that is available for current decisions.

D. Improving accuracy

It is difficult to judge the accuracy of the **agricultural** estimates because there are few alternative measures for comparison. The data series reviewed show variations that may have been caused by either natural variations in agricultural production or data collection errors. However, the magnitude and rapidity of fluctuations suggest significant collection errors. Unless a thorough review of a survey's accuracy is completed during the survey period, much of the information that would reveal the true accuracy of the data is lost.

For example, it is not difficult to understand why errors exist in the CSO data series when surveys take several years to be published. It is difficult to accurately track data for the three-year waiting period now occurring between data collection and data entry. Data have to be tracked at every point in the data entry/editing process—upon receipt, during data entry, and at each point in the computer editing process. Steps need to be taken to ensure that manual edits performed in the field and after receipt at the central office are performed correctly. This requires both training and good manuals which define the editing required.

In the future, it is hoped that both the MAFF and the CSO survey units will publish technical notes that attempt to explain data fluctuations. A mature and confident survey unit displays an open interest in eliminating survey shortcomings. All surveys, even in experienced hands, have points of difficulty. For the Zambian units to ignore or minimize them is not helpful to the data user. When the survey managers begin publishing comments on the possible biases in the survey, the data users will gain confidence in both the data and the survey unit. Again, this type of information can be easily lost in the delay between collection and analysis/publication.

The survey units should make every effort to employ improved statistical techniques designed to minimize sampling and non-sampling errors. Employing "total survey design" techniques would be a helpful approach. This methodology allows the survey designers to identify the various error-causing components of a survey and to minimize both sampling and non-sampling errors.

Training is often a key component in minimizing survey errors.¹⁹ All survey personnel should be provided with comprehensive training so they fully understand and appreciate the impact their actions have on data quality. For example, field personnel are often expected to spend long days following intricate procedures in search of data that have little meaning to them. This situation often leads to fabrication of the data by the field enumerators. However, when the staff is given information about the survey sample design and insights into the purpose of the survey, the quality of their performance is higher.

¹⁹ The CSO is presently engaging its statisticians in on-the-job training of manual editing using 1992/93 post-harvest data. The statisticians, after the program, are then expected to supervise junior officers in future surveys. Based on early feedback, the statisticians are gaining a lot of experience with common data errors generated by enumerators in the field and data entry personnel in Lusaka (CSO, personal communications).

IV. Summary

In spite of substantial effort in agricultural data collection, review of the available summaries and reports suggest significant problems with quality. As stated earlier, it is difficult to review data series after a period of time has elapsed unless there are technical notes that document the survey procedures including problems that may have affected the **quality** of data collected. Unfortunately, few such notes exist in either the MAFF or the CSO publications. However, the quality of Zambia's agricultural data may be improved in the future in a number of ways. The most important steps are to ensure the elimination of all unnecessary questions from the two main CSO and MAFF surveys and then to concentrate on the development and maintenance of solid data collection techniques. This will not be an easy task. It will take the courage of policymakers and survey managers alike to make commitments to data quality rather than data quantity.

The most expeditious way of beginning to change the Zambian data system is to employ a team of outside evaluators to review the system in detail. Once the evaluation is complete, and a plan of work is agreed upon by the appropriate governmental units, the government should request the aid of donors in mounting a sustained program of survey evaluation and improvement. Following are four alternative levels of technical support donors should consider providing to the Zambian agricultural data system. Each alternative offers unique benefits. Assisting Zambia with a combination of these inputs would be most effective.

- (1) Short-term trip(s) with the specific task of designing and organizing surveys to collect data for LTC research projects might be considered as a minimal level of support. Working on specific LTC research questions, short-term technical assistance (STTA) would collaborate with CSO statisticians in designing appropriate samples. STTA would explore the use of CSO sampling frame to facilitate probability samples. Areas of possible data-collection collaboration could be considered with the MAFF and/or the CSO field personnel. Any collaboration would be accompanied by in-country training provided by the STTA. The number of trips provided in this category would be totally dependent on LTC research needs.

Benefits: Professionally designed surveys resulting in high-quality research data. Collaboration and a small amount of training provided for the MAFF and the CSO staff.

- (2) One or two short-term trips to search for existing data that would be helpful to the LTC researchers would probably produce information that was previously overlooked. Data series or administrative records very likely exist which have potentially valuable information for researchers. These may include information from governmental or parastatal units (e.g., mortgage listings, title registrations, and the like), or listings currently being compiled for the CSO sampling frames. The search for these information sources would take some time and would depend on STTA's ability to convince government officials of the value of cooperating in the effort.

Benefits: Possible discovery of information that could be made available to the project and others at a relatively low cost.

- (3) STTA would develop an ongoing relationship with CSO and MAFF to assist in providing incremental improvements to the agricultural data system. Following a system review, the STTA would work to encourage changes that appear to be most effective in improving data

quality. Training of staff (both in-country and in the US) would be encouraged as the most certain method of assuring long-term improvements. STTA would expect to spend no less than two months in Zambia each year. Additional time would be spent in the US designing specialized training programs as needed.

Benefits: Improved data and improved working relationship between the project staff and the data collection officials. This kind of technical input could be particularly beneficial if the STTA is allowed to work closely with the CSO and/or the MAFF staff to gain their confidence and cooperation. As travel and training opportunities are realized, interaction between UW and Zambia professionals would be strengthened, offering possibilities for future collaboration.

- (4) Long-term TA (LTTA) to work with the CSO in completely rethinking the data system. There is evidence that the system needs major structural changes if it is to satisfy the needs of future data users. While new technologies such as GIS, remote sensing, and area frames may offer efficiencies and improved accuracy, there are many areas in which incremental changes would be beneficial to the organization. A resident LTTA would be able to influence major changes in design and methods that a STTA may not have the clout to accomplish. However, STTAs would be important for specialized training and statistical design needs.

Benefits: With sufficient funding, the CSO and the MAFF could collaborate in building an agricultural data system that uses cost-effective and efficient surveys to provide timely and accurate data.

Any project delivering STTA and LTTA should emphasize transfer of knowledge to local personnel. As obvious as this sounds, according to CSO officials, some TA personnel have perpetuated their employment by doing the work themselves. Some have failed to produce technical notes about survey methods despite remaining in Zambian organizations for years. Despite these reservations, the CSO nevertheless welcomes STTA and LTTA. From the perspective of the authors, such problems of confidence and transfer of knowledge are best encountered through projects emphasizing long-term institutional collaboration and commitment (e.g., options (3) and (4) above).

Improvement of staff performance is key to raising the quality of agricultural data in Zambia. By offering training opportunities to the staff, both productivity and accuracy will rise as they learn new procedures and experience higher morale. Some of the statistical training programs available are summarized below:

ISPC, Bureau of Census offers focused training in several areas of statistics, survey management, and computer analysis. Courses are usually 12 months in length. ISPC training is expensive, but courses impart valuable practical training on what is needed to manage an agricultural data system.

OICD/USDA contracts with governmental agencies and universities to provide specialty training of 2 to 8 weeks in length. Each year OICD offers several 2- to 6-week courses in agricultural statistics and computer usage. The impression is that the courses are somewhat limited in scope and the contractors have fairly rigid programs with limited latitude for adapting materials to specific country needs.

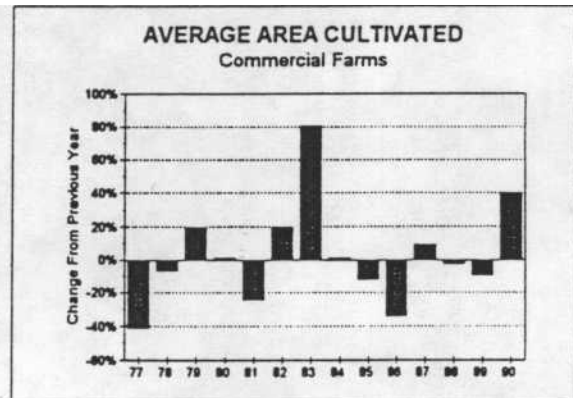
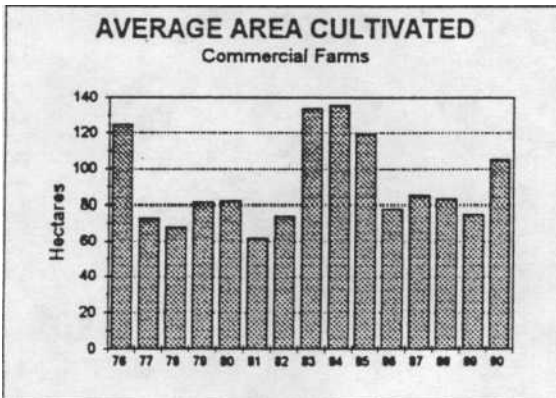
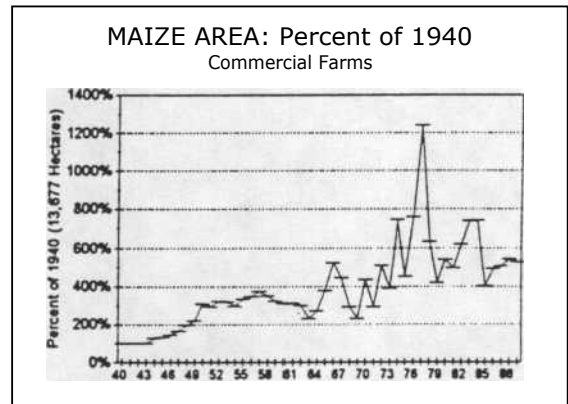
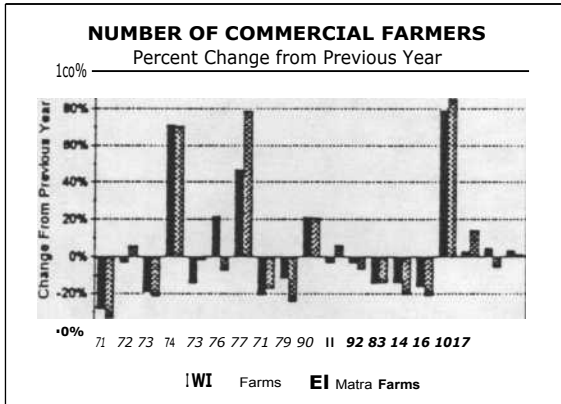
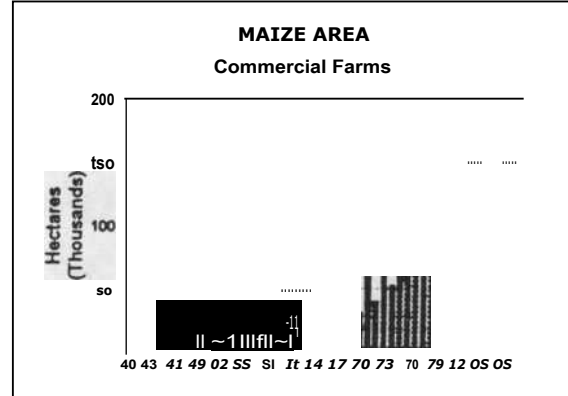
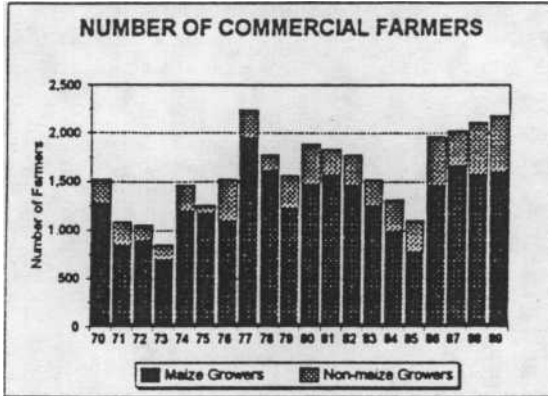
University of Wisconsin-Madison offers training opportunities either on-campus or in-country. Courses range from formal university graduate-level courses to 2- to 4-week workshops. Courses can be geared to the needs of the students. For example, courses can be adapted as refreshers for experienced staff or as beginning courses designed to get new employees started. Instructors will travel to Zambia to conduct short courses and/or assist Zambians in training local staff.

If employed as STTA to interface with the CSO and the MAFF (item 3 above), the instructor will spend up to two months per year in Zambia working on data problems. Coordination of STTA visits and training plans would increase effectiveness.

The University of Wisconsin offers additional courses in monitoring and evaluation, research methods, rapid rural appraisal methods and land tenure issues periodically at various African sites (e.g., Senegal, Madagascar, Uganda, and The Gambia).

The CSO prefers locally-organized courses as they afford opportunities for a larger number of officers to attend. However, this by no means precludes training abroad in specialized areas. Further, as it is difficult to identify with perfect knowledge all training needs in advance, the CSO strongly advises maintaining flexibility in choice of training programs during the course of project design.

Annex 8.1: Graphs illustrating variation in commercial farm estimates



Annex 8.2: Maize time series data published by the CSO, commercial farms

Year	Households growing	Area planted (ha)	Ave. area per HH (ha)	Production (90 kg bags)	Yield (bags/ha)	Sold (90 kg bags)	Percent sold	Value (kwacha)	Average value
1940		13,677		261,000					
1941		13,729		173,000					
1942		13,666		203,000					
1943		13,574		202,000					
1944		17,472		289,000					
1945		17,982		348,000					
1946		19,797		395,000					
1947		22,627		204,000					
1948		26,658		446,000					
1949		29,976		369,000					
1950		42,510		572,000					
1951		39,783		467,000					
1952		44,254		443,000					
1953		43,842		637,000					
1954		40,578		715,000					
1955		45,462		651,000					
1956		47,383		956,000					
1957		51,203		1,257,000					
1958		47,798		661,000					
1959		44,211		1,120,000					
1960		42,190		1,075,000					
1961		42,700		1,427,000					
1962		40,838		1,490,000					
1963		31,522		946,000					
1964		37,311		1,459,000					
1965		51,657		2,452,000					
1966		71,689		3,413,868					
1967		60,850		2,933,000					
1968		39,879		1,834,400					
1969		31,603		1,462,100					

Annex 8.2, Maize time series data, cont.)

Year	Households growing	Area planted (ha)	Ave. area per HH (ha)	Production (90 kg bags)	Yield (bags/ha)	Sold (90 kg bags)	Percent sold	Value (kwacha)	Average value
1970	1,277	59,530	47	2,318,590	39				
1971	849	39,940	47	2,020,400	51	3158600	97%	12,469,000	3.95
1972	898	69,970	78	3,264,600	47	2213070	97%	9,391,810	4.24
1973	705	53,028	75	2,291,008	4	4,982,220	95%	21,261,440	4.27
1974	1,203	102,030	85	5,247,430	51	2,923,500	95%	14,475,360	4.95
1975	1,181	62,130	53	3,077,000	50	4,376,490	94%	27,282,290	6.23
1976	1,096	103,650	95	4,647,840	45	4,765,160	95%	29,788,890	6.25
1977	1,959	169,860	87	5,014,830	30	3,273,806	91%	22,385,618	6.84
1978	1,620	86,684	54	3,601,018	4	1,972,530	95%	18,749,520	9.51
1979	1,224	57,070	47	2,086,880	37	2,307,704	87%	26,395,249	11.44
1980	1,478	74,233	50	2,656,850	36	2,870,635	94%	39,476,683	13.75
1981	1,569	67,860	43	3,044,772	45	2,471,264	96%	38,599,593	15.62
1982	1,463	84,701	58	2,572,991	30	3,656,297	97%	67,797,895	18.54
1983	1,259	100,859	80	3,786,320	38	2,141,583	86%	51,319,040	23.96
1984	1,000	101,286	101	2,487,687	25	1,858,407	97%	53,518,671	28.80
1985	789	54,922	70	1,917,150	35	3,412,687	98%	185,893,448	54.47
1986	1,463	67,739	46	3,500,140	52	3,398,491	97%	266,587,369	78.44
1987	1,670	69,477	42	3,504,521	50	3,031,477	94%	257,466,415	84.93
1988	1,577	74,763	47	3,231,122	43	3,314,679	94%	403,922,001	121.86
1989	1,595	72,090	45	3,533,213	49				

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