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## ZIMBABWE'S EXPERIENCE IN RESTRUCTURING INSTITUTIONS TO SUPPORT COMMUNAL FARMERS: LESSONS FOR NAMIBIA

C K Eicher and M Rukuni

### INTRODUCTION

Namibia's independence in March of 1990 provides a unique opportunity to examine Africa's collective experience in restructuring agrarian institutions to support communal farmers. This paper is divided into two main sections. The first is devoted to an examination of the basic conceptual issues in strengthening the institutional base for communal farmers (smallholders) (Eicher, 1989; 1990a). Because implementation is the core of development, the second part focuses on Zimbabwe's experience in strengthening the institutional base for communal farmers since independence in 1980. Zimbabwe's record highlights the complexity and the roadblocks in modifying a dual agrarian structure to serve the rural majority.

The thesis of this paper is that, because most countries in Africa are currently at an earlier stage of scientific, institutional, and human capital development than their counterparts in Latin America and Asia, agricultural development strategies and donor assistance in Africa should focus on human and institutional capacity building in the 1990s in order to strengthen the foundation for "getting African agriculture moving". But "getting agriculture moving" in a country such as Namibia requires facing up to the politically difficult choice of reinvesting some of the resources extracted from agriculture back into agricultural research, extension and rural infrastructure at this early stage of development. The politically difficult choice of reinvesting some of the economic surplus back into the agricultural sector is necessary in order to increase the productivity of the agricultural sector and enhance the contribution of agriculture to national development in subsequent stages of development (Timmer, 1990). But the dilemma is that the development literature is virtually silent on how to reform strategic rural institutions to serve both commercial and communal farms without squandering the agricultural surplus. The white-*elephant* Ujamaa villages in Tanzania and unproductive state farms in Ethiopia are constant reminders of how difficult it is to reform the agrarian structure without killing the goose that laid the golden egg (i.e. the agricultural surplus).

After three decades of independence and anemic agricultural performance in Sub-Saharan Africa, we are witnessing a profound turning point in the theory and practice of African development. We are witnessing a long overdue shift away from the North-South transfer of capital, technology, technical assistance and food aid to a paradigm based on the primacy of the market coupled with public investments in the development of human capacity and institution-building (Eicher, forthcoming). African initiative is required to strengthen indigenous training, research and delivery systems to support smallholders or communal farmers, the common term used in Zimbabwe, Namibia and South Africa. The distinguished educator from Burkina Faso, Joseph Kizerbo, emphasizes the need for a capacity-building model to build Africa "from the ground up". This theme of investing in research and in people is consistent with human capital theory pioneered by Nobel Laureate T. W. Schultz. Schultz (1981) contends that "The decisive factors of production in improving the welfare of

poor people are not space, energy and cropland; the decisive factors are the improvement in population quality and advances in knowledge".

But an initiative to strengthen Africa's human capital and the institutional base for communal agriculture must emerge from Africa. The routine tailoring of African strategies to the changing fashions of donors over the past 30 years must be put to rest. African governments are slowly learning how to blend indigenous farm practices with imported technology to develop packages of new technology and institutional support systems for communal farmers that satisfy gender, profitability, and ecological considerations. The process of developing policies, technologies and delivery systems for smallholders is one of the major development challenges of the 1990s.

### **THE BASIC QUESTION FOR A NEW NATION: A GROWTH OR DEVELOPMENT STRATEGY?**

In developing Namibia's agricultural strategy for communal farming for the medium term, i.e. the next 10 years, a vision of the future should flow from a deep understanding of its past as well as the experience of neighboring countries with similar ecologies and similar problems. But before agricultural economists in Namibia get too deeply involved in the details of developing an agricultural strategy, it would be instructive for them to examine why most African nations opted for an economic growth strategy at independence in the 1960s rather than a development and human capacity-building strategy. In 1960, when 17 African nations won their independence, there was no clear distinction between the term "development" and the term "growth" in the endless academic debates on how new nations could skip stages of growth and catch up with industrial nations. Both terms were used interchangeably by academics and African policy-makers in the 1960s. But in practice, African planners and their foreign advisors consistently opted for economic growth strategies that emphasized capital accumulation, industrialization and a heavy reliance on foreign aid to achieve high rates of economic growth.

With the benefit of hindsight, it is now obvious that at independence in the 1960s and 1970s, African nations should have pursued development rather than economic growth strategies. These strategies should have given priority to improving the capacity of individuals and groups to identify and seize opportunities, to strengthen infrastructure and institutions, and to accelerate the development and expansion of the market economy. Instead, political leaders developed various state control models which created and rewarded rent-seeking behavior rather than entrepreneurial skills and market development. In agriculture, instead of pursuing a strategy to maintain the competitive position of Africa's smallholders in world commodity trade, many newly independent countries opted for directly productive state investments in agriculture, and imported a number of "poisoned gifts" such as Israeli Moshav farm settlements in Nigeria, Soviet state farms in Mozambique and Ethiopia, and Ujamaa villages in Tanzania, an offshoot of the Chinese commune system (Eicher, 1990b).

In retrospect, on the eve of independence in 1960, African politicians, planners and foreign advisors fundamentally misread Africa's early stage of development because they generally believed that the major constraints on development were a shortage of capital and technical skills, the colonial legacy, unstable commodity prices and unequal terms of trade. But after 30 years of independence, it is now painfully clear that many African nations are at a much earlier stage of human capital, and scientific and development and institutional

maturity than their counterparts in Asia and Latin America.

### **INSTITUTIONS, SUSTAINABILITY AND AFRICAN DEVELOPMENT**

In this paper, we shall use a broad definition of institutions to include institutions and organizations and the rules and conventions that govern them. Over the past two decades, there has been a lack of hard analytical and empirical research on the economics, financing and sustainability of strategic national agricultural institutions, such as research and extension services and delivery systems for farmers.

Because of this historical neglect of institutions and the failure of structural adjustment programs to increase the aggregate supply response for agriculture in numerous African nations, the study of institutions is growing in popularity among economists. In a pioneering investigation of the economic development process in 23 countries over the 1850-1914 period, Morris and Adelman (1989) recently concluded that institutions mattered most in distinguishing between country groups experiencing more successful and less successful economic development. Also, they noted that "promotion of the current fad for free markets, free trade and individual incentives will not produce structures of change that are likely to be good for long-run, widely diffused growth and raise the living standards of most of the poor" (1989:1428).

Without question, there is little theoretical, conceptual, or empirical literature on rural institutions in Africa to guide policy-makers on how to develop efficient and equitable institutions to serve communal farmers and herders. This explains why Zimbabwe's experience over the past decade is relevant to Namibia.

Because human capital, technology and institutional innovations tend to be complementary inputs in agricultural production, a conceptual framework to guide the strengthening of the institutional base for smallholder agriculture should include the following public and private institutions:

- farm organizations, commodity groups, and other clientele groups that influence farm policy and agricultural research priorities
- training institutions such as colleges and faculties of agriculture
- technology-generating institutions, both public and private
- private and public organizations that make up the delivery systems for both purchased inputs for farmers as well as the marketing of farm products
- the Ministry of Agriculture, and
- the political system that shapes national agricultural policy.

Bonnen (1990) has attempted to integrate these "development institutions" into a conceptual framework that helps understand what "drives" the agricultural development process. The practical message that emerges from Bonnen's analysis is that donors and international organizations that pursue a piecemeal, project-by-project approach to strengthening one agricultural institution at a time are avoiding the tough question: the development of a viable institutional structure for rural society. In short, the issues of coordination and sequencing of public and private investments in rural institutions to serve communal farmers are only a subset of the broader issues involved in the development of a viable set of institutions for rural Namibia.

## **ZIMBABWE'S EXPERIENCE IN RESTRUCTURING INSTITUTIONS TO SERVE COMMUNAL FARMERS: 1980-90**

Cecil Rhodes colonized Zimbabwe in 1890, and European settlers started farming six years later in 1896. For the next 84 years, research, pricing, marketing, and credit policies directly and indirectly promoted the interests of white farmers and discriminated against black smallholders. This explains why Zimbabwe inherited a dual agrarian structure at independence in 1980 that consisted of large-scale white farms and small-scale farms operated by black peasants. After independence, Zimbabwe discontinued the classification of its agrarian structure by race. The white commercial farms, for example, were described as large-scale commercial farms; the medium-sized farms owned by blacks were classified as small-scale commercial (SSC) farms and the black farms in communal areas were classified as communal farms (Chavunduka, 1982). Land in commercial farms continues to be privately owned while land in the communal areas is farmed under traditional tenure rules. At present Zimbabwe's farms are classified as follows:

- large-scale commercial: 4 500 farms - 15.0 million hectares
- small-scale commercial: 8 500 farms - 1.5 million hectares
- communal farms: 800 000 farms - 18.0 million hectares.

Zimbabwe's agricultural policy since 1890 has been punctuated by various land ordinances that funneled the control of the prime agricultural land into the hands of white commercial farmers (Rukuni, 1990). Starting around 1950, the productivity of large-scale agriculture increased as a result of previous investments in research, extension and credit institutions for commercial farmers and the buoyant international commodity prices of the fifties. For example, Zimbabwe initiated research on hybrid maize at the Harare research station in 1932 and seventeen years later Zimbabwe became the second country after the United States to market hybrid maize seed. The combination of the hybrid maize varieties and nitrogen fertilizer led to a maize production revolution by large-scale farmers, starting around 1950. Nevertheless, from 1950 until independence in 1980, the black smallholder sector was primarily engaged in subsistence farming because of discrimination and the lack of supporting institutions such as agricultural research, credit, seed multiplication and marketing services. Moreover, the communal extension service under the Ministry of Internal Affairs did not have appropriate technology packages for black smallholders because it was not strongly coupled with a research system that had a political mandate to serve smallholders.

Throughout the colonial era, white agriculture was the responsibility of the Ministry of Agriculture while black agriculture fell under the Ministry of Internal Affairs. At independence the basic agricultural institutions - research, extension, credit and marketing - were primarily servicing large-scale agriculture. At that time, Zimbabwe's first black premier announced a policy of national reconciliation in an attempt to rebuild the economy and unite the society after a bitter racial war.

The three objectives of Zimbabwe's economic policy at independence were to repair the physical infrastructure, develop skilled manpower and address the land problem (Blackie, 1982). Zimbabwe's post-independence agricultural policy was consistent with the overall philosophy of Growth with Equity (Zimbabwe, 1981). In implementing the Growth with Equity policy, agricultural institutions were charged with addressing the needs of smallholders while, at the same time, maintaining some support for large farms.

The balance of this paper examines Zimbabwe's experience in strengthening five basic

institutions for communal farmers (smallholders) and small herders in the first decade of independence, 1980-90, namely:

- land resettlement
- agricultural research
- agricultural extension
- agricultural credit
- livestock services.

### **Land resettlement**

Land is arguably the single most important reason that led to the liberation war, and is a problem that will not fade away. For example, soon after independence, Blackie (1982:151) reported that "the unbalanced agricultural sector that evolved under successive Rhodesian governments needs urgent overhauling if it is to continue to play its part in the development of the country. This task is both the most expensive and the most explosive".

In 1980, the government embarked on a land resettlement program and purchased land on a "willing seller - willing buyer" basis, according to the terms of the Lancaster House agreement that led to the independence constitution. The land resettlement program was initiated in 1980 to resettle 17 500 families over five years on approximately 1.2 million hectares of land previously owned by European commercial farmers. But in 1981, the government revised the target to 162 000 households on 10 million ha of land over the same period. The UK made an initial financial grant of 20 million pounds sterling in 1981 and pledged an additional 10 million pounds to help implement the program (Cusworth & Walker, 1988).

To launch the resettlement program, a new Ministry of Lands, Resettlement and Rural Development was established in 1980. But the newly established Ministry "was from the beginning squeezed between two established ministries" (Wekwete, forthcoming, p. 12). For example, the Ministry of Agriculture retained its sectoral responsibility for agriculture (communal and commercial farms) and provided overall technical expertise to resettlement areas by assessing areas for resettlement, developing farm plans and providing extension assistance through AGRITEX. Moreover, the Ministry of Local Government and Town Planning also played a significant local governance role in the resettlement areas.

Zimbabwe has pursued two main resettlement models. On Model A schemes, farmers are settled on the same traditional communal tenure system found in communal areas. The resettlement farmers, however, have larger land holdings than the 20 ha average in communal areas (CGA, 1988). Under the Model B resettlement scheme, a group of farmers is settled on a large-scale farm and then they try to operate it as a collective farm. The Model A schemes, in general, have been fairly successful in quickly settling farmers. But the Model B schemes have been a general failure, partially because most of the commercial farms acquired by the government had been abandoned during the liberation war, and their physical plants largely destroyed. Plagued by the lack of finance, limited managerial skills, and a high membership turnover, most of the Model B resettlement schemes are technically insolvent.

When the Lands Acquisition Act was passed in 1985, it was hoped that it would strengthen the power of the government for the compulsory purchase of land. But Wekwete (forthcoming) argues that the Act was passed at a time that the government had cut back on resettlement, had dissolved the Ministry of Lands, Resettlement and Rural Development and



divided its responsibilities between the Ministry of Agriculture and the Ministry of Local Government. In 1985 The Ministry of Agriculture was renamed the Ministry of Lands, Agriculture and Rural Resettlement.

By mid-1990 about 52 000 families had been resettled on 2.5 million hectares, on a willing seller - willing buyer basis with 85 percent of the settlers coming from the communal areas (Kunasingham, 1990). A number of familiar obstacles have plagued the resettlement program. First, land is costly and very few donors have stepped forward to help finance the land transfer program. Second, since the government has been buying land on a "willing seller - willing buyer" basis, the commercial farms purchased have been mainly in marginal areas where water is generally a limiting factor. Roads, schools, shopping and health facilities are also limited in these often remote areas. The combination of limited finance and high cost of infrastructural development for settlement has hindered progress.

In summary, Zimbabwe's settlement program has assisted about 52 000 families in the first ten years of independence. Although this is less than the revised target of 162 000, it is substantially larger than the initial 1980 target of 17 500. On balance, Zimbabwe's settlement program is a qualified success. But three problems remain. First, because of rapid population growth, the present settlement program is unable to cope with the demographic treadmill and the steady increase in the rural population. Second, many of the poor, landless and inexperienced have not fared well as settlers. The National Farmers Association of Zimbabwe, the farm organization representing communal farmers, has recommended that potential settlers should have some financial resources of their own and some farming experience. A third lesson from a decade of resettlement is the high human resource intensity required to plan, service and staff resettlement areas. Zimbabwe is now ten years old, and its new single-chamber parliament has the power to rewrite the Lancaster House constitution. Land reform is, once again, a topical issue and a new land policy was announced in July 1990. The government plans to purchase five million hectares of land to resettle an additional 110 000 families.

### **Agricultural research**

Established in 1948, the Department of Research and Specialist Services (R&SS) is the most important agricultural research organization in Zimbabwe. The Department is located in the Ministry of Lands, Agriculture and Rural Resettlement. R&SS is responsible for research on all agricultural commodities except tobacco, sugar, forest products, fish, pigs and animal diseases. R&SS is also responsible for services such as the regulation of plants and dairies, meat and cattle grading, seed certification and pesticide registration. Today, R&SS has a cadre of 165 scientific staff and its budget from the government is Z\$25.3 million (U.S. \$10.5 million) in 1990/91. Additional financial research support has been secured from farmers' organizations, and the World Bank/IFAD national agricultural research and extension project.

At independence, R&SS was charged with giving increased priority to the needs of communal areas and adhering to the Presidential Directive of Black Advancement. R&SS responded to this new challenge by appointing a black director in 1983, introducing on-farm research in communal areas, surveying communal areas, and introducing new research projects on agroforestry and small-ruminants. One of the achievements of R&SS from 1980 to 1990 has been the institutionalization of on-farm research and intensifying the interaction between communal farmers, extension workers and researchers (Avila et al., 1989). R&SS

believes that these linkages will eventually pay off in terms of faster rates of adoption of improved technologies. Researchers report that working with farmers under field conditions has become one of the most satisfying parts of their job. While the introduction of on-farm research has brought about a desired re-orientation of Zimbabwe's national agricultural research system, progress in the long run will depend on how well on-farm research findings are incorporated into the fabric of R&SS and the ability of on-station researchers to develop new technologies for smallholders.

But after a decade of independence, R&SS faces a number of formidable problems in delivering on its post-independence mandate of serving communal, medium-sized and large-scale farms. First, there is a need to develop a comprehensive and streamlined strategy for agroforestry, horticulture, and small-ruminant research that is of benefit to communal farmers. More thought needs to be given to the amount of the total research budget that should be allocated for on-farm research. All scientists may benefit from having to spend some of their time on farmers' fields. Second, because of its geographical over-centralization, R&SS is not well-organized to carry out communal area research. Third, although the research budget has been maintained in nominal terms, it has declined in real terms and this makes it difficult to carry out its expanded mandate. Fourth, following the Presidential Directive of Black Advancement and financial incentive for whites to accept early retirement, R&SS lost a considerable proportion of its senior staff. For example, within four years, 75% of the white researchers and technicians employed in the late 1970s resigned to be replaced by mainly young black Zimbabweans (ISNAR, 1988:74). The number of black researchers in R&SS increased from four in 1977 to 115 by 1986. But staff turnover is still high because of poor conditions of service. About 60 percent of the professional staff have less than five years of work experience. Fifth, technologies are generally not available for the low-rainfall, marginal areas where the bulk of the communal farmers live. The 1990s will be a challenging decade for Zimbabwe's agricultural research system.

### **Agricultural extension**

Before independence, the Department of Conservation and Extension provided extension services for large-scale farms while the Department of Agricultural Development provided extension assistance in communal areas. In 1981, the two departments were formally merged to create the Department of Agricultural, Technical and Extension Services (AGRITEX), thus unifying the extension services for the agricultural sector under the Ministry of Agriculture. Zimbabwe's post-independence extension policy dramatically increased the budget for extension and shifted the primary emphasis from assisting commercial to assisting communal farmers. This new policy increased the number of village-level extension workers in communal areas.

Four years after independence, the government secured a World Bank/IFAD loan to strengthen agricultural research and extension. Through this loan, AGRITEX embarked on a number of activities to strengthen extension coverage in communal areas (World Bank, 1983). The loan included the provision of 66 trucks and 200 motorcycles which were sold to extension workers at a tax-free price and a subsidized rate of interest. This scheme has increased the mobility of extension workers and the private ownership of the vehicles has been regarded as a progressive and cost-effective measure because government pool vehicles are generally mishandled and have a short life span.

The World Bank/IFAD loan also included a requirement that AGRITEX would experiment with the Training and Visit (T&V) extension system. The T&V system was subsequently introduced in the Midlands, one of eight administrative provinces in the country. AGRITEX has concluded that T&V is too expensive to be adopted in its entirety. Also, it is felt that the T&V system is too rigid and its implementation often ignores the tradition of the local extension service (Drinkwater, 1987). But AGRITEX does appreciate the equipment that was supplied by the World Bank and IFAD as part of the T&V package.

AGRITEX is experimenting with a number of models instead of prescribing one extension model be applied throughout Zimbabwe. For example, since 1980 farmers have been incorporated into groups in an attempt to achieve the target of one extension worker to 400 farmers. The Group Development Area approach was started in Mashonaland East province, and has slowly been emulated in other provinces. The group approach incorporates training sessions, labor sharing and group lending.

Following the formation of AGRITEX in 1981, a large number of white staff left the extension service because of the Presidential Directive of Black Advancement, a financial incentive for early retirement, and the change in political climate. The loss of experienced staff was a set-back for AGRITEX, at least in the short run. This loss may have been partly offset by the increase in training activities supported by the World Bank/IFAD loan. The training, for staff and farmers, has been reinforced with new equipment such as videos and radios.

In summary, the current extension worker to farmer ratio has narrowed from 1:1 000 in 1980 to the following ratios in 1990: 1:850 in the communal areas; 1:600 in the resettlement areas and 1:150 for small-scale commercial farms. As a result of the policy decision to expand extension assistance to communal farmers since independence, large-scale farmers have had to rely heavily on agribusiness firms and consultants for extension assistance. AGRITEX, however, continues to provide assistance with conservation practices in areas where there is a high concentration of commercial farms. But the small-scale commercial farmers were neglected during the colonial period, and they continue to be neglected today in terms of government support services, including extension. And after a decade of independence, AGRITEX is still pragmatically experimenting with a number of alternative extension models. This is a prudent course of action, because AGRITEX has a formal mandate to assist three groups of farmers with widely different problems, resource bases and opportunities for growth.

### **Agricultural credit**

The Agricultural Finance Corporation (AFC) has its origins in the Land Bank of 1911. The AFC provided credit to white commercial farmers until 1978, when it launched a Small Farm Credit Scheme for communal areas and small-scale commercial farmers. This facility was expanded at independence and roughly 37 000 loans were extended in 1981/82. Without question, the expansion of credit since 1978 made an important contribution to the crop production revolution by communal farmers in the 1980s. In fact, the ready availability of credit was partly responsible for the 45% increase in fertilizer purchased by communal farmers from 1981 to 1985.

The number of loans for communal farmers increased from 18 000 in 1980/81 to 77 000 in 1985/86 and then declined to 44 000 in 1989/90. Three main reasons have contributed to the decline in credit use by communal farmers since 1985/86. First, a high delinquency rate

was experienced in these initial years. Second, recurrent droughts have increased the risk of borrowing and the rate of default. The AFC has responded by becoming more selective. The third problem is the AFC's delay in paying communal farmers because of the use of a 100% stop order (lien) on all crop sales until the loan of a farmer is repaid. The AFC lodges the stop order with the parastatal marketing boards, mainly the Grain Marketing Board and the Cotton Marketing Board. After a farmer delivers a product to a Board, the marketing board then transfers the proceeds to the AFC, which, in turn, deducts any loan repayments before paying the net return to the farmer. This process often leads to delays which are exacerbated by malfunctioning computers. Without question, the stop-order system has its drawbacks and the National Farmers Association representing communal farmers, has officially registered its criticism with the AFC. The AFC is an innovative organization and it is promoting the concept of group lending. Group lending often obviates the need for collateral or guarantees. Moreover, a stop order is generally unnecessary because of the increased security of group lending.

The number of AFC loans to commercial farmers has declined significantly from 2 233 in 1979/80 to 900 in 1988/89 because these farmers have turned increasingly to private banks for seasonal credit. Nevertheless, the total value of AFC loans to commercial farmers has increased from Z\$77.3 million in 1979/80 to Z\$169.9 million in 1988/89 because commercial farmers have secured larger loans from the AFC than before. In fact, the total value of AFC loans to 900 commercial farmers in 1988/89 was more than twice the total value of all AFC loans to small-scale commercial farmers, resettlement farmers and communal farmers. In summary, although the AFC responded magnificently to the challenge of helping communal farmers increase their access to credit in the first half of the 1980s, there are some major institutional and administrative problems facing smallholder credit programs today.

### **Livestock services**

Zimbabwe's experience with communal livestock development since 1980 should be of great interest to Namibia because of the strategic role of livestock in Namibia's rural economy. Zimbabwe has an estimated 5.6 million cattle of which 2/3 are in communal areas. But commercial farmers provide about 80 percent of all beef sold through the Cold Storage Commission.

Livestock policy during the colonial period was generally focused on beef production and various measures to increase the off-take rate in communal areas. During the colonial period, the multi-purpose role of cattle in communal areas was not understood and low off-take rates were generally viewed as irrational behavior or intransigence. But recent off-farm research by R&SS and others have shown that communal families keep cattle for multiple purposes (Scoones & Wilson, 1989). This experience is the same as that of Kenya where cattle perform a number of social, ritual, and economic functions. The relative ranking of these functions will vary widely according to ethnic group, country, ecological conditions, etc. What was earlier alleged to be ultra-conservative behavior of herders in Kenya is now viewed as prudence. It is now obvious that narrow academic debates that polarizes the motives for keeping cattle in terms of profit or wealth is not useful for policy purposes.

Livestock research during Zimbabwe's colonial period focused on commercial farmers with emphasis on breeding animals with high feed-conversion efficiency as well as pen-feeding of beef cattle. These technologies generally bypassed communal farmers. Attempts

to introduce exotic breeds also failed in communal areas.

Livestock productivity is currently low in communal areas. Presently there are no new breeds, management practices or animal nutrition improvements on the horizon for communal farmers and herders. Much thought needs to be given to a strategy to improve natural resource management and communal livestock production. The government has generally recommended rotational grazing systems, a common practice on large-scale commercial farms. Under the traditional tenure system in communal areas, grazing areas are communally owned and rotational grazing is practiced after fencing some paddocks. A number of grazing schemes were established in communal areas after independence and researchers are currently examining the performance of these schemes. Some preliminary findings reveal that fencing might be an unnecessary expense since fences have neither reduced the likelihood of boundary disputes nor have they provided greater management flexibility (Cousins, 1989). The net benefits of fencing are questionable.

Researchers in Zimbabwe are now searching for ways of incorporating cattle into sustainable farming systems because cattle can play a critical role in increasing crop production. For example, studies have shown that farmers who do not own cattle generally achieve farm income levels about half of those who own cattle. Since improved crop technologies generally rely on timeliness of operations, farmers without cattle for draught power generally plant and weed late, thus losing crop yield potential. Farmers without access to oxen also apply less fertilizer (Shumba, 1984). On-farm research is examining ways of reducing the need for cattle in weeding through zero tillage and chemical weeding. Studies are also under way to try and improve feed availability in the dry season. The introduction of pasture legumes is an example (Chinembiri, 1989).

The increase in population densities in communal areas has resulted in a reduction in the average number of cattle per farm household. Small ruminants, particularly goats, as well as poultry are replacing cattle as a source of cash for paying school fees and supplying meat to families. There are an estimated 2 million goats and sheep in communal areas. But Zimbabwe does not have a clear policy on small ruminants and poultry. During the colonial period, goats were actually discouraged because they were perceived to be destroyers of the environment. This policy has been changed and goats are now viewed as excellent users of browse.

Since independence, the government has stepped up attention to animal health in communal areas. Animal diseases, particularly tick-borne diseases, increased during the liberation war when tick-control dipping services were disrupted in communal areas. Also, AGRITEX is currently working with the Department of Veterinary Services to establish some 250 animal health and management centers in communal areas. But the long-term impact of these centers is unknown.

Zimbabwe has found that improving communal livestock productivity is a daunting task. Because of substantial ignorance of livestock development, there is an urgent need for an expanded research program on the technical, economic, social and institutional issues surrounding livestock production and marketing in communal areas.

### **LESSONS FOR NAMIBIA**

Three decades of independence in Sub-Saharan Africa have produced a large knowledge base on why many agricultural and rural development projects are not performing well at this early stage of Africa's economic history and institutional fragility. There is consistent

evidence that human capability and institutional barriers to development were ignored in the drive to increase foreign aid flows to African agriculture - especially during the rapid build-up of aid for direct action projects over the 1973-83 period. Starting around 1983, the foreign aid pendulum swung from project- to policy-based lending. But regardless of whether the focus was on projects or policies, the end result has been the same: the long-run human capability, scientific, institutional and social organizational investments - the prime movers of agricultural development - are being seriously neglected by both African policy makers and donors. There is a need for a fundamental re-examination of the assumptions about Africa's early stage of development, the differential levels of development of various African nations, absorptive capacity, recurrent costs and strategies for building African capacity in research, extension, and training. This requires country-specific and inter-country comparative studies.

Since Zimbabwe spent its first decade of independence addressing the institutional vacuum in the communal areas, its experience is of special interest to Namibia. The first lesson from Zimbabwe's experience is the need for planners in Namibia to abandon the stereotype that motivation of communal farmers is going to be a problem. The collective experience of African nations since 1960 and Zimbabwe since 1980 is that farmers will respond to economic incentives and new technology if they are given access to land, production technology, transport and market opportunities. This means that planners in Namibia should not hire hundreds of new additional extension agents to motivate farmers to produce for the market. Zimbabwe's first decade of independence has demonstrated beyond doubt that communal farmers are keen to increase crop production as soon as the racial barriers to inputs such as credit are eliminated. But the phenomenal growth of maize and cotton production by communal farmers demonstrates that Zimbabwe's success at increasing crop production is not a function of strengthening one institution such as credit, research or extension, but a combination of affordable and profitable technology, support institutions to facilitate the uptake and use of the improved technology, favorable prices and aggressive market development.

The second lesson from Zimbabwe's experience is to adopt a systems approach to strengthening the institutional base for communal farmers by simultaneously developing three strong national institutions:

- a national research system (NARS),
- a national extension system, and
- a modern Faculty of Agriculture.

Namibia should develop a plan to strengthen the three core national agricultural institutions over a period of 10 to 20 years, 1990 to 2010. For example, evidence from throughout Africa shows that it takes around a decade between the conception of research and the generation of new technology for farmers. Likewise, it takes 10 to 15 years of training (B.Sc., M.Sc., and Ph.D.) and on-the-job experience to develop a productive agricultural researcher.

The third lesson is that, even if racial barriers to gaining access to improved seeds and credit are eliminated, it is very difficult to transform an institution such as a credit agency that has historically served large-scale farmers to one that serves a dual agrarian structure of both large and small farms. For example, the dramatic increase in the number of loans for communal farmers in Zimbabwe required the government's Agricultural Finance Corporation (AFC) to revise its operational and administrative structures. The need for

further decentralization of its decision-making process has been recognized. The use of "stop-orders" as collateral is being re-examined. The bureaucratic delays in paying farmers have been difficult to rectify. Side-marketing has also created a problem. The current move towards group lending is a progressive innovation.

The fourth lesson is that communal livestock is an exceedingly difficult subsector to reform. Since much of Zimbabwe and Namibia's natural resource base is suited to cattle and small ruminants, it is important for Namibian planners to study Zimbabwe's as well as the Pan African experience in livestock improvement. For example, researchers and policy makers now recognize the multi-purpose contributions of livestock, particularly cattle, in the life of communal families. Beef is commercially important for large-scale farmers while goats, chicken and pigs are commercially important in communal areas. More research is needed on these animals. The recognition that a crop production revolution requires inputs from animal agriculture is an important lesson of the 1980s. In many ways, the ball is in the court of researchers, policy-makers and service institutions to develop proven and affordable technologies for the owners of smallstock. Unfortunately, there are no new breeds, management practices or animal nutrition improvements on the horizon for communal farmers and herders in Zimbabwe.

The fifth lesson from Zimbabwe is to resist the soft option of allowing foreign aid to pay routine salaries and recurrent costs. For example, Zimbabwe is one of the few countries in Africa that pays virtually all the salaries and operating costs of its national agricultural research services and its national extension services from its government budget. Once a country becomes hooked on foreign aid subscriptions to pay routine operating expenses of various government agencies, it loses control over a vital part of the planning process and it becomes more difficult to resist some of the well-intentioned but ultimately "poisoned gifts" from donors. For example, Zimbabwe has been able to resist pressure from the World Bank to adopt the T&V extension model as the national extension model because it basically finances the national extension budget from its own resources and it has earmarked its own resources to continue experimenting with alternative extension models.

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