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An Assessment of Selected Land Redistribution
Programs in Latin America, Asia and Africa and
Implications for the Analysis of Land
Resettlemeent in Zimbabwe

presented by

Martha Jane Sullins

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of the requirements for

M.Sc degree in Ag. Econ.



Major professor

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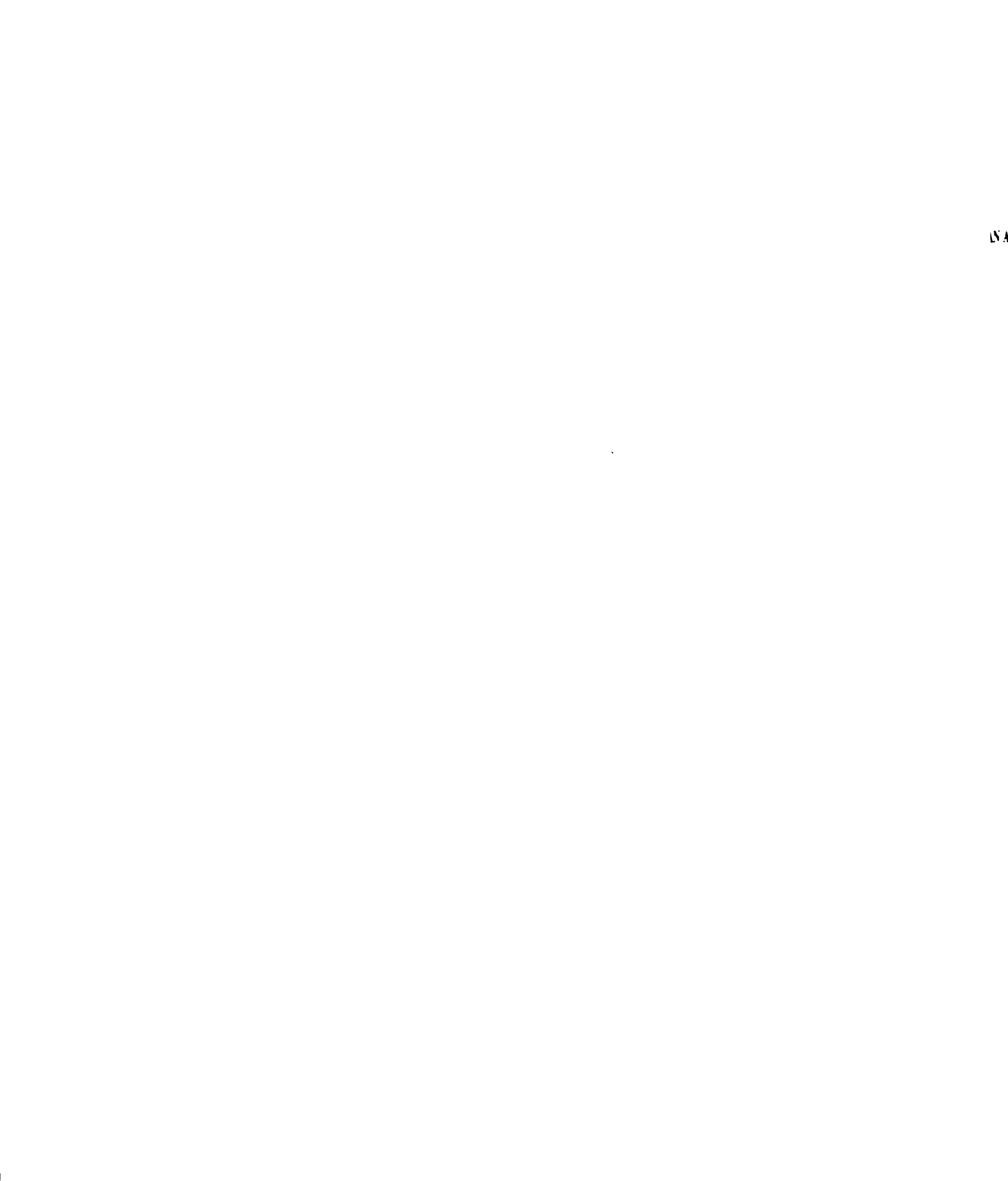
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**AN ASSESSMENT OF SELECTED LAND REDISTRIBUTION PROGRAMS IN LATIN
AMERICA, ASIA AND AFRICA AND IMPLICATIONS
FOR THE ANALYSIS OF LAND RESETTLEMENT IN ZIMBABWE**

**By
Martha Jane Sullins**

A THESIS

**Submitted to
Michigan State University
in partial fulfillment of the requirements
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ABSTRACT

AN ASSESSMENT OF SELECTED LAND REDISTRIBUTION PROGRAMS IN LATIN AMERICA, ASIA AND AFRICA AND IMPLICATIONS FOR THE ANALYSIS OF LAND RESETTLEMENT IN ZIMBABWE

By

Martha Jane Sullins

Many Latin American, Asian and African countries have redistributed large farms to individual smallholders to increase agricultural production, redistribute incomes and generate employment in rural areas. Case studies from Peru, Bolivia, Indonesia and Kenya illustrated that the following factors significantly influence the impact of land redistribution programs: 1) site selection; 2) settler selection; 3) institutional and administrative support; 4) land acquisition and financing; 5) land tenure policy; 6) agricultural and macroeconomic policies; and 7) scheme-level monitoring and evaluation.

In Zimbabwe, although land resettlement has not met the initial planning targets, the government succeeded in increasing smallholder production and redistributing income-generating opportunities. However, resettlement's impact varies significantly across schemes and data indicate that it may not have improved living standards for resource-poor families. Where success is contingent on effective planning and implementation, decisionmakers have received little timely information on scheme-level performance, underlining the need to reorganize and improve current monitoring and evaluation activities.

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Furthermore, I must genuinely thank my house/apartment mates, friends and colleagues who have offered their support, energy and ideas at every step of the way. You are the greatest! To my parents and sister, I thank you for your never-ending love and support. Finally, to Ben who, with the assistance of MCI and Northwest, really got me through all of this. To a great beginning!

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CHAPTER ONE

INTRODUCTION

Latin American and Asian countries have used land redistribution extensively in order to establish more equitable landholding systems. The redefinition of landholding systems through land redistribution creates new social and political power structures designed to provide greater economic opportunity for the rural population. In Africa, several land redistribution programs have been carried out to achieve many of the same basic goals as Latin American and Asian reforms, but by transforming different sets of land tenure and agricultural policy institutions.¹

Overall, reforms which redistributed land resources have achieved disparate results in terms of their impact on transforming political, economic and social conditions in developing countries. These different results are mostly a function of the social, political and economic context within which reforms take place, as well as varying degrees of government commitment to create more equitable agrarian systems. In addition, the potential economic impacts of land reform policies are often misunderstood and misstated.

This study analyzes the planning and implementation of Zimbabwe's Rural Resettlement policy using economic theory and empirical evidence from case studies in Latin America, Asia and Africa regarding the potential impacts of land redistribution on

¹ See Robert Chambers, Settlement Schemes in Tropical Africa (1969) for an historical overview of early settlement schemes in Africa.

agricultural production, income redistribution and employment generation for the resettlement sector in Zimbabwe. From this analysis, recommendations for institutionalizing an evaluation framework for Zimbabwe's resettlement program will be made, focusing on assessing scheme- and farm-level incentives and constraints for smallholders.

1.1 Problem Statement

The conflict between European settlers and black farmers over the allocation and use of agricultural land has resulted in the evolution of a dual agrarian structure that still characterizes Zimbabwe's land distribution. From the early days of colonialism until the *Lancaster House Agreement* was signed in 1980, access to prime agricultural land was gradually reallocated from black farmers to a minority of large-scale commercial farmers of European descent. These farmers also benefitted from better access to production inputs and markets for their products than the black peasant farmers. Until 1980, the majority of Zimbabwean farmers were restricted by law to cultivating more marginal lands in areas designated as Communal Areas (CA's). To redress this inequity, the government of Zimbabwe, under the 1980 Rural Resettlement Policy, began to purchase parcels of land from large-scale commercial farmers for redistribution to peasant smallholders, war victims and landless people residing in the overpopulated CA's.

Today, ten years later, critics argue that the resettlement policy has failed to meet the government's stated social, economic and political goals. It is important to critically assess these claims in order to draw the insights needed to improve the future design and implementation of Zimbabwe's resettlement policy. Design improvements would not only have an impact on the resettlement sector, but also on other sectors into which the country's scarce resources could potentially be allocated.

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1.2 General Objectives

This study has two general objectives. First, this study will review the economic theory underlying land redistribution policies and the experiences of selected Asian, Latin American and African countries that have carried out land redistribution programs, in order to identify recommendations to improve the planning, implementation and evaluation of resettlement in Zimbabwe. Based on this review, the study will examine some of the broader political, social and economic issues that influence the impact of land redistribution on agricultural production, income distribution and employment generation.

Furthermore, focusing on the Zimbabwe experience, this study will examine the manner in which resettlement policy has been evaluated to date. First, it will show that previous analyses are insufficient to draw reliable conclusions regarding the policy's effects on income distribution, improvements in social welfare, agricultural production levels, the degree of profitability for resettlement farmers and possible alternative uses for the resources invested into the program. Second, it will show that there are more effective methods for evaluating resettlement in Zimbabwe, and propose an alternative method of evaluation to analyze change in the resettlement sector.

1.3 Specific Research Objectives

The specific objectives of this study are to:

1. Clarify the role of land resettlement and redistribution policies within the context of agrarian reform; highlight the general goals and objectives associated with these policies; and examine the theory regarding economic impacts of land redistribution on agricultural production, income distribution and employment generation.

2. Examine the performance of land resettlement and redistribution policies in selected countries in Latin America, Asia and Africa, and highlight the findings from these studies that are relevant for planning, implementing and evaluating the impact of resettlement in Zimbabwe.

3. Review the history of land policy in Zimbabwe; the goals, development and implementation of the rural resettlement program; the agrarian structure these policies have created; and examine the national and farm-level impacts of the resettlement program.

4. Survey various methods of project evaluation and examine their advantages, limitations, data requirements and relevance for evaluating resettlement programs.

5. Propose specific recommendations for the monitoring and evaluation of current schemes and for improving the planning and implementation of Zimbabwe's land resettlement program.

1.4 Research Hypotheses

The following hypotheses will be tested in this study:

1. Land reform, carried out through the redistribution of land and property rights, involves changing the institutional arrangements governing people's access to land resources.² The manner in which these institutions should be altered depends on the current distribution of resources (benefits) to all members of society and how alternative arrangements will affect this distribution according to desired land reform goals.

2. A resettlement program's success or failure should be measured by evaluating its contribution in achieving the goals and objectives established for that program. This implies

² "Institutions are sets of ordered relationships among people which define their rights, exposure to the rights of others, privileges, and responsibilities" (Schmid, 1972).

that a program's performance cannot be compared using a uniform common denominator since each program is carried out under diverse social, economic and political conditions. Rather, program performance must be analyzed within the specific context of that country.

3. The manner in which Zimbabwe's land resettlement policy has been analyzed to date has provided insufficient insight into the policy's impact on agricultural production, income distribution, employment generation and settler welfare.

1.5 Organization of the Study

This study is organized into five chapters. Chapter One introduces the study objectives, hypotheses and organization of the thesis. Chapter Two contains four sections. The first section defines the concepts used in this paper, and discusses the role of property rights in determining income distribution. The second section outlines the theoretical arguments regarding the potential impacts of redistributive reforms on relevant indicators of performance. The third section examines four case studies; two land redistribution programs from Latin America (Bolivia and Peru), a colonization program from Asia (Indonesia) and one land redistribution program from Africa (Kenya). A summary of each study is presented according to the format given above and a more detailed description of each case is located in Appendix I. The conclusion to this chapter outlines the most relevant issues for Zimbabwe's resettlement program. These issues are examined in depth in the third section of Chapter Three.

Chapter Three is divided into three sections. The first section examines the historical evolution of land policy in Zimbabwe and the objectives, goals and subsequent implementation of resettlement policy. The second section analyzes the impact of resettlement on land distribution, crop and livestock production, income distribution and

employment generation and examines other important issues related to the implementation of resettlement policy. The third section evaluates the success of the resettlement policy in meeting its objectives, and examines the degree to which current evaluation methods provide policymakers with accurate interim information on scheme-level problems and progress.

Chapter Four examines the elements involved in evaluating rural development programs; discusses the importance of monitoring and evaluation systems in assessing the long-term performance of resettlement programs; and addresses the need to improve the evaluation of Zimbabwe's resettlement program by making specific recommendations.

Chapter Five contains a summary of the study, recommendations to resolve identified constraints for Zimbabwe's resettlement program, limitations of the study and issues warranting further research.

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CHAPTER TWO

LAND REDISTRIBUTION POLICIES: THEORY AND EMPIRICAL EVIDENCE

Chapter Two comprises four sections. The first section defines the concepts of land reform, land resettlement and redistribution, as used in this paper, and discusses the role of property rights in determining the pre- and post-reform distribution of income in the economy. The second section outlines the theoretical arguments regarding the potential impacts of redistributive reforms on relevant indicators of performance (i.e., agricultural production, income distribution and employment). The third section presents case studies, each of which is prefaced by a description of the general institutional factors influencing each reform (i.e., land tenure and other relevant policies and the agrarian structure resulting from this policy mix). These studies examine land redistribution policies in Peru, Bolivia, Indonesia and Kenya, according to the framework developed in the second section. Each case is summarized in this chapter and a detailed study is located in Appendix A. The final section analyzes the primary factors influencing the performance of land redistribution programs, and synthesizes the relevant points from each study in order to examine how well the empirical results support theoretical arguments regarding the potential impacts of land distribution and land tenure policy changes.

2.1 Land Reform, Resettlement and Redistribution

2.1.1 The Concept of Land Reform

In order to study land reform policies and the potential benefits and costs realized from their implementation, one must first establish a working definition of land reform. Since there are many definitions of land reform, the following sections develop a definition to both clarify the meaning of land reform and its relationship to resettlement and redistribution policies, and to lay the foundation for the conceptual framework used to analyze the case studies.

Historically, the term land reform referred to the redistribution of land from large landholders to individual small farmers or to cooperative groups. Over time, however, the concept has been broadened to include reforms in land tenure and other policies to provide smallholders with greater access to resources such as credit, education and marketing within the agricultural sector (King, 1977).

Raup (1967) attributes the evolution of the concept of land reform to changes in the forces affecting agriculture in this century. For example, prior to the early 1900s when farmers employed relatively uniform production techniques, land redistribution was used to redress political and social inequities, with little regard for the effects of land transfer on agricultural production. However, growing population pressure on land resources has shifted the emphasis of land reform towards improving economic efficiency, often with concurrent emphasis on social equity considerations (Raup, 1967).

Fundamentally, the purpose of land reform is to alter or transform a country's agrarian structure when an undesirable imbalance or inequity is perceived. An agrarian structure is defined as "a system of social relations (modes of production and their corresponding social class composition) and a system of land tenure (ownership and usufruct

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of land and water by farm sizes)" (de Janvry, 1984: 264). Following this definition, a land reform could alter social structure, agricultural production relations and rights to land resources depending on the type of landholding system and how it influences the modes of agricultural production and the social structure in a specific country.

2.1.1.1 Property Rights and Land Tenure Systems

Fundamentally, the specification of property rights determines the respective opportunity sets of resource users since these rights influence the extent of an individual's control over productive resources and his/her ability to generate income and other values from those resources (Schmid, 1987). Similarly, each tenure system is governed by sets of property rights which influence people's access to resources and the distribution of income in an economy.

The distinction between use and exchange rights in property institutions is critical in analyzing the potential distributional impacts resulting from changes in tenure arrangements. Use rights permit an individual to utilize a resource, but provide no legal means of transferring that right to another individual. Exchange rights allow individuals to transfer or withhold resources from others. This distinction of rights has implications for the distribution of wealth in an economy. For example, in a nontransfer (nonmarket) economy, differences in wealth are limited because individuals cannot gain market income by withholding or transferring resources, and wealth creation becomes more a function of individual skill and knowledge than economic advantage. In an exchange (market) economy, however, there can be vast differences in wealth among individuals (Schmid, 1987).

The distinction between use and exchange rights is important because under certain conditions it may be possible to redistribute land without extending exchange rights to

reform beneficiaries, particularly given empirical findings which suggest that individualized tenure systems do not always lead to greater efficiency in agriculture (Cohen, 1980; Hunter and Mabbs-Zeno, 1986; Barrows and Roth, 1989). In other words, changing land use rights through land redistribution may be sufficient to accomplish desired political, social and economic objectives without redefining exchange rights. These findings will be further examined in section 2.2.3 of this chapter.

Each tenure system is defined by the manner in which rights to land are allocated to individuals by institutions. Those individuals' opportunity sets (or potential options to use land resources) are formed by the rules of that particular tenure system. Okoth-Ogendo proposes the following:

"a tenure system... does not merely describe an isolated aspect of the economy of a society ... it prescribes the degree of control that may be exercised over land resources and consequently, circumscribes the manner in which they may be used and the manner in which the benefits accruing therefrom may be distributed. Further, a tenure system summarizes the set of relations which emerge through the power processes of society." (1976: 152).

Dorner further asserts that "the dimensions and future security of opportunities are critically affected by labor, capital, and product markets ... thus, the land tenure system interrelates with a wide range of other institutions" (1971: 15).

Although this paper discusses various tenure systems, including communal, freehold, tenant-farming and cooperative arrangements, it focuses on freehold and communal tenure systems, their effect on individual incentives and the degree to which they influence the impact of land redistribution on agricultural production, income distribution and employment. Brief definitions are given below to familiarize the reader with the general characteristics of communal and freehold systems.

Communal tenure systems allocate land use rights to individuals, but no right of exchange. Bruce describes many different communal landholding patterns, including: 1)

"common ownership that implies common exploitation and management;" 2) "the right of each member of a group to use independently the full extent of certain land of the group;" or 3) "significant group control, reflecting some group interest, over land that is apportioned for the relatively exclusive use of individuals or families of the group" (1988: 24-25). Several authors argue that the lack of tenure security associated with communal systems reduces farmers' incentives to invest in agriculture, as well as limits their ability to obtain credit (Barber, 1970; King, 1977; Feder and Noronha, 1987).

In contrast, freehold or individualized tenure provides both use and exchange rights to individuals, either through leasehold arrangements with the state or the registration and allocation of full land ownership to the individual. The most common form of freehold ownership is the small farm unit where the means of production and rights to the output belong uniquely to the family. Mellor (1967) finds variants of the freehold system where the landowner controls the production process but does not contribute the labor inputs. For example, in some Latin American and Asian tenure systems, large landowners rent land to or make output-sharing agreements with tenant farmers. Freehold tenure systems are presumed to offer the greatest incentive to the owner to invest in his/her operation and produce the most efficient allocation of resources because rights to land are clearly defined and legally enforceable and the costs and rewards of production are internalized by the owner (Barrows and Roth, 1989).

2.1.1.2 The Relationship Between Land Reform and Land Tenure Policies

King (1977) defines land reform as "land tenure reform," which involves either land redistribution (a change in size of holdings and land use rights) or tenancy reform (improvements in exchange rights, but no change in land distribution). King maintains that

while measures other than redistribution or tenancy reform (such as consolidation of landholdings or land tax reform) may affect one aspect of the agrarian structure, they do not have a significant, long-term effect on the whole structure because there is no direct change in individuals' rights to land.

As previously asserted, the purpose of a land reform is to change a country's agrarian structure in response to perceived inequities in the landholding system. Therefore, only a change in use or exchange rights would alter the landholding system. Although land may be redistributed either to individual smallholders (distributivist reform) or to collective groups (collectivist reform) (Lipton, 1974), this study will examine only distributivist reforms, where individuals' use or exchange rights to land are changed.

2.1.1.3 Goals of Distributivist Land Reform Policies

The goals of land reform policies shape the redistribution of resources and the reorganization of agricultural production relations within the agrarian sector. Policy goals also influence the degree to which accompanying institutional changes are carried out (for example, reforms to marketing, credit or extension institutions). The case studies in Chapter Two reveal that although each reform program was based on a broad range of objectives, these diverse objectives can be grouped into three categories leading to the attainment of political, social equity and economic efficiency goals.

A common political goal is to create a more stable political environment, as in Bolivia's attempt to reduce rural political instability by destroying the large landowning class. Increasing social equity emerges an important goal in every land redistribution case studied. Particularly in the cases of Bolivia, Kenya, Indonesia and Zimbabwe, land was redistributed to smallholders in order to improve their access to land resources and redistribute incomes

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in rural areas. This goal was sometimes reinforced by policies to improve rural dwellers' access to social services and infrastructure. In addition, improving or maintaining economic efficiency (in terms of aggregate output) is often of primary importance, particularly when holdings in the large farm sector are redistributed to individual smallholders.

These three goals are not mutually exclusive, and more often than not, land reforms involve multiple goals. Although, concurrent improvements in social equity and economic efficiency are often interpreted as conflicting goals because it is often assumed that redistributing assets to smallholders will reduce aggregate agricultural production, evidence to counter this proposition is presented in section 2.1.2.3.1.

2.1.1.4 Land Redistribution and Resettlement Policies

Land redistribution and land resettlement are similar because both result in a change in land use rights, but neither requires a change in exchange rights to land. The difference lies in the fact that resettlement does not necessarily require land redistribution to take place. For example, settlers may be moved onto new, unoccupied lands, if these are available for settlement. Redistribution, on the other hand, implies that after existing landholdings are dissolved, new farmers will be resettled onto the available land (except in the case of tenancy reform). For example, Zimbabwe's Rural Resettlement Policy provides for both the subdivision and the redistribution of large commercial farms to individual smallholders or cooperatives, and the resettlement of Communal Area farmers onto newly developed resettlement schemes.

Land redistribution programs involve the acquisition of land, with or without compensation to the owner, and its division among smallholders, the landless or other targeted populations. Often land redistribution occurs within the context of revolution

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(Bolivia, for example), or through the confiscation of foreign-owned property (King, 1977). The goal of a redistribution policy is to improve smaller farmers' access to production resources and change the distribution of income among members of a population.

Jacoby (1971: 170-71) argues that "any purposeful redistribution of land must entail the redistribution of wealth, income, status, capacity for saving and political influence which not only will provide incentives for increased agricultural production and labor productivity but will strengthen the socio-economic position of the peasant population." He also stresses the importance of accompanying institutional changes since "experience has proved the often tragic consequences of redistribution programmes that are confined to the mere distribution of public domain land and which completely ignore the vital problems of agricultural credit, infrastructures, soil improvement and access to markets" (1971: 170).

Land settlement (or resettlement)³ and colonization programs involve the relocation of selected farmers onto new, unsettled areas or less densely populated, already settled areas, as in Indonesia's transmigration program. Where governments are hesitant to make the political changes necessary for land redistribution, land colonization programs are often carried out instead (Oberai, 1988). Colonization is designed to reduce population pressure and resource depletion in one area and generate a more equitable distribution of land and labor for participating colonists (Jacoby, 1971). When farmers must relocate in order to benefit from a land redistribution or land consolidation program, governments often establish centrally-planned settlement programs with the aim of providing the farmer with new economic and political opportunities (Jacoby, 1971). Oberai (1988) stresses,

³ Jacoby (1971) suggests that the term settlement could apply strictly to the sedentarization of nomadic groups, and resettlement to the movement of sedentary people from one area to another. In this paper, however, settlement and resettlement are used synonymously.

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however, that "land settlement should not be considered either as an end in itself or as a convenient means of redistributing the population" since a settlement policy which supports neither the long-term development of the area nor is responsive to scheme-level problems as they arise, may provide settlers with little ability to sustain themselves independently of continued government intervention.

2.1.1.5 Ancillary Land Policies

Other land policies, often carried out as substitutes for land reform, influence land use rights, but have no direct redistributive effects. Land tax reform and consolidation policies improve the incentive structure for agricultural producers through changes in use rights to land, but do not change exchange rights.

Land tax reform is often implemented as a lower cost alternative to a land redistribution program. The purpose of a land tax reform is to: 1) increase landholding costs to larger landowners, forcing them to reduce the size of their estates and/or increase the intensity of their land use; and 2) raise revenue for the government. Governments enact land tax reform to induce agricultural productivity and indirectly redistribute wealth and income. In many countries, however, landlords hold sufficient political power to block or evade tax reforms. Furthermore, King (1977) argues that in countries where they have been enacted, government revenues have only increased by an additional 1-10%.

Land consolidation refers to the reorganization of farms with widely dispersed individual plots, in order to improve productivity and production efficiency. Fragmentation is eliminated either by bringing the disaggregated plots together through land exchange or reducing the total number of farms by combining them. Although fragmentation is often the result of a rational farming system (to reduce crop risk or avoid adverse variations in

soil types), critics argue that it limits the potential for mechanization and increases the time allocated to farming activities. Once implemented, consolidation may be difficult to enforce due to traditional methods of intergenerational land allocation (i.e., inheritance by family members) or farmers' unwillingness to change their existing farming system. This often results in parcels becoming fragmented again, regardless of legislation (King, 1977).

2.1.2 Land Reform and Institutional Change

It was stated above that land reform involves changing the institutional arrangements governing rights to land and other productive resources, which ultimately determine income distribution among individuals. It is necessary to analyze these institutional arrangements and the interdependencies they generate in order to assess the impact of a change in these rights on the agrarian structure and on desired political, social and economic goals. The following sections examine factors that influence changes in land distribution and tenure in an agrarian system, and the potential impacts of these changes on agricultural production, income distribution and employment generation.

2.1.2.2 The Impetus for Land Reform

Ruttan and Hayami assert that economic forces often drive land reform (1990). For example, the induced innovation model of agricultural development hypothesizes that "changes in market prices and technological opportunities introduce disequilibrium in existing institutional arrangements by creating profitable opportunities for institutional innovations" (Ruttan and Hayami, 1990: 106). Forces such as population pressures or new technology would cause the value of land to increase relative to labor or other inputs, and induce the need for land reform (Stevens and Jabara, 1988: 269).

Yet, this model has limited applicability for the study of land reforms since there are examples of LDC tenure systems in nonmarket economies where the institutional rules only provide for use rights. For example under communal tenure or tenant-farming arrangements, individuals have no exchange rights to land and so there are no market economy prices for their land. This model assumes, however, that markets exist through which land can be bought and sold.

Cohen argues that land markets do exist in communal tenure systems, even though they are not based on economic exchanges. While land is not directly salable, "it can be passed to others through a variety of actions, often with a profit" (1980: 360). Nonmarket transfers may increase security of "ownership" for communal land farmers (i.e., land rights transfers through gifts, loans or inheritance), but do not necessarily lead to the development of private property rights through the emergence of a land market. Therefore, in communal tenure systems, economic forces may not induce changes in land tenure.

De Janvry concludes that if an agrarian system comprises "a system of social relations and a system of land tenure" (1984: 264), then it is influenced more by rules of the state than by rules of the market. Ghose explains that "...because land relations tend to be linked to political power relations, the process of agrarian reform is inherently a political process" (1983: 6). Therefore, land reform constitutes a political instrument for transforming an agrarian system when the current system's production and consumption relationships cannot be successfully altered by alternative policy strategies (Ghose, 1983).

2.1.2.3 Impact of Land Reform on Agriculture: The Economics of Land Reform

After years of experimenting with different economic growth strategies for developing countries, development economists have observed that the returns from growth

did not always "trickle down" to lower income groups (Eicher and Staatz, 1984: 13-14). Lower income groups often remain the most disadvantaged because they lack adequate agricultural production and employment opportunities, even to achieve subsistence living standards. Rural incomes are often skewed because an inequitable landholding system restricts access to agricultural resources for a large percentage of the population. Thus, assuming that land is the primary scarce resource "and hence the main source of rural inequality and power," land reform can improve the distribution of resources, as well as stimulate economic growth (Lipton, 1974: 271).

The following sections analyze the implications of land redistribution for agricultural production levels, income distribution and employment generation, in countries where economic development is constrained by inequitable landholding systems.

Reform programs that redistribute land to smallholders assume that: 1) small farmers use land more efficiently than larger farmers; 2) post-reform smallholders are able to contribute to aggregate marketed output; 3) smallholder agriculture creates more employment opportunities than large-scale agriculture; and 4) the reallocation of land resources to smallholders improves income distribution.

In most developing countries capital is a scarce resource, while labor is more abundant. This is apparent in high underemployment and unemployment rates, particularly in rural areas (Dovring, 1974). However, large-scale agriculture tends to employ more capital-intensive methods of production to take advantage of economies of scale inherent to mechanization and to reduce hired labor costs. Consequently, when land is redistributed from large landowners to smallholders, the labor-intensive methods practiced on small farms

would absorb more labor resources.⁴ Meyer (1989) argues that in addition, land redistribution to smallholders reduces the demand for scarce capital resources formerly used in the more capital-intensive processes found on large farms. Further, small farm yields would increase and these farmers would earn higher incomes.

Although most analysts agree that redistributing land to individual smallholders would also redistribute wealth, there is less agreement regarding the potential impact of land redistribution on agricultural production and employment generation. The following three sections review the empirical evidence on this subject in greater detail.

2.1.2.3.1 Impact on Agricultural Production

In making the case for land reform in Kenya, Hunt (1984) summarizes the criticisms **against** the subdivision of large farms into smallholdings. First, since large farms use labor **and** machinery more efficiently, they can capture economies of scale in production, **marketing** and in the dissemination of information. Second, large farms are more likely to **adopt** technical innovations because they can both obtain credit more readily than smaller **farmers** and are able to bear more risk. Third, large-scale agriculture makes a greater **contribution** to overall economic growth because larger farmers have both a greater **propensity** to save and are more able to supply surplus agricultural goods for domestic use **and for export**.

Hunt stresses, however, that a critical examination of these arguments reveals that **land** redistribution can occur without decreasing aggregate agricultural production. First, **with respect** to input efficiency, small farms are often able to vary the proportions of inputs

⁴ Large and small farms are relative terms whose definitions depend on the quantity **and quality** of available land. The size of farms discussed in each case study will be defined **according** to their respective context.

they use (i.e., labor for capital) such that the more abundant resources are fully employed; and resources that cannot be fully utilized may be shared or hired out to others (see also Binswanger and Elgin, 1990). Further, smallholders can realize economies of scale if they act collectively. For example, farmers can purchase inputs, market their output and participate in extension activities as a group (Hunt, 1984).

In assessing the relative efficiency of small and large farms, different performance criteria may be used, depending on the objective to be maximized. For example, considerable evidence supports the thesis that yield is inversely related to farm size and that monetary expenditures per land unit are positively related to farm size, implying that small farms produce greater output at lower cash costs (Berry and Cline, 1979; Hunt, 1984; Binswanger and Elgin, 1990). Binswanger and Elgin (1990) attribute the higher cash costs per unit of output on large farms to the fact that they employ more hired labor than smaller farms. Assuming that the opportunity cost of family labor is less than the wage rate, family labor costs less than hired labor. In addition, family workers have more incentive than hired labor to be productive because they share the risk-bearing, as well as the farm output.

However, small farmers' nonmonetary costs (e.g., family labor) may indicate that total labor use is greater on small farms than on larger ones. Therefore, if the objective being maximized is to increase labor absorption in agriculture, a more relevant criterion would consider person/days of labor employed per hectare on small versus large farms. In the case where foreign exchange constraints exist and the objective is to minimize the use of inputs with substantial foreign exchange components, then smallholder production may be considered more efficient.

Second, if an institutional capacity already exists, credit can often be provided to small farmers at a relatively low cost. With improved access to credit, smaller farmers can adopt technical innovations and bear risk in proportion to their capital (Hunt, 1984).

Third, the potential contribution of large-scale agricultural production to national economic growth depends on the type of crops grown and whether their production generates foreign exchange or marketable surplus for domestic consumption. If small farms produce higher yields than larger farms, they may actually transfer a greater amount of aggregate production to other sectors of the economy than larger farms (Hunt, 1984), if larger farms produce a greater proportion of crops for export. The relative contribution of small farms is contingent on available family labor and the total area cultivated in food versus cash crop production.

Lastly, small farm households have shown a high propensity to save where there are viable investment alternatives (Hunt, 1984). Furthermore, even if larger farmers have a higher propensity to save than smaller farmers, these savings may not contribute to economic growth because large landowners have a higher propensity to purchase luxury items and to use more foreign exchange per unit of output than smallholders (Hunt, 1984).

According to Berry and Cline (1979), the relationship between farm size and land productivity changes as significant off-farm employment opportunities for small farmers emerge. As the small farmer's opportunity cost of labor increases, the inverse relationship between farm size and land productivity disappears because there is less incentive for small farmers to use labor intensively on the small farm. Clearly, however, in the developing stages of an economy, available evidence suggests that the redistribution of large-scale farms into small farms stimulates aggregate agricultural production and economic growth.

2.1.2.3.2 Impact on Income Distribution

Generally, the redistribution of landholdings to smallholders increases their access to income-generating opportunities through employment creation in agriculture. Yet, the impact of land reform on income redistribution in rural areas depends on the income-generating potential (a function of yield) of the newly created small farms, which is highly negatively correlated with the size of the holding distributed to the beneficiaries.⁵ Available evidence indicates that land redistribution to smallholders increases employment per unit of land area (Sternberg, 1971). Furthermore, as argued above, smallholders achieve higher yields than larger farmers. Depending on the level of inputs required for smallholder production, higher yields may result in higher incomes for labor absorbed into the small farm sector. In addition, in the presence of strong consumption linkages, increased farm incomes may lead to increased consumer demand for agricultural goods and services, and for goods and services produced in other sectors of the economy, depending on the composition of the goods and services purchased by smallholders (Pinstrup-Andersen and Hazell, 1987). Therefore, the extent to which land reform redistributes incomes to rural smallholders and the landless will depend on the total number of small farms to be distributed, the size of holding created and on smallholders' capacity to generate income and employment opportunities for both family and hired labor.

⁵ The size of holding distributed determines the number of people who will benefit from the reform. The smaller the post-reform holding, the greater the number of beneficiaries. Yet, if the holdings are too small to meet household food needs, the condition of many farmers could worsen (Lipton, 1974). The holding size must, therefore, take into account the typical farm family's management abilities, available technology, agroecological conditions and the potential of the holding to produce an acceptable income level.

2.1.2.3.3 Impact on Employment

Land reform has been used in primarily agrarian countries to combat high unemployment and underemployment rates which are exacerbated by high rates of population growth and landholding systems that constrain the expansion of rural employment possibilities. As a rural development strategy, employment creation through land reform contributes to economic growth and development, helps to redistribute incomes (Sternberg, 1971) by increasing the amount of family and hired labor applied per land unit (Lipton, 1974) and creates employment opportunities in smallholder agriculture.

Sternberg (1971) contends that although creating jobs is essential, it is equally important to create remunerative jobs, especially given that per capita incomes are generally lower in agriculture than in other sectors of developing economies. He advocates not only changing the existing allocation of resources through land reform, but also expanding cultivated land area where possible and improving rural infrastructure and services. He concludes that "the possibility of creating remunerative employment in agriculture is thus related to the over-all availability of non-human resources in agriculture, the level of technology and investment sources and uses, as well as to their redistribution and redeployment in a more rational manner" (1971: 4).

2.1.3 A Conceptual Framework for the Analysis of Land Redistribution Policies

It is difficult to assess the impact of land redistribution policies in developing countries because there are generally insufficient pre- and post-reform data to rigorously analyze changes in the agricultural sector. The lack of data is particularly critical for this study which is based entirely on secondary data.

Therefore, due to insufficient time series data for each land redistribution case examined, this study focuses on a descriptive analysis of the impacts of redistribution on selected indicators of performance, based on case studies and other available information. Each land redistribution case will be assessed by:

- 1) describing the political, economic and social context of the reform, including the predominant pre-reform tenure systems, the distribution of land and incomes, and the motivation for reform;
- 2) outlining each reform policy in terms of its stated goals, implementation and development of supplementary policies;
- 3) analyzing the impact of redistribution on: a) smallholder agricultural production; b) income redistribution, based on the number of beneficiaries and redistribution's effect on productivity; c) employment generation, for both family and hired labor, and the type of employment created; and d) other case-specific indicators;
- 4) assessing the effects of redistribution on growth in the agricultural sector, where causality can be established; and
- 5) examining the effectiveness of monitoring and evaluation in improving the performance of the redistribution program, where relevant.

Relevant lessons from these case studies and empirical data from Zimbabwe concerning the design, implementation and evaluation of redistribution programs are synthesized in Chapter Three.

2.2 Land Redistribution Policies in Latin America, Asia and Africa

Selected land redistribution programs in Latin America, Asia and Sub-saharan Africa were chosen to illustrate the wide variety of conditions under which distributivist land

reforms occur (Table 2.1). Although each reform was implemented in response to different political, social and economic pressures in order to alter the institutional structure governing rights to land, each offers important insights for the analysis of land resettlement policy in Zimbabwe.

First, the studies of land reform in Peru and Bolivia illustrate policies developed to change tenancy and sharecropping systems to cooperative and individualized tenure for smallholders. In each case, although the government emphasized cooperative development, smallholder agriculture predominated. Furthermore, as policy makers had limited experience with communal landholding systems (except in areas with Indian farming communities), they assumed that freehold tenure provided the greatest incentive and security to the individual landholder. The primary goal of these Latin American reforms was to immediately abolish the latifundia (large landholding system). Hence, given the short-term focus of these reforms, they failed to develop the complementary infrastructure and services essential for a reform to have positive, long-term impacts on agricultural production and income redistribution.

Second, the Indonesian transmigration program illustrates a large-scale resettlement program designed to provide farmers with increased economic opportunities. This case is especially useful in highlighting scheme-level planning, regional development and program evaluation issues.

Third, Kenya's resettlement program is most comparable to that of Zimbabwe because it occurred in a similar political context and had similar policy objectives. For these reasons, particular attention is given to analyzing the implementation of Kenya's program and its impacts on smallholder agricultural production, income distribution (hence the opportunity to test the growth with equity hypothesis), and employment generation.

Table 2.1: Primary Characteristics of Case Studies; Peru, Bolivia, Indonesia and Kenya.

Country:	Peru ^a	Bolivia ^a	Indonesia ^b	Kenya ^c
Type of reform	redistn. to cooperatives	redistn. to coops. and smallholders	smallholder colonization	redistn. to smallholders
Period of reform	1964-1975	1953-1975	1907-	1962-1971
Amt. of land transferred (millions of ha)	8.6	18.0	6.9	1.7
No. of families benefitted (% of rural pop.)	370,000 (6.8)	477,000 (30.0)	939,785 (3.8) ^d	71,000 (4.0) ^e
Average holding size (ha)	23	30	1-2	10-13

^a Data as of 1975.

^b Data as of 1987.

^c Data as of 1978.

^d Transmigrants as a percentage of Java's total population.

^e Number of beneficiaries as a percentage of the total number of smallholders, 1978.

Sources: Peru: Tom Alberts, Agrarian Reform and Rural Poverty: A Case Study of Peru (1981); Russell King, Land Reform: A World Survey (1977). Bolivia: Schlomo Eckstein et al., Land Reform in Latin America, (1978); Thomas F. Carroll, The Land Reform Issue in Latin America, (1961). Indonesia: World Bank, The Transmigration Program in Perspective (1986); J.M. Hardjono, Transmigration in Indonesia (1977); A. S. Oberai, Land Settlement Policies and Population Redistribution in Developing Countries (1988). Kenya: William J. House and Tony Killick, "Social Justice and Development Policy in Kenya's Rural Economy." in Agrarian policies and rural poverty in Africa (1983).

2.2.1 Land Tenure and Agrarian Structure in Latin America

The basic structural imbalances that characterize Latin American agriculture today have their roots in the landholding systems established during the Spanish and Portuguese conquests in the sixteenth century. The resulting political, economic and social inequalities have led many countries to implement agrarian reforms. Carrie Meyer (1989) points to the fact that of 20 Latin American countries, nine have implemented significant reforms affecting over 20% of their rural populations. Several -- like those in Chile and Guatemala - - were short-term, but others -- such as the revolutionary reforms carried out in Cuba, Haiti, Bolivia and Mexico -- have had a profound impact on the agrarian structure of each country. This section first describes the predominant landholding systems in Latin America today; and then analyzes the reform programs carried out in Peru and Bolivia, which are indicative of the redistribution and resettlement policies undertaken to alter this structure that neither "corresponds to the aspirations of the rural population nor to the requirements of ... technological progress" (Carroll, 1961: 162).

Four important landholding systems form the basis of Latin American agrarian structure; the latifundio, the minifundio, the comunidad and the colono systems. The latifundio system, which accounts for most of the land, is made up of large individually-owned estates (either extensively cultivated haciendas or intensively worked farms) that are cultivated by many tenant farmers. For example, King (1977) found that for the continent as a whole, 90% of the agricultural land is in the hands of 10% of the landowners. As Alexander points out, "the traditional large landholding system has seriously hampered the modernization of Latin America. It has hindered economic progress, made for widespread illiteracy and ignorance, and prevented a large proportion of the inhabitants from participating actively in the economic and political life of their countries" (1974: 17).

The minifundia make up the majority of farm units. These small, individually-owned family farms range from 2 to 20 hectares. While the latifundia are located on the best farm land, the minifundia are generally found on the poorest soils. Population growth, compounded by in-migration, has resulted in severe fragmentation of plots and deterioration of their productive capacity.

The comunidad is a collective farming system operated by several extended families, whose origins lie in early Indian agriculture. Although cooperative in nature, it is considered restrictive because it does not provide incentives for individuals to invest human or capital resources in the production process (Carroll, 1961). The ejido is a modern version of the comunidad which resulted from the Mexican land reform, but is much more integrated into the social and economic fabric of the country (Carroll, 1961).

The colono system serves as an agricultural labor reserve for the large estate sector. Since most farmers do not own land, large landowners typically compensate them for their labor with a cash payment, or more frequently permit them to temporarily cultivate a parcel of land. To earn this compensation, the colono (tenant farmer) must work a specified number of days, as well as fulfill other obligations to the estate. The colono system often exists in conjunction with cash-rent tenancy or sharecropping.

These four systems share some of the same characteristics. All are generally inefficient, and concentrate resources into the hands of a very few. Among the latifundios, the hacienda system is the least efficient because landowners maintain a significant amount of idle land, resulting in low output per worker and per land unit. Although plantations produce greater output per land unit, they still perpetuate a skewed distribution of resources. The minifundios suffer from the increasing depletion of an already small resource base, with no available incentives or opportunity to invest in better production

methods. The minifundios, similar to the colonos, lack resources, investment opportunities and institutional support such as extension, credit, medical and school facilities.

The following two case studies examine land redistribution programs implemented to counter the extreme concentration of land and incomes in Peru and Bolivia.

2.2.1.1 Land Redistribution in Peru

Peru's land reform program, while nonrevolutionary, was designed to abolish laws favoring tenant-landlord relationships and redress the skewness in rural incomes. Recognizing that the skewed rural landholding pattern was responsible for Peru's limited agricultural growth in the 1950s and early 1960s, the government proposed to redistribute 8.6 million hectares of agricultural land to approximately 370,000 smallholder families (6.8% of the rural population). The land reform policy unfolded over portions of two political regimes; from 1964-68 and from 1969-75.

Initially, the government's primary stated objectives were to improve the country's social structure and productive capacity, and later, to improve income distribution among the population (Alberts, 1981). The reform was implemented by expropriating all but the most efficient large farm operations and turning the land over to cooperatives and individual smallholders (King, 1977; Kay, 1983). As compensation to the former property owners, the government provided long-term bonds and cash. Major obstacles limiting the program's success included the government's ability to accommodate the numerous squatters who applied for land titles, and the lengthy expropriation procedures which limited the total amount of land transferred (Alberts, 1981).

By redistributing land to cooperatives and pockets of peasant insurgency, the reform had no commitment to support smallholder agriculture and create the agrarian structure

desired by the government. The primary beneficiaries were permanent workers on sugar, cotton or rice plantations who received higher wages, improved working conditions and membership in the newly formed cooperatives (Alberts, 1981). Although the number of smallholdings increased, their average size decreased. Thus, the number of minifundistas actually increased as a result of land redistribution. Furthermore, Alberts (1981) found that income distribution did not improve among Peru's rural population and, in fact, worsened among the lowest income group.

Many smallholders received no benefits from the reform because they cultivated remote parcels that did not command government attention, even though the government had stated that it would also improve service provision to marginal rural people. In retrospect, Kay (1983: 232-33) pointed out that, "within the context of a market economic system and given the characteristics of the pre-existent agrarian system, it is likely that a redistributive type of reform which assigned land to peasant farmers and peasant communities would have been more successful [than the government's focus on the cooperative sectors]." It also seems likely that the reform increased income concentration in the higher income groups (Kay, 1983). For example, census data show that during the reform period, the percentage of the population working in agriculture declined by approximately 8%, the number of self-employed agricultural workers increased by 25% and the number of wage laborers fell by about 10% (due to the subdivision of the large farms that had previously employed large numbers of wage laborers) (Alberts, 1981).

Although, official data do not show a decline in overall agricultural production associated with the reform during these years, production stagnated and eventually decreased per capita from the 1960s to the middle of the 1970's. Alberts attributes this primarily to a declining resource base, the cultivation of increasingly less productive land,

low private investment in agriculture and price controls and import subsidies that discriminated against agriculture (1981).

Without question, the government succeeded in meeting its less publicized objectives of increasing the food supply to urban areas by supporting large-scale cooperative production levels. Although the government placed subsidies primarily on imported foods to prevent urban food prices from rising (which amounted to 87% from 1973 to 1976), this policy resulted in reduced rural incomes. In addition, Kay (1983: 232) observed that "the government's cheap food policy not only negatively affected rural incomes but also by reducing agriculture's profitability, indirectly affected investment, production and employment in this sector." The government, however, failed to mobilize rural political support because most smallholders opposed the government's large-scale and cooperative enterprise models for the reform sector. Thus, "in the absence of a genuine mass participation, the collective cooperative model had to be imposed from above and was perceived as a constraint by the very people it was supposed to benefit" (Kay, 1983: 235).

2.2.1.2 Land Redistribution in Bolivia

The Bolivian land reform, although the product of a revolution, introduced individual smallholder agriculture into an agrarian system historically based on sharecropping and indigenous farming collectives. The government's primary reform goals were to destroy the latifundia and decrease land concentration among large landowners. Specific objectives of the 1953 land reform decree were to improve agricultural development, conserve natural resources and stimulate internal migration (Carroll, 1961). As in the case of Peru, all large landholdings except highly capital-intensive operations were expropriated. The government

provided 25-year bonds as compensation to former landowners and reform beneficiaries were expected to repay the government for land received (Carroll, 1961).

Due to the violent nature of the peasant revolution and the political instability that followed, the government faced difficulties in establishing titles for new beneficiaries and thus farmers had insecure rights to land. 25% of the land was initially distributed under collective title, but by the 1970s, most of this land had been redistributed to smallholders (Eckstein et al, 1978). Administrative, technical and financial resource constraints limited the government's ability to establish a technical basis for reform planning, and effectively carry out the land redistribution program, including the provision of complementary services to new landowners (Carroll, 1961). As of 1960, few landlords had received their compensation and the government had not required beneficiaries to pay for their holdings (Carroll, 1961).

The reform had a positive impact in areas suffering from serious social conflict. In those areas, the standard of living improved for farmers who received land and individual title. On a limited regional basis, the reform increased peasant participation in the market economy and expanded farmers' access to metal plows, chemical fertilizers and hired tractor services (Eckstein et al, 1978). While agricultural production decreased following the initial land redistribution, subsequently, staple food production increased significantly as a result of the reform -- primarily due to an expansion in area cultivated and increased access to inputs (Eckstein et al, 1978). Although there are no data on the impact of the reform on income distribution, if marketed production increased and consumer spendings tripled at one time (King, 1977), then it must have increased incomes of the land reform beneficiaries.

Since the reform was implemented as a reaction to a peasant revolution, the government made no effort to systematically restructure Bolivia's agrarian structure. It is

clear that more comprehensive legislation and a greater commitment of resources would have ensured a broader impact and a greater distribution of benefits. The reform affected 30% of the rural population, achieving some of the government's objectives. For example, a significant amount of land was distributed, agricultural labor relations were reformed, and internal migration was stimulated through colonization programs. However, the Indian communities experienced little or no development, simply land restitution (Garcia, 1970). In addition, the reform had little impact on agricultural development outside of the reform sector and it probably did not strengthen resource conservation, especially since the conditions of the minifundista were not improved. Finally, the reform was not totally successful in calming rural conflicts and some smallholders lost their new titles to large landowners who wanted to regain their properties (King, 1977).

2.2.2 Land Tenure and Agrarian Structure in Asia

Agrarian structure in Asian countries differs from that of Latin American countries because farms sizes are smaller and the landholding pattern is less skewed. A large proportion of land is individually owned (for example, 92% in India, 75% in Indonesia, 42% in Pakistan, 58% in the Philippines).⁶ However, current landholding patterns result from land reforms carried out in these countries. Prior to land reform, high rates of tenancy existed in many countries (for example 50% in the Philippines (Ahmed, 1975), where tenants paid a large proportion of their output to landlords and lacked security of tenure (King, 1977). Even today, tenant farming exists, but to a much lesser extent. For example, in India tenants farm only 4% of the land, and similarly 3.2% in Indonesia, while in the Philippines they farm 29%, and 35% in Pakistan (Bell, 1990). Furthermore, tenants farm

⁶ FAO (1981), based on 1970 data.

much smaller plots than owner-operators. For example, in India, tenants cultivate about 1.5 hectares while owner-operators cultivate 3 hectares. Individual smallholders farm small plots ranging from 0.9 hectares in the Republic of Korea, to 3.6 hectares in the Philippines and 5.3 hectares in Pakistan (Bell, 1990).

While there is still some inequality in resource distribution, rapid population growth constitutes the most severe problem facing most Asian countries today. The population in many countries increases by at least 2% annually, while the labor force increases by 2-3% (World Resources Institute, 1990). Population densities in rural areas average from 500 persons per square kilometer, to 1,500 per square kilometer on Java in Indonesia (King, 1977). Increasing population growth results in small, fragmented plots for farmers, overcrowding in urban areas, and increases in the labor force that often surpass growth in national food production. Much of the Asian labor force is employed in agriculture (for example, 55% in Pakistan; 57% in Indonesia; 52% in the Philippines; and 70% in India).⁷ Thus, governments are faced with accelerating population pressures on a limited resource base. In the past, many countries responded to these pressures by expropriating land from large landowners for subdivision among smallholders, tenants and the landless (King, 1977). Indonesia's strategy, the transmigration program, represents one such effort to alleviate population pressure on Java, Madura, Bali and Lombok, create employment and reduce poverty through land resettlement.

2.2.2.1 Land Redistribution in Indonesia: Transmigration Policy

Indonesia's transmigration policy evolved from early Dutch attempts to alleviate population pressure on Java by moving voluntary migrants to the outer islands (Oberai,

⁷ From the World Development Report, 1988.

1988). In the late 1960s, when average population densities had reached 600 persons per square kilometer, the Indonesian government began to formulate a large-scale transmigration program under the first Five-Year plan (Repelita I). These plans emphasized alleviating population pressure from Java, as well as increasing social welfare and promoting regional development on the outer islands. Since revenues from oil exports financed much of the program, the transmigration budget varied with oil prices, fluctuating over time from 0.7 to 6.1% of the total development budget.

The Indonesian government (GOI) selected transmigrants according to specific criteria (i.e., the head of household must be between 20-40 years old, married with a small family and have some agricultural experience)⁸ and provided them with transportation to the site, a house, land and a subsistence input package for one year. However, upon arriving at the sites, settlers often encountered poorly defined land boundaries and an absence of legal records, leading to conflicts between local residents and transmigrants over land titles. In addition, the indigenous people of the outer islands tended to resent the migrants who have better access to facilities and services (Oberai, 1988). For example, a 1981 UNDP/OPE Management and Monitoring survey found a higher ratio of agricultural extension workers to settlers in transmigration areas than in the local outer island farming communities (Babcock, 1986). Transmigration authorities have attempted to mitigate this problem by settling some local people onto transmigration sites, improving local land acquisition methods, and encouraging indigenous entrepreneurs to establish commercial relations with the new settlers (Oberai, 1988).

⁸ The government also resettles flood victims, the landless, farmers whose land is needed for development purposes, and the urban poor (Suratman and Guinness, 1977).

The government finances primarily rainfed and irrigated upland sites, tidal cultivation sites and tree crop plantations. Critics argue that in many resettlement areas, site planning and selection has resulted in crop failure, declining soil fertility and land disputes with local farmers that disrupted farming activities (Suratman and Guinness, 1977). Not all site-specific problems can be attributed to oversights in planning since part of the site selection criteria includes national security considerations and the colonization of less populated areas (Suratman and Guinness, 1977).

The GOI provides no compensation to outer island residents for land ceded to the transmigration program since it feels that they should relinquish land as a contribution to national development (World Bank, 1988). Although the government required earlier transmigrants to pay for the initial services they received, the government discontinued this policy to allow transmigrants to achieve an adequate standard of living more rapidly (Hardjono, 1977). The GOI intended to transfer scheme-level management responsibility to the provincial (district) level after five years of transmigration authority supervision. The districts, however, often encounter difficulties in financing infrastructure maintenance and scheme-level personnel after the GOI withdraws its support.

According to World Bank studies, transmigrants produce approximately 2 million tons of unmilled rice, which is equivalent to 17% of total outer island production and 5% of Indonesia's total rice production (World Bank, 1988). On a regional level, the World Bank (1988) estimates that since 1950, transmigrants have contributed from 45-96% of incremental rice production, depending on the area. However, due to decreasing soil fertility (particularly on upland, rainfed sites), declining rice yields and thereafter, declining agricultural incomes, have forced farmers to turn increasingly to non-farm sources of employment.

Transmigrant incomes vary by both farm model and length of settlement. More recent transmigrants generally earn lower incomes than farmers in the rural sending and receiving areas, although more established farmers earn slightly higher monthly incomes than rural Javanese (World Bank, 1988). Data show that farmers on older upland sites earn low agricultural incomes, attributable to declining soil fertility, which they supplement with off-farm income. Recent settlers in swamp reclamation areas earn the lowest total incomes (farm and non-farm), while farmers with tree crops and those on older tidal sites earn have the highest agricultural incomes. The proportion of total household income derived from off-farm employment ranges from 40-80% (again depending on farm model and period of settlement), indicating that some transmigrants find off-farm employment more remunerative than work in agriculture (World Bank, 1988).

While some new transmigrants earn lower incomes, most of those surveyed believed that their living conditions have improved after transmigration (World Bank, 1988). In contrast, they reported that transportation services were worse in the transmigration areas than in Java (World Bank, 1988).

During Repelita III (1979-84), the transmigration program created between 500,000-600,000 jobs on both rainfed food crop schemes and on tree crop settlements (World Bank, 1988). This translates to 1.3-1.6 jobs created per transmigrant household, or a total of 12-15% of the incremental labor force for Java and Bali (World Bank, 1988). Critics argue that transmigration is very expensive, yet it costs less to create employment for sponsored migrants than in the industrial sector (\$10,000-20,000 per job), although more than in service industries in Indonesia (World Bank, 1988). For example, on upland schemes, the government pays approximately \$3,300-4,100 to create one permanent job. On tidal schemes, the cost increases to \$4,500-5,500. On more remote sites, the cost per job

increases by approximately 25-50%, depending upon the farm model (World Bank, 1988). Although associated rural works programs create some temporary employment, and transmigration projects offer limited opportunities for low-level professionals, they generate no important secondary industry (Babcock, 1986).

Critics also argue that transmigration has led to increased environmental degradation. For example, the World Bank found that during Repelita III, between 30-50% of the total land cleared for sponsored migrants was previously forested. The relative proportion of forested land cleared for each transmigration site differs depending upon the province, and ranges from 0.2% in Sulawesi to 4.0% in Sumatra (World Bank, 1988). At the regional level, transmigration contributed to infrastructure development, but Oberai (1988) observed a marginal impact on regional integration in terms of developing industry and trade, exploiting and processing natural resources and improving transport and communications.

To the degree that the program has absorbed a small amount of Java's growing population, transmigration has been successful. Between the 1940s and 1987, the government settled almost 950,000 families on the outer islands, in addition to an unknown number of spontaneous migrants who received no government assistance. Even with this tremendous effort, Oberai (1988) projects that the transmigration program can only hope to remove 20% of the annual increase in Java's population growth.

The program's impacts on regional development are more difficult to discern. Although many families achieved higher standards of living after the first several years of acclimation, environmental degradation, a lack of human resources to administer the transmigration sites, and growing land scarcity are becoming increasingly important problems. In addition, the government has made a very limited attempt to monitor the

progress of transmigration in any systematic fashion, which inhibits its ability to respond to local-level problems as they arise. The economic rates of return to transmigration are very low; from negative values to approximately 4% for the most common settlement scheme (the upland model), to 11-13% for coconut, oil palm and rubber tree crop schemes. Critics charge that the program spends large sums of national funds on a small percentage of the population, with excessively low rates of return (Babcock, 1986). However, these same critics have yet to define any alternative policies to meet transmigration program objectives.

2.2.3 Land Tenure and Agrarian Structure in Africa

Tenure systems in Africa differ significantly from those in Latin America and Asia. Communal tenure initially formed the basis of African landholding systems, although colonial governments altered traditional tenure systems by introducing individualized ownership, which subsequently changed the agrarian structure. A study by Clive Bell (1990) examined average holding sizes and the distribution of landholdings by tenure system for 18 countries.⁹ His study, unfortunately, provides sparse data on the distribution of landholdings in Africa by type of tenure. The only complete data set is for Cameroon, which indicates that approximately 59% of the land is held under communal tenure, 25% under mixed tenure and 2% privately owned. This is in contrast to some Asian countries where 66% of the holdings are individually owned, and Latin America where 62% are individually owned. Communal tenure is a much less important form of landholding in Asia (less than 0.1%), as well as in Latin America (6%). Average landholding sizes in Africa are small -- 2.5 hectares -- compared to 3.4 in Asia and 47.1 in Latin America.

⁹ FAO (1981), based on 1970 data.

Since landholding systems determine incentives to farmers and income distribution, the choice of tenure system is an important policy issue, particularly in Africa. Neoclassical economists argue that individualized tenure systems: 1) increase tenure security and reduce the transactions costs involved in land disputes; 2) lead to greater investment and increased demand for credit; and 3) create a land market whereby land is transferred to those who are able to extract the highest value from it (Barrows and Roth, 1989: 6). The neoclassical model thus concludes that traditional tenure systems are inefficient because "property rights are not clearly defined, costs and rewards are not internalized and contracts are not legal or enforceable" (Barrows and Roth, 1989: 2). Economic efficiency, it is thought, will guide the evolution of land tenure systems.

As discussed in previous sections, property rights define the distribution of land and determine how rents from land will be distributed. Bell states that the "incomes of the rural poor depend heavily not only on the efficiency with which land is used, but also on the distribution of the rents generated by its use" (1990: 144). Traditional African land tenure systems, based on communal landholding, limited the degree of skewness in individual incomes (Schmid, 1987: 144). However, during the colonial period, governments advocated individual tenure because "land tenure [was] expected to evolve from the simple form of tribal ownership to individual ownership" (Feder and Noronha 1987: 148). Consequently, colonial governments developed different administrative rules to restrict indigenous farming, including the delineation of districts which ultimately reinforced ethnic differences and restricted the movement of people outside their districts (Feder and Noronha, 1987).

Following independence, African governments adopted different tenure systems which permitted varying degrees of communal and individualized tenure. Feder and Noronha (1987) classify these systems into three categories: 1) those which permit

individual titles (exchange rights, freehold status); 2) those which recognize different types of tenure (use and exchange rights systems); and 3) those which vest title to land in the state (use rights only, leasehold status). They suggest that although colonial governments distorted tenure systems in Africa, there has always been some degree of individualization in African tenure systems because it offers security and a form of collateral to farmers. Feder and Noronha (1987) conclude that to ensure increased land use efficiency, governments must promote some form of individualized tenure (either long-term leases or titles), depending on the costs of instituting such a system.

In contrast, Cohen (1980) contends that traditional tenure systems offer more security and flexibility in land use than critics usually assume (also see Hunter and Mabbs-Zeno, 1986). He states, "proponents of reforms converting corporate [communal] patterns to freehold rarely consider whether there might be advantages in corporate tenures that should be preserved..., or whether credit systems and improvements in land use can be promoted by strategies other than complete transformation to freehold" (1980: 355).

Similarly, Barrows and Roth (1989) argue that other institutional variables, in addition to land tenure laws, affect investment levels and agricultural incentives. They found no evidence in their three-country study (Kenya, Zimbabwe and Uganda) to support the thesis that conversion to a freehold system increases the demand for capital and the aggregate supply of credit, as presumed by the neoclassical model.¹⁰

"In the presence of economic opportunities in agriculture, the institutions governing control of land can constrain development if inflexible rules of tenure prevent movement of resources among individuals or if tenure insecurity lowers investment

¹⁰ Barrows and Roth (1989) did find, however, that individualized tenure in the presence of a land market may transfer land to those who are able to extract a higher value from the resource. It should be noted that this result would be inconsistent with income distribution objectives since those who were unable to obtain an equally high value from land would have no access to the resource.

demand.... However, it is clear that, in the absence of profitable technological options, registration [for freehold tenure] will have little effect on investment and productivity in agriculture" (1989: 40).

Therefore, although changing a tenure system from communal to freehold produces new economic opportunities, registration of freehold titles may be a costly and unnecessary undertaking, unless other institutional constraints which constrain agricultural production are first removed.

Given the diversity of the institutional conditions shaping agricultural development in African countries, there is certainly no one prescription for institutional reform in tenure relations (Cohen, 1980). Hunter and Mabbs-Zeno point out that "policies which facilitate adaptation are likely to be more beneficial than widespread upheaval in tenure relations... Resources would better be spent in facilitating the adaptability of existing institutions and improving pricing, credit, marketing, etc., policies" (1986: 118-19).

The question that arises then is not whether traditional tenure systems should be maintained or replaced with individualized tenure systems. Rather, if there is to be a shift away from traditional systems in response to new economic opportunities, given the inherent flexibility of traditional tenure systems in adapting to institutional and technological change (Cohen, 1980; Hunter and Mabbs-Zeno, 1986), policymakers must consider how institutional reform (with or without land tenure reform) will promote desired goals of increased agricultural production and increased equity.

Several researchers suggest the need for empirical research to explore the dynamics of institutional change in indigenous tenure systems in Africa (Cohen, 1980; Feder and Noronha, 1987; Barrows and Roth, 1989). This study attempts to identify and predict the impact of some of these institutional variables (i.e., land tenure, marketing, credit, extension and other rural development policies) on the performance of land resettlement in

Zimbabwe, using relevant information from the cases presented in this study and from other empirical research. During Kenya's land redistribution program, which was accompanied by the institution of individualized tenure for former communal land farmers (freehold status), the government combined land tenure reform with other institutional changes, to provide resettlement farmers with incentives to increase agricultural production and to redistribute land more equitably among European and African farmers.

2.2.3.1 Land Redistribution in Kenya

Land redistribution in Kenya represents a political response to population pressure in black farming areas and to smallholders' desire for land from which the colonial government had excluded them (House and Killick, 1983). The colonial system of land ownership established separate status and land rights for Europeans, Africans and Asians. Therefore, resettlement policy in Kenya sought to induce political stability by reducing inequality in land ownership between European and African landholders and creating greater employment opportunities for Africans. In addition, the government hoped to increase the incomes of settlers who moved to the schemes.

To achieve these objectives, the Kenyan government instituted the Million Acre program to redistribute more than 400,000 hectares to smallholders, over a five-year period. Thus, the government created high-density schemes to accommodate the landless and unemployed, and low-density schemes on higher quality land for incoming farmers with more agricultural experience. Priority was often given to the previous employees of a farm whose land was to be redistributed.

Commercial farmers sold land to the Land Development and Settlement Board on a willing buyer, willing seller basis. The government valued land at 1959 prices (the last year

in which a significant number of land market transactions occurred) and paid sellers a proportion in cash and the balance in annual installments backed by a 5% promissory note. The government granted freehold tenure status to smallholders on the settlement schemes, contingent upon repayment of their land and development loans, and compliance with recommended farming procedures and government regulations (Harbeson, 1984). Settlement regulations stipulated that farmers could neither subdivide, transfer, nor improve their plots without government consent (Harbeson, 1984).

The government provided roads, soil conservation works, water supplies and trading centers for each scheme (de Wilde, 1967). As de Wilde notes, however, sometimes water supplies for livestock and household use were inadequate at the time of initial settlement. In addition, settlers could use credit to obtain seed, fertilizer, livestock, fencing and other inputs, but Hazlewood (1985) attributes shortages of some inputs to settlers' inability to achieve target incomes, and thus repay their loans. The government developed scheme administration differently than traditional project management so that external management would decrease gradually as the scheme reached maturity (Clayton, 1978). The Department of Settlement proposed to transfer scheme-level management from its personnel to the scheme cooperative in a four-stage process, but in many cases, the Department of Settlement preferred to retain more control in order to ensure greater marketed surplus (Clayton, 1978).

Studies present mixed findings regarding resettlement's ability to generate growth in agricultural output and farm incomes. Von Haugwitz (1972) reported that neither the high nor the low-density farm model was superior, because at low altitudes the low-density farms performed better but at high altitudes the inverse was true. Leo (1989) cites data (1964-68) from the Government of Kenya's Economic Appraisal of the Settlement Schemes

which indicated that output and farm profits per acre increased more rapidly on high than on low-density schemes. Clayton (1978) points out that an expansion of the area cultivated on the scheme explained much of this rapid increase in farm output. Clayton found higher cash surpluses on the high-density schemes, although overall, a greater percentage of low-density farms achieved positive cash surpluses. Hunt's comparative study for settlement schemes (1967/68) and for large farms (1970/71) shows that in both sectors, the smaller size of farms¹¹ produced significantly higher yields than larger sized farms (1984).

It is virtually impossible to quantify the effects of Kenya's land redistribution on the poverty and inequality under which a large percentage of the rural population lived. Even though approximately 71,000 families benefitted from resettlement, the benefits were not distributed equally. For example, the landless did not obtain the same opportunities accorded to other beneficiaries and they were often allocated marginal lands. Hazlewood (1985) found that the need to "make settlement pay" influenced the selection of settlers to the point that many landless were excluded from the program because they showed less ability to repay loans for their land. Furthermore, income concentration increased because as Migot-Adholla observed, settlement officers encouraged absentee urban-dwellers with sufficient income to purchase land from smallholders who defaulted on their loan payments (Collier and Lal, 1986). Leo (1989) states that throughout the planning and implementation phases of Kenya's resettlement program, the government established high-density settlements to meet political objectives (i.e., to quell discontent in the African areas), while establishing the low-density settlements for more viable smallholder agriculture.

Repayment rates were low, and consequently, indebtedness was high among farmers

¹¹ Smaller refers to those farms under 20 acres (8 hectares) in the settlement sector and under 250 acres (100 hectares) in the large farm sector. Many settlement plots are from 8 to 24 times larger than the typical Kenyan smallholding of 0.5 to 1.5 hectares (Hunt, 1984).

on the resettlement schemes. There are several reasons for high indebtedness levels, which were for the most part, attributable to oversights in planning. First, the budgets developed for the schemes provided insufficient income to meet a family's cash expenditures (von Haugwitz, 1972). Second, the government anticipated that a farm would achieve full production in four years. However, the initial loan installments were due in full at the end of the first six months and settlers often had difficulties generating sufficient income to begin payment on these installments (von Haugwitz, 1972). Third, the farm budgets provided little allowance for crop failures due to drought, payment delays, heavy plowing charges levied by private firms or the obligation of cooperative members to purchase any capital equipment left on a farm (Harbeson, 1984). Heyer (1976) cites that low repayment rates on settler loans made the resettlement program seem like a less viable development program and limited the integration of the settlement schemes into the national program for smallholder development.

The settlement farmers employed more labor-intensive methods of production than the capital-intensive, highly mechanized large-scale farmers. As a result, although wage employment decreased as the large-scale farms were broken into smallholdings (Maitha, 1976), resettlement created greater employment opportunities for smallholders and their families. Compared to other types of settlement schemes, rainfed smallholder settlement employed more workers than the large farms (568 adults/1,000 hectares versus 319 adults/1,000 hectares), while the more capital-intensive irrigation-based resettlement schemes employed nine times as many workers (2,807 adults/1,000 hectares) (Clayton, 1971).

During the years 1964-72, when most resettlement was carried out, gross domestic product increased annually by 6.5%. Marketed agricultural output increased by 6.7%

annually, while subsistence agricultural output grew by 3.7% (population growth, however, averaged almost 4% annually), and manufacturing increased by 12% per annum (Hunt, 1984). After 1973, the Kenyan economy began to show signs of instability and the average growth rate began to decrease (Hunt, 1984).

Since resettlement, the most significant changes in the agrarian structure have taken place in the small farm sector, leaving the large-scale farming sector basically intact. This implies that there is still a skewed distribution of land ownership in Kenya. For example, one third of all agricultural land is still held in large farms, where more than 60% are holdings over 100 hectares (Cohen, 1980). Within the smallholder sector, 52% of the smallholders possess less than 15% of the total agricultural land, in holdings that average two hectares or less (Cohen, 1980). In addition, as of 1980 there were still an estimated 300,000 landless, 19% of Kenya's 1.7 million rural households, who could no longer afford to purchase land since title security caused land values to increase significantly (Cohen, 1980).

2.3 Key Factors Influencing the Success of Land Redistribution Programs

Although different political, economic and social forces shaped the land redistribution programs discussed in the previous sections, important lessons can be drawn from these studies. These lessons can then be applied to an analysis of resettlement policy in Zimbabwe.

Each phase of land redistribution -- planning, implementation and evaluation -- influences the program's impact on agricultural production, income distribution and employment generation. The following sections outline the factors which, based on the case

studies reviewed in this paper, play the most significant roles in determining land redistribution's success as a rural development policy.¹²

2.3.1 Site Selection

The selection of individual sites for resettlement schemes, based on technical studies of soil type, carrying capacity, access to water and other factors, determines the quantity and quality of land that settlers will have to grow subsistence production and marketable outputs. During the planning and implementation phases of Peru and Bolivia's land reform programs technical, administrative and financial constraints limited those governments' ability to select land with adequate short and long-term agricultural potential. As a result, many Peruvian smallholders did not benefit from reforms biased toward the cooperative sector and received small plots on poor soils, thus joining the growing number of minifundistas. In Kenya, technical studies of resettlement land provided planners with insufficient information on the income-generating potential of farming systems, resulting in high indebtedness levels among settlers. In Indonesia, inadequate soil testing during the planning phase led to variable soil conditions on some sites which could not support intensive agricultural production, given existing farming practices.

Clearly, the technical analysis of proposed resettlement sites influences not only the viability of agriculture in certain areas, but ultimately the distribution of incomes among those resettled (Christodoulou, 1965).

¹² Arthur Lewis first raised some of these issues in 1954 (subsequently published in Eicher and Witt, 1964; see also Christodoulou, 1965). It is evident from the case studies presented here that the lessons from earlier settlement attempts have not always been incorporated into more recent programs.

2.3.2 Settler Selection

Settler selection often influences the success of scheme-level cooperation and management, as well as settlers' success in farming (Lewis, 1964). In Kenya, settlers originating from different communities encountered difficulties in forming scheme-level cooperatives that would ensure the marketing of their produce, because they had not first developed a community among themselves. In both Indonesia and Kenya, settlers initially had difficulties associating with the neighboring communities because the local people thought that settlers had access to better services and facilities.

Although the Kenyan and Indonesian authorities settled landless and less experienced farmers, in addition to skilled agriculturalists, there is no indication in either case that farmers with varying levels of expertise could not maintain viable farms given equal access to services and technical support.¹³ Clearly, however, more experienced farmers will have the skills and resources to produce higher levels of output and make greater investments in their farms than less experienced farmers.

The issue of settler selection ultimately becomes a policy question of who should benefit from land redistribution and how the agricultural sector should develop to support economic growth in other sectors. A welfare-oriented policy would emphasize the settlement of resource-poor individuals, in order to help them improve their living standards. A growth-oriented policy would focus on the settlement of farmers with more advanced agricultural skills to stimulate more rapid growth in agricultural output.

¹³ In Kenya, for example, many farmers settled on high-density schemes (primarily the resource-poor -- the unemployed and landless) achieved more rapid increases in output and farm profits per acre than did the more experienced farmers on low-density farms (Von Haugwitz, 1972; Leo, 1989).

This paper does not advocate one policy option above the other, but merely recognizes the fact that, regardless of the strategy chosen, there must be some way of incorporating resource-poor individuals into the development process. This implies either providing these individuals with increased agriculture or non-farm opportunities in rural areas, or providing them with job-training programs and employment opportunities in urban areas. Without a coherent policy to incorporate resource-poor individuals into development programs, migration into urban areas and conflicts over land use in rural areas will eventually overwhelm governments' administrative and financial capacity to mitigate these problems.

2.3.3 Provision of Institutional and Administrative Support

Intensive institutional and administrative support are most important during the early years of settlement, when farmers are unfamiliar with the new farming system and have not yet developed community-level management skills. Resettlement planners should emphasize the development and initial maintenance of scheme infrastructure to aid settlers in establishing linkages with neighboring communities in the region. As settlements become integrated into regional networks for input supplies, transportation and marketing, they do not need to rely on intensive government support. For example, in both Indonesia and Kenya, the governments intended to transfer administrative responsibility from national authorities to the scheme-level. A lack of scheme personnel has impeded the transfer of management authority to the local level in Indonesia, while the Kenyan government withdrew its authority more slowly to maintain control over the marketing of scheme production.

The Indonesian government provided new settlers with essential inputs and subsistence supplies until they harvested their first crops. The Kenyan government made inputs available to settlers on credit, but this credit, in conjunction with other loan repayments, only contributed to their eventual indebtedness. The Bolivian and Peruvian governments lacked the resources and foresight necessary to extend input supply, marketing and extension services to most of the reform beneficiaries. In Bolivia, however, where extensive land redistribution occurred, studies show that where some farmers obtained better access to existing services, they increased their production of some crops.

Macroeconomic policies also determine the impact of land redistribution programs. For example, neither the Peruvian nor the Bolivian governments created the necessary conditions for economic growth following land redistribution. In both cases, price controls and import subsidies discriminated against long-term growth in the agriculture sector. As Kay explains in Mosley (1985: 444), "much of the good done to agriculture by the [Peruvian] agrarian reform was undone by complementary policies which were unfavourable to agriculture, including price controls on many home-grown food grains and subsidies on imported foodstuffs."

2.3.4 Land Acquisition and Beneficiary Payment for Land

The manner in which governments acquire land and exact beneficiary repayment determines the impact of the program on the number of beneficiaries and on the distribution of incomes among those beneficiaries.

Governments often disguise expropriation as acquisition by using long-term bonds whose value depreciates greatly before maturity (the Peruvian and Bolivian governments both purchased land in this manner) (Binswanger and Elgin, 1990). While such action

decreases government-level expenditures for land, it also decreases confidence in the government and makes landowners less willing to sell their property voluntarily. Kenya acquired land on a willing-buyer, willing-seller basis, accepting voluntary land sales at market prices. The political motivation for this strategy outweighed its costs in terms of national resources because it strengthened foreign investor and large-scale farmer confidence in the government's stability.

The costs of acquiring land for redistribution are very high and governments usually finance these costs through loans and external grants. Most governments, therefore, try to exact some payment from the reform beneficiaries to finance part of the program. The Indonesian government used its extensive oil reserves to finance the transmigration program and thus did not require transmigrants to pay for their land or any services they received. In addition, the government believed that transmigrants could achieve adequate living standards more quickly if they were not burdened with debt repayment.

The Kenyan government, on the other hand, had more limited financial resources, and attempted to rapidly finance resettlement by accelerating settlers' debt repayment schedules. When farmers were unable to make their loan repayments because of crop failures, they fell in arrears with their repayment schedules and accrued interest charges. In fact, many subsequently lost their land titles to wealthier urban purchasers. The Kenyan repayment plans could have been more successful had the government based these plans on farm budgets which allowed for some of the risks that new settlers face during their initial years.

2.3.5 Land Tenure Policy and Institutional Implications

In each case examined in the previous sections, the pre-reform distribution of property rights had produced an unacceptable distribution of land and incomes for the landless and for those farmers who were either tenant-farmers or farmed small, marginal holdings with limited rights to transfer or expand their landholdings. In the cases of Peru, Bolivia and Kenya, the impetus for changing the specification of property rights originated with those farmers whose rights to land restricted their access to more productive economic opportunities. The Indonesian government, when faced with Java's rapidly increasing population and the inability of many inhabitants to generate sufficient incomes from their landholdings, promoted settlement of the outer islands to reduce overcrowding in Java.

Institutional change in each case involved modifying property rights to increase the flow of benefits that farmers could earn from smallholdings under individual proprietorship. This was accomplished through: 1) the appropriation of land from larger titled landowners and its redistribution to smallholders (Peru, Bolivia and Kenya) and cooperatives (Peru and Bolivia); or 2) the appropriation of land from holdings under indigenous tenure law and its subdivision to smallholders (Indonesia). In all four case studies, the property rights of the targeted beneficiaries were changed from use rights in land to exchange rights.¹⁴ Exchange rights were specified differently in each reform. For example, in Kenya farmers were accorded freehold status contingent upon their ability to repay loans received for land and agricultural input purchases. In addition, exchange rights were defined such that settlers were not allowed to transfer their land without government approval.

¹⁴ Some Indonesian transmigrants held exchange rights to holdings on Java before moving to the outer islands, thus their access to more productive land was increased, but not the specification of their land rights.

Smallholders in Peru and Bolivia were given more broadly specified rights to land, including the right to transfer or subdivide their plots. There is evidence, however, that when the new titleholders could not pay for their land or became overburdened with debt, the former landowners seized the opportunity to repurchase the land from them. Even though the provision of individual ownership was an important departure from the previous tenant-farming system, new owners were not protected by legislation ensuring that their land could not be repurchased by the former owners -- legislation which would enforce the reform's redistributive effects.

In Indonesia, the lack of a legal mechanism to settle land claims has resulted in disputes between indigenous outer islanders and incoming transmigrants. In some cases, the transmigrants have been forced to pay for their land (especially land to which improvements have been made), or otherwise face expropriation of their property by local officials. Thus, it is clear that tenure laws must often be reinforced by additional legislation to ensure the long-term redistributive effects of the reform and limit any anticipated exposure of the new landholders to the actions of other individuals.¹⁵ The absence of such legislation in Peru and Bolivia underlines a lack of government commitment to reform and the perceived conflict between increasing equity through land redistribution and maintaining agricultural production in the cooperative sector.¹⁶

¹⁵ Property rights define the individual's opportunity set, or his/her available lines of action. In addition, property rights define the resource owner's "opportunity to create costs for others who are affected by the owner's acts and to create benefits for the owner through use or exchange" (Schmid, 1987: 6-7). The inverse also applies in that the specification of property rights determines the exposure of the individual to others' actions.

¹⁶ The benefits of creating additional tenure legislation must be weighed against the fact that the cost and complexity of legal procedures involved might mitigate the potentially wider impact of redistribution, as in the cases of Peru and Bolivia. Yet, Barrows and Roth (1989: 41) point out, in certain cases "registration may be used to avoid negative equity effects when farmers are threatened with loss of land to politically powerful individuals."

These case studies show that while land tenure systems determine who receives the rents (and other benefits) and who pays the costs of land resource utilization, other institutional variables influence the impact of land tenure laws on land use. For example, adverse pricing policies stifled investment in agriculture following land redistribution in Bolivia. Although smallholders gained freehold rights and larger parcels, the subsidies placed on urban food prices reduced rural incomes and the smallholders' ability to increase their benefits from agricultural production. Incomplete specification of land tenure laws in the outer islands resulted in conflicts over land use in Indonesia. Poorly planned loan repayment schedules limited or negated the operating surplus earned by settlement farmers in Kenya, and hence diminished their welfare after settlement.

Clearly, these case studies underline the importance of a thorough analysis of projected primary and secondary benefits and costs, given available resources for redistribution and the anticipated policy environment.

2.3.6 Scheme-Level Monitoring and Evaluation

Two important elements allow policymakers to influence the direction of land redistribution programs; planning (i.e., site and settler selection, administrative and institutional support, land acquisition and tenure policies) and evaluation. The case for comprehensive advance planning has already been made. Once the program is underway, evaluation provides policymakers with information on the weaker and successful aspects of the program, and aids in future planning. Unfortunately, many evaluation efforts are conducted mid-term or upon program completion, which leaves policymakers with little information on interim scheme development and the appropriateness of the initial plans (such as farm size, farm budgets, loan repayment schedules and institutional support). In

addition, uncertainty or lack of information about the expected performance of reform laws with respect to desired policy goals, limits the ability of policymakers to respond to unpredicted or unwanted outcomes as they arise.

Therefore, it is imperative for policymakers to effectively plan, monitor and evaluate the performance of reform programs. For example, in Indonesia, weak monitoring and evaluation of transmigration projects did not reveal problems of decreasing net returns to agriculture and other site-specific problems in a timely manner. Clayton (1978) noted that in Kenya, periodic surveys of critical schemes would have provided the management with the ability to monitor scheme-level response to the agricultural system, and to evaluate levels of service provision, thus avoiding long-term production problems. Bolivian and Peruvian policymakers did not commit resources to interim and ex-post evaluations which would have signaled the limited impact of these reforms, as well as the existence of noncomplementary policies.

The implications for the study of distributivist land reforms are two-fold. First, a broad set of institutional variables may influence the outcome of land redistribution. A change in land tenure laws, for example, may not have the anticipated effects on agricultural production, income distribution and employment generation if other policy measures provide disincentives to settlers, or limit the redistributive impact of the reform. These contradictory policy outcomes may or may not be predictable in the pre-reform planning stages, but should be investigated by policymakers.

Second, interim monitoring and evaluation of land redistribution programs increases the efficiency of resource allocation by revealing areas where the program is less successful (i.e., site selection or planning, settler selection, the provision of administrative and

institutional support or tenure system development), thus allowing policymakers to redirect these resources and increase the quality of the program.

2.4 Conclusions

Several lessons can be learned from these case studies and applied to the analysis of Zimbabwe's resettlement policy, which is presented in Chapter Three. First, governments can offer incentives to increase smallholder agricultural production through land redistribution, without a long-term decrease in aggregate output. However, there are generally insufficient data from which to draw conclusions regarding the relative efficiency of the newly created smallholdings versus commercial estates. A notable exception is the Kenyan land resettlement program where data indicate that small farms generated higher yields per hectare and used more labor than large farms, both important reform objectives. Extensive pre-reform planning, as well as on-going monitoring and evaluation, are essential components in ensuring that settlers can meet and maintain target production levels, and will have the ability to make future investments and expand their farming operations.

Second, the redistribution of incomes and productive opportunities (where redistributive equity is an important goal) is highly contingent upon the breadth of the reform program and the degree of government commitment to ensuring that benefits are realized by the most disadvantaged groups. In addition, in order to maintain adequate income levels in the reform sector, successful credit programs and debt repayment plans should be based on the income-generating potential of the farming system and on the settler's anticipated cash-flow pattern.

Third, the value of employment generation through land redistribution depends on the amount of remuneration to be derived from agriculture, as compared to alternative

employment possibilities (previous employment and present non-farm opportunities). In Peru, Bolivia and Kenya, many wage employment opportunities were eliminated by with the subdivision of large farms. Although an increase in smallholder agriculture creates new employment opportunities, their value to the reform beneficiaries may be limited if these opportunities do not remain profitable.

Finally, country-specific research and policy analysis on land tenure systems is essential to understanding the incentives and impediments provided to smallholders, particularly in the face of distributivist reform programs that may involve changing traditional tenure systems. In addition, other institutional variables affect the ability of smallholders to respond to a change in either use or exchange rights in land, and ultimately determine the degree to which reform goals are reached. Site-specific monitoring and evaluation programs provide scheme-level management personnel with information regarding the impact of these different institutional variables on settlers' ability to adapt to a new farming system, achieve an adequate standard of living, and benefit from the redistributive nature of the reform. The collection and analysis of such information allows management personnel and policymakers to respond more readily to problems that might impede the long-term performance of the program.

Chapter Three will examine the achievements of Zimbabwe's Rural Resettlement program to-date. The program's implementation and evaluation will be assessed in the context of: 1) the theoretical arguments regarding land redistribution and land tenure issues, 2) lessons from the case studies presented in this chapter, and 3) empirical studies from Zimbabwe.

CHAPTER THREE

RURAL RESETTLEMENT POLICY IN ZIMBABWE

The first section in this chapter examines the historical evolution of land policy in Zimbabwe which led to an inequitable land distribution between large landowners and small-scale black farmers; the objectives, goals and subsequent implementation of the resettlement policy designed to reallocate land and incentives to small farmers. One of the principal debates centers on the ability of the land reform policy to redistribute land while sustaining or increasing current agricultural production levels.

The second section focuses on the impact of resettlement on key issues of land distribution, crop and livestock production, income distribution and employment generation. It also examines issues related to the implementation of resettlement policy; including land tenure policy, women, the landless, soil conservation, and the potential for regional development.

The third section evaluates the success of the resettlement policy in meeting its objectives, and examines the degree to which current evaluation methods provide policymakers with accurate interim information on scheme-level problems and progress.

3.1 History of Land Policy in Zimbabwe During the Pre-Independence Period

Since the early colonial period, black and white farmers have been locked in a political and economic struggle for land. Initially, colonists entered Southern Rhodesia (now

Zimbabwe) from South Africa in hopes of exploiting the country's mineral resources. As it became clear that the country's mineral wealth was not equivalent to a Second Rand (named after a gold-vein first discovered in the South African Transvaal), the white settlers turned to agriculture. At this time, they found a thriving agricultural economy among the Africans who grew a variety of produce and engaged in local and regional trade (Palmer, 1977).

In 1894 the colonial government established the Native Reserves to contain Ndebele and Shona farmers in Matabeleland. The Reserves served to: 1) to suppress blacks after the Ndebele uprising; and 2) provide white settlers with a source of labor for mining and farming. By 1910, white settlers had claimed approximately 23% of the land in Rhodesia, while allocating only 26% to blacks as Native Reserves (Herbst, 1987b).

In 1914, the colonial government established the Native Reserves Commission to oversee the Reserve areas and plan their future development (Parliament of the Commonwealth of Australia (hereafter designated PCA), 1980). At this time, the colonial government established more than 104 separate Reserves, ranging in size from 2,100 to 625,000 hectares (Akwabi-Ameyaw, 1988).

White agriculture came to play an increasingly important role in Rhodesia's economy, and with its growth came the decline of African farming and trade (Palmer, 1977). To further protect their agricultural power from competition with the black farmers, the emerging white agriculturalists pressured the government to draw up separate land purchase areas for black and white farmers to further segregate the two races. As a result, the Morris Carter Land Commission (1925) created Native Purchase Areas. This legislation allowed

Master Farmers¹⁷ with sufficient resources to purchase land with freehold title. Although white farmers developed the Purchase Areas to segregate blacks into their own designated areas, black associations supported the legislation which would also secure more land for black farmers (PCA, 1980).

The Land Apportionment Act (1930) tightened the colonialists hold on agricultural land by prohibiting Africans from owning any land outside of the Purchase Areas, legalizing the separation of the two races (Moyana, 1984). By 1930, white settlers had appropriated approximately 50% of Rhodesia's land, leaving black farmers with about 30% of the allocated land (Herbst, 1987b). The Act formally delineated the Native Purchase Areas where black farmers could purchase and own land, if they had the requisite agricultural skills and resources. The Act divided Rhodesia's land area as follows: 8.8 million hectares held in Natives Reserves; 3 million hectares held in Native Purchase Areas; 19.9 million hectares reserved for white farming and urban areas and a remaining 7.2 million hectares of unallocated land (PCA, 1980). The remaining shreds of African independence were destroyed during this period by the white farmers who received credit and inputs from the government, thus undermining the competitiveness of the African farmers and driving them to subsistence cultivation on marginal lands (Palmer, 1977).

In addition to implementing land policies that encouraged black farmers to move into the Reserves, or buy land in the Purchase Areas, the colonial government developed agricultural policies to reduce competition from black farmers (PCA, 1980). For example, the Maize Control Act limited access to maize marketing outlets for black farmers and the Cattle Levy Act levied a tax on all cattle in order to subsidize the settlers' cattle industry

¹⁷ Master farmers are certified by extension agents as having passed field courses in improved crop production methods.

(Moyana, 1984). By 1935, as a result of both overcrowding and overstocking, many black farmers were forced to work for wages in the mines and on commercial farms because they could no longer meet their expenses with earnings from grain and cattle in the Native Reserves (Moyana, 1984).

As land degradation continued in the Reserves, government enacted legislation to modify land use in the Reserves, believing that indigenous farming practices were the cause of degradation -- and not severe overcrowding and land scarcity. The African Land Husbandry Act (1951) attempted to change the traditional communal tenure system into a private landholding system, and "to provide for the control of the utilisation and allocation of land occupied by natives and to ensure its efficient use for agricultural purposes, [and] to require natives to perform labour for conserving natural resources..." (Wekwete, forthcoming: 6). This attempt at changing land use failed because the individual holdings were too small to promote the desired farming practices. In addition, government assigned insufficient staff and services to support the measures in the Reserves (Moyana, 1984). As a result, land deterioration continued and segregation exacerbated racial and political tensions (Moyana, 1984).

The Land Tenure Act (1969) legally defined the races as "European" and "African" and enacted stricter prohibitions against the lease, ownership and occupation of land in white farming areas by black farmers. In essence, Rhodesia's land area was now divided in half between African areas and European areas, with the remaining portion designated as national land. This "equal allocation" of land overlooked the fact that by this time, whites made up about 5% of the population and blacks 95% (PCA, 1980).

While the Land Tenure Amendment Act (1977) removed racial restrictions for all lands except for the Tribal Trust Lands (PCA, 1980). The wheels of change turned very

slowly. Even though the 1979 Land Tenure Repeal Act eliminated all existing racial restrictions on land in non-rural areas, the distribution of land ownership remained relatively unchanged until the institution of the Rural Resettlement Policy in 1980 (PCA, 1980).

3.2 Agrarian Structure and Land Distribution in Zimbabwe

Historically, Zimbabwe has depended on its agriculture sector as a catalyst for economic growth and it still plays a significant role in providing employment and generating foreign exchange earnings, particularly the large-scale commercial farm sector.

Today, agriculture is the most important source of employment. Commercial agriculture employed about 35% of the workforce in the mid-1970s, and 25% in 1983 (CSO, 1987: 44-52). Overall, approximately 70% of the population derives its main source of livelihood from smallholder agriculture (Bratton, 1990).

In addition, agriculture finances growth in other sectors through its foreign exchange earnings, representing between 53% and 60% of all foreign exchange earned during 1978-1984 (CSO, 1987: 170). Through its successful agricultural growth strategy, Zimbabwe has become the largest exporter of food and cash crops in the Southern African region, playing a significant role in regional food security (Bratton, 1990).

Zimbabwe is divided into five Natural Regions (agroclimatic) which have served as the basis for Zimbabwe's agricultural policy and land use planning for the last 20 years (Stoneman, 1982). Although 85% of Zimbabwe's land area is used for agriculture (forest, parks and national lands comprising the rest of the country's land area), extreme variations in rainfall render some areas of the country suitable only for extensive livestock grazing.

Region I receives high rainfall (over 1,500 mm annually) and supports specialized farming such as tea, coffee and intensive livestock production. Region II receives

moderately high rainfall (750-1,000 mm annually) and is suitable for intensive maize, tobacco, cotton and wheat production, as well as livestock. Region III receives moderate rainfall (650-800 mm annually) accompanied by mid-season dry periods, and is best suited for livestock and some types of crop production. Region IV experiences periodic drought (450-650 mm of annual rainfall) and is suitable only for semi-extensive livestock production and drought-resistant crop production. Region V is dry with erratic, low rainfall (below 600 mm annually) and suitable only for extensive livestock grazing (Stoneman, 1982; Weiner et al, 1985).

Until 1980, four primary farming systems characterized agriculture in Zimbabwe; large-scale commercial farms (LSCF), small-scale commercial farms (SSCF), communal area farms (CAs) and state farms. With the 1980 land resettlement policy, the government created the resettlement areas. Land tenure laws, production organization, capital and technological investments and management practices differentiate these four systems (Moyo, 1986). For the purposes of classification, the following section describes the SSCF and state farms. However, future sections examine only the LSCF and the CAs which have more relevance for the subsequent analysis.

3.2.1 Large-Scale Commercial Farms

Prior to independence, there were approximately 6,000 large commercial farms, ranging from irrigated farms of 100-200 hectares to ranches covering 1 million hectares in more arid areas (Stoneman and Cliffe, 1989). LSCF farmers hold freehold rights to their land, which lies primarily in Natural Regions I and II. Before 1980, this sector constituted 15.3 million hectares or 39% of the total land in Zimbabwe. Even in the LSCF sector, land is very unevenly distributed. For example, Herbst reports that 10.5% of the farmers own

60% of the farmland, while 55% of these farmers own less than 10% of the commercial farmland (Herbst, 1987b). Less successful farmers live in the poorer agroecological zones; 43% of the poorest farmers produce less than 10% of the commercial output (Herbst, 1987b). On the other hand, the LSCF sector also contains large, highly capitalized estates owned by multinational corporations, particularly agro-processing enterprises. (Moyo, 1986)

Compared to communal area farmers, commercial farmers employ more advanced technology and farming methods. Yet, some critics argue that they underutilize large portions of their land (Stoneman and Cliffe, 1989). On average, only 5% of commercial land is cropped, while grazing land constitutes more than 60% (Bruce, 1990). Riddell (1978) contended that greater access to direct and indirect assistance (loans, price supports, capital grants, low employment costs and artificial land prices) allowed farmers with unused or underutilized land to continue farming in an inefficient manner.¹⁸

The LSCF sector produces valuable export crops and provides employment for both seasonal and permanent workers. For example, prior to resettlement, the LSCF sector produced 90% of the marketed maize and most of the other export crops (tobacco, wheat, coffee, tea, sugar). Similarly, as of 1974, the LSCFs employed a total of 336,000 workers (Stoneman and Cliffe, 1989).

¹⁸ There are many estimates of land availability in Zimbabwe and land use intensity on commercial farms. For example, the Whitsun Foundation determined that only 7% of the country was suitable for intensive rainfed crop production, and that the ratio of cropped to total area in the LSCF in 1974 was only 4.1%. Riddell claimed that only 15% of arable land in the LSCF was cultivated in 1976. Finally, Weiner et al. found that 35-52% of Zimbabwe's arable agricultural land may be underutilized (Weiner et al., 1985).

3.2.2 Communal Areas

The CAs are located primarily in Natural Regions III, IV and V and encompass 16.4 million hectares of land. Prior to independence, they supported 750,000 families, in addition to a large migrant population. Rapid population growth (both human and animal) in the CAs has resulted in severe land degradation. Moyo (1986) reports that between 1961 and 1977, the number of farmers increased from 349,000 to 675,000 (88% increase) and the total area cultivated increased from 1.1 to 2.2 million hectares (91% increase). For this same period, cattle herds increased by 70% from 2 to 3.4 million head, resulting in a net reduction in grazing area (Moyo, 1986).¹⁹ Moyo estimated that in 1980, 57% of Zimbabwe's population lived in the CAs, cultivating arable plots of 1 to 10 hectares. Until the mid-1980s, when the government improved marketing and extension services for maize and cotton, low productivity and rainfed ox-plow cultivation characterized this sector (Bruce, 1990:1).

Under the landholding system in the CAs, local officials allocate use rights to households for both arable and grazing lands. These rights extend to fuelwood, thatch, water, and wild fruits and vegetables, and can be transferred through inheritance (Cusworth and Walker, 1988). In addition, livestock owners share responsibility for communal grazing land, but increased population pressure has resulted in their deterioration, as well as a reduction in crop fallowing and pastureland (Stoneman and Cliffe, 1989).

Bruce (1990) questions whether traditional land use patterns still exist today, especially given colonial intervention and extreme population pressures. Stoneman and Cliffe point out that "the communal authorities responsible for land allocation were

¹⁹ The sudden increase in small and large livestock holdings in the communal areas was a result of the lifting of compulsory destocking laws in 1961 (Whitlow, 1985).

weakened through successive [administrative law] changes. The chiefs' and headmen's authority was first removed then reinstated by the colonial authorities... In the 1980s they have clawed back some de facto influence over land..." (1989: 133). Changes in the tenure system, as well as a lack of resources have contributed to underdevelopment in the CAs. In fact, growth in the LSCF sector has often been linked to underdevelopment in the Communal Areas (Stoneman and Cliffe, 1989).

3.2.3 Small-Scale Commercial Farms

Small-scale commercial farms were originally designated as African Purchase Lands by the Land Apportionment Act (1930). Prior to independence, approximately 8,500 farmers held freehold land rights for units ranging in size from 50 to 200 hectares (Moyo, 1986). Located primarily in the poorer natural regions, these farms cover 2.5% of the total land and hold 2.5% of Zimbabwe's population. One-tenth the size of the LSCF, and much less productive (Akwabi-Ameyaw, 1988), the SSCF typically contributes only a small amount to national marketed surplus (Herbst, 1987b). The crops grown in the SSCF are similar to those grown in the communal areas (i.e., maize, cotton, groundnuts and sunflower, with some soyabeans, rapoko and tobacco). Land utilization rates are low and the sector tends to produce below potential (Bruce, 1990). Bruce attributes the sector's poor agricultural performance to inadequate service provision (particularly credit) and the admission of less-skilled communal area farmers onto SSCF land.

3.3.4 State Farms

In the 1960s, the government created large, heavily mechanized and irrigated estates to serve as growth points in relatively arid areas, intending to eventually privatize them

(Moyo, 1986; Bruce, 1990). After independence the government integrated these farms into the Agriculture and Rural Development Authority (ARDA). ARDA, which produces cotton, wheat, and tea and other crops in the more marginal areas, is now responsible for Model C resettlement schemes (core estate schemes). Although the estates produce export crops, they also produce wheat and rice to substitute for imported products (Moyo, 1986). Currently, ARDA supports 28 estates which generate \$20 million annually in foreign exchange, and employ 4,000 permanent staff and 17,000 casual laborers (Bruce, 1990).

3.3 Post-Independence Land Policy: The Rural Resettlement Program: 1980-1990

Prior to independence, Zimbabwe's agricultural strategy focused on channeling resources into the commercial sector, in order to generate growth by creating wage employment and export earnings. The 1980 Rural Resettlement program represents a large and long-term diversion of financial and human resources into the development of smallholder agriculture.

In 1980, Zimbabwe gained independence from Great Britain as a result of the Lancaster House Agreement. Through the Agreement, the new socialist government -- led by Robert Mugabe and the Zimbabwean African National Union (ZANU) -- developed a land policy reform designed to dissolve the strong racial lines dividing the country. The Agreement addressed the land issue by placing extensive conditions on the reallocation of property rights. These conditions prohibited the government from altering the existing ownership patterns, except through the purchase of land at market prices in exchangeable currency on a willing-seller, willing-buyer basis (Ministry of Finance, Economic Planning and Development, 1986).

The Lancaster House Agreement also ensured that property could not be expropriated without adequate compensation to the owner, which meant that the government had to allocate more resources to land purchase (Ministry of Finance, Economic Planning and Development, 1986). The clause was valid for 10 years (until 1990) and could only be changed by unanimous agreement of the House of Assembly and a 2/3 vote from the Senate (PCA, 1986). Although the government enacted this condition to reassure white settlers about the security of their property and assets under the new government, it also increased the financial and physical resources needed to carry out the resettlement program.

The Constitutional Amendment Act (1991), developed after the Lancaster House Agreement expired, tried to improve upon the limited success of the 1980 Resettlement Policy by introducing legislation to make sufficient land available for resettlement at lower market prices for government purchase. The new policy statement instituted price controls on land to reduce its market value, allows compensation for land in domestic currency, and makes provision to regulate the minimum and maximum size of farms. The law also prohibits absentee landlords and land sales to foreigners (Morna, 1990; St. Clair, 1990).

3.3.1 Objectives of the 1980 Resettlement Program

The stated objectives of Zimbabwe's resettlement policy are to improve rural living conditions, particularly for communal area farmers, the landless and the unemployed. Equally important, however, is the integration of the resettlement sector into national agricultural development. Therefore, resettlement should not be a deficit sector which continually absorbs national resources, but should produce a marketable surplus and contribute to national development.

The government outlined the principal objectives of Zimbabwe's Rural Resettlement program as:

- alleviating population pressure in communal areas;
- extending and improving the base for productive agriculture in the peasant farming sector through both individuals and cooperatives;
- improving the standard of living of the largest and poorest sector of the population;
- ameliorating the plight of people who were adversely affected by the war and rehabilitating them;
- providing, at the lower end of the scale, opportunities for the landless, unemployed and the destitute;
- bringing abandoned or under-utilized land into full production as one facet of implementing an equitable policy of land redistribution;
- expanding or improving the infrastructure and services needed to promote the well-being and economic productivity of rural inhabitants; and
- achieving national stability and progress in a country that has only recently emerged from the turmoil of war (Zimbabwe National Farmer's Union, 1987: 1).

The government's objectives for economic growth and agricultural development provided policy direction for the resettlement program. For example, the 1989 National Land Policy document states that it "is recognized that without increasing agricultural production, there would be no point in changing the land ownership pattern in the economy... An increase in agricultural production will assist in the achievement of other indirect objectives like food self-sufficiency, forex earnings and improvement in the balance of payment position" (MLARR, 1989: 5).²⁰ Therefore, although resettlement policy is intended to redress the inequitable distribution of land and create employment, to be politically acceptable, increased agricultural production must accompany land redistribution, to meet both domestic and external priorities.

²⁰ Additional agricultural policy objectives include: 1) maintaining a balance between equity, productivity and sustainability, 2) promoting emergent black large-scale farmers, 3) creating employment and 4) land tenure reform (MLARR, 1989).

3.3.2 Resettlement Financing

Resettlement receives both government and external funding. The government of Zimbabwe meets approximately 30% of the overall expenditures for resettlement, which includes funds spent on land acquisition and development, planning, administration, and all of the recurrent program costs (Cusworth and Walker, 1988). While it is difficult to estimate the total amount of domestic resources committed to resettlement, Cusworth and Walker place the cost of resettling 40,000 households at approximately Z\$146.1 million, including Z\$80.8 million in land acquisition and initial development costs, and an additional Z\$65 million for the eventual completion of land development work.

The Department of Agricultural and Extension Services (AGRITEX) spends an estimated Z\$500,000 annually on resettlement planning, and the Department of Rural Development (DERUDE) spends Z\$5.0 million annually on resettlement scheme administration, bringing the total annual recurrent costs to Z\$5.5 million, or Z\$137 per settler (Cusworth and Walker, 1988).²¹ Annual government outlays on local government administration alone in the Communal Areas total Z\$25 per household (Cusworth and Walker, 1988).

External donors provide additional funding for resettlement, particularly to cover the costs of land purchases, including; a United Kingdom grant in 1980 (Z\$32 million); the African Development Bank/Fund (Z\$27.2 million); Kuwait (Z\$7.8 million); the European Economic Community (Z\$6.3 million) -- a total of Z\$73.3 million. Since 1986-87, no other

²¹ 1982-83 budget estimate from the Overseas Development Administration evaluation report (Cusworth and Walker, 1988). This calculation does not include the expenditure of DECODE (Department of Cooperative Development) on services for the Model B schemes. DECODE was transferred out of MLARR in the 1985 reorganization.

external sources of funding have been allocated to resettlement (Cusworth and Walker, 1988).

3.3.3 Organizational Arrangement for Resettlement within the National Government

A myriad of different ministries plan and implement resettlement, coordinating all activities from site selection to scheme evaluation. A scarcity of trained personnel, as well as bureaucratic confusion following the 1985 reorganization of the Ministry of Lands, Resettlement and Rural Development (MLRRD), caused delays in resettlement implementation and problems in ministerial coordination.

After independence, the government created MLRRD to guide the resettlement program. Several departments within the Ministry of Agriculture, as well as other ministries, implement resettlement on the ground. For example, AGRITEX provides planning and technical assistance. The Agricultural Finance Corporation (AFC) supplies scheme-level credit, including short- and medium-term credit, and credit management education (Wekwete, forthcoming). The Agricultural and Rural Development Authority (ARDA) administers all of the state farm operations and Model C schemes.

During the initial years of the program, the Ministry of Local Government and Town Planning (MLGTP) maintained control over the rural and urban local authorities, which in turn restricted MLRRD's participation in rural development planning (Wekwete, forthcoming). Within the Ministry of Lands, the government established a monitoring and evaluation unit for resettlement schemes (M&E Section). The M&E unit, however, suffered from a lack of supporting resources and did not produce a systematic assessment until 1986 (Cusworth and Walker, 1988).

In 1985, the MLRRD was merged into the Ministry of Agriculture to form the Ministry of Lands, Agriculture and Rural Resettlement, formerly the Ministry of Local Government and Town Planning (Cusworth and Walker, 1988). Thus, the MLARR and the Ministry of Local Government, Rural and Urban Development (MLGRUD) now share the administration of the resettlement program. The Department of Rural Development (DERUDE) was reorganized and incorporated into MLGRUD, becoming the principal implementor of the program, particularly at the scheme-level.

At the provincial level, Provincial Rural Development Officers coordinate the activities of the scheme-level resettlement officers. Resettlement officers, employed by DERUDE, register settlers, allocate land, issue permits, supervise and monitor scheme activities and collect socio-economic data on the settlers. Since resettlement areas do not fall within any local government authority, DERUDE alone administers them (Cusworth and Walker, 1988). Wekwete contends that because of the scattered nature of the resettlement schemes and lack of personnel, it is difficult for DERUDE to develop regional strategies. Instead, the government develops schemes according to available funding and land.

Other ministries providing assistance to the resettlement program include; the Ministries of Energy, Water Resources and Development; Education; Health; Construction and National Housing; Community Development and Women's Affairs; Cooperative Development; Transport and the Natural Resources Board (Akwabi-Ameyaw, 1988).

Although the government hoped that ministerial reorganization would improve resource coordination between the resettlement and communal areas, it has significantly impeded the flow of resources into the resettlement program (Wekwete, forthcoming). The reorganization spread the limited number of trained personnel too thinly to ensure coordination among ministries or commitment to resettlement's success.

3.3.4 Criteria for Land Acquisition

The government based the initial criteria for land acquisition on a set of optimal conditions for locating and developing resettlement schemes, drawn up during the Lancaster House Agreement. Several years after independence, the land market withered as commercial farmers were assured that the government had no plans to expropriate their property, and most of the remaining land for sale was in smaller parcels in less desirable areas.

The 1980 resettlement policy statement allowed the government to purchase land for resettlement according to the following guidelines:

- a) Land suitable for resettlement which is near or adjacent to communal areas, particularly those under heavy population pressure, is preferred.
- b) The land should not be presently farmed and preferably is already on offer for Government purchase.
- c) Blocks of land available for purchase should be large enough to allow for economic provisions of schools, clinics, marketing facilities, etc., even if this means the purchase of some occupied farms on a willing-seller basis.
- d) In the initial stages of the programme, preference has been given to areas adequately served with basic infrastructure such as roads and water supplies.
- e) To reduce delays to a minimum, preference is given to areas where planning information is available (Ministry of Finance, Economic Planning and Development, 1986: 125).

Initially, the government appropriated land abandoned during the independence war, or purchased it from whites who were unsure about the new government's intentions (Bratton, 1990). Several years later, however, the amount of land available for purchase did not meet the demand for resettlement scheme development. Thus, in 1985 the Land Acquisition Bill modified the conditions on land acquisition imposed by the Lancaster House Constitution. The bill gave the government the right of first refusal (anyone wishing to sell land must offer it to the government before the private market) and "the right to

designate blocks of farms as land that the State would like to use for public purpose, in order to ensure that farmers in the designated blocks of farms sell their land to Government" (Ministry of Finance, Economic Planning and Development, 1986: 125). The 1990 Policy Statement (described in section 3.3) gave the government even greater latitude in planning and implementing resettlement.

3.3.5 Scheme-level Planning and Appraisal

The MLARR conducts the initial land selection, valuation and purchase for resettlement schemes. AGRITEX provides the technical, financial and economic appraisal, as well as planning and design of the physical scheme layout and proposed agricultural production system (Cusworth and Walker, 1988). These analyses, however, may be unreliable in projecting the benefits and costs for resettlement smallholders, and in estimating their land management abilities.

MLARR plans resettlement schemes using information on soil type, availability of arable land and rainfall gathered on commercial farms before independence. The level of crop and livestock production necessary to reach the prescribed target income for each Natural Region determines the scheme pattern, as well as the amount of land needed to carry a cattle herd for draft power and manure, and maintain good conservation practices (Cusworth and Walker, 1988). Commercial farm data might, however, overestimate the amount of land a smallholder needs to maintain a viable operation, since commercial farmers typically underutilize some portion of their farms.

AGRITEX developed farm modeling techniques to determine the costs and benefits accruing to the settler household from agriculture and livestock production, using data drawn from the commercial farm sector (Cusworth and Walker, 1988). Scheme-level

economic analysis consists of subtracting the capital costs, including land purchases but not infrastructure costs (such schools or clinics) and annual operating costs, from the total farm benefits (income from crop and livestock production). After discounting the net benefits over a twenty-five year period, AGRITEX conducts a sensitivity analysis for each scheme by varying the scheme-level costs and benefits to determine the effects of cost increases and benefit decreases on scheme profitability (Cusworth and Walker, 1988).

Analyses based on commercial agriculture assume greater management skill and resources than smallholders usually possess and thus, overestimate smallholder production levels and investment capability. Thus, current planning and appraisal techniques give an optimistic picture of the potential for smallholder crop and livestock production in the resettlement areas.

3.3.6 Settler Selection

During the early years of the resettlement program, the government adhered to strict criteria to choose individuals for resettlement, emphasizing the settlement of displaced war victims or refugees returning to the country. GOZ did not, however, choose settlers in groups in order to establish communities, but selected them for individual characteristics (i.e., farming skills or employment status). The increasing number of squatters, settling without authorization, indicates that the government insufficiently accommodates landless people with the resettlement program.

Initial criteria for settler selection stated that settlers should be:

- effectively landless, and
- not employed (nor is his spouse); and
- poor; and
- married or widowed with dependents; and

- aged 18 to 55 years, physically fit and potentially able to make productive use of the land allocated; and
- prepared to give up all land and grazing rights in the communal area of origin; or
- a returned Zimbabwean refugee who is given special consideration; or
- an experienced or master farmer willing to give up all land rights in the communal areas and wage employment elsewhere (ZNFU, 1987: 2).

Since many of those first settled lacked significant agricultural experience, in 1982 the government added a clause permitting the settlement of master farmers. GOZ hoped that more experienced farmers would provide a "demonstration effect" for less experienced farmers (Herbst, 1987b).

Some settlers, particularly squatters from the communal areas and refugees from other countries, have been self-selected by illegally settling on the schemes (Herbst, 1987a). Although resettlement officials have forcibly evicted some squatters, they have allowed approximately 50% to remain on the scheme. Herbst attributes their success at circumventing officials and gaining access to land on the schemes to their political mobilization and determination. Furthermore, the resettlement bureaucracy is weak and inexperienced in confronting certain situations, which allows many squatters to pressure local officials and take advantage of resettlement's administrative disorganization (Herbst, 1987a).

Bruce notes that the selection criteria have brought together groups of people "from different backgrounds and localities [that] may have made it more difficult to develop a sense of community and to establish useful practices such as sharing of draft animals" (1990: 33). This poses a potential limitation to organizing settlers to achieve political cohesiveness.

3.3.7 Resettlement Scheme Models²²

The GOZ has designed and implemented four different resettlement farm models: a family farm (model A); a cooperative (model B); a cooperatively owned core-estate (model C) and an extensive ranch model for the more arid areas in natural regions IV and V (model D). The government based each model on a different rural development strategy, and therefore, each receives different types of infrastructure development. Since Model A schemes comprise 95% of the schemes developed to date, this paper focuses more on the performance of Model A schemes in resettlement planning and implementation.

There are two model A schemes, the Normal Intensive and Accelerated models. The fundamental difference between these models lies in funding their development, and providing scheme-level services. Both of these models consist of groups of individual family holdings formed into nucleated villages. Each family receives a 5 hectare arable plot, 2500 square meters of land for a residential plot and a communal grazing right for 5 to 15 livestock units, depending on the carrying capacity of the natural region.²³ Thus, the average total landholding ranges from 29 to 88 hectares. A typical scheme contains 500 families in approximately 15 villages, serviced by 3 to 4 schools, 6 diptanks, a service center, and a support staff of one resettlement officer and several other government employees.

GOZ funds the intensive schemes with the assistance of donors such as Great Britain, the European Economic Community, the African Development Bank, the Netherlands and several NGOs. After settlement in an intensive scheme, settlers receive one-half of a hectare ploughed at no cost, along with any necessary agricultural inputs. In

²² The following section is compiled from Kinsey, 1982 and 1983; Bratton, 1990; Wekwete, forthcoming.

²³ One livestock unit is equivalent to 1.5 cattle, 1.5 donkeys, 5 goats or 4 sheep.

the second year, the government expects settlers to obtain seasonal credit with the AFC to pay for tillage and input purchases. In the third year, settlers can apply for medium-term loans for larger purchases such as draft animals, a plow or an ox-cart.

The GOZ funds the entire development of the accelerated schemes, without external assistance. The government designed accelerated schemes to resettle qualified farmers more rapidly following land purchase, without waiting for DERUDE and AGRITEX to carry out preliminary planning and appraisal procedures. The government only provides settlers with access to drinking water at the time of settlement, but eventually upgrades Accelerated schemes into Normal Intensive schemes. In the interim period, settlers use the services and infrastructure in neighboring communal areas, if such an opportunity exists.

Resettlement, however, has progressed more quickly than anticipated, and the government often cannot meet the demand for services, particularly water (Ministry of Finance, Economic Planning and Development, 1986; Herbst, 1987b). Herbst found that the Ministry of Water Resources has only met one-third of the demand for water on the schemes. This is a critical because 91% of the resettlement schemes have insufficient surface water for both agriculture and household use (Herbst, 1987b).

Model B resettlement schemes are cooperatively organized and managed group settlements, designed to eventually form the basis of Zimbabwe's agriculture sector. GOZ, with some NGO financing, funds these schemes. The government develops Model B schemes around existing infrastructure on the purchase site, and thus must pay more to purchase the land and existing assets than for other schemes. Most of the cooperatives purchased in this manner continue to cultivate the management-intensive specialized crops grown prior to the land purchase (i.e., coffee, fruit or irrigated wheat). Cooperative members own and control the agricultural inputs and outputs, and agree on the distribution

of any earnings from the enterprise. On some schemes, members may own livestock and a small subsistence plot privately, but must hold all other property cooperatively.

The Model C schemes combine individual settlement with cooperatively owned core-estates. The estate provides technical and managerial services to the individual settlers, who in turn work for some portion of the cooperative's proceeds. Farmers may, however, keep their own land and livestock apart from the estate venture. The Model C scheme is appropriate for crops that require large-scale post-harvest processing. As of 1989, however, there were only three functioning Model C farms -- producing flue-cured tobacco, dairy and cotton (Bratton, 1990).

Model D schemes include a group ranching and an extensive grazing model. These models are more appropriate for areas where intensive crop production is too risky due to lack of rainfall and poorer soils. The group ranching scheme entitles each family to a residential stand in a nucleated village, one hectare of arable land, a gardening plot and the right to hold a maximum of 20 livestock units on the farm. Model D farmers may use local off-farm employment to supplement their incomes from low-intensity ranching. To create the latter Model D scheme, the government purchases farms near existing communal areas and uses this land in a rotation to relieve pressure on CA land. This model focuses on reorganizing grazing land without resettling communal area farmers.

MLARR assumes that each scheme will be integrated into the district and eventually achieve political representation through the area district council (Harbeson, 1981). Critics argue, however, that MLARR plans each scheme autonomously, without considering the local capacity that might already exist in a neighboring communal area (Kinsey, 1982; Ministry of Finance, Economic Planning and Development, 1986).

3.3.8 Land Tenure Policy in the Resettlement Areas

Some authors suggest that while settlers receive larger landholdings in the resettlement areas than farmers cultivate in the CAs, their rights are more restricted on the schemes. For example, the present land tenure laws prohibit land transfers and constraining farmers' abilities to improve their living standards through nonfarm employment.

While resettlement schemes extend leasehold ownership, ultimate control of land use and allocation resides with the state. Settlers receive three permits which regulate residence on the scheme, crop cultivation and livestock. These permits only give use rights to land; prohibiting settlers from subdividing, selling or transferring their land through inheritance. They also cannot not engage in any nonfarm activities on their residence site. Furthermore, they have no legal "recourse against governmental actions which are supposed to be taken in the interests of effective land management" (Harbeson, 1981: 11).

Bruce observes that these permits mandate "broad rights on the part of the Ministry but remarkably few rights for the permit holder" (1990: 35), altering settlers' traditional methods of land use. The government may, at any time, change or terminate the permit without notice to the permit holder. Also, the permit specifies no time period of validity (Bruce, 1990) and requires settlers to relinquish any landholdings in the communal areas for the period during which they hold the permit. Harbeson notes that settlers are expected to cultivate individual plots, but graze their cattle in common areas. In addition, to promote cooperation and economies of scale in service provision, the government requires settlers to live closer to one another than in the CAs.

The degree to which tenure uncertainty influences both the settlers' willingness to invest in their farming operations and their ability to obtain credit is unknown. However, potentially insecure land rights have not prevented many settlers from moving to

resettlement areas. This is because settlers receive larger and better quality holdings in the resettlement areas than they held in the CAs. In a case study carried out in regions IV and V, Campbell et al. (undated mimeograph: 17) found that the "allocation of land for both cultivation and grazing...represents a significant improvement in access to resources for the settlers." Villagers did state, however, that in the future their landholdings would not be large enough for their children. Campbell's study indicates that, for settlers, the benefits of relatively large arable landholdings may outweigh the costs of the uncertainty in the tenure laws, at least in the short run. However, Bruce (1986) argues that the government must make some provision for land inheritance on the schemes, particularly since attempts to reform indigenous inheritance systems and prevent land fragmentation are very rare. A system that limits subdivision to a certain size, if enforced, would not only prevent parcel fragmentation, but would increase intergenerational tenure security.

3.4 Assessment of Land Resettlement Policy in Zimbabwe

3.4.1 Achievement of Stated Targets

As of 1981, the government planned to resettle 18,000 families on 1.1 million hectares of land each year (Table 3.1). In 1982, however, the government stated in its "Transitional National Development Plan" that it would resettle at least 162,000 families from 1982-1984, after which it would resettle 15,000 families per year between 1986 and 1990 (Herbst, 1987b). Yet, by the end of 1985, the government had resettled only 36,000 families on approximately 2 million hectares of land (Herbst, 1987b). As of mid-1989, 52,000 households occupied 2.64 million hectares of land (Palmer, 1990).

Table 3.1: Targeted vs. Actual Number of Families Resettled on All Schemes and Land Area Settled in Zimbabwe, 1980-1990.

Year	Target Number of Families^a	Actual Number of Families	Total Land Area Settled (000s ha)
1981	18,000	NA	NA
1982	72,000	25,000	360
1983	126,000	NA	1,100
1984	180,000	31,000	2,200
1985	195,000	36,000	2,300
1989	255,000	52,000	2,640

^a All column figures are cumulative.

Sources: B. Kinsey, "Forever Gained: Resettlement and Land Policy in the Context of National Development in Zimbabwe," (1982: 96-99) and "Emerging Policy Issues in Zimbabwe's Land Resettlement Programmes," (1983: 179); S. Moyo, "The Land Question," (1986: 192-3); J. Herbst, "How the Weak Succeed: Tactics, Political Goods, and Institutions in the Struggle over Land in Zimbabwe," (1987b: 8-9); R. Palmer, "Land Reform in Zimbabwe: 1980-1990," (1990: 169).

Clearly, with respect to the number of families settled, the resettlement program has not progressed as rapidly as initially planned. Financial constraints, organizational difficulties at the national level, insufficient land for sale and political pressures to decelerate resettlement influenced the pace and quality of resettlement scheme development. Funding constraints, which developed after the 1983 budgetary reforms, were compounded by a less than anticipated inflow of donor funds and the reallocation of some resettlement funding to communal area development (Ministry of Finance, Economic Planning and Development, 1986; Bratton, 1990). Furthermore, land prices skyrocketed in the mid-1980s, significantly increasing the costs of resettlement, as commercial farmers became assured of future political and economic stability in the country (Palmer, 1990).

Political pressures exerted by interest groups greatly influence the availability of land for sale. Once the government purchased most of the initially available commercial farms, the remaining sellers held a bargaining advantage over the government which allowed them to curb the pace of resettlement by withholding their parcels from the market (Bratton, 1990). In addition, the CFU intensively lobbied the government to reduce the rate of resettlement, arguing that the subdivision of large farms would adversely affect aggregate agricultural production and stifle foreign investment (Palmer, 1990; Bratton, 1990).

Finally, while smallholders have received much of the redistributed land, government officials and other elite Zimbabweans have purchased large tracts of land, thus concentrating some landholding power in the hands of larger black landowners. Palmer notes that in recent years, 500 black citizens joined the CFU, many of them politically powerful, changing the power structure underlying the debate over the land question. He contends that "the debate which emerged [over the land question]...was certainly complicated by the fact that the white farmers now potentially have more powerful local allies than they did ten years

earlier. For some members of government, indeed, land distribution might now signify taking land for themselves, rather than giving it to peasants" (1990: 175).

Although various administrative and technical problems prevented GOZ from settling the targeted 270,000 families by 1990, the resettlement effort is still impressive. As of mid-1989, GOZ had resettled over 400,000 individuals, 94% of them on model A schemes. These figures do not, however, disclose information on the types of individuals resettled, nor on their success as resettlement farmers. Thus, the following sections examine: 1) the impact of resettlement on redressing some of the remaining inequities in land distribution; 2) the impact of resettlement on national agricultural production; 3) the distribution of benefits from resettlement; and 4) the long-term viability of the resettlement schemes.

3.4.2 Impact on Land Distribution and Agrarian Structure

Since 1979, the LSCF sector decreased in size by 3.85 million hectares or 25.6% of its pre-independence land area (Appendix B, Table B.1)²⁴, however, the land transfers have done little to alter the basic distributional imbalances in landholdings between commercial and small farmers. Although land transfers occurred in each farm size category, transfers involving blocks over 1,000 hectares, accounted for 95.5% of the total land transferred. This is a function of the government's desire to purchase only large tracts of land for resettlement to achieve economies of scale in service and infrastructure development on the schemes.

²⁴ In addition to commercial land purchases, 504,491 ha of state land have been used for resettlement, for a total of 3,284,000 ha of resettlement land (Roth, 1990).

Table 3.2: Land Distribution in Zimbabwe by Farm Sector and Natural Region: 1969 and 1988.

Sector	1969 (%)	1988 (%) ^a	Natural Region (%) and Land Area (000s ha)				
			I	II	III	IV	V
National & unreserved land	14.4	12.7	50.1 (1.0)	25.0 (0.5)	545.9 (11.0)	2541.1 (50.3)	1843.0 (37.2)
Communal areas	41.8	41.9	135.0 (0.8)	1270.0 (7.8)	2820.0 (17.2)	7340.0 (44.9)	4790.0 (29.3)
Large-scale commercial farms	40.0	28.7	202.2 (1.8)	3687.0 (32.8)	2405.4 (21.5)	2429.1 (21.7)	2489.7 (22.2)
Small-scale commercial farms	3.8	3.2	7.3 (0.6)	222.2 (17.9)	438.3 (35.4)	473.3 (38.2)	97.6 (7.9)
Resettle-ment areas	0.0	8.4	30.0 (0.9)	590.0 (17.9)	1240.0 (37.8)	810.0 (24.6)	620.0 (18.8)

^a State farms and some unaccounted land missing from the total.

Sources: S. Moyo, "The Land Question," (1986: 185); M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 22).

Resettlement did not significantly change the national distribution of agricultural land (Table 3.2). Large commercial farms still comprise almost 30% of the total landholdings, 59% of which are located in the more fertile agro-ecological zones. In 1988, the communal areas and the small-scale commercial farm sector comprised the same land area as in 1969, even though the population in the former more than doubled since 1969. While communal area reform is not an objective of Zimbabwe's resettlement policy, relieving population pressure in the CAs was stated as an objective of resettlement in 1980, and clearly must be addressed by GOZ, either through increasing the redistribution of land to CA farmers or through other interventions.

Much of the LSCF land sold to the government lies in the poorer agro-ecological zones; in fact, 43% lies in regions IV and V (Table 3.2). Model A schemes clearly make up the majority of land purchased for resettlement, with 58.6% of this land located in regions III and IV (Table 3.3). As of 1987, 78% of the registered settlers lived on Model A schemes (Roth, 1990: 127), and 1.5% of which lived on Model A accelerated schemes. Model B cooperative schemes lie almost exclusively in region I, comprising 12.4% of the resettlement land area, and only 12% of the resettlement population. Model C and D schemes represent less than 3% of the resettlement land area and less than 9% of the population.

The government's focus on Model A schemes results partly from the U.K.'s funding preferences for the capitalist model of land ownership, and partly from farmers' preferences for individual holdings. The fact that many of these settlers are intensively farming areas suitable only for extensive livestock grazing or semi-extensive crop production leaves them vulnerable to periodic crop loss due to drought, and hence potential food security problems.

Table 3.3: Resettlement Area Locations by Natural Region (000s ha), 1988.

Model ^a	Natural Region					Total
	I	II	III	IV	V	
A Int.	18.3 (0.7) ^b	431.6 (16.2)	975.2 (36.5)	589.2 (22.1)	122.8 (4.6)	2137.1 (80.1)
A Acc.	0.0 (0.0)	17.2 (0.6)	12.9 (0.5)	26.9 (1.0)	73.5 (2.8)	130.5 (4.9)
B	231.1 (8.7)	43.2 (1.6)	54.7 (2.0)	3.1 (0.1)	0.0 (0.0)	332.1 (12.4)
C	6.0 (0.2)	0.5 (0.02)	5.4 (0.2)	0.0 (0.0)	0.0 (0.0)	11.9 (0.4)
D	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	58.0 (2.2)	58.0 (2.2)
Total	255.4 (9.6)	492.5 (18.4)	1048.2 (39.3)	619.2 (23.2)	254.3 (9.5)	2669.6 (100.0)

^a Model A Intensive (infrastructure and services provided at settlement); Model A Accelerated (rapid settlement, services extended later); Model B (cooperative); Model C (estates combined with individual settlement); Model D (group ranching and extensive grazing).

^b Expressed as a percentage of total resettlement land area.

Source: MLARR M&E Unit 1986-87 Annual Household Survey (August, 1988).

3.4.2 Impact on Agricultural Production

3.4.2.1 Cropping Patterns and Aggregate Production of Major Crops

Since independence both commercial farmers and smallholders have changed their cropping patterns of many food and industrial crops, in response to farm-level incentives (i.e., price changes, availability of inputs, marketing outlets and extension services). The following section illustrates these trends for five major crops; growth rates for national crop production appear in Table B.2 in Appendix B.

Maize represents 30.2% of the total area under crop production in the commercial sector and 45.3% in the CAs (Roth, 1990). Since 1981, large-scale commercial production of maize decreased by 61%, while total area planted decreased by 48% (Appendix B, Table B.3). Roth (1990) cites several factors contributing to the decline in area planted, including the CFU's policy promoting crop diversification and the government's imposition of production controls in 1986. In addition, real producer prices for maize have steadily declined since the early 1980s. Maize yields in the commercial sector currently average 4.2 tons per hectare, while yields in the communal areas average approximately 0.9 tons/ha.

Communal area production of maize increased slightly during the 1980s, while total area planted remained relatively stable. Roth (1990) attributes yield increases in the communal sector to increases in hybrid seed deliveries, fertilizer use and the number of grain depots in communal areas.²⁵ Stoneman and Cliffe (1989) explain that CA farmers benefitted from increased access to credit, marketing channels and extension services, and the elimination of discriminatory farm prices after independence. An estimated 90% of all

²⁵ Rohrbach (1988) states that, in the communal areas, as much of 30% of the post-war (as of late 1979) area expansion in maize cultivation is a result of farmers reclaiming fields abandoned during the war and opening grazing areas for crop cultivation.

CA farmers now plant hybrid maize and account for more than 50% of total marketing board deliveries (Stoneman and Cliffe, 1989).

Resettlement area maize yields remain somewhat higher than those found in communal areas and average 1.47 tons/ha. Maize production in the resettlement areas continues to increase, primarily due an expansion in area cultivated. In 1983, resettlement area production represented 0.72% of total production, but grew to 19.2% by 1987. Area planted in maize increases by an average of 31% annually (calculated from Appendix B, Table B.3).

Sorghum production in the LSCF sector accounts for only 0.8% of the total area under cultivation, but 10.3% of the total cropped area in the CAs (Roth, 1990). Total production and area planted in the LSCF declined during the 1980s, while yields continued to increase from 2.4 tons/ha in 1980 to 3.0 tons/ha in 1988 (Appendix B, Table B.4). Although breweries demand a significant amount of sorghum deliveries annually, its importance in the LSCF sector is declining as farmers switch to higher value export crops (Roth, 1990).

Communal area sorghum production fluctuated greatly during the 1980s, whereas total area planted increased by an average of 1.3% per year during this same period. While yields averaged 0.4 tons/ha -- one-sixth the level of commercial yields -- total production averaged two to three times greater than commercial production. Resettlement area production has grown from 65 tons in 1983, to 2,600 tons in 1987. The resettlement sector now contributes 4.7% to national sorghum production, increasing from 0.1% in 1983.

Total LSCF production of tobacco (both flue and burley) fluctuated during the 1980s, and total area planted increased by 38%, due partly to an increase in nominal and real tobacco prices since 1984 (Roth, 1990). LSCF tobacco yields have increased by over 30%

since the late 1970s, to over 2 tons/ha, while communal farmers average a little over 0.6 tons/ha (Appendix B, Table B.5). In 1988, tobacco represented 10.9% of the total area under cultivation in the LSCF, but a relatively small proportion of total cropped area in the communal areas.

Communal area tobacco production has increased significantly since the 1970s, and since 1981, production increased by 510%; an average annual increase of 68%. Total area planted increased by 363% over this same period (an average of 50% annually), while yields increased by an average of 6.9% annually (calculated from Appendix B, Table B.5).

Resettlement area tobacco production contributes an insignificant amount to aggregate production in Zimbabwe (from 0.05% in 1983 to 0.1% in 1985), yet total production did increase from 52 tons in 1983 to 347 tons in 1987. In 1988, relatively few farmers produced tobacco on resettlement schemes, although it appears that the number of farmers growing tobacco increases yearly, particularly for burley tobacco (Cusworth and Walker, 1988). Several factors currently constrain increases in resettlement's contribution to total tobacco production, including; farmer management skills, labor, lack of credit to purchase necessary inputs and insufficient extension advice and training (Cusworth and Walker, 1988). Data for tobacco production in resettlement areas indicate that yields may be twice those achieved in the communal areas, but are insufficient to draw firm conclusions.

Cotton represents 12% of the total area under cultivation in the LSCF sector and 7.2% in the communal areas (Roth, 1990). LSCF production of cotton fluctuated in the 1980s, tending to decline after 1985 (Appendix B, Table B.6). In addition, prices paid to producers have steadily declined since 1981 (Roth, 1990). Yields, however, have been

consistently high -- twice as high as those achieved in the communal areas -- which Roth (1990) attributes to improved varieties, management, research and extension.

Communal area cotton production increased annually by 24% since 1981, while total area under production increased by 15%. Increased Cotton Marketing Board purchases, as well as improved extension and training for cotton farmers in communal areas have stimulated cotton production (Roth, 1990), however, yields appear unchanged in the 1980s, averaging 0.73 tons/ha.

Total resettlement area cotton production increased significantly each year since 1982, primarily attributable to an increase in area planted; but some data suggest that yields may be decreasing. Resettlement area cotton production increased from 0.5% of total national production in 1983 to 7% in 1988. Yields are slightly higher than those achieved in the communal areas, averaging 0.96 tons/ha.

Groundnut production represents only 1% of the total area under cultivation in the LSCF sector, and groundnuts are usually grown in rotation with tobacco (Roth, 1990). LSCF production of groundnuts increased by 1.4%, yields grew by 0.9% and area planted by 0.6% during the 1980s (Roth, 1990). Commercial area yields for groundnut production are 2 to 3 times higher than yields realized in communal areas.

Groundnut production comprises 4.7% of total crop production in the communal areas (Appendix B, Table B.7). Production has increased annually by 24% since 1981, while total area planted decreased by 5.5% per year from 1981 to 1989. Roth (1990) notes that although communal area groundnut production constitutes 97% of national production, CA farmers deliver only 3% of this production to the Grain Marketing Board. Farmers sell most of their production on the private market or use it for home consumption.

Resettlement area groundnut yields, however, are higher than communal area yields and production increased from 0.1% of national production in 1982 to 3.4% in 1988. Cusworth and Walker (1988) attribute limited production of groundnuts in the early 1980s to initial seed shortages in the resettlement areas.

3.4.2.2 Aggregate Livestock Production

In the commercial sector, total cattle inventories have declined since 1978 (Appendix B, Table B.8). Beef cattle inventories decreased by 21% since the 1970s, due primarily to drought, foot-and-mouth disease and a 24% decline in real cattle prices since 1982 (Roth, 1990). Dairy cattle inventories, on the other hand, have increased since independence, in response to increased demand for dairy products and government price incentives, and also as a function of improved management and breeding. On the other hand, LSCF small livestock production (total holdings of sheep, goats and pigs) has decreased since 1980.

Small and large livestock holdings in the communal areas have increased markedly since 1980. Although periodic droughts occurred in Masvingo and Matabeleland, national cattle herd numbers grew by 2.0% per year (Roth, 1990). Communal area cattle inventories have grown in importance from 54.0% of the national herd in 1980 to 66.0% in 1987, but their commercial importance is rather low. In the communal areas, cattle ownership signifies wealth and status, as well as a source of draft power, income and manure (Gesellschaft Fur Agrarprojekt in Ubersee (GFA), 1987; Cusworth and Walker, 1988). Goat and sheep production almost doubled from 1980 to 1987, due most likely to increased demand for meat and animal by-products such as mohair and wool (Roth, 1990). The only data on resettlement livestock production available to the author originate from M&E

surveys of several resettlement schemes (ODA evaluation report, 1988), which contain no aggregated information. Thus, they are discussed in section 3.4.2.4.

One can conclude that even though the total land area in the LSCF declined by 25.6% from 1980 to 1988, resettlement has not adversely affected aggregate crop production. Data on area, production and yield growth rates (Appendix B, Table B.2) show that, from the early 1970s to 1988, a transition occurred in national crop production. In particular, large commercial farms decreased their total area planted in cereal crops (maize, sorghum, wheat, barley), shifting instead to industrial crop production (tobacco, coffee, cotton, groundnuts, soyabeans, sunflower). In the early 1970s, industrial crops averaged only 34.6% of total cropped area, while in 1988 they averaged 46.6% (Roth, 1990). This shift in the composition of crop production is due to government price controls on cereals crops and shortages of capital-intensive inputs. Consequently, commercial farmers have shifted to producing crops which require more labor (particularly seasonal labor which is unregulated by wage laws), because input price controls make labor cheaper relative to other inputs. In addition, labor-intensive crop production is generally not subject to output price controls.

It appears that macroeconomic policies have been more important determinants of commercial agricultural production than the diversion of land resources to the resettlement program. Furthermore, the data reveal the importance of price incentives and market access in stimulating production of cotton and maize in the communal and resettlement areas. Overall, as commercial farmers respond to changing government restrictions (i.e., restrictions on maize production) and world market demand (for example, increased demand for horticultural products and decreased demand for maize), small farmers, who have a lesser investment capability to change their farming operations in response to short

and medium run price changes, fill the gaps in domestic production. Thus, once land became available and the proper incentives were offered to small farmers, it is evident that they significantly increased their marketed output.

Price policy also influenced the composition and size of livestock holdings in the LSCF, encouraging farmers to produce fewer beef cattle, but increase their holdings of dairy cattle. In contrast, since small farmers in communal and resettlement areas retain livestock as wealth, insurance and an input into crop production, their inventories are influenced more by climatic vagaries than by price levels.

Aggregate, national level data showed that crop and livestock production grew steadily during the 1980s. Therefore, to assess the distributional impacts of resettlement it is necessary to analyze regional and household level data on crop and livestock production, incomes and employment opportunities. Since little data exist on the distributional impact of resettlement in Zimbabwe, this study will incorporate information from various case studies, in an attempt to isolate some of resettlement's impacts on farmers in different agro-ecological regions.

3.4.2.3 Regional Agricultural Crop Production

Comparing communal and resettlement area agricultural production provides a basis for analyzing the distributional impact of resettlement. Since most resettlement farmers formerly lived in the communal areas, they have developed land management and farming techniques that were appropriate under a communal tenure system, and allowed them flexibility to alter the proportion of cropped and grazing land in response to climatic changes and cattle stocking levels. In addition, when agriculture could not support the farm

household, families had the option of earning off-farm income locally or by migrating out of the communal areas.

Several government policies restricted resettlement farmers from utilizing their communal coping strategies. In the resettlement areas, the MLARR prohibits settlers from stocking more cattle than their allotted number of livestock units, removing some degree of farmers' flexibility in responding to changes in their environment. Furthermore, the government bans settlers from engaging in off-farm activities, except Model D residents who may earn insufficient incomes by ranching in the lower natural regions. The government limits farmers' crop and livestock inventories and restricts their access to off-farm income, in an effort to reduce land degradation in the resettlement areas and encourage farmers to concentrate their resources in agriculture. These limitations have two implications for agricultural development in the resettlement areas. First, farmers must develop new coping strategies during periods of drought, since they may have fewer cattle to sell when required. Second, when agriculture is not remunerative, particularly in the event of crop failure, farmers have no secondary source of income to draw upon.

To assess the household food security situation in the resettlement areas, Cusworth and Walker (1988) examined 1985 M&E survey data²⁶ from selected households in each

²⁶ These data should be interpreted with care, and used only to highlight potential problems. While the M&E unit collected data in 1985 and 1986, they also used recall methods to collect data for 1984. All data pertain to Model A schemes of which 11 were selected. Villages within each scheme were stratified by soil type but the settlers chosen in those villages were often among the best farmers. Settlers were then interviewed to determine land preparation methods, and were characterized according mechanical or ox tillage practices. Finally, from each subset, two or three settlers were chosen using random number tables. Furthermore, no data were collected from Matabeleland due to security reasons, therefore, the data for region IV originate from Masvingo only.

region.²⁷ The data, which included only maize and sorghum retentions (which excludes the degree to which vegetable crops and other grains contribute to household nutrition and income), indicated that maize production appears to satisfy household food requirements in all regions except V (Table 3.4). In fact, in the higher natural regions, farmers used only 40% of their arable land to attain these production levels for food crops and the rest of their land for cash crops (Cusworth and Walker, 1988).

Table 3.4: Maize and Sorghum Retention Per Resettlement Household by Natural Region in Zimbabwe, 1983/84 - 1985/86. ^a								
Year	Natural Region							
	II		III		IV		V	
	Maize	Sorghum	Maize	Sorghum	Maize	Sorghum	Maize	Sorghum
1983/84 ^b	16.2	0.0	12.9	0.0	14.0	1.8	1.6	2.6
1984/85	18.7	0.0	19.2	0.0	17.6	2.7	11.6	14.5
1985/86	17.4	1.7 ^c	16.1	1.0	15.6	4.1	2.3	1.4

^a Average number of bags retained after harvest, where average bag size = 90 kg.

^b Drought year.

^c Estimate based on limited number of cases.

Source: Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 104).

²⁷ Riddell estimated that each individual in the CAs requires 385 lbs or 175 kg annually for consumption. If the average household size is 8.5 people (Cusworth and Walker, 1988), then a family requires approximately 1488 lbs of maize or 7.4 bags annually.

An examination of average area, yield and gross margins (gross income minus variable cash expenses for each crop) for maize, sorghum and cotton, again reveals the degree of variability across regions in the resettlement sector (Appendix B, Tables B.9-B.11). Maize is the primary food crop in all the resettlement areas, while farmers grow sorghum in the lower natural regions (IV and V) as insurance for drought periods and cotton in higher regions (II and III) as a cash crop. Although yields vary from year-to-year, the greatest variation for all crops occurs in region V, in addition to the lowest gross margins.

For example, maize yields are high in regions II, III and IV (2.49, 1.89, and 1.88 tons/ha, respectively) compared to region V where yields are extremely variable (ranging from 1 ton to 0.1 tons/ha). The data also indicate that farmers in regions II, III and IV receive higher gross margins per hectare than in region V, yet figures for all regions show extreme year-to-year variability. Furthermore, sorghum yields average 1 ton/ha in regions III and IV, yet under 0.5 tons/ha in region V. Gross margins for sorghum indicate the same variability as those for maize. Cotton, produced only in regions II and III, generates less variable yields and gross margins.

Table 3.5: Average Area under Cultivation for Schemes in Natural Regions II-V in Zimbabwe, 1985/86.

Natural Region	Average Area under Cultivation (ha)	Of Total Arable Land Available (%)
II	3.0	60
III	3.6	71
IV	3.8	76
V	4.8	96

Source: Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 118).

These data further highlight the risk involved in crop production in the lowest regions, especially since almost 100% of arable land is committed to crop production in some areas (Table 3.5). In other high-potential areas, households meet their food needs using 60-70% of their allotted land, implying that if labor is fully employed at current production levels, then these plots may be too large for the average resettlement household to manage.

3.4.2.4 Regional Livestock Production

Livestock holdings play a vital role in the communal area farming system, as well as in the resettlement areas. In addition to serving as a source of draft power, livestock provide an alternative source of income when crop production is insufficient in meeting household needs. Therefore, unless farmers have other options through which to generate income (i.e., off-farm income, or more reliable cropping systems in the lower natural

regions), livestock production will continue to be important to resettlement area farmers, leading to potentially serious overgrazing and soil erosion problems.

A communal area livestock survey conducted by the Gesellschaft für Agrarprojekte in Übersee (GFA) in 1987 revealed that households with larger herd sizes have higher maize production; often four times greater than those of households without cattle (GFA, 1987). Increased production results, in part, from increased yields due to more intensive planting and manure application, in addition to improved timing from using draft power. Farmers in natural regions IV and V, however, experience more frequent crop failure and spend more time in off-farm employment, which leads to neglect of cropping activities.

In addition to livestock's general importance as an input to production (GFA, 1987; Cusworth and Walker, 1988), small livestock also play an important role. They serve as an intermediary step to large animal acquisition, and often allow women to make investments that requires less labor and capital than cattle (Cusworth and Walker, 1988).

Therefore, given the role of livestock in both the farming system and the culture, farmers may attempt to accumulate very large holdings of both small and large animals. Although the government issues permits to control the number of livestock per holding, it does not enforce these stocking rates. In fact, data show that some farmers have already surpassed permitted stocking levels, particularly in the higher potential natural regions (Cusworth and Walker, 1988). Furthermore, where overstocking occurs on adjacent communal areas, communal area farmers trespass onto resettlement lands to graze their herds. A partial cause of the overgrazing problem lies in the specification of the tenure system, which permits individual holdings for crop cultivation but mandates communal grazing. Thus, some farmers' livestock holding patterns, especially those with very large

herds, may adversely affect other farmers with smaller herds, influencing their ability to maintain viable farming systems.

3.4.3 Impact on Employment

LSCF farmers employ a large number of seasonal and permanent employees; in 1989 they employed 247,154 individuals, of which 75% were male and 25% female (Roth, 1990: 167). During the initial resettlement years, some critics voiced concerns that the subdivision of large farms would decrease total wage employment opportunities in the economy (Kinsey, 1982; 1983). These critics, however, did not anticipate the slower pace of resettlement, the effect of transforming underutilized parcels with low labor/output into fully productive land with high labor requirements, or the shift of many commercial farms into more labor intensive crops (i.e., tobacco, cotton, horticultural crops and vegetables) (Roth, 1990).

Although the number of LSCF employees decreased by 9% from 1980 to 1989, it is unlikely that the decline in wage employment is due primarily to land resettlement policy. For example, during this period, the government enacted various policies which increased the costs of labor for LSCF employers, including minimum wage laws and regulations expanding workers' rights. Therefore, declining wage employment could be part of an overall trend in agriculture toward greater investment in labor-saving technology (Roth, 1990). Although some of the decline in the labor force can be attributed to the subdivision of farms in the LSCF subsector, Roth contends that some of the land transferred was underutilized and mechanization may have increased the ratio of cropped area/worker from 2.1 in 1980 to 2.5 in 1985. Furthermore, foreign exchange shortages, growing unemployment and increased numbers of refugees entering the work force encouraged LSCF managers to

hire less permanent wage labor but more seasonal labor which is not controlled by government regulations.

Evidence from Kenya and Peru suggested that small farms achieve higher labor/output than large farms. Therefore, policies designed to expand the small farm sector will absorb surplus labor in agriculture. In the case of Zimbabwe, although total wage employment in commercial agriculture decreased by 9% during the first 10 years of the resettlement program (from 271,291 to 247,154 employees, or a loss of approximately 24,000 jobs), there are now 52,000 families in the resettlement sector. However, the net gain in employment in the smallholder sector (both in terms of family and hired labor) is difficult to ascertain because many settlers were previously communal area smallholders or employed on commercial farms. Thus, the net impact on employment is much smaller than the actual number of adults settled.

3.4.4 Impact on Income Distribution

Several factors affect the distribution of incomes resulting from land resettlement in Zimbabwe, including the natural region in which the settlement is located (site selection), the size of the holdings and farmers' access to services and infrastructure.

First, the location of the settlement determines the intensity of crop cultivation, and hence settlers' ability to earn sufficient household incomes and repay loans acquired for input purchases. Cusworth and Walker (1988) found that farmers in natural region V earned the lowest gross margins from crop production, but the highest average value for their cattle herds.^{28,29} Farmers in region II earned the highest total gross margins for

²⁸ Offtake is calculated as the ratio of the number of cattle sold, slaughtered or disposed of during the year to the total herd at the beginning of the year (Cusworth and Walker, 1988).

crop production and cattle offtake (1983/84 - 1985/86), yet also the highest levels of indebtedness; averaging over Z\$1,500. Farmers in regions III and IV also accumulated debts of almost Z\$700. Since crop production and cattle offtake rates are highly contingent upon climatic conditions, farmers with high levels of indebtedness could, after a year of drought, find themselves unable to repay their debts and thus be ineligible for further credit.

Furthermore, low loan repayment rates to date indicate highly variable farm incomes and debt accumulation. For example, Cusworth and Walker found higher repayment rates following a successful cropping season, and repayment rates from several schemes indicate that farmers more often repay short-term than medium-term loans.³⁰ Repayment rates for short-term loans average from 4-83% and from 0-56% for medium-term loans. In addition to repayment problems, settlers complained about late loan processing and input delivery, as well as costly and insufficient transport (Cusworth and Walker, 1988).

The study by Campbell et al. indicated that families with a larger holding than in the communal areas are able to build up livestock inventories and reinforce their coping strategies. However, evidence also suggests that resettlement area holdings may be too large, given available family labor and other production inputs, implying that resettlement land is not accommodating the maximum number of beneficiaries. As Lipton pointed out (Chapter Two, section 2.1.2.3.2), the size of the holding determines not only its income-

²⁹ These figures may underestimate levels of indebtedness among settlers since Cusworth and Walker compare the target net farm income of Z\$400 with gross margin calculations. Thus, farmers' incomes are not adjusted for any fixed costs they incur (ie., maintenance and depreciation on farm equipment and structures), nor are they adjusted for any remittances or off-farm income earned. They assume that the two additional sources of income and expenditure net out, but this is an unusual assumption, given that during the first few years of settlement expenses on plows, carts and hand tools are probably high.

³⁰ Farmers generally use short-term loans to acquire seasonal inputs (fertilizer and seed), whereas medium-term loans (four years) purchase oxen, carts or farm implements (Cusworth and Walker, 1988).

generating potential, but the number of beneficiaries served by the reform. This implies that if holding sizes are indeed too large in some areas (Table 3.5), then reducing plot size will allow the government to settle more households, thus redistributing incomes more widely.

Access to services and infrastructure also determines the farm household's ability to earn sufficient incomes. A lack or untimely delivery of inputs and certain services such as credit, marketing and transport limits farmers' short- and long-term potential to generate income and invest in improved seed and farming equipment (Kinsey, 1982; Cusworth and Walker, 1988). Thus, services and infrastructure ultimately play an important role in determining who benefits from land redistribution, and by how much.

3.5 Other Key Issues

3.5.1 Land Tenure

Many analysts of Zimbabwe's resettlement policy have criticized the current tenure policy in the resettlement areas, arguing that it perpetuates the system found in the communal areas, which is blamed for extensive land degradation (Whitlow and Campbell, 1989). There is little understanding of the incentive structure that the communal landholding system provides for investment and conservation, and therefore, the resettlement areas should be studied to determine how people will respond to a different and expanded opportunity set. Bruce (1990) notes that many people recognize that the permit system currently used in the resettlement areas is an inadequate long run solution to establishing land rights because it does not address problems of future land subdivision for inheritance, or potential abuses by administrators.

In recent years, several parties have proposed land reform initiatives. However, the viability of each proposal depends on who will bear the costs and who will reap the benefits, and whether the eventual distribution of benefits and costs is consistent with the government's long-term objectives for rural and agricultural development.

First, the Communal Area Development Plan recommends issuing five year permits, which would subsequently be converted to 25 year leases, and include an option for extension to 90 years. This proposal still embodies some uncertainty (and therefore potential costs), since settlers could be subject to administrative changes after the initial five year permit expires. It is also a costly option for the government because each land permit would have to be evaluated and processed three times, as opposed to once if the government accords long-term titles or leases. The government would gain little through this process since there must be a less costly way to evaluate settlers' landholdings.

Second, Lionel Cliffe proposes "a system of community rather than state control of land, urging that it can allow for reallocations of land over time to cope with new households and reallocations which may be required in attempts to intensify land use" (Bruce, 1990: 36). There is some doubt as to whether a community-based system would function in the same manner as a traditional landholding system where local officials allocate land and spatially control land use. While Cliffe's option involves fewer administrative costs for the government, it is doubtful that a communal system could be successful in resettlement areas. Since settlers typically originate from different ethnic groups, they would not recognize the same local authorities, unless the government allows each scheme to select its own management. Thus, this option has a high potential for land use conflicts whose confrontation and resolution would involve the costs of creating and sustaining another administrative agency.

Michael Bratton (1990) suggests that according exchange rights (either limited or fully specified) will provide sufficient incentives for resettlement farmers to make investments to increase agricultural output.³¹ Since policymakers are hesitant to instate freehold tenure in the resettlement areas, he advocates establishing some form of leasehold tenure with either protective legal measures to prevent subdivision and sale or an extended lease. Either of these options would provide increased security,³² guarantee more enforceable rights in land for landholders, and would require fewer administrative costs than registering freehold titles or reissuing permits at specified time intervals.

The case studies in Chapter Two underlined the need for policymakers to provide for institutional flexibility in designing tenure systems. Often, other institutional variables affect the distribution of benefits and costs from land redistribution to a greater extent than the specification of the tenure system itself. Therefore, in designing tenurial reforms, it is necessary to study the opportunities created for farmers in the new resettlement areas and judge whether a change in tenure will indeed create greater incentives to smallholder agriculture, or whether other policy interventions would achieve the desired outcomes.

3.5.2 Condition of Women: Access to Land and Production Opportunities

Several authors suggest that allocating land by permit in the resettlement areas changes the traditional access and control women have over some parcels of land

³¹ The Commercial Farmers' Union also advocates individualized tenure in the form of a three-year lease during which farmers' progress is monitored, and if they are considered successful farmers, they have the option to gain full title to their land (CFU, 1991).

³² Barrows and Roth define tenure security as "the landholder's perception of the probability of losing land within some time period...[or] losing a specific right in land such as the right to cultivate, graze, fallow, transfer, or mortgage" (1989: 35). They further emphasize that titling procedures are not homogenous and, depending on the country and institutional context, a title may convey varying degrees of security of ownership.

(Chimedza, 1988; Gaidzanwa, 1988).³³ In addition, because of the emphasis on cash-cropping, women may lose rights to cultivate their own fields which often provide nutritional supplements to the household diet, as well as generate additional income.

The government typically issues permits to male heads of household, except in the case of female-headed households, where the woman receives the permit. To date only 7% of the permits issued have been allocated to women (Chimedza, 1988). In addition, although both the husband and wife can be designated as co-permitholders, Chimedza reports that the MLARR discourages the practice. She also found that women's lack of knowledge about resettlement procedures and laws prevented them from seeking jointly-held permits.

Lack of explicit rights to land prevents women from obtaining credit, and exposes them to eviction in cases where the husband is convicted of a crime (Chimedza, 1988). Furthermore, in moving from communal areas to resettlement schemes, women lose traditional ties and assistance from extended family members. Often, the only available family labor consists of the husband and wife, and the limited contribution of school-age children (Chimedza, 1988).³⁴

Although women lose some traditional rights to land on the resettlement schemes, access to larger holdings enables them to grow their own crops, and co-wives can even have individual plots (Chimedza, 1988). In Chimedza's survey, she found women interplanted

³³ See also Achola Pala Okeya's description of the impact of land tenure reform on women in Kenya as summarized by Joy K. Green in "Evaluating the Impact of Consolidation of Holdings, Individualization of Tenure, and Registration of Title: Lessons from Kenya."

³⁴ More drastic labor shortages occur in areas where services are so inadequate that parents must send their children back to communal area schools (Kinsey, 1982).

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their crops with maize but not with higher value cash crops (i.e., tobacco and cotton), typically controlled by men.

Gaidzanwa suggests that prices could significantly affect women's roles in the farming system (1988). For example, if groundnut prices increase (traditionally a woman's crop), then demands for female labor will grow as they intensify groundnut production. As a result, women could lose control over their crops since higher prices might encourage men to exert control over the production of these higher value crops (Gaidzanwa, 1988).

Therefore, the legal framework created for the resettlement areas limits women's legal control over land, exposing them to eviction in some cases, and increasing the possibility of them losing control over their labor input and own source of revenue generation.

3.5.3 Incorporating the Landless into Resettlement Schemes

Resettlement's impact on landlessness in Zimbabwe is unknown, primarily because the number of landless individuals also remains unknown. Yet, one of the primary objectives of resettlement policy is to provide "opportunities for people who have no land and who are without employment and may therefore be claimed as destitute..." (Zimbabwe National Farmer's Union, 1987: 1). Providing productive opportunities in agriculture for the landless improves their standard of living and reduces the influx of unemployed into urban areas.

Estimating the number of landless is difficult since many people migrate to find employment or work permanently on commercial farms, often with no holdings of their own. In addition, many communal area residents are essentially landless, either because they have no land or because they farm small holdings on marginal soils (Bratton, 1990). Various

estimates project that landless families make up 6-12% of communal area households (Bruce, 1990), and may number more than 330,000; 42% of the total agricultural population and 32% of Zimbabwe's population (Bratton, 1990).³⁵ Although resettlement represents an opportunity to improve conditions for the landless, the problem is twofold.

First, even if the government could meet its goal of settling 110,000 households on 15 million hectares over the next ten years, redistribution would still not reach a substantial number of landless people. Sixty percent of those currently settled on schemes came from the communal areas (Moyo, 1986); another 28% were landless (Bratton, 1990). Therefore, if the government did settle an additional 110,000 families, all landless, it could accommodate only 30% of those needing land.

Second, the landless need more than just land. Bratton (1990) asserts that the landless and near-landless also suffer from shortages of labor, agricultural inputs and livestock which further constrain their ability to establish viable farms. As critics argue that the government cannot always provide services and infrastructure for settlers in a timely manner, this could adversely affect the productivity of the landless or near-landless who move to resettlement schemes with little or no capital and farming equipment.

Resettlement has had some impact on reducing landlessness in Zimbabwe only because some landless families have been resettled. However, the number of landless continues to increase yearly. If the policy's goal is to have a wide distributive impact, then the government must provide more than simply land to new settlers. They also need access to support services and infrastructure which would enable them to become productive farmers, particularly those who move to schemes with few resources.

³⁵ Estimates for 1980 include 180,000 truly landless households and 150,000 near-landless households (Bratton, 1990). Bratton also estimates that by 1990 there will be 370,000 households in need of land.

3.5.4 Land Degradation and Conservation

Land degradation in the communal areas has progressed to the point where it limits the potential for agricultural development (GFA, 1987), and some fear similar consequences in the resettlement areas, particularly if farmers subdivide their holdings for transfer to other family members. Two factors exacerbate land degradation; human and livestock population pressure, and lack of information and inputs to practice appropriate conservation methods. In addition, inadequate income-generating opportunities in the resettlement areas could accelerate degradation by forcing farmers to cultivate their fragile land more intensively.

Surveying 30 communal areas, the Whitsun Foundation (1983, cited in GFA, 1987) found that the long run carrying capacity of the land would support only 36% of the existing population. Actual cattle stocking rates sometimes surpass the recommended rates by 100% (particularly in natural region V), leading to overgrazing and exposed soils.³⁶ High rates of soil erosion -- five to eight times the natural rate of erosion -- further reduce the land's carrying capacity (GFA, 1987). Cusworth and Walker (1988) reported that some resettlement areas have already approached overstocking, especially in the higher natural regions where crop yields are more variable. Thus, the potential for land degradation in the resettlement areas already exists, primarily in areas where farmers rely on cattle to supplement their income in case of crop failure.

Although the Technical Services division of AGRITEX conducts soil conservation, land use and veld management courses, the division is severely understaffed in terms of branch personnel and extension workers (GFA, 1987). Whitlow and Campbell (1989)

³⁶ Whitlow and Campbell found that over 60.0% of all eroded land in the communal areas was located in regions IV and V (1989).

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advocate making materials available to extension workers and education institutions that convey the significance of erosion problems and the importance of proper land management and conservation. While education is important in providing information on appropriate techniques to farmers, perhaps the key solution lies in addressing the problem of variable profitability in some resettlement area farming systems, and hence farmers' need to maintain more intensive stocking levels.

3.6 Summary and Implications for Further Evaluation

Zimbabwe's land resettlement program demands extensive personnel and financial resources. Since 1980, the government has spent approximately Z\$117.5 million on land purchases, development and recurrent costs, excluding donor-financed land purchases (Cusworth and Walker, 1988; Palmer, 1990), or Z\$2256/household settled (Z\$3669/household including donor expenditures). This translates roughly to 0.4% of gross domestic product per year. In the short run, resettlement has not caused aggregate agricultural production levels to plummet, as many anticipated. In fact, the resettlement sector, as well as the LSCFs and CAs, contribute incremental increases to national production each year. Thus, as argued in Chapter Two, resettlement has a potential to accelerate economic growth.

On the equity front, it appears that some households benefitted from gaining landholdings in the resettlement areas, particularly former communal area farmers, landless families, war victims and the unemployed. The question that remains concerns the extent and permanency of those benefits. Available data indicate, not surprisingly, that settlers in some resettlement areas experience highly variable returns to agriculture and have inadequate access to services and infrastructure. In these areas, where even the short-term

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benefits from resettlement are tenuous -- the long-term prospects are dim. Furthermore, only a small percentage of those most in need of land; 4% of the landless and near-landless, received land. The majority of those settled were communal area farmers who left their small parcels for larger, better quality landholdings. The condition of the resource-poor; the landless, farmers in marginal areas and women, may not have improved as a consequence of the resettlement program. Therefore, although the government increased equity, benefits are highly skewed toward the settlers in better natural regions and those with access to sufficient inputs, services and infrastructure.

Currently, the Rural Resettlement program is one of many rural development programs in Zimbabwe. For example, during 1984 the government committed Z\$786 million to other programs, including; irrigation schemes, urban infrastructure in rural areas, small-scale industry, rural credit, agricultural services, conservation and reclamation works, forest development, parks and wildlife development, rural health facilities and schools, community courts and rural infrastructure (GOZ, 1981). Resettlement represented approximately 13% of the total funds allocated to rural development. Yet, the government, even with a substantial monetary commitment to the resettlement program, has little indication of its short-term performance, much less its longer run prospects. The eventual goal of resettlement is to integrate these individual schemes into regional economic development, by encouraging schemes to become more self-sufficient and less reliant on government support. Yet, it is difficult to ascertain the extent to which this long-term goal may be achieved when there is little effort to monitor and evaluate scheme-level progress and difficulties. Although the government established an M&E unit, the Policies and Procedures document for resettlement does not even indicate the unit's source of financing (Cusworth and Walker, 1988).

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Unfortunately, political forces constrain the success of the resettlement program. Although significant amounts of underutilized land still exist in the commercial sector, the government will not force farmers to sell their land for fear of driving them out of commercial agriculture. In addition, an increasing number of government officials now have a stake in decelerating the pace of resettlement in order to keep more land for themselves. Finally, pressure from the British government, which provides large grants for land acquisition, shapes both the past and the future of resettlement. For example, the British only endorsed Model A schemes which provide for individualized tenure, a form contrary to Mugabe's socialist vision for Zimbabwe. Also, the British government more recently stated that it will discontinue its funding unless the GOZ purchases land only in natural regions IV and V (Palmer, 1990). Recognizing that these important parameters constrain the government's actions, there is still room to increase the quality of the current program by expending efforts to more systematically collect and analyze agricultural production and socio-economic data regarding farm-level performance on various resettlement schemes. Improving monitoring and evaluation could allow the government to more efficiently direct funds, and thus increase the breadth of the resettlement program.

3.7 Conclusions

Clearly, resettlement policy in Zimbabwe is guided not only by current political, economic and socio-cultural conditions, but also by its historical legacy of land segregation which led to the development of the overcrowded, degraded Communal Areas and the powerful commercial farming sector. Today's policies attempt to rectify some of these problems by redistributing land to smallholders who have long been denied access.

Since 1980, resettlement has contributed to increased aggregate agricultural production and served to redistribute incomes to some smallholders, as well as expand rural employment opportunities. The policy's impact is very limited, however, compared to the government's initial objectives. To date, the government has failed to adequately address several important issues, including; options for resettling a greater number of landless and near-landless, ensuring the legal security of women on resettlement schemes, developing strategies to prevent potential overgrazing and soil erosion problems, and seriously investigating land tenure reform for smallholders.

The four case studies presented in Chapter Two underlined the importance of pre-reform planning and periodic evaluation to ensure that the goals of land redistribution are met. Similarly, the impacts of Zimbabwe's land resettlement policy on agricultural production, income distribution and employment generation are highly contingent on site and settler selection, timely provision of inputs and services, and the effects of other agricultural and macroeconomic policies in providing incentives for smallholder production.

Monitoring and evaluation contributes to policymakers' understanding of how diverse micro- and macro-level policies influence the impacts of resettlement on smallholder agriculture and provides a medium for developing interventions to make resettlement more effective. The case studies, as well as evidence from Zimbabwe, highlight the need to institutionalize an appropriate evaluation strategy that will improve planning and implementation of land redistribution programs, as discussed in Chapter Four.

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CHAPTER FOUR

EVALUATING LAND RESETTLEMENT POLICY IN ZIMBABWE

The first section of Chapter Four examines the elements involved in evaluating rural development programs; focusing on performance, impact and efficiency analyses. The second section discusses the importance of monitoring and evaluation systems in assessing the long-term performance of resettlement programs, and addresses the need to improve the evaluation of Zimbabwe's resettlement program by more clearly defining its role in planning and implementation and expanding the current methodology.

4.1 Evaluating Zimbabwe's Resettlement Program

Chapter Three outlined the impact of Zimbabwe's resettlement program on agricultural production, income distribution and employment generation, both in terms of aggregate indicators (i.e., total production, average yield, number of families resettled), and some disaggregate information derived from case studies and evaluation reports.

Evidence presented in Chapter Three showed that the government should improve its current evaluation methodology by systematically collecting information on broad indicators across all schemes relating to resettlement's impact at the scheme-level (agricultural production, income distribution and employment). In addition, the government should allocate resources to examining critical issues, including: 1) the ability of formerly landless individuals to become productive resettlement farmers; 2) the development of soil

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conservation policies; 3) the effect of leasehold tenure on resettlement farmers' incentives for investment in accelerating agricultural production; 4) the viability of establishing schemes based on intensive crop production in regions IV and V; and 5) women's access to land and production opportunities.

Although the government has established a monitoring and evaluation unit to collect and analyze data on resettlement area activities, Cusworth and Walker (1988) found that the unit is under-financed and lacking in both organization and continuity of personnel service. Furthermore, the M&E unit (which operates through AGRITEX) is not the only branch collecting data on resettlement scheme performance; MLGRUD, DERUDE, and the CSO, among others, also collect information of use to their particular agencies. Wekwete (forthcoming) argued that there is little inter-ministerial coordination of resettlement activities, and therefore, there is most likely little coordination of data collection efforts.

Given the government's increasing emphasis on creating a highly productive resettlement sector (MLARR, 1989; GOZ, 1991), the government should establish a more systematic method of evaluating resettlement to ensure that redistribution does lead to growth in agricultural production. In fact, two main elements for evaluation emerge from the government's focus on increasing agricultural productivity. First, one must determine the relative influence of selected scheme-level variables (i.e., input, service, management and agro-ecological conditions) on farm performance. Second, one must isolate the settler types that have the highest potential for contributing to growth in agricultural production. With more detailed information about specific scheme-level performance variables, policymakers can redirect future resettlement efforts towards providing requisite conditions and settler types to encourage growth in the resettlement sector.

4.2 Conceptualizing Evaluation

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Evaluation "is a process for determining systematically and objectively the relevance, efficiency, effectiveness and impact" of a program's activities in the context of its objectives (United Nations, 1984). Casley and Kumar describe three specific types of evaluation; performance, impact and efficiency assessment (1987). Performance assessment "includes a review of all the activities undertaken by the project to achieve its stated objectives" including: 1) planning and appraisal, 2) specification of objectives, activities and targets, 3) timing of implementation, 4) services and inputs provided, 5) beneficiary coverage, 6) managerial performance, and 7) financial performance (1987, 101-2).

Impact assessment focuses on both the primary and secondary effects, including anticipated and unanticipated results of the program. These effects are often measured in terms of their impact on agricultural practices, or the health, nutrition and socio-economic status of the target group.

Program efficiency assessment refers to estimating the financial and/or economic rate of return generated by the government's investment in the program, at the scheme, regional or national levels of analysis.

Performance, impact and efficiency assessment are not mutually exclusive, but evaluators often focus on one aspect more than another, particularly in the face of financial, personnel or time constraints. Whatever the emphasis, evaluations should incorporate theoretical and empirical knowledge from the relevant social science in order to derive alternative programs and to test causal relationships (Freeman et al. 1979).

Evaluations may be conducted: 1) ex-ante for project appraisal; 2) periodically during project implementation; and/or 3) ex-post, after project completion. The type of evaluation system adopted must reflect program objectives and available resources, as well as various information-users' priorities for data collection and analysis.

Table 4.1 presents the three stages of evaluation -- specification, design and implementation -- and highlights (*) those discussed in this study.

Table 4.1: Phases in the Evaluation Process. ^a		
Phase I --- Specification of evaluation topic	Phase II --- Design of evaluation procedures	Phase III --- Implementation of evaluation
*Specify <u>subject</u> of evaluation	*Select study <u>design</u>	Check <u>feasibility</u> of evaluation
*Specify <u>type</u> of evaluation	*Select evaluation <u>criteria</u>	Designate <u>organization</u> of evaluation
*Specify <u>purpose</u> of evaluation	*Select comparative <u>standards</u>	Test and refine evaluation <u>procedures</u>
Specify <u>decision options</u> ^b	*Select evaluation <u>measures</u>	Collect, analyze and report <u>results</u>
Finalize evaluation topic	*Specify data <u>analysis</u> procedures	Evaluate evaluation
	*Select <u>sampling</u> procedures	Complete findings and recommendations
	*Specify <u>data collection</u> procedures	
	Specify data <u>reporting</u> procedures	
	Finalize evaluation design	

^a Those steps noted with an asterisk are discussed in this chapter.

^b For example, identify who makes decisions regarding the evaluation, any relevant timelines, constraints, and so forth.

Source: H. Freeman et al. Evaluating Social Projects in Developing Countries. (1979: 44).

4.2.1 Information-Users and Levels of Analysis

There are three primary clients who provide services or inputs for resettlement; each with a different role in planning and implementation. Therefore, they require different sets of information from which to make decisions relevant to their level of involvement. First, ministry officials require information on the return to government resources invested in the resettlement program, in order to judge whether these resources could be more efficiently allocated to another project. They also need to convey this information to donor agencies who fund the program. In addition, they may want information on ministerial and scheme-level administrative activities. Furthermore, some ministries and collaborating agencies require information on the maintenance and use of specific inputs they provide to resettlement schemes, such as water, roads, building equipment, veterinary supplies and so forth.

Second, scheme administrators need information on program inputs and settlers' farm-level performance, in order to inform government officials of ways in which services and management can be improved, as well as to evaluate their own performance. Finally, farmers need information on and access to inputs and services in order to improve their farm management practices and decisionmaking tools.

Performance, impact and efficiency assessment may be conducted at the scheme, regional and national levels. Successful evaluation requires that information-users establish both evaluation priorities (i.e., identify a hierarchy for evaluating program objectives) and determine the relevant level of aggregation for the analysis. Casley and Kumar argue that the hierarchy must specify "target populations, critical activities, and tasks to be monitored against agreed targets," both in terms of short- and long-term objectives (1987: 23). This

hierarchy will determine the level of aggregation which is conditioned by the purpose of the analysis (i.e., whether the evaluation will assess farm-level, regional or national impacts).

Thus, the specific evaluation methodology chosen is a function of the characteristics of the program being evaluated, as well as the information needs of decisionmakers and any constraints they face (i.e., political, financial, time and personnel constraints).

4.2.2 Assessing Program Performance

Program performance assessment measures the degree to which program activities achieved the stated objectives for planning and implementation. The process of evaluating program performance induces accountability, allows planners to link implementation problems to shortfalls in impact and provides a basis for modifying program procedures (Freeman et al., 1979). Table 4.2 lists some indicators of program performance that could be used to determine how well a resettlement program meets its objectives, in terms of general information on resettlement beneficiaries, scheme-level inputs and the performance of scheme managers.

Table 4.2: Indicators of Program Performance for Resettlement Schemes.

Performance variable	Performance indicator	Data source
Characteristics of beneficiaries	<ul style="list-style-type: none"> - No. of households settled - Area of origin - Size of livestock holdings - No. and type of farm implements - Size of farm parcel 	<ul style="list-style-type: none"> - Settler registration records
Characteristics of resettlement land (by agro-ecological location and scheme type)	<ul style="list-style-type: none"> - Price/ha - Location - Total area purchased - Total area developed 	<ul style="list-style-type: none"> - Ministry of Agriculture data
Service or input to scheme: <ul style="list-style-type: none"> - Water - Health center - School - Seed, fertilizer, herbicide, grain bags - Ag. implements - Credit - Extension - Transport - Housing 	<ul style="list-style-type: none"> - Timely delivery - Maintenance - Adequate staff - Adequate supply/distribution - Quality 	<ul style="list-style-type: none"> - Service records at ministry or scheme-level - Observation - Interviews with scheme participants
Managerial performance (scheme and/or inter-ministerial)	<ul style="list-style-type: none"> - Budget allocations - Equipment and input supplies and condition (field and office) - Enforcement of scheme regulations 	<ul style="list-style-type: none"> - Personnel time sheets and records (written and oral communications) - Interviews with scheme participants

Source: Compiled by author.

Performance evaluation requires the collection of relevant data in a cost-effective manner. Some performance variables are directly measurable (i.e., number of households resettled, total land purchases), while others are more qualitative (i.e., quality of housing or services, staff performance) and require some subjective interpretation. Furthermore, some variables must be evaluated more frequently than others, perhaps entailing a greater cost. For example, it is relatively inexpensive to more frequently collect data on the number of families settled in a certain region. On the other hand, obtaining information on the timing of input deliveries entails contacting the ministries or organizations involved, as well as inquiring about beneficiary satisfaction – a costly process which may require collecting data several times a year, depending on the service in question. Yet, some knowledge of the timeliness of input delivery is essential to understanding the conditions influencing agricultural production and settler welfare at the scheme-level. This implies that in order to monitor project performance in a cost-effective manner, evaluators must identify the set of variables (objective indicators) that can be collected at minimal cost from readily available administrative data, and supplement the data with information gathered through informal interviews or case studies.

Data to assess performance objectives can be collected through various methods, including observation, reviewing service records, and interviews with service providers and settlers (key informants). The appropriate data collection method depends not only on available resources, but also on the degree of precision desired in the analysis, as well as the importance accorded to performance assessment. However, since it is necessary to collect performance data over a wide range of variables, evaluators must devise a systematic and relatively uniform method of collecting this information (Freeman et al., 1979), and establish a baseline or target against which to evaluate program performance.

4.2.3 Assessing Program Impact

Impact assessment measures the value and magnitude of the program's effects on the target population (Freeman et al., 1979). In its most rigorous form, impact assessment must show that measurable impacts on the target population are a function of that particular program, in order to establish linkages between program inputs and outputs (Freeman et al., 1979). However, it is often difficult to establish direct causal linkages because many intervening factors influence the production of outputs. For example, increases in agricultural production are a function of settlers' improved farming conditions (such as more arable land and better soil quality), as well as timely access to inputs, credit, marketing opportunities and weather. Thus, program inputs are typically viewed as a bundle of factors which appear associated with the output or impact. These factors are generally measured in terms of indicators or "objectively verifiable measures of changes or results brought about by an activity...used as markers of progress towards reaching intermediate or long-term objectives" (United Nations, 1984: 37), either directly or indirectly. Direct indicators measure the progress of an activity against a stated target, whereas indirect indicators provide a measure of impact when direct indicators are too expensive or difficult to develop (Freeman et al., 1979; United Nations, 1984).

The implications for evaluating resettlement are that 1) several indicators must be used to measure changes in anticipated outputs, and 2) these indicators must be evaluated at intervals frequent enough to provide relevant information. Table 4.3 presents some indicators that could be used in measuring the impacts of resettlement on agricultural production, income distribution and employment generation for the target population.

Table 4.3: Indicators of Program Impact for Resettlement Schemes.

Impact variable	Outcome indicator	Data source(s)
Agricultural production	<ul style="list-style-type: none"> - area cultivated - crop composition (cash + staples) and total prodn. - yield variability from year-to-year - proportion marketed vs. consumed at home 	<ul style="list-style-type: none"> -Sample surveys -Marketing board records
Income distribution	<ul style="list-style-type: none"> - total household income (farm income + non-farm income) - livestock holdings - housing 	<ul style="list-style-type: none"> -Sample surveys -Participant interviews
Employment generation	<ul style="list-style-type: none"> - full-time farming jobs created - part-time farming jobs created - non-farm jobs created (rural works, services) 	<ul style="list-style-type: none"> -Sample surveys -Participant interviews

Source: Compiled by author.

Program impact can be measured at the aggregate level (national or regional) to gauge whether the program has had a negative or positive aggregate effect on the economy, or at a disaggregated level (individual scheme or farm). To estimate aggregate impact, the analyst must first develop assumptions regarding program impact at the scheme or farm level by conducting a more diagnostic analysis to identify micro-level impacts.

National statistics may provide information on aggregate-level impacts, and are usually based on projections derived from a small sample of individuals. However, aggregation disguises regional and local-level fluctuations which signal possible or actual problems for a subset of program beneficiaries. Thus, if there are potentially undesired outcomes resulting from program implementation, then evaluators must examine micro-level impacts more closely.

Freeman et al. (1979) divide impact assessment methodologies into two categories; experimental and judgmental. Experimental methods involve rigorous research designs intended to isolate the net impact of a program on its beneficiaries. These methods include using control groups in either randomized or nonrandomized experiments and cross-sectional studies with statistical controls. In general, these methods are costly, resource-intensive and must be developed prior to program implementation to ensure appropriate experimental design.

Judgmental methods are less rigorous than experimental approaches but more effective when resource constraints exist. These methods include formal and informal surveys of the target group, case studies, participant assessment of the outcomes, as well as external evaluator and project administrator assessments. Judgmental approaches can also be used diagnostically to 1) identify problems, 2) determine contributing factors, 3) review constraints on decisionmaking, 4) develop and appraise alternative solutions, 5) recommend

the optimal course of action and 6) monitor feedback (Casley and Kumar, 1987). Nonetheless, judgmental approaches should be validated by more precise assessment methods whenever possible (Freeman et al., 1979).

4.2.4 Assessing Program Efficiency

Ex-post financial and economic analyses provide decisionmakers with information on the financial or economic rates of return to a program; information which could then be compared to proposed alternatives. Both types of analyses extend the scope of impact assessment since one must define the extent of all quantifiable impacts prior to conducting rate of return analysis.

Financial rate of return analysis (private accounting method) assesses the program's financial viability for various participants involved (Gittinger, 1982: 16). This includes analyzing the financial profitability of resettlement for resettled farmers or calculating the program's revenue-generating capacity for the national funds invested.

Economic rate of return analysis (public and social accounting methods) helps the policymaker determine if a project's contribution to economic development justifies using the scarce resources required for its implementation (Gittinger, 1982). Public accounting methods allow one to select the alternative that contributes the most to national income (in an ex post comparison), but do not determine how program participants benefit differently. On the other hand, social accounting methods for rate of return analysis incorporate the use of distributional weights through which the analyst can assign varying degrees of importance to income received by certain socio-economic groups, or the use of different numeraires.³⁷

³⁷ A numeraire is a "common measurement used as the unit of account ... that measures the objective being maximized" by the analysis (Gittinger, 1982: 488). For example, one could disaggregate the income stream generated by the project into streams

Both financial and economic rate of return analyses involve benefit maximization or cost minimization with respect to the program objective, which is expressed in terms of a common denominator or numeraire. These analyses rely on the simplifying assumption that all individuals or firms maximize the same objective through their actions. While this is rarely true, this modification makes it possible to develop a yardstick measure from which the analyst can then interpret the results for different groups of individuals. To appraise the profitability of resettlement farming, one usually assumes that farmers' common objective is to maximize total income earned on the scheme, where benefits and costs are expressed in units of real income in domestic currency. To conduct an economic analysis of a resettlement program, where one considers the costs and returns of the investment to society as a whole, the numeraire may be expressed in units of national income³⁸. In economic analysis, the values of the benefits and costs are adjusted for price distortions (caused by government intervention or other institutional factors), and expressed in shadow or efficiency prices to correct for these biases.

Nelson (1973) argues that economic objectives are often noncomplementary. For example, economic objectives might "dictate that mechanization and high-technology agriculture be applied at the expense of beneficiary participation, income distribution, and employment generation objectives... [or] the need to attract entrepreneurial ability and private capital may dictate subdivision into blocks larger than...generally established, thus sacrificing some of the income distribution objective" (1973: 59). In the examples given

received by different individuals at different income levels, and weight these streams to reflect a social premium on the components (Duloy, 1974).

³⁸ National income may be defined as "the total net earnings of labor and property employed in the production of goods and services in a nation during a period, usually a year." This can be measured in terms of Gross Domestic Product (GDP) or Gross National Product (GNP) (Gittinger, 1982: 486). However, other numeraires may be constructed.

above, where economic efficiency is not the sole performance criterion, theoretically the other criteria should be weighted according to their importance as determined by national policy (Nelson, 1973). However, in practice any weighting method is open to subjective interpretation by the evaluator, implying that the outcome might not accurately represent either the implicitly or explicitly stated national policy.

Many critics voice reservations about the use of efficiency analysis in program evaluation. Carruthers and Clayton (1977) state that public policy objectives are often difficult to determine precisely, particularly due to the politically sensitive nature of some program objectives. Hardaker et al. suggest that the partial equilibrium approach to efficiency analysis neglects general equilibrium feedback loops through which technical change may increase incomes, and hence stimulate demand (1984). This is particularly true for resettlement areas where the establishment of large population centers affects the regional and national economy in a relatively short period of time.

Furthermore, the methodology itself can be costly and time-consuming (particularly those methods involving econometric estimation), and present a false impression of precision regarding the outcome of the analysis. In addition, processes such as shadow-pricing, which often require extensive time and resources, are less related to project success or failure than other aspects of planning and evaluation (Carruthers and Clayton, 1977). Finally, in order to establish reliable relationships between program inputs and outputs, evaluators must incorporate uncertainties due to weather, pests, input supplies and markets (Carruthers and Clayton, 1977). Just as these inherent uncertainties pose constraints for small farmers and condition their economic behavior in agriculture, they also introduce a certain degree of unreliability regarding long-term projections in an analysis.

4.3 Developing Evaluation Techniques for Resettlement

In order to appropriately assess the effectiveness of land resettlement in Zimbabwe, analysts must employ an evaluation methodology that operates well in a dynamic context. Dynamic evaluation of resettlement is essential for several reasons. First, the level of organizational and managerial coordination required for resettlement programs changes over the life of the program. While intensive management is necessary during the initial years of scheme development, the government can withdraw from direct involvement as scheme members develop their own organizational capacity and become more integrated into regional administration. Therefore, the objectives by which one assesses management performance also change.

Second, program impacts are not always apparent during the first few years. In many cases, although land redistribution programs result in short-term decreases in agricultural production as settlers adapt to a new farming environment, production increases after several years (for example in Bolivia). Conversely, a particular farming system may become less sustainable after several years of intensive farming, such as the upland transmigration sites in Indonesia. Furthermore, the distribution of resources may change over the course of the program as certain farmers accumulate more resources, or as other productive activities arise (i.e., non-farm employment opportunities), creating a greater concentration of incomes (as observed in each case study in Chapter Two).

Third, the rate of return to government's investment in resettlement changes depending on when the calculation is made during the program's net benefit stream. For example, since expenditures are most likely to decrease over the life of the scheme, the returns to the government's investment increase during the later years of the program, generating a greater rate of return. Therefore, rate of return analysis conducted in the later

years of a resettlement program is more favorable than if conducted earlier when project costs are higher and the net benefit stream is lower.

However, the dynamic aspects of performance, impact and efficiency assessment are not incorporated into traditional mid-term or ex post analyses. Therefore, even an extensive, one-shot evaluation will contribute little to understanding scheme-level development and performance. On the other hand, a more systematic and timely evaluation method could be developed in conjunction with the M&E Unit's current activities by more precisely defining the evaluation task, streamlining the data collection effort and producing more timely and widely diffused syntheses of resettlement findings, as discussed below.

4.3.1 Monitoring and Evaluation

Monitoring and evaluation involve two different types of program assessment. Monitoring refers to "the continuous or periodic review and surveillance by management...to ensure that input deliveries, work schedules, targeted outputs and other required actions are proceeding according to plan..., [and whose purpose] is to achieve efficient and effective project performance by providing feedback to project management at all levels" (United Nations, 1984: 13-14). Evaluation methods incorporate information gathered during the monitoring process into ongoing, mid-term and/or ex post analyses.

An essential element of monitoring is that it "should focus on the interaction between the project activities and reactions of the target population if it is to meet the needs of management" (Casley and Kumar, 1987: 7). To accomplish this, monitoring should be based on gathering information which reflects the link between program implementation and its impact on the target population, and should be well integrated into project management structures, at all levels (Casley and Kumar, 1987).

A study of an irrigation project monitoring system (Ng and Letham, 1983) indicates that most monitoring systems are inadequate for decisionmaking because the information provided to decisionmakers: 1) is not current enough to assist in timely decisionmaking; 2) does not assist in making operational or strategic decisions; 3) is too complex and difficult to use; 4) does not reflect interactions between the project and its beneficiaries; and 5) is seldom diagnostically compared with established targets. Ng and Letham stress that a deficient system "cannot provide early warning of impending problems so that they can be dealt with before becoming acute" (1983:31).

The government of Zimbabwe has a strong political commitment to continuing its investment in resettlement, both to meet its pre-independence commitment to redistribute resources to smallholders and to assure commercial farmers and external donors that redistribution can occur without undermining the economic health of the country. Therefore, the government should place the greatest priority for evaluation on performance and impact assessment, in order to determine how shortfalls in planning and implementation can be rectified to make resettlement more effective. In Zimbabwe, strengthening the current monitoring and evaluation system could increase the management and diagnostic capability of both policymakers and administrators, and thus improve the success of resettlement in increasing smallholder agricultural production and redistributing incomes.

4.3.2 Strengthening Monitoring and Evaluation in Zimbabwe

In order to institutionalize an ongoing evaluation system for resettlement, one must first study how the current system of data collection, analysis and diffusion of results provides information on program performance and program impact on beneficiaries, and identifies existing and potential problems. The monitoring and evaluation unit should be

responsible for coordinating all evaluation activities, in order to decrease repetition in data collection and synthesize the findings into a format that provides useful information to identified users. The following sections will examine the process of organizing and implementing an ongoing evaluation of resettlement in Zimbabwe, including: 1) structuring the evaluation method; 2) systematically collecting indicator data at both the scheme and farm levels; 3) initiating issue-oriented studies to better understand local constraints and potential problems; and 4) decentralizing data collection activities.

4.3.2.1 Organizing the Evaluation Method

The monitoring and evaluation unit, as the central agency responsible for evaluating resettlement, must first identify the different information-users and their needs. These users might include ministry officials, resettlement officers and other scheme-level personnel, whose needs will determine the type and the frequency of data to be collected. Typically, these data will support the analysis of broad indicators, as well as identified problems in resettlement's implementation. Once the unit identifies the types of data required by the information-users, M&E personnel can then investigate existing data sources, including the type of data currently collected, the quality and frequency of collection, and the form in which it is collected. Gaps in existing information can then be filled by collecting additional data.

Second, the M&E unit must aggregate information-users' needs to ensure cost-effective and complete data collection, specify the procedures for data collection, and designate the responsibility for implementation to the various ministries and organizations involved. Once the data are collected, the M&E unit is responsible for overseeing the analysis and reporting of all results, both to the central and local levels.

4.3.2.2 Data Collection for Program Indicators

Impact and performance assessment of the resettlement program entails collecting information on homogeneous indicators across all schemes, in order to measure scheme progress against baseline targets, compare outcomes on different schemes, and assess the aggregate impact of resettlement on the economy. To collect information on performance and impact indicators with limited resources, it will be necessary to employ relatively simple assessment techniques.

Performance is assessed by measuring the program's objectives against its achievements, both to gather one-time and periodic data. One-time data collection would involve compiling information on the characteristics of land purchases and development and on program beneficiaries. Periodic data collection includes gathering information on the types of services and inputs required for scheme development and the outputs of scheme administrators (see Table 4.2). Much of this information can be obtained from settler registration and scheme administration records, supplemented by interviews with administrators and farmers. For example, records might indicate that the scheme depot received seed and fertilizer for the planting season, but interviews could reveal that the supplies arrived after the rains began, or in insufficient quantity to meet demand.

Generally, the assessment of resettlement program impact focuses on evaluating changes in agricultural production, income distribution and employment on program beneficiaries (see Table 4.3). For example, agricultural production can be measured using marketing records or farmer estimates, and if area cultivated is known for each marketed crop (either through scheme records or farmer knowledge), then yields can be calculated from this information. However, if marketing records are used, it will be necessary to make some adjustment for home consumption in calculating total production.

Income is much more difficult to measure, in part because farmers prefer not to disclose the amount or sources of their income for legal reasons (resettlement regulations prohibit households from earning any income off-farm). Furthermore, since income data are collected only periodically, farmers often cannot correctly recall the time and amount of their earnings. Yet, some approximations can be made through cattle and crop marketings, although these data will typically underestimate the amount of household earnings and give no indication of the household's cash flow after the recorded sales.

Indicators of employment generation include the number of adults engaged in full-time farming, those with permanent service jobs and those engaged in temporary activities such as rural works. This information could be obtained through scheme records of resettled households, and the number of individuals employed by the government for permanent and temporary positions. Employment data are primarily useful for examining the aggregate impact of resettlement on labor absorption in agriculture, and have less relevance for scheme-level analysis.

The data gathered by monitoring resettlement's performance and impact at the scheme-level can then be compared directly to initial targets established for production, annual household income, per capita service provision (i.e., the number of people served by health clinics, schools, extension workers, and so forth), credit use and the development of housing and infrastructure. However, since targets frequently underestimate settlers' ability to achieve target incomes or provide enough labor to cultivate the recommended parcel size, monitoring and evaluation data can be used to revise targets and provide policymakers with information to improve future planning. Furthermore, these data also indicate where differences in various schemes' performance lie, signalling the need to study certain issues more intensively.

4.3.2.3 Incorporating Issue-Oriented Studies into the Evaluation Methodology

Although broad impact and performance indicators provide policymakers with an overview of resettlement's progress, there are some issues not captured in these indicators. These issues include existing problems identified from ongoing monitoring activities, and potential problems identified from similar experiences in other countries or in other areas of Zimbabwe (issues for future research). Thus, in order to address pertinent issues as they arise, it is also necessary to incorporate the use of selected issue-oriented studies into the evaluation of resettlement.

Issue-oriented studies represent a more flexible evaluation approach than monitoring broad indicators across all schemes. In issue-oriented studies, the analyst can adjust the data requirements, information sources and the number of schemes to fit the specific issue of interest. For example, to assess the overall impact of resettlement on settler welfare, one needs to identify groups among the settler population whose needs or response to resettlement might differ from others. Several vulnerable, or at-risk groups can be identified, including formerly landless and resource-poor settlers, women, and settlers in lower potential areas. Therefore, one might target several schemes containing a high percentage of individuals in these groups for each region and identify a number of cases for study among the total population.

Indicators of settler welfare should be developed to measure the benefits that settlers gain from living in resettlement areas. The critical values for these indicators would be established according to the study region. These indicators might include: measuring health and nutrition (i.e., vital statistics, anthropometric measurements, or food consumption), housing (by type of construction materials), livestock inventories (by number and herd composition), education (participation in formal and informal education, for children and

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adults), water source (type, variability of supply and distance from household), transport (i.e., cost and availability for both passengers and commerce), and political representation (either through the Zimbabwe National Farmers' Union or local government).

Data sources for these studies will vary, depending on the issue in question. For example, in exploring the impact of scheme regulations on women's legal rights and on their role as food producers, one would need to examine women's legal rights in the communal areas in comparison with the resettlement areas. Also, in order to capture the effect of different cropping systems on demands for female labor (since the types of cash and food crops grown vary in the higher and lower rainfall areas), it is necessary to select several studies in each natural region (based on purposive sampling). The studies could then be based on interviews with women in several villages on each selected scheme, and include surveys of crop production according to gender and labor requirements.

Another issue warranting research is the environmental impact resulting from resettlement. For example, to isolate some of the factors leading to land degradation and pinpoint potential solutions, one could first identify areas facing a higher risk of soil erosion (i.e., areas with high population densities, significant slopes, erodible soils or rock outcrops). After clustering these areas, one could stratify the clusters by soil type, agricultural practices and livestock inventories, and select a sample for study from the clusters. This would allow researchers to examine the links between soil erosion, household labor availability, and access to agricultural inputs and extension information.

Finally, there are options for conducting these intensive studies to reduce the involvement of AGRITEX personnel, who may already suffer from heavy work demands. These might include contracting with University of Zimbabwe personnel or with local NGOs

who might have area expertise and more available resources with which to undertake these studies.

4.3.2.4 Decentralizing Data Collection

Decentralizing data collection activities decreases overall administrative costs by combining data collection with other activities conducted by scheme personnel, and allows participants to gain management and problem-solving skills, particularly farmers. For example, scheme administrators and extension workers can be involved in collecting impact and performance indicator data, and in providing support to researchers investigating specific issues identified through the ongoing monitoring activities. They could record information on the availability, quality and timeliness of service provision to the scheme, and gather information from farmers regarding their perceptions of resettlement. In addition, with training they could participate in scheme-level monitoring by signalling input shortages or other problems to the appropriate agency. Furthermore, literate farmers can record yield or production estimates, and information on the end uses of their food crop production.

However, the principal issue involved in promoting this component of evaluation is finding incentives to motivate individuals to participate and provide reliable information. This is particularly crucial for resettlement officers and other scheme personnel who may perceive no advantage in extending their work into additional activities if they receive no benefits (monetary benefits or nonmonetary benefits such as recognition, land or special privileges).

4.4 Implications for the Future Planning and Implementation of Resettlement Policy in Zimbabwe

Strengthening the monitoring and evaluation of resettlement schemes in Zimbabwe will improve future resettlement planning and implementation by providing policymakers with more timely and relevant information on program and scheme-level performance. For example, coordinated and timely data collection efforts will provide policymakers and scheme-level administrators with early warning information, enabling them to resolve problems as they arise. Furthermore, in developing future resettlement sites, planners can generate more realistic projections of actual smallholder returns to farming in the resettlement sector by basing farm budgeting on communal area and not commercial farm data. Finally, by extending the monitoring and evaluation system to examine the cooperative, core estate and group ranching schemes (Model B, C and D schemes), the government could determine which factors have impeded their development into viable models for farmers in Zimbabwe, and thus where appropriate, redirect the resources necessary to make these models more successful.

4.5 Conclusions

Due to organizational and financial constraints, current activities for evaluating Zimbabwe's resettlement program fail to provide policymakers and administrators with timely information on resettlement's performance; and its impact on the national economy and on program beneficiaries. The M&E unit does not systematically compare recognized baseline indicators with farm-level performance in different natural regions and among different types of farmers. Finally, they have made no systematic effort to assess the effects of institutional and policy factors (i.e., tenure policy, resettlement regulations) on farm-level

incentives for increasing agricultural production and on the distribution of resources -- factors previously shown to influence the outcome of land redistribution policies.

To fill this gap in planning and implementation and to better address the needs of the more vulnerable groups among the target population, the government should reorganize its current evaluation method to make the M&E unit responsible for the collection, analysis and synthesis of all data for resettlement. The unit should develop a set of broad indicators to assess the impact and performance of resettlement policy in Zimbabwe, and initiate issue-oriented studies to explore region-specific problems. By expanding the evaluation methodology to include these studies, policymakers could begin to examine the impacts of existing or potential problems raised through program-wide data collection and analysis. An ongoing, more diagnostic approach to assessing resettlement could ensure that the redistribution of resources through resettlement also results in increasing agricultural production and economic growth.

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CHAPTER FIVE

SUMMARY AND CONCLUSIONS

5.1 Summary

This paper examined theoretical and empirical evidence regarding the impacts of land redistribution policies on agricultural production, income distribution and employment generation in the smallholder reform sector. Evidence from an analysis of land redistribution programs in Peru, Bolivia, Indonesia and Kenya supports the proposition that subdividing large farms into smallholdings has often led to a net increase in agricultural production, as well as wider income distribution and greater employment opportunities in agriculture. However, factors outside of the reform sector will strongly influence the outcome of land redistribution policies, including institutional, macroeconomic and agricultural policies. The case studies suggest several lessons that policymakers should incorporate into planning land redistribution policies.

First, subdividing large farms into smallholdings has not led to a long-term decline in aggregate agricultural production, as many critics of distributivist land reforms argue. However, it is difficult to assess whether these new smallholdings operate more efficiently than the former large farms, primarily due to insufficient data with which to analyze different efficiency criteria. In Peru, although national production did not decline following land redistribution, per capita production subsequently decreased due to many factors, including low agricultural investment, price controls and import subsidies. Although

agricultural production initially decreased following Bolivia's land reform, thereafter food production increased significantly in some regions as smallholders benefitted from greater access to production inputs. Indonesia's transmigration program is credited with increasing national rice production by 5% during the 1980s, although the farm-level impacts varied according to the location and time of settlement. Finally, in Kenya land resettlement also led to increases in national agricultural production, with variations noted among different settlement types.

Second, redistributing land to smallholders has improved income distribution, where the newly created smallholdings have provided the settlers with adequate income-generating possibilities. The potential for post-reform improvements in income distribution depend on governmental policies, as well as the size of the holding, which must take into account the typical farm family's management abilities and available technology, agroecological conditions and the potential of the holding to produce an acceptable income level. For example, in both Peru and Bolivia, the governments' priority to quell peasant uprisings skewed the reform benefits primarily toward those regions where unrest was greatest. As a result, there is evidence in Peru that income concentration increased among some higher income rural families. Since the early 1900s, Indonesia's transmigration program has served to distribute incomes and other benefits (i.e., improved housing and health care) to almost one million families of landless laborers and Javanese farmers with very small subsistence holdings -- approximately 4% of Java's population. Kenya's resettlement program distributed land to 71,000 smallholders (4% of all smallholders). However, the program was less successful in generating adequate incomes for settlers in the long run because high indebtedness among settlers forced some smallholders to default on their loans and

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eventually lose their land (particularly on the high-density schemes designed for less-experienced farmers).

Third, the case studies illustrated that land redistribution to smallholders absorbs surplus labor in agriculture, increases the amount of labor used per land unit, and thus increases employment in smallholder agriculture. However, the potential impact on job creation also depends on the long- and short-term profitability of the new farming system for the settlers. For example, in Peru the reform created a large number of minifundistas (small farmers with marginal, subsistence holdings). In Bolivia, although much of the rural population benefitted from employment in agriculture, many subsequently lost their land titles to returning landowners who asserted their prior claims. The Indonesian reform has been more successful in creating both on-farm, off-farm and temporary employment for transmigrants, totalling approximately 500,000-600,000 jobs on rainfed schemes alone. In Kenya, resettlement was very successful in creating smallholder employment in agriculture. For example, although rainfed schemes absorbed more workers than large commercial estates (568 adults/1,000 hectares versus 319 adults/1,000 hectares), irrigated schemes had the greatest impact on job creation -- employing nine times as many workers (2,807 adults/1,000 hectares) as commercial estates.

In each case study examined, smallholders received broader rights to land as pre-reform land tenure policies were changed to stimulate investment and increases agricultural production in the reform sector, and to redistribute income more widely in the economy. Land tenure policies comprise sets of property rights which influence individuals' access to land and other resources, and ultimately, the distribution of income throughout the economy.

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Access to land may be defined in terms of exchange rights (the individual may transfer or withhold his/her right to the land) and use rights (the individual may utilize the land with no right to transfer it to others). Neoclassical economists argue that tenure systems which allocate only use rights to individuals (communal landholding systems in particular) are inefficient because they discourage investment and demand for credit, increase transactions costs in land disputes, and impede the development of a land market which would encourage more efficient land use. However, there is much debate, especially among scholars of African land tenure systems, that a significant degree of individualization is inherent to communal landholding systems, providing the tenure security necessary to encourage investment and use of credit (Cohen, 1980; Hunter and Mabbs-Zeno, 1986; Barrows and Roth, 1989). These critics suggest that other institutional constraints (such as pricing, credit and marketing policies) often prevent investment and increases in agricultural production, arguing that resources should first be applied toward adapting existing institutions to provide proper incentives rather than transforming tenure institutions.

The case studies illustrated that while granting smallholders individualized rights to land may provide some benefits and incentives to increase agricultural production, the impacts are often tenuous and short-term. This results from two factors, including the effect of other institutional variables may which skew the impact of the land tenure law, and a lack of additional legislation to protect the rights of the new landholder and reinforce the distributive impact of the reform.

The analysis presented in Chapter Two concludes that the most significant factors determining the impact of land redistribution programs were: 1) site selection; 2) settler selection; 3) government provision of institutional and administrative support to new landholders; 4) land acquisition and financing; 5) land tenure policy adopted for the reform

sector; 6) agricultural and macroeconomic policies affecting the reform sector; and 7) scheme-level monitoring and evaluation.

Thus, it is important for policymakers to recognize that a broad set of variables affects the outcome of land redistribution programs on the target population. For example, in Bolivia adverse pricing policies stifled investment in agriculture following land redistribution. Although smallholders gained freehold rights and larger parcels, the subsidies placed on urban food prices reduced rural incomes and the smallholders' ability to increase their incomes from expanding agricultural production. In Indonesia, incomplete specification of land tenure laws in the outer islands resulted in conflicts over land use. In Kenya, unrealistically high loan repayment schedules limited or negated the profits earned by settlement farmers, and hence reduced their welfare.

The diversity of institutional variables influencing the outcome of land redistribution programs makes it difficult for policymakers to anticipate all possible impacts during the planning stage. Therefore, these case studies underline the importance of establishing interim monitoring and evaluation activities as a component of land redistribution programs. By revealing those areas where the program is less successful (i.e., site selection or planning, settler selection, the provision of administrative and institutional support or tenure system development), monitoring and evaluation provides policymakers with information needed to increase resource efficiency by redirecting resources and program components to maximize their impact.

These lessons from the four area case studies regarding the potential impacts of land redistribution programs have direct relevance for land resettlement policy in Zimbabwe. The government of Zimbabwe implemented the Rural Resettlement Program in 1980 to redistribute large tracts of underutilized commercial farmland to smallholders who had

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gradually been relocated into low potential agricultural regions during the colonial rule. Since 1980, the government has settled approximately 52,000 families (416,000 individuals) on 2.6 million hectares of land, primarily in natural regions III and IV. To date, 18% of former commercial farmland has been redistributed to smallholders, although purchases total 25.6% of all commercial lands (3.8 million hectares).

Although the current pace of resettlement does not meet the targets set by the government in 1980 (resettling 255,000 families by 1989), the accomplishments of the program are still significant. First, resettlement's contribution to national food crop production increases yearly, particularly in maize and groundnut production. Second, approximately 6% of the rural population has benefitted from resettlement, compared to 4% benefitted during the Kenyan resettlement program. Furthermore, there is evidence improved price incentives and market access have stimulated resettlement area cotton and maize production.

However, a closer examination of scheme-level crop production in different natural regions reveals significant differences in productivity, suggesting that not all farmers benefit equally from resettlement. Farm families in the higher potential areas are able to satisfy their household food requirements using only 40% of their arable land for food crop production and the remainder for cash crops, perhaps indicating that holding sizes are too large for available family labor. However, farmers in regions IV and V use 75-96% of their holdings primarily for food crop production and may not satisfy their household food needs in some years.

Resettlement has served to increase employment opportunities in smallholder agriculture, during a period of declining wage employment in the commercial sector. Decreases in commercial sector employment are due primarily to post-independence

minimum wage regulations and a shortage of foreign exchange, rather than the subdivision of commercial farms. This is evident in the decreasing ratio of permanent to seasonal labor used in commercial agriculture (from 4.0 in 1979 to 1.2 in 1989) which has occurred since minimum wage government regulations took effect.

Finally, income distribution on resettlement schemes appears to be skewed toward settlers in better natural regions and those with greater access to production inputs, services and infrastructure. In a survey of selected schemes, farmers in natural region V earned the lowest gross margins for crop production, while farmers in region II earned the highest total gross margins for crop production and cattle offtake. Contrary to government objectives, only 4% of the total population resettled were originally landless or near-landless families; the majority were communal area farmers who left small parcels for larger, better quality holdings in the resettlement areas. Furthermore, data indicate that although the resettlement program was supposed to address the needs of the resource-poor (the landless, farmers in marginal areas and women), their condition may not have improved.

Overall, while Zimbabwe's resettlement policy has been successful in creating an increasingly productive smallholder sector and generating employment in agriculture, its impact on income distribution has varied significantly across resettlement schemes. Success has been contingent on effective planning and implementation, but decisionmakers (from ministry officials to resettlement officers) have received little timely information on the effectiveness of site and settler selection, the provision of inputs and services, and the effects of other agricultural and macroeconomic policies in providing incentives for smallholder production.

Policymakers do not receive timely and appropriate information because the government has placed little priority on evaluating the national and scheme-level impacts

of resettlement, even though this information could improve resource allocation. Although the government established a monitoring and evaluation unit responsible for collecting and analyzing data on resettlement schemes, to date the unit has received insufficient financial and human resource support to conduct a more comprehensive evaluation of resettlement. Furthermore, its evaluation activities are poorly coordinated with those of other agencies who provide inputs and services for schemes and collect data pertaining to their own activities. Strengthening the current monitoring and evaluation effort for Zimbabwe's resettlement program would contribute to policymakers' knowledge of how resettlement planning and implementation influence program performance, and its impact on smallholder agriculture production, income distribution and employment.

Generally, in order to provide useful and timely information, an evaluation must involve the collection and analysis of data identified as important to the various users of the evaluation output. The type of evaluation chosen to assess a particular program is then a function of the characteristics of the program being evaluated, as well as the information needs of decisionmakers and any constraints they face (i.e., political, financial, time and personnel constraints).

Three types of general evaluation techniques are described in the literature: performance, impact and efficiency assessment. Performance assessment measures the degree to which program activities achieved the stated planning and implementation objectives. Impact assessment focuses on both the primary and secondary effects of the program on its beneficiaries, including anticipated and unanticipated results. Program efficiency assessment refers to estimating the financial and/or economic rate of return generated by the government's investment in the program, at the scheme, regional or national levels of analysis.

Evaluation of resettlement programs typically requires a long time-frame for analysis, particularly since the level of government resource commitment and the program impacts on its beneficiaries change over the life of the program. Deficiencies in planning and implementation, as well as variable impacts on participants on different resettlement schemes in Zimbabwe, signal the need for reorganizing and improving the monitoring and evaluation unit's current evaluation methods. This could be accomplished by increasing the flow of information to policymakers and scheme administrators by extending the current monitoring and evaluation activities to include: 1) centralizing the responsibility for monitoring and evaluation such that the M&E unit could reassess how the existing evaluation data meet the needs of information-users, in addition to coordinating the collection, analysis and diffusion of necessary information; 2) systematically collecting indicator data at both the scheme and farm levels; 3) initiating issue-oriented studies to better understand local constraints and potential problems; and 4) decentralizing data collection activities to decrease total government costs for evaluation and increase participation in scheme-level assessment.

5.2 Policy Implications

Resettlement programs do not yield predictable outcomes for program beneficiaries. Due to their size and extended time horizon, resettlement programs are often greatly influenced by other policies not specifically directed at the reform sector (i.e., foreign exchange controls, price policies or labor laws). Therefore, in order to direct the program toward desired outcomes in terms of agricultural production, income distribution or employment generation, policymakers must carefully monitor both program impact and performance, adjusting its implementation where shortfalls are observed. Although these

observations on the importance of planning and implementation for resettlement programs have already been documented (Lewis, 1964; Christodoulou, 1965; Lewis, 1973; Oberai, 1988), it seems as though the lessons learned from other programs are overlooked, or not widely known. In particular, policymakers tend to place little priority on establishing effective monitoring and evaluation systems to improve planning and implementation for resettlement programs.

One can identify several critical planning and implementation issues for Zimbabwe's resettlement policy which could be addressed by improving monitoring and evaluation and more intensively investigating potential and identified problems in the resettlement areas. These include:

Beneficiaries' reimbursement for resettlement land and credit

The Kenyan land resettlement program illustrated the importance of correctly estimating settlers' ability to generate sufficient income to repay loans obtained for land and agricultural inputs. Repayment rates for loans which are based on poor technical data or unrealistic expectations in the face of uncertain climatic conditions lead to low repayment rates and settler indebtedness, thus undermining the redistributive equity gained through the reform.

Currently in Zimbabwe, many settlers have accrued annual debts more than one and one-half times greater than their annual incomes. The implications for planning and evaluation of resettlement in Zimbabwe are two-fold. First, in establishing repayment schedules for loans (for land or agricultural inputs), planners should develop farm budgets based on projected smallholders' yields and input costs. Data for both farm budget projections and loan repayment schedules are currently derived from pre-reform commercial farming data which may overestimate smallholders' profits. Therefore, future planning of

repayment schedules should be based on actual smallholder costs and returns, allowing for extended schedules where uncertain climate conditions may affect settlers' ability to repay their debts and still have an operating surplus for future investment. Second, credit records should be carefully monitored to verify that settlers can indeed meet the planned repayment schedules. If repayment rates are low for certain types of settlers, or for settlers in specific areas, then the problem can be addressed by either revising the target rates or examining the viability of the farming system.

Land tenure policy

Land tenure policy defines who receives the benefits and who pays the costs of using land. Therefore, tenure laws can be formulated to restrict or encourage access to land. In each case study cited above, land redistribution improved smallholders' access to land through exchange rights (freehold title, sometimes with restrictions), which could be transferred or withheld from other individuals. However, in Peru, Bolivia and Kenya many smallholders who received individual titles to land subsequently lost their rights, either because they defaulted on their loans or because returning large landowners pressured them to relinquish their land. In Zimbabwe, settlers' rights to land are embodied in permits of unspecified duration. Critics currently debate the type of tenure system that should be instituted in the resettlement areas; either communal land rights or some degree of freehold ownership.

Ultimately, the choice of tenure policy depends on three factors. First, government policy objectives determine whether use rights will be granted to maintain a wider income distribution among the population or whether farmers will receive exchange rights as an incentive to expand and invest in their farms, resulting in some degree of income concentration. Second, the length of farmers' potential investment horizon determines the

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tenure security necessary to ensure that they will capture the benefits from investments made. Third, the availability of institutional support (such as input and output markets, extension services and credit) shapes farmers' ability to make and sustain investments.

In Zimbabwe, the government's increasing emphasis on increasing smallholder production signals the need to reevaluate the current permit system in the resettlement areas, which poorly defines settlers' rights to land. Full freehold ownership could limit distributive equity as illustrated by the case studies. However, it is feasible to specify freehold rights to land such that settlers with more resources can purchase land from others to expand their holdings, with limited implications for reducing equity in the resettlement sector. Farmers' perceptions of tenure security in the resettlement areas have not yet been thoroughly investigated. However, perceptions of tenure security will influence future land use in the resettlement areas. For example, intensification will soon be important in resettlement agriculture as population pressure increases on the schemes. Small-scale irrigation systems would allow settlers to intensify crop production in many areas, but their development is contingent on settlers' ability to obtain long-term credit and their perceptions of the long run security of their land improvements. Incentives such as favorable output prices and improved market access have stimulated communal and resettlement area crop production, leading to area expansion but not intensification of production.

Therefore, it is necessary to investigate which factors are most important in sustaining growth in smallholder production, including perceptions of tenure security and institutional incentives. Empirical evidence regarding the actual constraints facing smallholders would suggest policy options for land tenure.

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Environmental impacts of resettlement

Increasing pressure from human and cattle populations on communal area land has resulted in severe land degradation in these areas. There is already evidence that some resettlement area farmers are surpassing recommended stocking rates for cattle, suggesting that overgrazing and soil erosion could be imminent in the resettlement areas. Resettlement farmers, who have larger landholdings, also have more options than communal area farmers for expanding their grazing area to accommodate larger herds or developing rotational grazing systems to prevent overgrazing. However, there are limits to grazing area expansion, and thus, farmers need viable options for developing new livestock management techniques. Therefore, further research is necessary in order to identify sustainable alternatives for intensive or extensive livestock production that are suitable to the various natural regions. For example, in the higher natural regions it may be possible to improve pasture management by experimenting with fertilizers and new fodder crops, while in the lower regions options for extensive rangeland management must be explored. Any proposed alternative must provide farmers with low-cost options, and access to the information and training necessary to implement them.

Monitoring and evaluation

Due to organizational and financial constraints, Zimbabwe's current monitoring and evaluation activities for resettlement fail to provide policymakers and administrators with timely information on its performance; and its impact on the national economy and on program beneficiaries. Moreover, current methods do not permit a systematic investigation of the effects of institutional and policy factors on farm-level incentives for increasing agricultural production and on the distribution of resources. Therefore, there is a critical

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need to institutionalize a more effective evaluation strategy, which would include the following components:

- 1) centralizing the responsibility for monitoring and evaluation such that the M&E unit could reassess how the existing evaluation data meet the needs of information-users, in addition to coordinating the collection, analysis and diffusion of necessary information;
- 2) systematically collecting performance and impact indicator data at both the scheme and farm levels which could then be compared to planned targets, used to draw comparisons among other schemes or settler groups, or quantify resettlement's impact on the national economy;
- 3) initiating issue-oriented studies to better understand local constraints and potential problems based on issues identified through the collection of indicator data; and
- 4) decentralizing data collection and selected data analysis activities to decrease total government costs for evaluation and increase participation in scheme-level assessment.

Strengthening the current system could increase the management and diagnostic capability of both policymakers and administrators, and thus improve the success of resettlement in increasing smallholder agricultural production and redistributing incomes. However, perhaps it is more important to create a greater demand for the information generated by a monitoring and evaluation system. Without demand for evaluation information, from both policymakers and scheme administrators, there is little benefit gained from improving the current system.

5.3 Limitations of the Study

The principal limitation to this study is the absence of primary data on the performance, impact and efficiency of resettlement in Zimbabwe. Thus, it is difficult to

draw more specific conclusions regarding the impacts of land resettlement policy on different population groups in different regions. While the secondary data used provided important insights into potential problems at the scheme-level, interviews with ministry officials, scheme administrators and settlers on different schemes are required to conduct a more extensive analysis of resettlement, as well as to propose more specific recommendations for scheme and farm-level evaluation.

Furthermore, primary research would have permitted the author to assess the Monitoring and Evaluation Unit's current resources and constraints in greater detail, with the goal of proposing specific options for streamlining and improving the coordination of its data collection activities on resettlement schemes with those of other ministries.

5.4 Future Research

Some issues for applied research on resettlement in Zimbabwe have been identified, including; examining the viability of resettling landless and near-landless individuals, investigating the legal security of women on resettlement schemes, developing strategies to prevent potential overgrazing and soil erosion problems and analyzing the potential for land tenure reform in the resettlement areas.

However, after more than a decade of resettling farmers, more extensive research should be conducted to assess the regional impacts of resettlement, the long-term viability of farming in certain areas and the impact of the resettlement area tenure system on traditional intergenerational land transfer. Further research and analysis of these second generation effects would enable policymakers to improve long-term implementation, particularly in the provision of necessary financial, administrative and institutional support to resettlement areas.

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To extend the comparative research undertaken in this study, one could examine the Kenyan land resettlement program to assess the differential performance of the high- and low-density schemes compared to other smallholders, and in particular, the long-term impact of land registration on the distribution of benefits among settlers.

APPENDIX A
CASE STUDIES

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APPENDIX A

CASE STUDIES

Peru: Land Redistribution Policy

1. Pre-Reform Agrarian Structure

Peru's pre-reform agrarian structure is typical of most countries in Latin America, in that most of the land area is concentrated in the hands of a few large landowners who also have considerable political power, while many smallholders cultivate small, marginal parcels. 1961 census data reveal that 1.3% of the landholders possessed 84% of the agricultural land while, 83% of the landholders held about 6%. The largest estate holdings were at least 500 hectares, while smallholders farmed plots under 5 hectares; one-fifth of which were under half a hectare (Alberts, 1981).³⁹

There are vast differences in the quality of agricultural land in Peru, ranging from irrigated coastal land to remote jungle (*selva*) to densely populated and over-cultivated highland areas. Therefore, figures on land concentration that do not consider variable land quality tend to overestimate its true extent (Alberts, 1981). Standardizing the unit of land area to account for this variability provides a clearer idea of land ownership in Peru. For example, King (1977) estimates that family farms averaging about 8 hectares covered 4% of the land area in the coastal region and 5% in the highlands. Of the irrigated land in the coastal region, about 50% was in 180 holdings of over 500 hectares, while only 6% was in 36,000 holdings of less than 5 hectares.

Prior to the reform there were three principal farming systems in Peru; plantations or estates, haciendas and peasant communities. Plantations, located on 80% of the coastal farmland, mainly produced sugar, rice and cotton for export. Haciendas, located in the highland areas, comprised both large livestock enterprises and smaller livestock-crop estates. Peasant communities, collective groups with strong economic, social and political ties, were found primarily in the highlands.

The differences in land quality and working conditions among these farming systems led to skewed income distribution, both inter-regionally and intra-regionally. For example, in 1971/72 (illustrating that these differences existed even after some reform measures were taken), the average household income in the Coast area was about two times that earned in the highlands, but comparable to incomes earned in the Selva (Kay, 1983). In the Coast region, 5.8% of the people earned less than 670 (\$15.40) soles per month and 9.3% earned over 6000 soles (\$138) per month (where the average monthly household income was 3300 soles or \$76). In the highlands, however, 37% earned less than 670 soles (\$15.40) monthly while only 5.1% earned more than 6000 soles (\$138) monthly. This inequity resulted in widespread poverty and poor nutrition (Kay, 1983).

³⁹ Peasants traditionally fragmented their plots as a method of risk avoidance by locating them at different altitudes and ecological areas (Ghose, 1983). Traditional fragmentation, however, has been severely compounded by inheritance and population pressure.

2. Impetus for Reform

In the 1950s and early 1960s the government realized that the landholding pattern could be blamed, in part, for Peru's limited agricultural growth. King (1977) cites that while food production was increasing at 2.5% per year, the population grew by 3% and food demand increased by 4.4% annually. With declining agricultural exports and increasing food imports, reform in the agricultural sector slowly became a pressing issue. The impetus for a land reform began in the early 1950s when peasant rebelled and invaded large estates. This movement eventually grew to number 300,000 peasants who demanded greater access to land resources.

3. Goals and Objectives of Land Redistribution

Peru's land reform policy unfolded over portions of two political regimes, from 1964-1968 and 1969-1975. The first government focused on improving the country's social structure, its productive capacity and the distribution of national income. When a new government came into power through a military coup in 1968, the new priority became income redistribution through structural reforms in the agricultural sector (Alberts, 1981). Economic growth was also an important concern, but the government assumed that growth would be a natural result of the reform. The government added other objectives to the development plan for 1971-1975, the most important of which included developing cooperatives to increase rural participation in decision-making, accelerating the transfer of property, increasing the health level of the population, providing social services to marginal rural people, and increasing, as much as possible, production and productivity, especially in agriculture (Alberts, 1981).

The government also pursued several unstated objectives. For example, the government increased supplies of marketable surplus production to the growing urban centers, and to foster industrial growth. Furthermore, the government sought to legitimize its power by involving the rural population in the political system, thereby creating a stronger national state (Kay, 1983).

Policy Implementation: 1964-68 and 1969-1975

4. Land Expropriation

The first land reform bill passed in 1964, stated that initially public lands were to be expropriated, followed by abandoned properties and those owned by absentee-landlords (King, 1977). The potential for the reform's almost exclusive regional impact quickly became apparent. The government gave priority for land transfer to those regions with the greatest degree of peasant upheaval (mostly in the highlands), while excluding coastal sugar plantations, efficiently-farmed estates and corporately-owned land and agro-industrial operations from expropriation (King, 1977). Due to limited funds and congressional opposition, the level of expropriation was very low during this period (Kay, 1983). Those families who did receive land at this time were awarded individual parcels.

In order to speed up implementation in 1969, all large estates were subject to expropriation without exception. In fact, the government began this phase of the land reform "by expropriating the most profitable and capital-intensive agricultural enterprises, showing their determination and ability to liquidate the rural oligarchy" (Kay, 1983: 207). Former farm workers took over most of the expropriated land and turned them into collective farms.

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Collectives predominated during the Peruvian for several reasons. First, Peru had a strong history of cooperative action, originating from Marxist ideology, early Indian collective farming systems and the various economic organizations introduced by the Catholic church. Second, government administrators found it much easier to displace the owner of an estate and hand the entire operation over to the workers, than to subdivide the farm into individual parcels and redesign the production system for smallholders (Alberts, 1981). Additional provisions in the law included giving squatters the right to become legal owners of 15-30 hectares of land if they could prove *de facto* tenure status, and the elimination of semi-feudal labor arrangements (King, 1977).

5. Provisions for Compensation of Landholders

The government compensated the former landowners for the expropriated land, partly in cash, partly in bonds. The amount of cash compensation was determined by calculating the land value as the average of the declared tax value, the market value and the potential income that would be realized from the estate, under good management (Alberts, 1981). The bonds could be used either as tax payments or for an industrial investment. Although this compensation might seem to place a considerable burden on the government's budget, but Alberts shows that the ratio of reform expenditures to total government expenditures never reached more than 1.1% in any one year, and averaged about 0.5% annually.

In 1968, the government changed the compensation method, thereafter valuing land on the basis of self-declared tax assessments for 1968. Actual cash compensation decreased to half the former amount and the remaining portion was paid in low-interest, long-maturing government bonds (King, 1977). The farmers who took over the land reimbursed the government in installments over a 20-year period, and received a grace period of up to five years to begin repayment.

When the government initially enacted the land reform law, it set no targets regarding the amount of land to be transferred, the number of farms to be expropriated or the number of farmers to be benefitted. Target figures given by the government between 1969 and 1975 estimated that between 336,000 to 500,000 families would eventually receive land, on 10-13 million hectares of expropriated land (Alberts, 1981). This was the equivalent of redistributing about 41% of Peru's agricultural land to 39% of the peasant families (Kay, 1983).

Assessment of Land Redistribution

6. Land Distribution

Table A.1 presents data on the achievements of Peru's land redistribution. Even though these figures are below the targets, the government expropriated a substantial amount of land and redistributed it to many families. These figures hide the fact that although only a small percentage of land was actually distributed to individual smallholders, 48% (mostly in the highlands) was subsequently farmed by individuals, not cooperatives, which is contrary to the government's initial intentions (Kay, 1983). The government had difficulties establishing cooperatives in the highlands because hacienda tenant-labor relations were more entrenched among the peasant farmers. Also, peasants were not familiar with the type of centralized management system found on coastal estates and from which it was easier to form cooperatives (Alberts, 1981).

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Table A.1: Land Area Expropriated, Distributed and Number of Families Benefitted During Peru's Land Redistribution, 1964-1978.

Time Period	Land Expropriated (100,000s ha)	Land Distd. ^a (100,000s ha)	No. Benef. ^b (000s)
1964-68	2.7	3.0	10
1971	NA	1.8	90
1973	3.0	2.2	110
1975	7.4	6.2	245
1976	NA	6.8	292
1978	NA	8.6	370

^a Cumulative amount of land adjudicated and distributed.

^b Cumulative number of families benefiting from land redistribution.

Sources: Tom Alberts, Agrarian Reform and Rural Poverty: A Case Study of Peru (1981: 140-195); Russell King, Land Reform: A World Survey (1977: 177-180).

Several problems arose in carrying out the land redistribution. First, the government had difficulties accommodating the many squatter families who applied for titles to land. Of a total of 160,000 families, 128,000 applied to be registered but only 55,000 received even provisional certificates, and very few received permanent titles (Alberts, 1981). In addition, most of these families received small 6 hectare plots on poor soils. Thus, instead of resolving some of the minifundio problem, a greater number of new minifundistas emerged from the land reform. Second, because the overall expropriation procedure was long and complicated, the process of expropriating the assets, handing them over to the beneficiaries and drawing up a contract required an average of 18 months to complete. This greatly reduced the amount of land that could be redistributed (Alberts, 1981).

7. Post-Reform Agrarian Structure

Critics argue that the Peruvian government concentrated too much on the type of land to be expropriated, instead of working toward the agrarian structure desired through the reform process. The mixed successes and failures of the reform center around the state's desire to emphasize collective agriculture, and therefore it is difficult to draw specific conclusions about the smallholder sector because more is known about the reform's effects on the politically sanctioned collective sub-sector than about small farmers and the rural poor (Alberts, 1981).

Using the total number of production units as a point of reference, it appears that the distribution of ownership did not change drastically from 1961 to 1972. This is because the government rarely subdivided the expropriated estates, but maintained them as

cooperatives. The predominant form of ownership did change, however, since the government prohibited alternative forms of indirect exploitation, such as sharecropping and renting land. Therefore, the legal status of many peasants did change through the receipt of legal titles to land (Alberts, 1981).

In terms of the number of smallholdings, between 1961 and 1972, the number of farms with less than 5 hectares increased by approximately 384,000, while their average size decreased from 1.5 to 1.4 hectares (Alberts, 1981). Additionally, smaller farms were subdivided even further.

In general, the beneficiaries of the reform were the rural upper-class (mostly former permanent workers on large estates) who constituted almost 30% of rural population. After the reform, they still had access to almost 50% of the nation's cropland and obtained the greatest increases in income (Kay, 1983). At the same time, the comuneros, comprising 29% of the population, held only 19% of the land.

The comuneros and the minifundistas were, for the most part, excluded from redistribution. Political struggles surrounding implementation prevented improvements from taking place in the minifundio areas. Peruvian officials were hesitant to grant peasants the right political participation since they feared that extending the reform to the minifundistas would adversely affect agricultural production (Alberts, 1981). The minifundistas did not receive better access to technical assistance and credit since most of the reform effort went towards establishing and maintaining the cooperatives (Alberts, 1981).

8. Agricultural Production

Although the land redistribution had different impacts on regional agriculture, there was little change in the composition of agriculture and no subsequent decline in production levels.

The reform had differential effects on agricultural production among the various cooperative enterprises. Coastal area sugar, cotton and rice plantations were expropriated and turned into cooperatives. The data indicate that sugar production was not affected by the reform, and in fact increased until droughts caused output to fall (Alberts, 1981). For the cotton and rice cooperatives, the data are less conclusive. Studies generally show that production increased slightly and real wages rose significantly following the reform (Kay, 1983).

In the highland areas, the pre-reform agrarian structure permeated the newly reformed enterprises, causing differential degrees of proletarianism and technological development (Kay, 1983). Despite considerable variation across the highland livestock cooperatives, it appears that real wages increased until about 1978 and private ownership of livestock continued to grow, even though profits and investment fell (Kay, 1983).

The livestock-crop units were originally planned as collective enterprises, but at least one third, if not one half, of the total units are held in individual plots and livestock herds (Kay, 1983). It is difficult to draw specific conclusions since data on these units is sparse. However, it appears that the wages derived from collective farming did not equal the income that farmers earned from their own plots. One study showed that labor productivity eventually fell on the collective units, leading to asset disinvestment on many units (Kay, 1983).

Official data do not indicate a decline in overall agricultural production associated with the reform period. One does see, however, a stagnation and eventually a decline in per capita production from the 1960s to the middle of the 1970s. This is due primarily to a declining resource base, the cultivation of increasingly less productive land (marginal), low

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private investment in agriculture and price controls and import subsidies that discriminated against agriculture (Alberts, 1981).

As Kay points out, the reform had little impact on the composition of agricultural production because "the Highlands produce primarily for the rural market and the Coast primarily for the urban market" (1983: 231). The reform accentuated these regional inequalities. In addition, the same pre-reform production pattern was evident, where the urban market absorbed 65% of total agricultural production, the rural market received 27% and export markets 7.9% (Kay, 1983).

Looking at overall economic growth during the reform period (1964-75), one sees that gross domestic product (GDP) grew at an annual rate of 5.4%. The agriculture sector experienced an annual growth of 3.4% per year from 1960 to 1975. During this same period, however, agriculture's percentage contribution to GDP decreased from 18.5% to 12.7%, while manufacturing's contribution grew from 20% to 26.2% (Alberts, 1981).

9. Income Distribution

Although there are no time series data from which to analyze the post-reform situation, the various studies reviewed indicate that the reform did not improve the distribution of income among Peru's rural population. In the cooperative sectors, land reform altered income distribution to varying degrees. For example, in the cotton and rice cooperatives, real incomes per capita for permanent workers increased by 78% after the reform (1968 to 1972), but temporary workers' incomes increased only 27% for the same period (Kay, 1983).

Examining income distribution by quintile (excluding property income), personal income declined 0.5% to 1.0% in all quintiles (1961 to 1972). Only in the highest income group did personal income increase (+2.5%). In 1972, the lowest income group earned 2.5% of all personal income while the highest group retained 58%. Low average rural incomes are due primarily to low levels of agricultural output and the slow growth in agriculture, relative to growth in other sectors of the economy (Alberts, 1981).

Alberts (1981) concludes that at least the lowest 40% of the population saw their incomes decrease after land redistribution and that there was most likely an increase in income concentration. Although there are no estimates since 1972, it is thought that for most of the labor force, real income has been decreasing since 1973.

It was mentioned in the previous section that, as a result of the land reform, the minifundio sub-sector had grown larger, and their holdings had become more fragmented. Alberts (1981) found that these smaller farms had a more limited income-generating potential. He gives two reasons for this. First, the minifundistas have limited means of investing in their productive capacity because of a lack of access to credit and technical assistance. Second, as the holdings are increasingly subdivided below 5 hectares, production costs per unit of product go up, resulting in higher transportation costs. This makes economies of scale difficult to achieve and thus makes investment prohibitive for minifundistas.

10. Employment Generation

As a result of the reform the rural population decreased, even though new employment opportunities were created in agriculture. Prior to the reform, 67.2% (1961) of the population lived in rural areas, whereas in 1972, 52.5% were rural dwellers (Kay, 1983). This decline in the rural population was due primarily to heavy out-migration to urban areas. Kay shows that the agricultural population also decreased in proportion to the

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urban population. In 1961, 50.5% of the rural population was employed in agriculture, compared to 42.2% in 1972. In addition, the composition of the agricultural population changed. The number of self-employed in the agricultural population rose from 50% in 1961 to 76% in 1972. The proportion of wage-laborers fell from 30% to a little more than 20% over the same period (Kay, 1983). The increased number of new self-employed are mostly smallholders who were settled on colonization schemes in the highlands.

The government planned to create over 300,000 jobs in agriculture through land reform, however, ultimately only 171,900 jobs were created. Even so, employment grew by 0.9% -- three times the growth in male employment from 1961 to 1972 (Kay, 1983). Therefore, the reform did have a positive impact on employment creation, but not enough to stem much of the rural outmigration.

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Land Redistribution in Bolivia

1. Origins of Land Redistribution in Bolivia

In the late 1940s, widespread conflict arose in the rural areas between large estate (hacienda) owners and their tenants over the repressive nature of the hacienda-tenant system. A violent revolution ensued, during which peasants expelled hacienda owners from their estates to take possession of their lands and break up their stronghold on land ownership. During the aftermath of this revolution the government decided to draw up an agrarian reform law in an attempt to redress some of the severe inequalities found in the Bolivian landholding system. It is very difficult to conduct a complete evaluation of the Bolivian land reform because time series and census data are lacking for the post-reform period. However, case studies and various reports provide some insights as to the impact of the reform on the agrarian structure and on the agricultural sector.

2. Pre-Reform Agrarian Structure

Before the reform, the highland areas of Bolivia contained one of the most exploitative hacienda systems in Latin America. Part of this region, the altiplano, is dry and desolate, and farms are concentrated on the margins of the plateau. The Indian communities found on the altiplano provided labor and land for the haciendas' development. In the valleys, northeast of the altiplano, subtropical cash crops are grown under a different, less exploitative hacienda system. South of this region lies a mountainous region containing haciendas, a high concentration of minifundios, and Indian communities.

Prior to 1950, three principal farming systems existed in Bolivia: the latifundia (hacienda or large estate), Indian communities (indigenous farming communities) and the minifundia (small, individually-owned family farms). The latifundia were held by a privileged landowning class but farmed by sharecroppers, tenants and Indian servants. These haciendas had grown in size and power by destroying the neighboring Indian communities and incorporating them into their estates (Garcia, 1970).

As of 1950, 78% of the farms in Bolivia contained 20 has of arable land or less, but comprised only 1.0% of the total farmland. Sixty percent of these were minifundia with fewer than 5 hectares of land, or an average of 2.2 hectares per holding. On the other hand, 6% of the farms were over 1000 hectares, comprising 92% of the total farmland (Carroll, 1961). The land reform was intended to have its greatest impact in the highlands where most of the haciendas were located, and where 93% of Bolivia's population was concentrated on 40% of the country's land (King, 1977).

3. Goals and Objectives

The land reform decree issued by the government in 1953 cited the following objectives: "1) redistribution of land that does not perform a social function; 2) development of Indian communities; 3) reform of agricultural labor relations; 4) promotion of agricultural development; 5) conservation of natural resources; 6) stimulation of internal migration" (Carroll, 1961: 176).

The government's overriding goal, however, was to destroy the latifundia and reduce the problem of severe land concentration. As Garcia points out, "agrarian reform was born to the political ideal of destroying, by one blow, the social structure of the hacienda, thus liberating the labor and creative energy of the peasant masses" (Garcia, 1970: 309).

As it will be shown below, emphasis on this last goal, in addition to fiscal constraints, prevented the government from developing the supporting services necessary to ensure the achievement of its other objectives.

Policy Implementation

4. Land Expropriation

The 1953 reform included provisions calling for the abolition of the latifundia, and the exemption of large farms from expropriation where the owner had already made large capital investments and improvements to the land (Carroll, 1961). The law identified different types of farms to be inspected and categorized for expropriation, and limited the size of property that could be maintained after the reform, depending on the agro-ecological area (King, 1977).

The latifundia were to be expropriated without compensation if: 1) the property was owned by an absentee landlord; 2) the production process was considered technologically obsolete; or 3) the tenants or workers were exploited (King, 1977).

Medium-sized properties could be expropriated if they surpassed a predetermined size, determined according to regional differences in land quality. The ceiling varied from 6 hectares for irrigated vineyards to 350 hectares for farmland in the altiplano.

Small properties could not be expropriated except if they exceeded a maximum of 3 hectares in vineyards or up to 35 hectares on the altiplano. Estates using more modern agricultural practices were allowed to retain up to 80 hectares of good quality land (or up to 800 hectares on the altiplano), with the remainder to be expropriated (King, 1977).

The distribution of land to peasants usually followed their occupation of the estate, which tended to "reflect the political strength of local sindicato organizations ... [and] the persistence of local landowners in fighting campesinos' claims," rather than the legal distinction cited above (Eckstein et al., 1978: 22). Redistribution allowed the hacienda workers to take immediate possession of their existing plots, as well as some portion of the hacienda's land (King, 1977). The government compensated owners of expropriated properties with 25-year bonds at 8% interest. The amount of compensation was based on the land value determined from that year's tax assessment (Carroll, 1961). Beneficiaries of the reform were also expected to repay the government for the land allocated to them.

Assessment of Land Redistribution

5. Land Distribution

The reform was marked by upheaval. Armed peasants occupied haciendas, expelling the landowners and destroying a considerable amount of estate assets, including livestock herds (Carroll, 1961). The first five years, in fact, were subject to political struggles, economic difficulties and high inflation (King, 1977). This led to much insecurity regarding rights to land, which was compounded by the government's inability to grant titles to beneficiaries upon their possession of the property.

Although the government distributed much of the land by 1955, the land title certification process was more lengthy (Table A.2). As of 1960, about 59,000 families had received land titles, although the number of eligible families was estimated at between 100,000 to 200,000 (Carroll, 1961). By 1970, only 37% of the redistributed farmland had

been titled, and less than 30% of the landholders had actually received a title to their land (Eckstein et al, 1978).

Approximately 25% of all land transferred was titled collectively, but the farm unions (sindicatos) receiving the collective titles operated poorly. Thus, by the 1970s most of this land had been redistributed to individual holders (Eckstein et al, 1978). The difficulties experienced in distributing and titling the land is partly attributed to the judicial procedure for determining which land was to be expropriated and establishing the respective rights of landowners and beneficiaries. This process often extended over 6 or 7 years, and sometimes lasted as long as 10 years (Eckstein et al., 1978).

Administrative, technical and financial resource constraints also limited the government's ability to effectively carry out the land reform program. Most of the country was unmapped at the time of the reform and little data existed on soil types and land use. By 1960, few landlords had received their compensation and none of the beneficiaries had been required to pay for their holdings (Carroll, 1961). In addition, any complementary services introduced during the reform period generally by-passed the reform sector and were applied to commercial development efforts in the eastern region (King, 1977).

Table A.2: Land Area Distributed and Number of Families Benefitted from Bolivian Land Redistribution, 1955-1975.

Date	Land Distributed (000s ha) ^a	Number of Families Benefitted (000s) ^a
1960	4.2	59
1969	3.8	185
1970	9.8	237
1975	18.0	477

^a Totals are cumulative as of the end of each year figured.

Sources: Schlomo Eckstein et al., Land Reform in Latin America, (1978: 11); Thomas F. Carroll, The Land Reform Issue in Latin America, (1961: 176-77); Russell King, Land Reform: A World Survey (1977: 118).

Colonization was to be a complementary policy to the land reform, designed to redistribute part of the population and concentrate these human resources on agriculture (Garcia, 1970). The colonization programs, heavily supported by the Bolivian government and foreign donors, contributed to an increase in agricultural production (mostly in sugar, rice, cotton and coffee production, or cash crops) but had little effect in stemming the increasing population pressure found in some areas (Garcia, 1970). The attempts at colonization in Bolivia are best summarized by Garcia. He points out that only settlements formed around the important elements of the rural community, or formed near traditional migratory routes of the rural population were successful.

6. Post-Reform Agrarian Structure

There have been marked changes in Bolivia's rural areas since 1953, but these changes cannot all be attributed to the reform. With respect to the concentration of land ownership, from 1950 to 1970 neither the size nor the number of minifundio holdings changed. Farms of less than 5 hectares still comprised about 0.2% of the farmland, their average size remaining at 1.4 hectares per holding. Due to the subdivision of large estates into smaller holdings and an increased number of small property owners, the number of minifundia decreased in proportion from 60% of all farmers before the reform to 14% after the reform. Farms ranging in size from 5 to 100 hectares ("small properties") increased their total land holdings from 1.4% to 31%, and the average holding size increased to about 30 hectares (Eckstein et al., 1978). Most of the new landholders in this size category were reform beneficiaries.

The number of large farms decreased significantly after the reform, although the size of the holdings did not decrease. For example, the number of farms with holdings of 100-1,000 hectares fell from 7% to 1% of the total farm units, and their average size declined from 350 to 280 hectares. Very large estates decreased in number by approximately the same amount, but the average holding increased in size from 5,018 to 7,097 hectares (Eckstein et al., 1978). Large estates increased in size due to the expansion of the eastern frontier beyond the Andes mountains. Most of these new estates were formed into large-scale ranches, some of which even exceeded the 50,000 hectare ceiling placed on large holdings (Eckstein et al., 1978).

The conflict which inspired the revolution continued for years following the reform. After the reform was initiated, some landlords in an effort to regain their properties or to receive some payment for their former land, continued to intimidate the new peasant owners (Jacoby, 1971). These conflicts indicated a trend toward the reassertion of the landlords' power. Some landlords regained all of their properties or were able to persuade peasants to return to the estate as sharecroppers; especially those who had not yet received a land grant, (King, 1977). Since 1971, many landowners had formed affiliations with the military regime, thus gaining more political influence (King, 1977).

7. Distribution of Income and Benefits

Although the reform improved living conditions for some of Bolivia's population (particularly those who had worked on the expropriated haciendas), the reform had only a regional impact. Since the reform, land use changes in other areas of the country resulted only from expanding and intensifying farming in the tropical lowlands (King, 1977).

In the reform areas, however, available evidence indicates that greater security of tenure encouraged farmers to invest in housing construction on their land. The development of settlements, many along the roadsides, improved farmers' access to

marketing and transport facilities. In the Cochabamba valley, for example, it was estimated that the total value of production increased tenfold as a result of post-reform changes in land use (King, 1977). King cites that farmers on one hacienda increased their marketable production from 10% to 70% after the reform. Also, farmers on former haciendas began stocking greater numbers of livestock than the more extensive estates had previously retained. Overgrazing in this area, however, could lead to erosion and deterioration of the land (King, 1977).

The revolution and the ensuing reform destroyed the social, economic and political vestiges of the hacienda, as well as other types of servitude (Garcia, 1970). However, the reform had little effect on the Indian communities because it did not provide for the necessary structural change in tenure, agricultural practices or expanded institutional relationships with the rest of the economy (Garcia, 1970).

As for the minifundia, the reform failed to remodel or concentrate land parcels to diminish the extreme fragmentation of the smallholdings (Garcia, 1970). In addition, the rapid manner in which the reform was implemented, and government-level resource constraints ruled out any attempt at launching rural development strategies targeted at the minifundia. In these areas, growing population pressure on a limited resource base eventually forced some farmers to migrate out of the region in search of employment. In areas too distant from potential employment sources, hidden unemployment grew because these workers could not be absorbed by the existing farming practices carried out on small, marginal plots (Garcia, 1970).

8. Agricultural Production

While little time-series data exist to evaluate trends in Bolivia's agricultural output before and after the reform, information from various reports and case studies outline the major issues.

Initially, from 1952 to 1955, overall agricultural production dropped by 70-87% (there are many different estimates), eventually rising to its pre-reform levels around 1960 (King, 1977). Most of this subsequent increase, however, was attributed to increased rice, sugar and cotton production in the newly colonized eastern areas which were not affected much by the reform.

In the early 1960s, however, annual growth in the agriculture sector dropped from 2% to almost zero in 1970 (King, 1977). This decline was accompanied by severe economy-wide problems which were exacerbated by high inflation, price controls, and sporadic droughts. During this time wheat imports doubled and the marketing system, previously maintained by large landowners, basically collapsed.

In the reform sector, the production of corn, potatoes and wheat initially declined but recovered by 1958-60, although incidents of drought tend to complicate this evaluation (King, 1977). Recovery continued into the 1970s, with annual growth rates of 6.3% for potatoes, and 4.8% for maize and rice, the main staple foods of the campesinos (Eckstein et al., 1978).

Eckstein et al. (1978) found that some of the short-term decreases in food crop production in the reform sector can be explained by the disincentives created by PL-480 wheat imports and government policies encouraging barley imports. Although they were not able to obtain direct production estimates for the areas with the largest number of land reform beneficiaries, they cite indirect evidence that basic food production increased significantly as a result of the reform.

Using Bolivia's 1950 agricultural census, they argued that the subsequent post-reform increases in potato output, which occurred after the land was subdivided into smaller farms, were due to the strong negative correlation between yield and farm size (Eckstein et al., 1978). Potato yields increased by 242% from 1950 to about 1972, mostly due to increased use of chemical fertilizer by campesinos. This is significant because potatoes are a campesino crop for which labor intensity increases with fertilizer use, rather than decreases. It is most likely that fertilizer was imported as a result of cultivator demand for the input. If demand for fertilizer had come from large landowners, they postulate, it would have been used on cash crops. This implies that some of the reform beneficiaries obtained better access to inputs.

Finally, there is also evidence of increased vegetable production among campesinos in the highland and valley areas. This appears to be the result of improved access to markets among campesinos in areas with extensive land redistribution (Eckstein et al., 1978).

Land Redistribution in Indonesia: Transmigration Policy

1. Origins of Transmigration Policy

Transmigration originated in 1905 when the Dutch administration in Indonesia attempted to relieve growing population pressure on Java by moving migrants to the outer islands. Approximately 200,000 migrants were settled by 1940, in addition to the large number of spontaneous migrants who left Java to work on Sumatran plantations. After 1942, fifteen years of war and political instability left the newly independent Indonesian government with few resources to allocate to transmigration. Even though a more comprehensive transmigration policy was planned in 1947 (31 million people over 15 years, changed in 1951 to 49 million over 35 years), changes in government administration and economic problems produced limited results. Until the creation of the first five-year plan (Repelita I), the government had no firm resettlement program and settled varying numbers of migrants, from 25,000 a year to almost none (Oberai, 1988).

2. Land Tenure Policy

The 1960 Basic Agrarian Law established a uniform tenure system. This law supported individual ownership throughout the country, and placed restrictions on land purchases and sales through the regulation of absentee land ownership.⁴⁰ In addition, the law regulated the transfer of use-rights through leasing, sharecropping and pawning (Booth, 1988). The Basic Agrarian Law protects customary land rights, except in cases where they conflict with national interests (World Bank, 1988).

Traditional law, or *adat*, allows the community to allocate the right to cultivate, with no guarantee of tenure security (World Bank, 1988). Incoming migrants may be asked to compensate the local community for the land they obtain, and sometimes migrant holdings are subject to expropriation if the value of their land increases to the point where it becomes valuable to the community. However, due to the absence of legal records or precise boundaries, the establishment of a legal transfer of title from the local community to migrants becomes difficult (World Bank, 1988; Oberai, 1988). Therefore, government sponsorship of the transmigration program is essential in mitigating some of the conflicts arising over land in the outer islands (World Bank, 1988).

3. Goals and Objectives of Transmigration

By 1966, Indonesia's population had grown to more than 70 million, with average population densities reaching 600 persons per square kilometer in some areas of Java. At this time, it was estimated that two-thirds of the population lived below the poverty line, and that per capita income was steadily decreasing (Oberai, 1988). Therefore, after 1966, the emphasis of the transmigration program shifted from alleviating population pressure to raising living standards for both migrants and the inhabitants of Java. It was also planned that the program would promote economic development for the outer islands (Oberai, 1988).

⁴⁰ The amount of land that any one family could own was limited to 5 hectares of wetland and 6 hectares of dryland in the most densely populated areas, and 15 hectares of wetland and 20 hectares of dryland in the least densely populated areas. A minimum holding size of 2 hectares was established for both wetland and dryland areas (Booth, 1988).

The First Five-Year Plan (Repelita I; 1969-1974) emphasized increasing food production and creating a more balanced population distribution throughout the country. The Second Five-Year Plan (Repelita II; 1974-1979) placed more emphasis on improving social welfare and stimulating regional development. Initially, a target was set for settling 250,000 families during this period. Later, in 1976, this target was revised to a total of 108,000 families.

The Third Five-Year Plan (Repelita III; 1979-1984) emphasized settlements as growth points that would contribute to regional development and extend beyond agriculture into processing and other industries. The plan was based on a target of 500,000 families or 2 million people. The oil price increases of 1973-74 and 1979-80 enabled the transmigration program to grow from about 0.7% to almost 6% of the development budget by 1978 (Oberai, 1988).

The Fourth Five-Year Plan (Repelita IV; 1984-1989) called for the settlement of 750,000 families. However, in January of 1986, the government of Indonesia was forced to significantly reduce its development budget resulting in a 56% reduction in the transmigration budget (World Bank, 1988).

Program Implementation Under the Five-Year Plans

4. Settler Selection

The selection of settlers was based on three elements: 1) families should migrate as units, 2) migration should be voluntary, and 3) people from highly populated areas should be given priority to migrate. The official criteria for selecting transmigrants specified certain personal characteristics, but farming skills - although desired - were not required. Several studies showed that most had limited experience in farming; about one-third had never owned or managed a farm before and less than one-fifth had never farmed before (Oberai, 1988). As the program expanded, the government stressed the need for transmigrants not only with farming skills, but also other service skills. Some were homeless, landless and unemployed persons transferred out of Java by the Social Welfare Department and by village officials.

5. Site Selection and Management

Inadequate site selection was the primary cause of settlement failure in the 1950s and 1960s because systematic surveys regarding water availability and soil types were not carried out and management personnel had no incentive to be effective (Oberai, 1988). Initially, transmigration sites had to be suitable for irrigated wet rice production, as well as close to Java in order to reduce transportation costs (Oberai, 1988). As sites of this type became scarce and more costly, attention turned to swamp reclamation for tidal irrigation. However, although swamp soils have highly organic soils, tidal cultivation proved technically difficult due to soil acidity and problems in dealing with tidal effects, annual flooding and severe pest problems (Oberai, 1988; World Bank, 1988).

Suratman and Guinness (1977) report that the required surveys often involved only cursory inspections of the potential site carried out over a period of one or two months, but insufficient to provide information on which to build agricultural development programs and understand inter-ethnic relations. Consequently, after several years of settlement, transmigrants experienced crop failure, declining soil fertility and land disputes with local farmers that disrupted farming activities (Suratman and Guinness, 1977).

Although further improvements were made to the transmigration program under Repelita III, the results were mixed. Site location improved, but site plans and land clearing were often inadequate, and infrastructure was poorly maintained (World Bank, 1988). In addition, land and financial resources became greater constraints to program implementation (Oberai, 1988). Much of the available land was too mountainous, swampy or endowed with poor, erodible soils and hence not suitable for agricultural cultivation (Oberai, 1988).

The Government of Indonesia (GOI) has provided no cash compensation for land ceded to the transmigration program. It does, however, provide cash compensation for the loss of any tree crops located in settlement areas (World Bank, 1988). GOI believes that if migrants paid for settlement land: 1) the price of land for local smallholders would increase; and 2) it would make GOI development programs less replicable.

In the earlier stages of the transmigration program, migrants were expected to repay the government for the transportation, housing and food provided to them (Hardjono, 1977). However, by the 1960s, the idea of repayment was discontinued because it added little to the overall transmigration budget and it was thought that migrants could achieve desired living standards more quickly if they were not overburdened by loan repayments (Hardjono, 1977).

The administration of each scheme remains under MOT (Ministry of Transmigration) authority for at least five years or until self-sufficiency is achieved. Fiscal and administrative responsibility is then transferred to the province which also assumes responsibility for service and infrastructure maintenance (World Bank, 1988). The World Bank cites road maintenance and staff transfer as the primary difficulties resulting from the transfer to the provincial level.

6. Service Provision

Over the life of the transmigration program, the provision of assistance to migrants has varied greatly. Suratman and Guinness (1977) state that in 1950s, it was assumed that migrants needed only to be settled on the land with a seed and food allowance to carry them over until the first harvest.

Beginning in the early 1970s, government-sponsored migrants received transportation to the site, a small house and 0.75 to 1.0 hectares of cleared land (World Bank, 1988). They also received subsistence supplies for one year, including materials for planting minor tree crops and additional supplies in cases of crop failure. At the end of five years, settlers are expected to be self-sufficient (World Bank, 1988). One survey found, however, that in the first few months, 62% of the household heads interviewed had to find employment outside of the scheme because they were unable to support their families with the food rations supplied by the MOT (Suratman and Guinness, 1977).

Cash crop schemes were initiated in 1978 and based on tree crops (rubber, coconut, and oil palm). These schemes are open to both local smallholders and migrants, the latter receiving a small subsistence plot (World Bank, 1988). Oberai (1988) notes that one of the most effective forms of assistance has been the cultivation of tree plantations for cash crops. This program provides a more secure livelihood for transmigrants than the traditional agricultural production schemes (Oberai, 1988).

There has been a tendency on the part of the indigenous people of the outer islands to resent the migrants who have access to better facilities and services (Oberai, 1988). For example, a 1981 UNDP/OPE Management and Monitoring survey found that the ratio of agricultural extension workers to settlers was much greater in transmigration areas than in

the local outer island farming communities (Babcock, 1986). The transmigration authorities have attempted to mitigate this problem by settling some local people onto transmigration sites, improving local land acquisition methods, and encouraging indigenous entrepreneurs to establish relations with the new settlers (Oberai, 1988).

The enormity of the transmigration program places an administrative strain on the country, but the GOI has attempted to improve interagency administration and coordination. Settlement personnel are charged with providing courses on topics such as animal husbandry, agricultural skills, local government, cooperatives and family planning and health (Suratman and Guinness, 1977). Most settlements, however, are plagued by a shortage of staff, particularly agricultural officers, health workers, teachers and social workers (Suratman and Guinness, 1977). Oberai (1988) reports that as staff numbers have increased in order to meet the demands of the expanding program, the quality of the management and service personnel has decreased, especially among the on-site staff.

Assessment of Transmigration in Indonesia

7. Achievement of Transmigration Targets

As indicated in Table A.3, the total number of migrants settled has never equalled planned government targets for the transmigration program. The initial target set in 1951 was to move about 49 million people over a 35 year period. However, only about 4 million people had been settled as of mid-1987. The reasons for the variable numbers of people settled (Table A.3) stem from changes in the amount of financial resources allocated to transmigration, shortages of appropriate land for settlement and shortages field and central government personnel. Oberai (1988) asserts that even though the transmigration program represents a tremendous effort to reduce population pressures on Java and promote regional development, at its current intensity, the program will not correct the population imbalance between Java and the outer islands. Java's population is approaching 100 million and increasing at 2% annually. Even if the targets for Repelita III are attained, it will only remove 20% of the annual increase in Java's population (Oberai, 1988).

Table A.3: Indonesia's Sponsored Transmigration Program: Targeted vs. Achieved Settlement Rates Through 1989.

Year	No. of families targeted	Total families moved	Local families ^a	Resettled families ^b	Total families settled
Before 1950	NA ^c	200,565 ^d	NA	NA	200,565
1950-54	NA	21,037	0	1,280	22,317
1955-59	500,000	32,114	0	128	32,242
1960-64	NA	26,456	0	0	26,456
1965-69	NA	21,633	0	0	21,633
1969-74	NA	39,436	0	75	39,511
1974-79	250,000	44,484	7,600	0	52,084
1979-84	500,000	301,279	22,284	42,414	365,977
1984-89	400,000	179,000 ^e	NA	NA	179,000
Total	1,650,000	866,004	29,884	43,897	939,785

^a Indigenous families settled in transmigration sites.

^b Resettlement of sponsored or spontaneous migrants within the province.

^c Data not available.

^d Number moved by the end of 1940.

^e As of June 30, 1987.

Sources: World Bank, The Transmigration Program in Perspective (1986: xxi); J.M. Hardjono, Transmigration in Indonesia (1977: 19-21); A. S. Oberai, Land Settlement Policies and Population Redistribution in Developing Countries (1988: 48-88).

8. Agricultural Production

It is difficult to assess the regional impact of transmigration on agricultural production because: 1) migrants may need several years to reach full production levels⁴¹; 2) many migrants improve their operations over time through the addition of tree crops or irrigation, but it is impossible to separate the transmigrants' contribution to aggregate production from that of the local population; and 3) provincial data are very unreliable (World Bank, 1988: 84).

Table A.4 provides information extracted from a World Bank analysis on the regional impact of transmigration on rice production throughout Indonesia. This analysis is based on the following assumptions that approximate the actual situation in each province: 1) 80% of all sponsored migrants produce an average yield of 700kg/family of rice; and 2) for each government-sponsored migrant family, one spontaneous migrant family has settled in the same province, with the exception of two areas (World Bank, 1988).

Although data for each province are not included in the above table, in certain provinces transmigrants have contributed from 45-96% of incremental rice production. It is apparent from the above analysis that transmigrants' contribution to rice production is highly variable at the provincial level and that this variability can be attributed to the predominant farm models in the region and general soil fertility. According to this and other World Bank studies, transmigrants produce approximately 2 million tons of unmilled rice, which is equivalent to 17% of outer island production and 5% of Indonesia's total rice production (World Bank, 1988).

This analysis should be interpreted with care. Oberai (1988) found that surveys conducted on older upland settlements showed low and highly variable crop yields. In one survey, about 30% of all farmers obtained 500 kg or less of unmilled rice per year. It was found that these farmers had turned from rice to other subsistence crops, with their primary source of cash coming from off-farm employment (Oberai, 1988). The World Bank has also found that in some areas, farmers rely on off-farm employment to supplement their earnings from agriculture; often supplementing 40-80% of their household income.

When asked about their perceptions of their current rice production relative to that of two years ago, 40% of all settlers interviewed reported that their production was lower than two years ago, while approximately the same proportion cited increased production (World Bank, 1988). On older tidal sites, 62% of the tidal farmers reported production increases over two years ago, while 40% reported production decreases (World Bank, 1988).

⁴¹ For example, Hardjono (1977) found that migrants entering tidal projects require several seasons to adjust to their new environment. They must learn tidal cultivation and often face a lack of fresh water in the dry season, malaria, cholera, and crop destruction by wild animals. In addition, the long-duration variety used by these farmers produces only one crop per year, meaning that they must find another source of income.

Table A.4: Regional Contribution of Transmigration to Incremental Rice Production by Region in Indonesia, 1980-1984.

Region	Transmigrant families	1980 Regional production (000)	1984 Regional production (000)	Incremental regional prodn. (000)	Transmigrant contribution	
					(A) ^a	(B) ^b (%)
Sumatra	129,916	5,678	7,305	1,627	4	9
Kalimantan	45,367	1,626	1,743	117	22	43
Sulawesi	31,540	2,286	3,030	744	2	5
Maluku and Irian Jaya	15,487	28	24.4	(-)	-	-
Total outer island	222,310	9,618	12,102	2,485	5	10
Total inner island	-	20,032	25,392	5,360	-	-
Total Indonesia	222,310	29,650	37,494	7,845	2	3

^a Assumes 80% of all families produce 700kg/family of rice or 560 kg/family average for all transmigrants.

^b Assumes ratio of one spontaneous family/sponsored family with rice production at rates in (a) above.

Source: World Bank, *The Transmigration Program in Perspective* (1988: 84-85).

The World Bank (1988) reports that in some tidal areas, reasonable production has been maintained for 20 years or more without the use of fertilizers. However, it has recently been found that new sites are experiencing serious agricultural problems related to site location (deep peat or acid soils), planning and pest infestation. For example, 56% of the farmers interviewed on older upland sites⁴² reported decreases in rice production, while only 31% showed production increases (World Bank, 1988). These inconclusive results point to the need for establishing "long-term monitoring of yields and production on representative upland and tidal sites" (World Bank, 1988: 31). This issue will be addressed later in section 2.3.6.

9. Distribution of Incomes

Table A.5 presents the results of an income survey carried out by the Central Bureau of Statistics (BPS) and the MOT in 1985, covering over 2,200 households in both successful and critical sites (World Bank, 1988). Included in this table are comparative data from a 1984 National Socioeconomic Survey (Susenas) of 17,000 households in rural Java and 2,800 rural households in the receiving provinces (World Bank, 1988).

⁴² This survey information, compiled by the Central Bureau of Statistics (BPS) in 1985, covers those migrants who arrived at their sites before 1982.

Table A.5: Comparison of Transmigrant, Javanese and Outer Island Incomes in Indonesia, 1984-1985.

Area ^a	Survey date	Monthly household income - Rp (US\$)	Annual household income - Rp (US\$)
Transmigration sites	1985	58,300 (53)	699,600 (636)
Rural sending areas	1984	67,200 (62)	806,300 (733)
Rural receiving areas	1984	90,750 (83)	1,089,000 (990)

^a Data on rural sending areas include individual smallholders, tenants and landowners.

Source: World Bank, Indonesia: The Transmigration Program in Perspective (1988: xxv).

When compared to incomes in the rural areas from which they came (sending provinces) and incomes in the rural areas to which they migrated (receiving provinces), the transmigrants' incomes are lower. If the survey data are corrected for possible underreporting of subsistence production, migrant incomes become roughly the equivalent of Javanese incomes (World Bank, 1988)⁴³. In addition, transmigrants who had been settled in upland communities for at least five years had average monthly incomes of Rp 75,000 per household, which are slightly higher than those of the Javanese surveyed, including landowners (World Bank, 1988).

Although many transmigrants earn lower incomes than the average rural Javanese farmer, the migrants' living conditions have been improved through transmigration. All migrants own land, a house and some own livestock (World Bank, 1988). In a survey of migrants' perceptions, two-thirds said their incomes had increased since transmigration, 17% said their incomes were relatively unchanged, and 16% said their incomes had decreased (World Bank, 1988).

It is evident that incomes vary by both farm model and by period of settlement. Data show that farmers on older upland sites have low agricultural incomes, attributable to declining soil fertility, which they supplemented with off-farm income. Recent settlers in swamp reclamation areas have the lowest total incomes, while farmers with tree crops and those on older tidal sites have the highest agricultural incomes. The proportion of total household income derived from off-farm employment ranges from 40-80% (again depending

⁴³ Only income from major commodities is reported in the BPS survey which excludes income from home garden production. The World Bank (1988) has readjusted the BPS expenditure data by Rp 1,000-2,000/capita/month (Rp 5,000-10,000/household/month) in order to allow some comparability among populations outside the survey.

on farm model and period of settlement), indicating that some transmigrants find off-farm employment more remunerative than work in agriculture (World Bank, 1988).

10. Migrant Welfare

World Bank (1988) surveys reveal additional information on the position of migrants, relative to rural Javanese. Their data show that migrants are able to meet their subsistence needs from home production, and in addition, spend less on nonfood expenditures (fuelwood, household items, durable goods, taxes, medical expenses and schooling) than Javanese residents.

Table A.6 presents migrants' perceptions of their welfare, before and after transmigration. When migrants were asked whether their incomes had improved, decreased or remained about the same, the majority of Repelita II and III migrants replied that their incomes had improved since transmigration. Compared to two years ago, 57% of the Repelita II and 51% of the Repelita III migrants felt that their incomes had improved. With respect to transportation facilities, 63% of Repelita II and 69% of Repelita III migrants felt that transportation was worse in the transmigration area than in Java. Few migrants felt that their health had declined in the transmigration area, but 44% of Repelita II and 51% of Repelita III migrants felt that their health status had not changed. For the most part, an approximately equal proportion (except in the case of Repelita II tidal farmers) felt that their health had improved since transmigration (World Bank, 1988).

Table A.6: Migrant Perceptions of Welfare by Transmigration Site in Indonesia, 1985
(Percentage of Respondents).

Site	Current income vs. pre-migration income			Current income vs. two years ago			Transport at site vs. in Java			Health at site vs. in Java		
	Better	Worse	Same	Better	Worse	Same	Better	Worse	Same	Better	Worse	Same
Repe-lita II												
Tidal	85	8	7	46	5	48	22	44	34	35	5	60
Up-land	60	31	9	59	26	14	20	74	24	39	23	38
Up-land w\tree	69	13	18	64	22	14	43	42	15	44	7	48
Repe-lita II total	66	23	11	57	21	22	25	63	12	39	17	44
Repe-lita III												
Tidal	64	13	23	45	27	28	13	71	17	46	8	47
Up-land	68	15	17	52	22	27	15	69	17	37	8	55
Up-land w\tree	71	8	22	66	11	24	25	69	6	46	13	42
Repe-lita III total	67	14	19	51	23	27	15	69	16	40	9	51

Source: World Bank, The Transmigration Program in Perspective (1988: 37).

11. Employment Generation

During the Repelita III program (1979-84) between 500,000-600,000 jobs were created on both rainfed food crop schemes and on tree crop settlements (World Bank, 1988). This translates to 1.3-1.6 jobs created per transmigrant household, or 12-15% of the incremental labor force in Java and Bali (World Bank, 1988). There is, however, no data on the amount of indirect employment created by the transmigration program in services such as transportation, marketing, social services and the input supplies to transmigrants. Temporary employment, also immeasurable, has been created through labor-intensive rural works projects (such as land clearing and the construction of roads and houses) and through the development of tree crop schemes (World Bank, 1988).

The cost of employment creation for sponsored migrants is much less than in the industrial sector (\$10,000-20,000 per job), yet greater than in service industries in Indonesia (World Bank, 1988). For example, on upland schemes, the cost is approximately \$3,300-4,100 per permanent job. On tidal schemes, the cost increases to \$4,500-5,500. On more remote sites, the cost per job is believed to increase by 25-50%, according to the farm model (World Bank, 1988). It should be noted that there is no information on the cost of employment creation for spontaneous migrants, who move at their own cost.

Babcock (1986) reports that with the exception of one or two cases, transmigration programs have not generated important secondary industries. He notes, however, that "in the more prosperous project areas new market centers do grow up where commonly the entrepreneurs, for example, the traders, the transport sector, are from non-transmigrant ethnic groups" (1986: 177). While there are some employment opportunities for low-level professionals in the transmigration areas, their employment in this sector implies that another rural area will be short-staffed (Babcock, 1986).

12. Regional Development

Transmigration has had a variable impact in the receiving areas on agricultural production, infrastructure and service sector development and population growth. World Bank (1988) estimates indicate that transmigrants settled during Repelita III produce 2% of the total outer island rice production and those settled since 1950 produce 33% of the outer islands' total rice production, or about 5% of Indonesia's total production.

Oberai (1988) notes that transmigration has had a marginal impact in integrating the regions into the national economy -- in terms of developing industry and trade, exploiting and processing natural resources and improving transport and communications. He adds, however, that the conservation and rational exploitation of Indonesia's resources is becoming a great concern. The World Bank (1988) states that although transmigration has reduced demographic pressures in Java's more critical areas and permitted the reforestation of overcultivated lands, settlement in the outer islands has reduced the amount of forested land and placed pressure on conservation areas and wildlife habitats. For example, the World Bank found that during Repelita III between 30-50% of all land cleared for sponsored migrants had been previously forested. The relative proportion of forested land cleared for transmigration sites differs depending upon the province, and ranges from 0.2% of the total land area in Sulawesi to 4% in Sumatra (World Bank, 1988). The degree to which forested land has been cleared by spontaneous migrants is unknown (World Bank, 1988).

One of the clearest indicators of regional development in Indonesia's transmigration program is the improvement of infrastructure, through the construction of both access and main roads. In some areas infrastructure in the regions has doubled (World Bank, 1988). A drawback to this development, however, is the burden it places on the districts when fiscal

responsibility for infrastructure maintenance is transferred to the provincial level. As a result, many roads fall into disrepair once national government financing is terminated (World Bank, 1988). The transmigration program has also led to the expansion of other services in outer islands, especially extension, agricultural input supply, education and health services. There is evidence that those towns, which depend primarily on central government budgets to finance their development expenditures, have difficulties accommodating town and urban growth under the current planning arrangements (World Bank, 1988).

Babcock (1986) estimates that the Repelita I and II transmigrants made up 1.4% of the outer island population in 1980, and accounted for 5.8% of the total provincial population growth in the settlement provinces. These figures, however, do not include spontaneous migrants whose contribution to population growth was not recorded until 1983 (Babcock, 1986). During the Repelita III period, the proportion of sponsored transmigrants to indigenous residents grew to as much as 40% of the 1980 population of some districts (Babcock, 1986; World Bank, 1988).

13. Monitoring and Evaluation of Transmigration Projects

Under the Repelita III program, the World Bank and the United Nations Development Programme supported a monitoring project which included an early warning system to allow detection and rapid response to scheme-level problems (World Bank, 1988). Unfortunately, GOI resource constraints forced the program to be abandoned. Field-level problems also hindered the success of the monitoring program. For example, Ministry of Transmigration staff were charged with collecting too much information, some of which was not readily available to them (World Bank, 1988). The monitoring and evaluation aspect of the transmigration program is one of the most important components yet remains one of the weakest ones.

14. Economic and Financial Analyses of Transmigration Projects

The World Bank carried out financial and economic analyses of nine transmigration farm models (1988). They analyzed both upland and tidal sites over a thirty year period, beginning in early 1980. The typical farm budget included benefits realized by the farmer from all crop and livestock production (large and small animal) and from off-farm income earned. The following costs were quantified in the analysis: the opportunity cost of labor for settlers and the costs of site selection and preparation, settler selection, recruitment and subsistence, input packages and project administration. The opportunity cost of capital used for these analyses was 10%.

For all food-crop models, the rates of return were lower than prior appraisals had indicated. For example, the rates of return from agriculture (excluding off-farm income) were low, falling between negative values for the most prevalent low-input models to 4% for upland sites with sufficient market access and input use⁴⁴. Upon adding the benefits from off-farm income, the economic rates of return increased to an average of 3-6% for the low-input/low-output upland and tidal sites. Only the more costly tree crop models (oil palm, coconut and rubber plantations) had economic rates of return greater than the opportunity cost of capital. The respective rates of returns to oil palm and rubber tree

⁴⁴ About 75% of the Repelita settlements are located in upland areas, and few schemes are irrigated.

schemes were 13% and the returns to coconut schemes were estimated at 11% (World Bank, 1988).

Land Resettlement: The Case of Kenya

1. Agrarian Structure and the Origins of Land Resettlement in Kenya

Land resettlement in Kenya was a political response to population pressure in black farming areas and to smallholders' desire for land from which they had traditionally been excluded (House and Killick, 1983). The colonial system of landownership had established separate status and rights for Europeans, Africans and Asians through the allocation of land. European settlers maintained exclusive freehold ownership in the White Highlands, the highest potential land. A census executed prior to any land redistribution indicated that over 90% of the European farms were holdings of 400 hectares or greater and 50% of these were holdings of at least 2000 hectares (Hazlewood, 1985).

The reserves (or non-scheduled areas) were communally farmed land units allocated to various ethnic groups, comprising 24% of Kenya's total land area, or 74% of all arable land (Leo, 1989). Six million Africans cultivated small plots of variable quality under a communal tenure system. Squatters were allowed to reside on European farms in return for their labor on large-scale farms in the highlands (Leo, 1989).

Consequently, Kenya's dualistic land ownership system resulted in severe inequities in resource distribution for millions of smallholders. Political instability developed, stifling foreign investment in the country, and motivating the Kenyan government to develop several land transfer programs.

The colonial government initiated a land reform in 1954, according to the Swynnerton Plan,⁴⁵ that promoted freehold tenure for all Kenyans. It did not, however, address the issue of land hunger among Africans, a major cause of political instability, which subsequently impeded foreign investment in Kenya. The government thought that the transfer of land from large European landholders to African farmers would create greater political stability and confidence in the Kenyan government with, it was hoped, no negative impact on agricultural productivity (von Haugwitz, 1972).

As Hazlewood notes, "the brief history of land transfer is complex, because schemes of different types were introduced to meet the political and economic pressures of the time" (1985: 445). The Million Acre program, established in 1962, was the most important land transfer initiative in terms of the amount of land redistributed and its impact on smallholders. Several irrigation schemes were also created -- the Perkerra scheme (1953), the Mwea scheme (1954), the Ahero and Bunyala schemes (1968) and the Tana scheme (1969) -- but these schemes were smaller and much more management and capital intensive than the Million Acre program. In addition, study of the Million Acre program offers the most relevant insights regarding the implementation and evaluation of Zimbabwe's rainfed resettlement schemes.

The Million-Acre program involved the purchase of over 400,000 hectares of European farmland adjacent to African or non-scheduled areas (at a rate of 81,000 hectares per year for five years). The government then redistributed this land under individual title to African farmers in several different types of settlements; high and low-density settlements, and cooperatively or individually owned large-scale farms (House and Killick, 1983).

⁴⁵ The major components of the Swynnerton Plan were "1) a major programme of land reform, 2) increased availability of credit, and 3) a reorientation of research, extension and marketing bodies" (House and Killick, 1983: 44-45).

Land transfer continued until 1971, but after 1965 the primary focus of the program shifted towards maintenance of large-scale farming units (Hazlewood, 1985). Leo notes that throughout the 1970s and into the 1980s, "the policies that were followed reflected above all a continued intense pressure, both from landless people and from the bourgeoisie, for the multiplication of smallholdings. Indeed they were less policies than a series of expedients, each one designed under pressure to come to terms with a particular set of circumstances" (1989: 179). Consequently, during this time the government developed two Harambee settlements for carefully selected settlers to farm smaller sized low-density plots. Following intense pressure from the landless, squatters were eventually given titles and settled on abandoned European farms (known as Haraka schemes). By 1982, these settlements together covered over 670,000 hectares and benefitted approximately 64,000 families (Leo, 1989). Although the number of beneficiaries appears large, it represented only 3% of the population.

2. Goals and Objectives of Resettlement

The primary objective of resettlement was to induce political and social stability by reducing inequality in land ownership between European and African landholders and creating greater employment opportunities for Africans. In addition, the government wanted to produce a structural change in agriculture by substituting smallholder farming for large-scale farming, without causing a decrease in agricultural production (Hazlewood, 1985) and a pre-determined target income for settlers (von Haugwitz, 1972). Objectives concerning improvements in social welfare were not explicitly stated and social welfare concerns were addressed only through land redistribution which permitted increased access to resources for smallholders.

Implementation of Kenya's Resettlement Program

3. Land Selection

Commercial farmers sold land to the Land Development and Settlement Board on a willing buyer, willing seller basis. The government valued land at 1959 prices (the last year in which a significant number of land market transactions occurred) and paid sellers a proportion in cash and the balance in annual installments backed by a 5% promissory note. The purchase price allowed for a 12.5% return on the capital invested, as well as for the value of permanent improvements on the land which contributed to a profitable farming activity (von Haugwitz, 1972).

Geography, as well as politics, influenced land selection. Ethnic tensions necessitated that certain tribes be separated from others by boundaries, and thus, settlements were planned according to ethnic lines. Leo concludes that the settlement program "not only reaffirmed and hardened existing ethnic boundaries, but in fact reintroduced ethnic uniformity in areas where mixing had already taken place spontaneously" (1989: 111).

Significant funding for land purchases came from the United Kingdom, the Commonwealth Development Corporation and the World Bank. In addition, the Kenyan Government received loans for a proportion of the land purchase and for settler credit. Given the high level of external funding, the government felt compelled to make the settlement program pay for itself, at least in part. This led the government to accelerate the rate at which settlers repaid their land purchase and agricultural input loans, contributing to low repayment rates (Hazlewood, 1985).

4. Settler Selection

The criteria for settler selection differed for the high and low-density schemes. Committees interviewed applicants for high-density schemes, usually choosing those who were unemployed and landless but had some agricultural knowledge. Priority was often given to the previous employees of a farm whose land was to be redistributed. Both types of settlers were required to deposit some working capital and pay a stamp duty and legal fees at registration (von Haugwitz, 1972).

Smallholders on the settlement schemes received freehold tenure status contingent upon repayment of their land and development loans, and compliance with recommended farming procedures and government regulations (Harbeson, 1984). Settlement regulations stipulated that farmers could not subdivide, transfer, or improve their plots without the government's consent (Harbeson, 1984). Settlers were also not allowed to retain land in their former areas but many farmers used the schemes as a way of increasing their total land holdings (Hazlewood, 1985).

5. Scheme Planning and Management

Resettlement planners developed farm budgets for each soil type found on a scheme (usually two), although many schemes with a common income target had three different model budgets for various farming systems, plot sizes and loan schedules. De Wilde (1967) found that farm plans often paid insufficient attention to variations in soil fertility, topography and the scheme's micro-climate. In addition, he found that farm plans were sometimes developed for crop or livestock systems subsequently not viable for the settler.

During the initial planning period, the government encouraged farmers to form marketing cooperatives since there were often no private traders to act as marketing intermediaries (von Haugwitz, 1972). The ethnic and geographical origin of settlers hampered scheme-level cooperation. Although settlers were often from the same tribe, they were from different communities which made cooperative efforts difficult (Clayton, 1978). Therefore, economic incentives played a significant role in motivating cooperative participation. When settlers first joined a scheme, they were more likely to participate in cooperative activities. As they gained more experience, cooperative participation decreased as they marketed their production outside of the cooperative to obtain higher prices (Clayton, 1978).

The Million Acre program contained two types of individual smallholder schemes. High and low-density schemes were developed to meet the demand for land by both skilled and unskilled agricultural workers. The government created 122 high-density settlements for the landless and the unemployed, with average holdings of 10 hectares. Each scheme held 3000-4000 settlers on 4000 hectares of land who were targeted to achieve a subsistence standard of living and L25-75 cash income, in addition to repaying any loan obtained for land purchase and for other inputs.

Approximately 40 low-density schemes, located on higher quality land, were allocated to farmers with more agricultural experience. About 100 settlers farmed each 2000 hectare scheme, whose individual holdings averaged 13 hectares. Each plotholder was to achieve subsistence and a L100 cash income after repaying their loans. Although the government wanted to locate both types of schemes near the overpopulated African Areas in order to reduce population pressure in these areas, this was not always possible. As Leo explains, European farmers "were not prepared to sell high-potential, underdeveloped land at prices that reflected its present worth rather than its ultimate potential, and that those who wanted

to do so were able to find buyers at better prices [than those offered by the Land Development and Settlement Board]" (1989: 79).

The Department of Settlement theoretically transferred scheme-level management from Department personnel to the scheme cooperative in a four-stage process. Initially, the Department of Settlement would operate the scheme in consultation with the cooperative. The scheme would reach the second stage of Settlement staff withdrawal from daily operations after 5 years, with the staff retaining responsibility for loans, extension services and all legal aspects relating to the scheme. At the third stage, the cooperative grouped individual schemes into complexes of 5-20 schemes to ensure greater control of cooperative activities. The fourth stage, full scheme maturity, occurred after repayment of all settler loans; approximately 30 years after initial settlement, thus integrating the scheme into the smallholder farm sector (Clayton, 1978). This phasing was not adopted in many cases because the Department of Settlement preferred to retain more control over the schemes to ensure that they marketed a desired amount of surplus production (Clayton, 1978).

6. Service Provision

The government planned to provide roads, soil conservation works, water supplies and trading centers for each scheme (de Wilde, 1967). As de Wilde notes, however, there were often inadequate water supplies for livestock and household use at the time of initial settlement. Furthermore, although settlers could obtain seed, fertilizer, livestock, fencing and other inputs on credit, Hazlewood (1985) attributes shortages of some inputs to many settlers' inability to achieve target incomes.

Each scheme was advised by virtually the same number of staff, regardless of scheme size and in spite of the fact that high-density schemes were significantly more populated than low-density schemes. This is significant for the provision of extension services because the high-density schemes contained large numbers of landless settlers with limited agricultural experience, who were most likely in need of more intensive extension services; at least during the first years of settlement (Leo, 1989).

Assessment of Resettlement in Kenya

7. Post-Reform Agrarian Structure

Since resettlement, most of the organizational changes in agriculture have occurred in the small farm sector, leaving the large-scale farming sector basically intact. Most of the plantations and ranches remained under the control of non-Africans since these farms were not easily subdivided and therefore had to be purchased as complete units, at higher prices (Senga, 1976). The large farm sector, particularly in the middle and lower size groupings (200-2000 hectares) decreased in size (based on data from 1960 to 1973), while the number of farms smaller than 100 hectares increased (Senga, 1976). The increase in the number of certain sizes of large farms is due to the repurchase or lease of smallholder plots by larger farmers after redistribution (Cohen, 1980). There is no policy limiting or prohibiting land concentration, even though the data point to greater efficiency in smallholder agriculture.

In sum, of a total of 50 million hectares of agricultural land, the government purchased 1.7 million hectares of land (roughly 3%). As of 1978, 800,000 hectares of this area had

been transferred to smallholders, 860,000 hectares transferred as larger holdings,⁴⁶ with 100,000 hectares remaining under non-Kenyan ownership (House and Killick, 1983).

Therefore land ownership in Kenya remained skewed after the reform. For example, one third of all agricultural land is still held in large farms, 60% of which are holdings over 100 hectares (Cohen, 1980). Within the smallholder sector, 52% of the smallholders own less than 15% of the total agricultural land, in holdings that average two hectares or less (Cohen, 1980). In addition, as of 1980 there were still an estimated 300,000 landless, or 19% of Kenya's 1.7 million rural households, who could not afford to purchase land since the emergence of a land market and title security had caused prices to increase (Cohen, 1980; Collier and Lal, 1986).⁴⁷

8. Agricultural Production and Income Distribution

Several studies reached similar conclusions regarding growth in output and income for settlement farmers in Kenya. Von Haugwitz (1972) found that for the period 1964 to 1967, farms at high altitudes without permanent crops achieved higher levels of output and net farm profits than low altitude farms; even though the low altitude farms often had more available hired and family labor, as well as more credit and capital invested per acre. The rate of increase in output and net profit was higher on the high-density farms than on the low-density farms. When he compared high and low-density farms over the whole program, von Haugwitz found neither farm type was superior because at low altitudes the low-density farms performed better but found the inverse at high altitudes.

Leo (1989), however, cites data from the Government of Kenya's Economic Appraisal of the Settlement Schemes (1964-68) showing that output and farm profits per acre increased more rapidly on high than on low-density schemes. Clayton (1978) points out that much of this rapid increase in farm output can be attributed to an expansion in area cultivated.

Data on returns to capital invested on the settlement farms also indicate that high-density farms out-performed low-density farms. From this data it appears that farmers achieved higher cash surpluses (or in the early years, lower cash deficits) on the high-density schemes, although overall a greater percentage of low-density farms achieved positive cash surpluses (von Haugwitz, 1972). This is significant because the government originally designed the high-density farms to provide much lower target incomes than the low-density farms. However, many farmers did not reach the targeted income level for their farm type (Clayton, 1978; Leo, 1989). In fact, during the period 1964 to 1968, the greatest proportion of farms attaining their target income was 69% for the lowest target income group (Leo, 1989).

Hunt (1984) provides comparative data for settlement schemes (1967/68) and for large farms (1970/71). Her study shows that in both sectors, the smallest size of farms achieved significantly higher output per acre than larger sized farms, which supports the proposition

⁴⁶ It appears that by 1984, half of these large farms would be subdivided into smallholdings, leaving approximately 430,000 hectares still under individual ownership (House and Killick, 1983).

⁴⁷ In fact, a study by Migot-Adholla reveals that settlement officers encouraged absentee urban-dwellers with sufficient income to purchase land from smallholders who defaulted on their loan payments.

that labor productivity and output/area unit are greater on smaller farms than on larger farms.⁴⁸ This was attributed to a higher cropping intensity and a more intensive use of grazing land on the smaller farms. The data also revealed that as farm size increased labor inputs per acre decreased.

Data from the traditional small farm sector indicated some of the same relationships found in the settlement and large farm sectors (Hunt, 1984), including an inverse relationship between farm size and output. While the average farm operating surplus per hectare was greater for the smallest size farms (particularly those under 0.5 hectare, or a little over 1 acre), income per household member increased with farm size, partly because household and farm size are positively correlated. The fact that smaller farms achieved higher returns may be explained by more intensive labor use and management (Hunt, 1984). These data point to a greater efficiency in resource use on smaller farms (higher output and sales per hectare, higher use of labor per unit of output and lower use of capital and foreign exchange-intensive resources per unit of output) implying that both efficiency and equity can be achieved through land redistribution (Hunt, 1984).

9. Employment Generation

Farming patterns on the settlement schemes changed very little from those practiced by the large-scale farmers who formerly owned the land. The settlement farmers, however, employed more labor intensive methods of production instead of the highly mechanized methods used by the large-scale farmers. As a result, although wage employment decreased as the large-scale farms were broken into smallholdings (Maitha, 1976), redistribution created greater employment opportunities for smallholders and their families. Surveys of settlement farms from 1964 to 1967 indicate that an average of 319 adults were employed per 1,000 hectares on high and low-density schemes, a number much larger than those employed by large-scale farms (Clayton, 1971).⁴⁹ When both family and hired labor were included, Clayton found that about 568 workers were employed per 1,000 hectares on rainfed settlement schemes.

In comparison to employment generated on other types of settlement schemes and farms, rainfed smallholder settlement employed more workers than the large farms owned by Africans, while the more capital-intensive irrigation schemes employed nine times as many workers, or approximately 2,807 persons per 1,000 hectares (Clayton, 1971). However, settlement alone was unable to generate sufficient employment during this period (1964-67) since employment increased by 2.8% annually while the labor force grew by 3.5%.

10. Settler Welfare

⁴⁸ Smallest size category refers to those farms under 20 acres (8 hectares) in the settlement sector and under 250 acres (100 hectares) in the large farm sector. It should be noted that many settlement plots are from 8 to 24 times larger than the typical Kenyan smallholding of 0.5 to 1.5 hectares (Hunt, 1984).

⁴⁹ Although her calculations for labor inputs are based on a worker-equivalent per 1,000 acres, Hunt's (1984) data from 1967/68 show the same pattern of employment generation. For example, for settlement farms under 10 acres, a total of 808 workers are employed (781 family laborers and 27 hired workers). Using the same worker-equivalent, large-scale farms under 250 acres employed a total of 93 workers.

It is virtually impossible to quantify the effects of Kenya's land redistribution on the poverty and inequality under which a large percentage of the rural population lived. However, of the 71,000 families affected, not all were given equal access to productive opportunities in agriculture. House and Killick (1983) argue that by providing land to numbers of landless and poor families, resettlement reduced poverty and land hunger, encouraged increased smallholder production and generated higher incomes in the highland areas.

House and Killick (1983) also found that racial inequality between European settlers and Africans was most likely reduced by the transfer of resources, even though this also permitted a small landholding class of wealthy Africans to emerge, further differentiating the African population. Furthermore, those who still farmed in the traditional smallholder areas and the resettlement farmers felt that the resettled farmers benefitted from improved access to services and resources, which created additional perceptions of inequality.

The government did not always accord the same opportunities to the landless as to landed individuals. According to Leo, "settlement involved an accommodation of landless people, but the accommodation was not designed to offer them a serious opportunity for prosperity, even at a peasant level" (1989: 120). Consequently, in order to stifle any continuation of the Mau Mau rebellion, the landless were dispersed through resettlement to assert control over them and partly assuage their land hunger. They did not, however, receive the high quality land allocated to the more prosperous peasants on the low-density schemes (Leo, 1989). Hazlewood (1985) also found that the need to "make settlement pay" influenced the selection of settlers to the point that many landless did not benefit from resettlement because they showed less ability to repay loans for their land.

Leo (1989) illustrates that throughout the planning and implementation phases of Kenya's resettlement program, the high-density settlements were established to meet political objectives, while the low-density settlements were intended to be more viable for smallholder agriculture. Even so, there are data to support the thesis that many settlers on high-density schemes achieved cash surpluses and increases in agricultural output in spite of the biases against them.

11. Credit and Debt Repayment Capability of Settlers

Low repayment rates and high indebtedness among settlers on the resettlement schemes can be attributed, for the most part, to oversights in planning. First, the budgets developed for the schemes did not provide sufficient income to meet a family's cash expenditures (von Haugwitz, 1972). Second, it was planned that a farm would achieve full production in four years. However, the first loan installments were due in full at the end of the first six months and settlers often had difficulties generating sufficient income to begin payment on these installments (von Haugwitz, 1972).

Third, there was little allowance in the farm budgets for crop failures due to drought, payment delays, heavy plowing charges levied by private firms or the obligation of cooperative members to purchase any capital equipment left on a farm (Harbeson, 1984). Many farmers accumulated greater debt in drought years and could not make their loan payments which then accrued an annual interest charge of 6.5% (von Haugwitz, 1972). As a result, the high repayment installments and interest on subsequent defaults reduced settlers' ability to make improvements to their farming operations (von Haugwitz, 1972).

De Wilde (1967) found that repayment rates were lower among the high-density farmers than low-density farmers. This is consistent with data on farms achieving positive cash surpluses. In addition, settlers on the low-density schemes were generally better managers

and farmers who started with more working capital and were thus capable of producing a higher yield per acre (von Haugwitz, 1972). A greater number of low-density farmers achieved cash surpluses than high-density farmers, yet the proportion of low-density farms was consistently less than 50% (Leo, 1989), roughly equivalent to the total percentage of loans repaid (von Haugwitz, 1972).

Furthermore, there were different cultural perceptions among the tribes regarding their obligation to repay debt on land that formerly belonged to European settlers. Many of the new settlers still felt that the redistributed land belonged to them traditionally, leaving them with little incentive to make the loan repayments (de Wilde, 1967; Leo, 1989).

Heyer (1976) cites that low repayment rates on settler loans was the primary reason why the settlement schemes were not successfully integrated into the national program for smallholder development. The large expenditures on resettlement were eventually criticized, leading to staffing cutbacks on many schemes that often left them understaffed compared to the other smallholder areas (Heyer, 1976).

12. Economic Growth

Land resettlement in Kenya was achieved without any decline in national agricultural production (Collier and Lal, 1986). During the years when most resettlement was carried out, 1964 to 1972, gross domestic product increased annually by 6.5%. Marketed agricultural output increased by 6.7% annually, while agricultural subsistence output grew by 3.7% (population growth, however, reached almost 4% annually), and manufacturing increased by 12% per annum (Hunt, 1984). However, after 1973, the Kenyan economy began to show signs of instability and the average growth rate began to fluctuate at lower levels (Hunt, 1984).

APPENDIX B
AGRICULTURE SECTOR DATA FOR ZIMBABWE

APPENDIX B

AGRICULTURE SECTOR DATA FOR ZIMBABWE

Table B.1: Structural Change in Zimbabwe's Large-Scale Commercial Farm Sector, 1979-1988.						
Farm Size	1979		1988		Net Change	
	No. farms	Area (ha)	No. farms	Area (ha)	No. farms	Area (ha)
< 200 ha	1,324 (21.7) ^a	104,674 (0.7)	947 (20.3)	75,136 (0.7)	-377 (8.0)	-29,538 (0.3)
200-399	445 (7.3)	125,805 (0.8)	367 (7.9)	104,000 (0.9)	-78 (1.7)	-21,805 (0.2)
400-599	446 (7.3)	220,176 (1.5)	392 (8.4)	192,344 (1.7)	-54 (1.2)	-27,832 (0.2)
600-799	425 (7.0)	294,387 (2.0)	356 (7.6)	246,837 (2.2)	-69 (1.5)	-47,550 (0.4)
800-999	423 (6.9)	374,916 (2.5)	348 (7.5)	309,067 (2.8)	-75 (1.6)	-65,849 (0.6)
1000-1999	1,372 (22.4)	1,931,189 (12.8)	1,063 (22.8)	1,491,043 (13.3)	-309 (6.6)	-44,146 (3.9)
2000-3999	905 (14.8)	2,503,591 (16.6)	673 (14.4)	1,853,162 (16.5)	-232 (5.0)	-650,429 (5.8)
4000-5999	289 (4.7)	1,423,735 (9.5)	182 (3.9)	893,705 (8.0)	-107 (2.3)	-530,030 (4.7)
6000-7999	142 (2.3)	974,229 (6.5)	99 (2.1)	687,039 (6.1)	-43 (0.9)	-287,190 (2.6)
> 8000	342 (5.6)	7,111,514 (47.2)	233 (5.0)	5,361,053 (47.8)	-109 (2.3)	-1,750,461 (39.9)
Total	6,113 (100.0)	15,064,216 (100.0)	4,660 (100.0)	11,213,386 (100.0)	-1,453 (23.8)	-3,850,830 (25.6)

^a Figures in parentheses are percentages of column totals for numbers of farms and land area.

Source: adapted from M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 29).

Table B.2: Growth Rates of National Crop Production in Zimbabwe (%), 1973-1988.

	Area Growth Rates		Production Growth Rates		Yield Growth Rates	
	1973-80	1979-88	1973-80	1979-88	1973-80	1979-88
Cereals:						
Barley	0.8	0.2	7.1	-1.1	6.3	-1.3
Maize	-4.3	-5.5	-4.0	-5.3	0.3	0.3
Sorghum	-5.0	-3.7	4.2	-1.9	9.7	1.9
Wheat	6.9	0.9	10.2	2.1	3.1	1.2
Industrial:						
Tobacco	2.3	0.0	7.3	2.0	4.9	2.0
Coffee	6.0	4.4	20.3	6.9	13.5	2.3
Cotton	0.2	-1.6	2.9	0.3	2.7	1.9
Soyabeans	26.1	4.2	35.4	4.0	7.4	-0.2
Sunflowers	-9.8	18.7	-7.9	17.5	2.1	-1.0
Groundnuts	-5.9	0.6	6.5	1.4	13.2	0.9
Dry Beans	-15.1	8.8	-11.3	15.0	4.5	5.7

Sources: M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 131-33).

Table B.
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Table B.3: Maize Production on Zimbabwe's Large-Scale Commercial, Communal Area and Resettlement Area Farms, 1978-1989.

Year	Large-Scale Commercial			Communal Area			Resettlement Area		
	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)
1978	201.8	1,114.6	5.523	700.0	450.0	0.643	NA	NA	NA
1979	190.7	721.9	3.786	600.0	420.0	0.700	NA	NA	NA
1980	227.7	910.7	4.000	900.0	600.0	0.667	NA	NA	NA
1981	294.8	1,736.0	5.889	1,000.0	1,000.0	1.000	NA	NA	NA
1982	270.4	1,143.6	4.229	1,100.0	595.0	0.541	NA	0.024	NA
1983	235.2	601.8	2.559	1,050.0	285.0	0.271	5.92	6.6	1.115
1984	250.0	694.6	2.778	1,136.0	454.0	0.400	NA	56.42	NA
1985	205.0	1,112.5	5.427	1,018.0	1,558.0	1.530	54.62	117.00	2.142
1986	200.0	1,197.6	5.988	1,074.0	1,348.0	1.255	74.00	148.00	2.000
1987	140.6	506.6	3.603	943.0	548.0	0.549	121.40	109.26	.900
1988	151.0	682.4	4.519	1,036.0	1,450.0	1.400	113.50	136.20	1.200
1989	130.0	681.8	5.24	920.0	1,062.0	1.154	NA	NA	NA

Sources: M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 152); Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 67-69); K.H. Wekwete, "A Review of the Rural Land Resettlement Programme in Post-independent Zimbabwe," (forthcoming: 22); CSO Crop Forecasting Committee.

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Table B.4: Sorghum Production on Zimbabwe's Large-Scale Commercial, Communal Area and Resettlement Area Farms, 1978-1989.

Year	Large-Scale Commercial			Communal Area			Resettlement Area		
	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)
1978	6.8	15.6	2.29	120	57	0.48	NA	NA	NA
1979	7.5	18.9	2.52	76	30	0.39	NA	NA	NA
1980	6.8	16.3	2.40	120	66	0.55	NA	NA	NA
1981	8.4	24.3	2.89	200	100	0.50	NA	NA	NA
1982	7.1	16.9	2.38	200	50	0.25	NA	NA	NA
1983	5.1	7.2	1.41	280	44	0.16	NA	65	NA
1984	8.8	17.6	2.00	156	37	0.24	NA	1.4	NA
1985	13.9	53.1	3.82	211	76	0.36	NA	5	NA
1986	22.0	NA	NA	150	66	0.44	NA	3	NA
1987	5.7	14.4	2.53	164	38	0.23	NA	2.6	NA
1988	3.8	11.4	3.00	206	160	0.78	NA	NA	NA
1989	4.3	14.0	3.26	151	62	0.41	NA	NA	NA

Source: M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 152); K.H. Wekwete, "A Review of the Rural Land Resettlement Programme in Post-independent Zimbabwe," (forthcoming: 22); CSO, Statistical Yearbook, 1989, (1989: 177); CSO Crop Forecasting Committee.

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Table B.5: Flue and Burley Tobacco Production on Zimbabwe's Large-Scale Commercial, Communal Area and Resettlement Area Farms, 1978-1988.

Year	Large-Scale Commercial			Communal Area			Resettlement Area		
	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)	Area (000 ha)	Prodn (000 T)	Yield (T/ha)
1978	55.4	83.1	1.5	381	169	0.44	NA	NA	NA
1979	60.1	107.3	1.79	360	197	0.55	NA	NA	NA
1980	63.7	11.9	0.19	365	231	0.63	NA	NA	NA
1981	39.3	69.1	1.76	367	195	0.53	NA	NA	NA
1982	45.4	88.2	1.94	1,080	774	0.72	NA	0.052	NA
1983	46.0	93.2	2.03	1,400	645	0.46	NA	NA	NA
1984	49.6	115.8	2.33	1,210	774	0.64	NA	0.296	NA
1985	51.0	104.6	2.05	1,700	1,190	0.70	NA	0.109	NA
1986	NA	NA	NA	NA	NA	NA	NA	0.594	1.2
1987	56.3	119.9	2.13	NA	NA	NA	NA	NA	1.3
1988	54.3	112.7	2.08	NA	NA	NA	NA	NA	0.5

Sources: CSO, Statistical Yearbook 1989, (1989: 183); Crop Forecasting Committee (CSO).

Table B.6: Cotton Production on Zimbabwe's Large-Scale Commercial, Communal Area and Resettlement Area Farms, 1978-1989.

Year	Large-Scale Commercial			Communal Area			Resettlement Area		
	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)
1978	86.1	129.0	1.50	41	31	0.76	NA	NA	NA
1979	77.0	130.2	1.69	20	15	0.75	NA	NA	NA
1980	74.9	145.6	1.94	15	12	0.80	NA	NA	NA
1981	58.4	118.0	2.02	59	45	0.76	NA	NA	NA
1982	52.3	104.8	2.00	51	27	0.53	NA	0.79	NA
1983	59.9	111.1	1.85	65	33	0.51	0.78	NA	1.014
1984	72.2	145.3	2.01	100	70	0.70	NA	5.36	NA
1985	70.3	155.0	2.2	130	110	0.85	0.78	9.77	1.251
1986	NA	NA	NA	114	99	0.87	0.99	8.82	0.895
1987	58.6	122.6	2.09	138	83	0.60	1.50	13.50	0.900
1988	60.1	127.9	2.13	161	137	0.85	2.66	19.95	0.750
1989	55.7	112.0	2.01	153	123	0.80	NA	NA	NA

Source: CSO, Statistical Yearbook, 1989, (1989: 181); CSO Crop Forecasting Committee.

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Table B.7: Groundnut Production on Zimbabwe's Large-Scale Commercial, Communal Area and Resettlement Area Farms, 1978-1989.

Year	Large-Scale Commercial			Communal Area			Resettlement Area		
	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)	Area (000 ha)	Prod'n (000 T)	Yield (T/ha)
1978	13.4	12.7	0.950	200.0	100.9	0.504	NA	NA	NA
1979	3.2	7.5	2.324	240.0	100.0	0.417	NA	NA	NA
1980	3.8	10.7	2.779	175.0	67.0	0.383	NA	NA	NA
1981	12.9	18.8	1.456	300.0	100.0	0.333	NA	NA	NA
1982	11.9	16.4	1.374	240.0	95.0	0.396	NA	0.164	NA
1983	10.7	9.2	0.855	180.0	22.5	0.125	NA	0.979	NA
1984	7.0	6.2	0.883	144.0	18.7	0.130	4.2	3.403	0.806
1985	6.9	6.9	1.000	118.0	61.0	0.512	12.3	4.800	0.390
1986	NA	NA	NA	160.0	64.0	0.400	10.2	3.060	0.300
1987	5.1	13.0	2.549	177.0	55.0	0.310	10.8	4.320	0.400
1988	5.5	16.4	2.982	197.0	106.0	0.540	NA	NA	NA
1989	6.0	NA	NA	160.0	72.0	0.450	NA	NA	NA

Sources: CSO, Statistical Handbook 1989, (1989: 179); M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 152, 159); CSO Crop Forecasting Committee.

Table B.8: Livestock Production on Zimbabwe's Large-Scale Commercial and Communal Area Farms (000s head), 1978-1989.

Year	Large-Scale Commercial			Communal Area		
	Cattle ^a	Sheep and Goats	Pigs	Cattle ^a	Sheep and Goats	Pigs
1978	3,077	283	113	2,950	2,366	96
1979	2,709	235	90	2,860	1,700	NA
1980	2,410	220	93	2,869	1,149	39
1981	2,391	212	99	2,895	1,500	84
1982	2,400	193	106	3,240	1,105	76
1983	2,358	201	105	3,105	1,254	74
1984	2,231	226	81	3,087	1,666	94
1985	1,963	153	78	3,342	2,057	104
1986	NA	NA	NA	NA	NA	NA
1987	1,847	NA	NA	3,555	2,456	119
1988	NA	NA	NA	NA	NA	NA
1989	1,776	133	96	NA	NA	NA

^a Includes beef and dairy cattle.

Sources: CSO, Statistical Yearbook 1987, (1987: 158); M. Roth, "Analysis of Agrarian Structure and Land Use Patterns in Zimbabwe," (1990: 44-48)

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Table B.9: Average Area Planted, Yield and Gross Margins for Resettlement Area Maize Production, 1983/84 - 1986/86.

Natural Region	1983/84			1984/85			1985/86		
	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha
II	1.8	1868	98	1.9	2871	315	1.8	2729	197
III	1.6	1092	46	2.0	2465	287	2.0	2126	211
IV	2.3	1377	150	2.0	2497	329	1.9	1764	216
V	1.3	123	3	1.6	1032	133	2.3	161	-5

Source: Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 110).

Table B.10: Average Area Planted, Yield and Gross Margins for Resettlement Area Sorghum Production, 1983/84 - 1986/86.

Natural Region	1983/84			1984/85			1985/86		
	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha
II	0.0	0.0	0.0	0.0	0.0	0.0	0.4	706	75
III	0.7	1730	208	0.4	677	87	0.5	608	65
IV	0.9	797	73	0.6	1383	165	0.6	860	128
V	2.6	97	1	2.9	1057	147	2.3	110	14

Source: Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 111).

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Table B.11: Average Area Planted, Yield and Gross Margins for Resettlement Area Cotton Production, 1983/84 - 1986/86.

Natural Region	1983/84			1984/85			1985/86		
	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha	Area (ha)	Yield (kg/ha)	Gross Margin/ha
II	1.3	1304	366	2.0	1272	424	1.4	1168	610
III	1.0	724	213	1.5	1230	463	1.4	1038	545
IV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Cusworth and Walker, "Land Resettlement in Zimbabwe, A Preliminary Evaluation," (1988: 112).

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