LESOTHO

AGRICULTURAL SECTOR REVIEW

September 30, 1986

Eastern and Southern Africa Projects Department
Southern Agriculture Division

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CURRENCY EQUIVALENTS

Currency Unit = The Maloti (singular, Loti), at par with the Rand and circulating jointly with it.

US$1.00 = M 2.00
M 1.00 = US$0.50 (February 1986)

ABBREVIATIONS

BASP - Basic Agricultural Services Program
CPDO - Central Planning and Development Office
FSSP - Food Self-Sufficiency Program
IFAD - International Fund for Agricultural Development
LHWP - Lesotho Highlands Water Project
MOA - Ministry of Agriculture and Marketing
MPEA - Ministry of Planning and Economic Affairs
RSA - Republic of South Africa
SAA - Selected Agricultural Area (under Land Act, 1979)
USAID - United States Agency for International Development

FISCAL YEAR

April 1 - March 31

This report is based on the findings of a mission which visited Lesotho in April–May 1985, comprising Messrs. A. Bose, A. Spurling and C. Hall and Ms. Duer of the Bank, and Ms. L. Sonn (FAO/CP) and Mr. P. Hildreth (FAO/CP, Consultant). Background papers (Agriculture in the Economy; Crop Agriculture; Livestock; and Land Tenure and Agricultural Development) prepared by mission members are contained in a separate volume available from the Eastern and Southern Africa Projects Department, Southern Agriculture Division.
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Table of Contents

I. INTRODUCTION .................................................. 1
   A. Background .................................................. 1
   B. The Economy ................................................. 2
   C. Agriculture in the Economy ................................. 2

II. MANAGEMENT OF THE AGRICULTURAL SECTOR .................. 4
   A. Organization ................................................. 4
   B. Policy Formulation and Planning ............................ 5

III. AGRICULTURAL PERFORMANCE AND LAND MANAGEMENT ...... 7
   A. Agricultural Performance ..................................... 7
   B. Land Management and Tenure ................................ 13

IV. AGRICULTURAL PROSPECTS, ISSUES AND STRATEGY .......... 16
   A. General Prospects ............................................ 16
   B. Proposed Agricultural Development Strategy ................ 18
   C. Elements of the Agricultural Strategy ...................... 19

STATISTICAL TABLES

Table 1: GDP at Factor Cost and Market Prices as Percentage of GNP
Table 2: Suitability of Land for Agriculture
Table 3: Land Under Cultivation per Rural Household
Table 4: Crop Production and Yields
Table 5: Total Supply of Five Major Crops, 1974/75 - 1983/84
Table 6: Fertilizer Use, 1974/75 - 1983/84
Table 7: Grazing Livestock Population
Table 8: Cattle Herd Size Composition, 1974/75 - 1983/84
Table 9: Carcass Meat Offtake

MAP

Lesotho: Relief Map showing Administrative Districts
(IBRD 14282)

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I. INTRODUCTION

A. Background

1.01 Agriculture in Lesotho is a low-yield, high-risk occupation, and there exist alternative sources of relatively high income for those who live on the land. In terms of its contribution to GDP, agriculture has been a declining sector. However, agriculture has received considerable attention in recent years, both in and outside the country, because of its importance to the Basotho people, and its potentially greater importance in the future.

1.02 In 1979, the Bank carried out a comprehensive review of the agricultural sector in Lesotho and published its findings in early 1981.\footnote{Lesotho: Agricultural Sector Review. Report No. 3039-LSO. January 27, 1981. Two volumes.} Several severe constraints were identified, including low motivation to farm, overstocking of cattle and weaknesses in the provision of agricultural services. A two-pronged strategy for the future was proposed: (a) the establishment of clear priorities for agriculture, and (b) policy planning with an awareness of the problems most likely to arise from declining employment prospects and pressures on the land. The priorities proposed by the review included concentration on the more efficient farmers as well as the very poor rural inhabitants, and a shift to more intensive cultivation, especially of high value crops. The Bank's report included recommendations on a number of policy issues, the principal ones being the need to control livestock numbers, and the inadvisability of trying to achieve food self-sufficiency in every year. It also cautioned against organizing production along cooperative lines. Many of the conclusions of this Report still apply. Self-sufficiency in foodgrains remains a central part of the Government's policy and overstocking continues to be a serious problem, despite the Government's efforts to control livestock numbers. It may be noted that there has been no significant move towards cooperative production, although cooperatives are being established with official encouragement.

1.03 Since the 1981 sector Report, agricultural discussions between the Government and the Bank have taken place mainly in the context of supervision missions for the Basic Agricultural Services project (BASP) and the IFAD-financed Credit and Marketing project. In recent years, the Ministry of Agriculture and Marketing (MOA) has carried out extensive reviews of agricultural policies, and has held special seminars on land reform and livestock development; the latter was done following discussions between the Government and the Bank on livestock-related issues in connection with a proposed mountain livestock project.

1.04 The present report is the result of a review carried out by a World Bank mission in April-May 1985. It is concerned mainly with issues of land management, and related questions of tenure, overstocking and lack of commercialization in the livestock subsector, with an overview of crop
agriculture. The report focuses on agricultural policy and strategy and, as such, examines the planning and management of agricultural development, with an emphasis on institutional and administrative capacity.

B. The Economy

1.05 Lesotho is a very small, land-locked country completely surrounded by the Republic of South Africa (RSA). It is mountainous, poor in natural resources, and its domestic economy is one of the least developed on income and resource criteria, although trade and services are well-organized in its cities. Despite political differences with RSA and a preference for self-reliance, Lesotho depends heavily on RSA for paid employment (mostly in the gold and coal mines), imports, transport routes, Government revenues through a customs union, and monetary arrangements through membership in the Rand Monetary Area. The remittances of Basotho workers in RSA constitute over 50 percent of Lesotho's GNP. The price structure of traded commodities in Lesotho is highly influenced by that of the dominant economy of RSA.

1.06 Lesotho's economy grew rapidly in the 1970s due to several positive factors, including increases in workers' remittances, customs union receipts and mining and tourism incomes. Since 1979, there has been a distinct worsening of the economy as the factors responsible for the earlier growth have weakened or reversed direction, resulting in a severe financial problem with which the Government is still grappling. Lesotho depends very heavily on food aid and on external capital and technical assistance to carry out its various development programs. During the 1970s, there was a substantial inflow of external aid to Lesotho, mostly on concessionary terms. This has declined since 1980 because of Lesotho's limited absorptive capacity and the general scarcity of concessionary funds. The Government has taken measures to improve financial management, and the immediate financial and fiscal problems have eased. Meanwhile, real GDP (at factor cost) actually declined during 1981-84, but increased by 3% in 1985.

C. Agriculture in the Economy

1.07 Lesotho's major crop producing area is a belt of western "lowlands" at a minimum altitude of 1,500 m above sea level, making up about 10% of the total land area. The remainder of the country is dominated by plateaus and mountains rising to elevations of over 3,000 m, consisting principally of rangelands used extensively for grazing. Originating in the highest elevations of the Drakensburg escarpment in the northeast, the Senqu River and its tributaries dominate the watershed structure and contain one of Lesotho's most valuable natural resources, viz. surface water at high altitudes. Only about 13% of the land area is considered arable, with up to 3% potentially suitable for intensive cultivation. Because of the country's topography and poor soil types, the area potentially suitable for irrigation is estimated to be about 17,000 ha. Farmers face a very difficult combination of steep gradients, continuously degraded and eroded soils, and low and variable rainfall.

1.08 The small and declining agricultural sector of Lesotho accounted for 23% of GDP during 1983/84, down from 30% four years earlier, and 38% in

2/ A set of nine statistical tables at the end of this report provides information on aspects of the agricultural sector.
1974/75. However, the rural areas are important because over 85% of the population of 1.6 million live in these areas, and about 60 to 70% of the country's labor force obtain some supplemental income from agriculture. By giving shelter and partial subsistence to most of Lesotho's population, the rural agricultural economy provides an important socio-economic base.

1.09 Following a period of substantial growth in GDP during the previous decade, fueled mainly by external factors, the 1980s have seen a decline in domestic output. Falling production in the mining sector has been primarily responsible for this decline, as has the average 10 percent per annum fall in agricultural (primarily crop) production since the beginning of this decade. Real value added attributable to livestock production has declined slightly in recent years, while real value added for crop production in 1983/84 was only one-third of that during 1979/80, due to a number of factors including, in particular, several consecutive years of drought. Production data for the five major crops (see table below) give a vivid picture of this deterioration.

### Crop Production (mt)

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<th></th>
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</thead>
<tbody>
<tr>
<td>Maize</td>
<td>105,674</td>
<td>83,028</td>
<td>76,200</td>
<td>79,384</td>
<td>92,350</td>
<td>89,178</td>
</tr>
<tr>
<td>Sorghum</td>
<td>47,729</td>
<td>26,158</td>
<td>30,687</td>
<td>33,768</td>
<td>54,823</td>
<td>51,290</td>
</tr>
<tr>
<td>Winter Wheat</td>
<td>1,785</td>
<td>4,972</td>
<td>9,158</td>
<td>7,781</td>
<td>18,434</td>
<td>34,159</td>
</tr>
<tr>
<td>Summer Wheat</td>
<td>15,208</td>
<td>9,490</td>
<td>5,652</td>
<td>9,346</td>
<td>9,346</td>
<td>7,480</td>
</tr>
<tr>
<td>Beans</td>
<td>3,517</td>
<td>4,898</td>
<td>1,624</td>
<td>1,338</td>
<td>2,478</td>
<td>7,244</td>
</tr>
<tr>
<td>Winter Peas</td>
<td>55</td>
<td>1,565</td>
<td>2,298</td>
<td>2,289</td>
<td>3,277</td>
<td>4,970</td>
</tr>
<tr>
<td>Summer Peas</td>
<td>3,143</td>
<td>2,960</td>
<td>1,0(9</td>
<td>1,350</td>
<td>1,350</td>
<td>1,350</td>
</tr>
</tbody>
</table>

1/ Averages for wheat and peas are aggregated for an 11-year period, since the breakdown between summer and winter crops is not available for 1984/85.

Source: Ministry of Agriculture and Marketing

While yields remained fairly static, areas planted declined, leaving production at levels much below those achieved just 10 years earlier. Consequently, food imports have increased substantially, while agricultural exports have either stagnated or declined.

1.10 The drought of recent years has not been the only factor affecting output. The terms of trade between agricultural and non-agricultural products have moved substantially against the farmer, as has the ratio of farm input to output prices. Furthermore, despite recent limits placed by RSA on the number of mine workers that could enter the Republic, male laborers are generally unwilling to work at jobs in Lesotho because the return is much less than this reservation wage. In addition, increased mine wages have led to a significant increase in the real level of remittances per mine worker, particularly since 1980. Studies show that on average only 17 percent of total household income in the rural areas is derived from agriculture, much of the remainder being from mine wage income. Since suitable levels of subsistence can be reached by most households through combining all sources of non-agricultural income with small amounts of agricultural production for home consumption, there exists little incentive at present to engage seriously in agriculture, especially after considering the risks.
1.11 About 80% of Lesotho's land area may be regarded as rangeland, with climate, soil conditions and topography more suited to livestock than to crops. The rangeland has been one of the most precious of Lesotho's natural resources. The total livestock population, comprising cattle, small stock (sheep and goats), pigs, horses and donkeys, has fluctuated in the past four decades within the range of 850,000 to one million standard livestock units.3/ The herd's size, composition (mainly as between cattle and small stock), and age and sex distribution, have changed significantly from time to time, responding, inter alia, to drought conditions and economic factors including the level of earnings of mine workers in South Africa, which until recently have enabled the importation of quality cattle. Since 1979, there has been a decline in legal imports from over 30,000 to less than 5,000 head annually. Cattle import restrictions, introduced in 1982, which allowed imports only of slaughter animals and improved breeds, have accelerated this decline.

II. MANAGEMENT OF THE AGRICULTURAL SECTOR

A. Organization

2.01 The Government is involved in the agricultural sector through several organizations: the Ministry of Agriculture and Marketing (MOA), the Ministry of Cooperatives and Rural Development (MCRD), the Ministry of the Interior (MOI), the Cabinet Office and the Ministry of Planning and Economic Affairs (MPEA) mainly through its Central Planning and Development Office (CPDO). Of these, MOA has the largest direct role. Parastatal bodies associated with MOA are involved in input supply, credit and livestock and crop marketing. The Cabinet Office has overall authority for making decisions on key policy matters. MCRD, closely linked to the Cabinet Office, is responsible for "rural development" projects and promoting farmers' cooperatives and other forms of association. MOI is responsible for implementing land tenure legislation. MPEA is responsible for macroeconomic and sectoral investment planning, including capital budgeting (recurrent budgets are prepared by the Ministry of Finance) and coordination of foreign aid. All investment projects require the approval of CPDO.

2.02 The "traditional authorities" in Lesotho (i.e., the hierarchy of chiefs) continue to play an important role, particularly at the local government level and in the management of grazing land. The respective roles of the traditional authorities and the Government are now in a state of flux, as the latter moves to decentralize its administration and promote local cooperatives and village level committees.

2.03 This report reviews the overall performance of the main Government organizations that relate to the agricultural sector. These organizations are generally in need of more experienced technical and professional staff with stronger management skills. There is a serious shortage of skilled personnel nationally, a problem that is further exacerbated by better career opportunities either in the private sector or

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3/ One standard livestock unit is the aggregate of different species of animals weighted as follows: cattle 0.8, sheep 0.2, goats 0.2, horses 0.7, donkeys 0.5.
in the "homelands" of RSA. Moreover, a freeze on the budgets and staffing of MOA and other agencies has been in effect since 1982. Partly as a result of this situation, externally funded agricultural investment projects had usually been run on an enclave basis with specific project staffing and heavy overlays of technical assistance personnel, often outside MOA's structure. The general experience has been that these efforts have not been sustainable after completion of the external funding. MOA's present policy is that all on-going and proposed projects should fit into its organizational structure.

B. Policy Formulation and Planning

2.04 The Cabinet Office is the dominant policy-making authority for all sectors, including agriculture. In principle, the CPDO is responsible for national planning for all the sectors, but in practice its role has been very limited, due to both organizational weaknesses and a lack of qualified staff capable of dealing substantively with sectoral matters. It has been, in effect, an administrative body handling donor missions and preparing annual capital budgets based on submissions from other ministries. Under these circumstances, a major responsibility for agricultural planning has fallen on MOA which, although afflicted with internal weaknesses of its own, has the strongest planning organization among the ministries in Lesotho.

2.05 Overall, the Government has lacked an effective development planning capability. Technical or advisory support to policy makers has been limited. Cabinet subcommittees or interagency committees (such as those for project review, budgeting and development planning) have not been particularly effective, partly because of the dearth of competent senior officials to serve on them. Moreover, the Government's project selection and budget arbitration process does not deal with externally-funded projects, which have constituted the bulk of investments. For the above reasons, Lesotho's external aid program has been largely uncoordinated and driven by the preferences of individual donors.

2.06 The Government is considering proposals for reorganizing the planning machinery with the objectives of strengthening the decision-making process in regard to priorities and investments, and formulating clear policy guidelines for establishment of priorities and processing of development programs and projects. As a first step, the Government is undertaking a major reorganization and expansion of CPDO, supported by a UNDP-financed project. Recently, the Government approved the establishment of a cadre of economists to serve the various ministries. Staff of this planning cadre, administratively under CPDO, would work with MOA and other sector ministries; this is expected to bring about a more coherent vertical integration of planning. The Government also recently decided to establish a high-level National Economic Development Council.

2.07 The Government's primary goals are to improve the well-being of its people and reduce dependence on South Africa. Beyond that, its development objectives were specified in a series of five-year development plans, the last being the Third Development Plan for the period FY81-85. This Plan proposed development in several directions, without defining priorities clearly enough, except in relation to the objective of food self-sufficiency. Historically, investments have taken place usually independently of the five-year plans, as there has been very little linkage between external and local funding available on the one hand, and investments included in the plans on the other. Project investments were
based not so much on any national development strategy as on proposals made at the initiative of external donors. An implicit GOL policy of "maximizing" foreign aid has resulted in a wide variety of projects, all competing for scarce local resources in area development, land use, soil conservation, forestry, planning, farming systems research, and livestock and range management.

2.08 This tendency to maximize foreign aid can be attributed, in part, to the absence of any overriding framework of policy and priorities. Under those circumstances, it would be difficult to evaluate donor or other development proposals and assess the relative merits of each proposal. The framework should become available with the adoption of a "programs" (as distinct from a "projects") approach to development as provided under the Third Plan. This would permit employment of different criteria to assess investment opportunities and priorities. For example, programs could be defined geographically (watersheds, agro-ecological zones) or sectorally (agriculture, livestock) and in terms of priorities (labor-intensive projects in preference to mechanization).

2.09 MOA has made good use of technical assistance (particularly from USAID and UK's ODA) to strengthen its policy and planning units. In recent years, MOA has begun to systematically formulate an agricultural policy. It has prepared a series of policy papers, and undertaken in-depth reviews of livestock and land tenure issues. MOA's policy papers have endeavored to convert broad national goals into sector-specific policies and strategies. MOA's paper on general agricultural policies has proposed a list of desirable objectives, including increased production, income and employment; and growth with equity through assistance to the poorer segments of the rural population. However, there is no clear definition of priorities in relation to the country's scarce human and financial resources. The Government's general objective of food self-sufficiency has been overriding. The current food self-sufficiency program, begun in 1980/81, is a capital intensive operation and has required substantial subsidies. Initially designed and administered by the former Prime Minister's Office, the program was transferred to MOA in 1984. Decisions on this program, the largest single internally funded investment activity, were thus until very recently outside MOA or MPEA.

2.10 Like other ministries, MOA is highly centralized, but is now programmed for decentralization, through the setting up of agricultural offices with separate staffs and budgets in all ten districts. This is part of GOL's plan, conceived in 1980, to decentralize Government activities into "integrated district administrations", a concept which is being piloted in one district, but has yet to be replicated elsewhere. This slow approach to full implementation is probably wise, since decentralization may further exacerbate the problems of shortage of experienced technical staff. Besides a rationalization of management responsibilities at headquarters, other concerns of MOA are improvements in its planning capabilities, reorganization of field services, and integration of completed projects with its regular organization. MOA has a sizeable planning unit including expatriate advisors, but is in need of more experienced nationals. Project and policy implementation functions of the unit have been inadequately carried out because of staff shortages and, more importantly, because of management pressures on the unit for day-to-day administrative work, including liaison with visiting donor agency missions.
III. AGRICULTURAL PERFORMANCE AND LAND MANAGEMENT

A. Agricultural Performance

1. Arable Agriculture

3.01 Arable agriculture continues to be severely constrained by Lesotho's relatively poor natural resource base (limited suitable land, infertile and highly erodible soils and low and erratic rainfall) and its relatively weak economic position, compared to the level of non-farm wages, in particular from mine employment in the RSA.

3.02 About 13%, or less than 400,000 ha, of the land is suitable for cultivation, and this area has been progressively declining due to erosion and urban encroachment. The estimated total cropped area declined from about 341,000 ha in 1973/74 to 228,000 ha in 1979/80, but recovered to 258,000 ha in 1984/85, due partly to the Food Self-Sufficiency Program (FSSP). Field crops, mainly maize, sorghum, wheat, beans and peas, are grown primarily in the lowlands and to a much smaller extent in the foothills.

3.03 Given the harsh environmental conditions, the Basotho traditionally practice low-risk (low-input) forms of agricultural production. Crop agriculture is characterized by a high proportion of subsistence farming, with over 70% of production (90% for grains) retained for home consumption; low and stagnant production with heavy dependence on non-agricultural income; and a preponderance of households headed by females who are traditionally not decision makers for agriculture, but nevertheless carry out most of the agricultural activities without adult males. Within a pattern of stagnant field crop yields, output declined in the three drought years, 1981/82 through 1983/84. Maize production in 1984/85, for instance, supplied less than half the country's consumption requirements. An improved rainfall pattern in 1984/85 has enabled national production to regain the levels attained prior to the 1981/82 decline.

3.04 The Government's policies with regard to crop agriculture, as presented in its Third Five-Year Development Plan, gave priority to food self-sufficiency and the integrated development of rural areas. In addition, several MOA policy papers, issued over the last few years, reflect considerable further thinking on policies for crop development in an extremely difficult environment. They accord very high priority to meeting food requirements by applying "labor intensive and modern techniques", and to implementing land legislation to achieve increased investment and production. The papers also deal with high-value crops, and propose guidelines for the "rationalization" of the extension and research services.

3.05 Actions, however, have not always conformed to stated policies, although recently this situation has improved. For example, the FSSP, launched in 1980/81, emphasized highly mechanized methods of production and initially involved very little farmer participation. Mechanization was
intended to raise agricultural productivity substantially, and to address constraints caused by the scarcity of male labor and management caused by the competition from employment opportunities in RSA in the 1970s. The Program provided input subsidies which, though modest in the first year when rainfall was good, totalled an estimated M 44 million in the first four years. Although there were some initial high yield increases in a year of above average rainfall, the average increase was relatively modest; average returns from maize under the Program were comparable to those achieved by good farmers using improved traditional methods. Thus, highly mechanized, capital intensive methods of grain cultivation have not proved economically viable; nor have such large subsidy expenditures proved to be financially sustainable. To cover the costs of the original FSSP operation, yields of about 3,000 kg/ha for maize and 1,800 kg/ha for wheat were called for; however, actual average yields have been less than half these levels. The Program was restructured about two years ago to require farmer participation in the form of ploughing and weeding. The Program also now requires that farmers pay for the Program-operated disking and planting operations for which credit may be obtained from the Government-owned agricultural bank. A package of inputs (insecticides, fertilizer and seeds) is provided on subsidized terms through Coop Lesotho. Credit may also be obtained for these inputs. The Program has developed a new package of inputs and a more focussed approach to extension, both of which are being tested out. For FY86 the budget for the Program was just over M 8 million, including M 2 million in subsidies. While the restructuring has reduced the amount of subsidy, it remains to be seen whether the Program will generate the needed yield increases to be economically and financially viable.

3.06 The Government has also promoted crop production in the lowlands through the Basic Agricultural Services Program (BASP), which was supported by a number of external agencies, including IDA. Its principal objective was to improve crop yields through additional infrastructure and better technical advisory services from a strengthened MOA. This program, which concluded in March 1985, did not achieve its objectives for a number of reasons, including a general lack of motivation among farmers who were unwilling to incur additional risks by adopting new and unproven technologies. This problem was compounded by the failure to develop suitable technical packages or to significantly improve the efficiency of the extension services. Also, GOL tended to give higher priority to FSSP by, inter alia, assigning a large number of the better qualified extension staff to this Program. Moreover, although BASP was coordinated by a central unit in Maseru, the financing of the different areas by the various donors produced a number of enclaves. The Government has just finalized a completion report on BASP.

3.07 Survey data collected during the implementation of BASP provide considerable information on land holdings, family composition, ownership of livestock, distribution of crop production, extent of fruit and vegetable cultivation and the use of improved seeds and fertilizers. The survey data reveal that 23% of Lesotho's total crop output is produced by only 6% of the producers and that 50% of the value of crops is produced by only 15% of the households. The larger farmers in the lowlands identified in the survey number about 30,000. The survey also shows that grain is still the dominant production activity for most householders. The survey also provides important information on enterprise profiles of lowland holdings,
which could be useful in developing more effective extension strategies for the different districts.

3.08 While GOL programs have had a limited positive impact on crop farming, there has been one significant recent development. Purchases of inorganic fertilizers by lowland farmers outside FSSP have increased very rapidly over the past ten years, along with the uptake of hybrid maize and sorghum seeds. Obviously, active farmers, interested in increasing their yields, are putting together their own input "packages".

(a) **High Value Crops**

3.09 The large domestic demand for fruits and vegetables which is now met from imports, the relatively high returns which could compete effectively with off-farm income, and the absence of any significant economies of scale in production make horticultural production a promising prospect for Lesotho. A positive feature of many of the rural development projects of the 1970s was the inclusion of basic technical work on intensive cropping of certain fruits, vegetables and fodder. For example, the Thaba Bosiu project experimented with alternative cash crops, culminating in the initiation of an asparagus project. MOA has also done preliminary research studies on a range of high value crops including lucerne, vegetables, fruits, essential oils and seed crops, recently supplemented by economic studies on a smaller number of fruits and vegetables, including asparagus. While the various pilot units or experiments gave useful yield data, which indicate the potential for considerably higher returns from these crops than from field crops, experience with large-scale production in area-based schemes has not been satisfactory. The Government understandably and wisely has been cautious about direct involvement in production. Also, MOA is still in the process of getting organized to provide technical advice on these crops.

3.10 Official data on horticultural and other high-value crop production is incomplete. Many of these crops are grown for household consumption, while the bulk of the marketable surplus is sold within local or village areas. A baseline study for BASP showed that a surprisingly high proportion (over three quarters) of households in the area had an average of eight peach trees per family, and that 30% of the households from these sources are producing vegetables, mostly for their own consumption. Cash incomes were very small in most cases, but these crops provide a valuable nutritional supplement. Furthermore, there has been a steady sale of fruit trees by MOA (about 11,000 in 1984).

3.11 Ownership of fruit trees (particularly peach and, in smaller quantities, apple and apricot) is common in the lowlands and foothills, while vegetables are cultivable as a backyard crop countrywide. These are essentially low-yield operations that do not require high labor inputs. The exceptions are tomatoes, potatoes, onions and cabbages, which are grown as cash crops in a number of areas, and sold locally or in nearby cities. These enterprises, however, cannot replace imports of fresh vegetables from RSA. Their production is of variable quality and without assurance of continuity of supply. A few emerging Basotho entrepreneurs have undertaken commercial sales of vegetables, either through purchase from individual small farmers or by combining their own production with imports from the RSA. One company which has an asparagus and mushroom production and
3.12 MOA's policy is very supportive of high value crop cultivation, and reflects an understanding of the management and input requirements. However, MOA may be overly optimistic about the prospects of increasing the output of these cash crops in view of the marketing constraints (particularly competition from RSA). For crops generally, the Government's policy favors implementation of land legislation to grant individual leases, a measure which it believes would provide the security necessary to generate interest in investments.

3.13 The Government is also in favor of establishing Selected Agricultural Areas (SAAs) to spread the cultivation of high value crops. No such SAAs have been set up so far, although in a few agricultural development projects, groups of farmers were expected to produce vegetables under irrigation. These efforts were not particularly successful, mainly because farmers were not involved in design or management, and therefore were not committed to these schemes; and because of marketing problems. In light of such experience, MOA's policy paper correctly recommends the preparation of feasibility studies before starting any major program in high-value crops. Also, the role of research in fostering high value crop production in different agro-ecological zones, and the importance of improving the field services (with specialized staff, especially horticulturalists, at the district level) are recognized. These recommendations are supported, but have yet to be implemented.

(b) Fodder Crops

3.14 As seen from the limited research work carried out, there is potential for growing fodder crops in the lowlands and perhaps in the foothills. Such crops could provide cash income, in addition to serving an important conservation function and enabling better management of livestock. Although small amounts of baled grass and lucerne hay are now produced by farmers, much of the grass and legume hay needed for livestock is imported from RSA. Surprisingly, data on such imports are not available, which suggests inadequate planning for domestic fodder production. Trials in the lowlands, including conservation development areas, have shown that fodder crops can give reasonable returns, as well as enable marginal land to be used for producing stock feed at critical times. Gross margins of M 45-50 per ha for eragrostis (grass) hay, which is comparable to that for maize or sorghum, have been obtained. Higher gross margins have been achieved for legumes and oats.

2. Livestock Subsector

3.15 Lesotho is primarily a pastoral country characterized by communal grazing and the people's strong desire to hold livestock. The livestock sub-sector, which at times in the past had been a source of economic strength, has become increasingly problem-ridden. As in most countries in the region, Lesotho's rangeland is open to communal grazing which, despite administrative and legal measures, is mainly uncontrolled, and is perhaps the most important factor affecting livestock development. The rangeland is now severely overstocked, and Government measures to reduce stocking rates are extremely difficult to enforce.
3.16 The livestock subsector is dominated by smallholders. Although there are a few large herd owners, there is very little commercial or ranching activity. Communal grazing and widespread transhumance, mainly of livestock from lowlands to mountains for summer grazing, characterize the livestock system. Cattleposts located in the mountain ranges are assigned to individuals by the hierarchy of Chiefs, who are responsible for grazing control within the jurisdiction of a large ward. Grazing around the cattleposts is communal. Herds and flocks for summer grazing are brought to these cattleposts from points scattered throughout the lowlands and foothills. Livestock grazed on a particular range may, therefore, come from geographically dispersed villages, whose owners may have little in common with each other. Although still quite prevalent, in the past decade or so, transhumance has declined due to problems of theft, shortage of cattleposts, and the permanent settlement of parts of the mountain ranges.

3.17 Lesotho's livestock market is part of the much larger South African market. Basotho consume sheep, goats, and some cattle. Changes in demand for beef are met largely by supplies from RSA with very little impact on domestic offtake and prices. Also, local butchers prefer to buy their supplies from RSA to get better quality and choice. Domestic beef production involves a very small proportion of the national herd, i.e., offtake rates are very low. Estimates tend to vary and their reliability is not known. A recent study by MOA advisory staff estimated offtake at 5 to 5.5 percent, of which less than 2 percent is actually marketed; the rest is accounted for by home consumption. There is little export at present; however, export possibilities are being explored with the opening of an abattoir (paras 3.18 and 4.41).

3.18 Apart from private butchers in the cities, the marketing system has been developed by the Government. It includes a network of cattle saleyards, a small feedlot near Maseru, an abattoir which was commissioned at the end of 1985, cattle trek routes from the highlands, and the Livestock Products Marketing Service (LPMS), a service arm of MOA, which handles the marketing of all livestock products. The only current marketing activity in which the private sector is involved relates to wool and mohair. Government marketing facilities and services have not generated the expected supply response. Many Government saleyards, at which the Government's feedlot company has been the sole or major buyer, have had to close operations. In addition, LPMS has had to be subsidized. There is no organized internal market for sheep and goats; the bulk of slaughter is for household consumption. In contrast, wool and mohair export marketing is well established, and these two commodities are major export items. A recent problem has been the deterioration in the quality of mohair, due mainly to uncontrolled crossbreeding of sheep and goats and poor management.

3.19 The desire to own and hold stock, particularly cattle, remains very strong in Basotho society as in many other countries in the region for socio-cultural as well as economic reasons. This subject has been studied extensively, and there is agreement on the high value placed on cattle, although there are differences of opinion on the relative importance of the factors responsible for this preference. Some sources claim the predominance of socio-cultural factors: in Basotho society, the status of a family is determined partly by the number of cattle owned. Livestock reinforce the network of social relationships by their important uses in
payment of the bride price, in ceremonial slaughter, and through cattle loans ("mafisa"). Nevertheless, in addition, there is a very strong financial incentive to hold livestock. Livestock held as assets in rural society simultaneously offer a hedge against inflation, and provide a source of income (from the sale of milk and wool and mohair clips, and through "mafisa") and a rate of return higher than that on savings accounts. Banking facilities and opportunities for alternative investments are very scarce in rural Lesotho and, as individuals cannot own land, livestock offer perhaps the only significant means of accumulating wealth. Under communal grazing and a regime of free Government veterinary services, the recurring costs of holding livestock are negligible, reinforcing the individual's financial incentive to hold stock.

3.20 Despite the strong incentive to hold cattle, about half of the rural households in Lesotho, including many landless, do not own livestock, according to official data. Among the owners, the distribution of cattle is highly skewed, as can be expected, with cattle wealth concentrated among traditional authorities, businessmen and senior officials. In Lesotho, as in many other countries, ownership needs to be distinguished from use or holding, due to the very widespread practice of "mafisa" whereby cattle owners entrust their cattle to others who take responsibility for management in return for draft power, milk and sometimes a small fee. Young stock, wool, mohair and hides of the animals are normally taken by the owners. Mafisa, together with sharecropping, ceremonial slaughter and bride price transactions, redistribute the sub-sector's output in patterns which differ from ownership patterns. These divergent ownership, usage and production patterns have an important bearing on policy measures for grazing control, destocking and commercialization of the sub-sector.

3.21 It is generally recognized that the rangeland in Lesotho is overstocked to the extent of 200% to 300% of the estimated "carrying capacity" of the land. A national survey of stocking rates and range characteristics is being carried out under an ongoing USAID range management project. This degree of continuous and uncontrolled overgrazing has resulted in progressive deterioration in the condition of the rangeland, which is manifest in the increasing loss of vegetative cover, depletion of some of the more palatable species of grasses and their replacement by woody shrubs, widespread sheet and gully erosion and increasing sedimentation in rivers. Also, cattle fertility rates have declined. Project experience has not met expectations, and minor improvements to the range, in grazing management and in offtake, have usually not proved to be sustainable beyond the project period. While Lesotho's range has some ability to recover if protected, the continuing pressure of human and livestock populations and the relatively small land area effectively available for grazing because of topography or competing demands, are already causing serious ecological damage.

3.22 The Government recognizes the very serious, interrelated problems of overstocking and deterioration of the rangeland, and programs are being prepared to address them. Major features of the Government's policy include: highly subsidized support services; absence of any taxation of the livestock subsector or of charges for use of grazing land; and legislation in the form of the Range Management and Grazing Control Regulations (1980) which was based on an enabling Land Husbandry Act (1969). Among the major purposes of the legislation were controlled or
rotational grazing on the range, and destocking through culling. The policy regarding livestock was recently presented in an MOA policy paper. The main policy thrusts were: (a) "extensive" range-based technologies in the mountains and foothills, aimed at controlling livestock numbers, with encouragement to set up grazing associations; (b) in the lowlands, a deliberate shift to "intensive" production technologies, e.g., stall-fed beef and dairy cattle and labor-intensive poultry and piggy operations, to ease pressure on land and reduce transhumance; and (c) support for commercial marketing and processing (agroindustries), which was manifest by the establishment of the Government-owned feedlot and abattoir in Maseru. Major elements of strategy in the above policy framework included continued restrictions on livestock imports and proposals for a cattle tax and short-term price subsidy to encourage higher offtake (these proposals have yet to be acted upon).

3.23 Efforts to implement the policy guidelines through projects have not been particularly successful. The provision of marketing trek routes or local auction services has not resulted in any significant increase in livestock offtake. The experience of area-based projects, which included grazing control, pasture rotation and stock reduction, has been unsatisfactory. The only major ongoing project in this field, the USAID-financed Land Conservation and Range Development Project, has had limited success so far in attracting herd owners to the local grazing association and initiating a rotational grazing system. The project is suffering from trespass problems, although not as seriously as similar earlier projects. There has been negligible culling of livestock herds. MOA has been providing modest direct support and technical expertise with regard to these problems. Traditional authorities do not have the resources to carry out control functions, nor are they sure of their role in this matter. Because of the diffused pattern of cattlepost ownership and the wide divergence between social and private costs, community action has been lacking or ineffective.

B. Land Management and Tenure

1. Background

3.24 Until 1979, access to and use of rural land in Lesotho was governed by the traditional laws of Leretholi, which were re-interpreted from time to time to adapt to changing conditions. Under these laws, land was considered to belong to the Basotho people, but was held in trust and administered by the King and his subordinate chiefs, for and on behalf of the people. In practice, the allocation of land was the responsibility of the village headman. Under the laws, every married male was entitled to three small parcels of land for cultivation. These arable lands were open to communal grazing in the off-season and could not be fenced. Once cultivable land was allocated, the allottee was entitled to hold it until he was "removed"; removal could occur by death, abandonment, or expulsion. A distinction was drawn between these cultivable fields and residence and garden plots, also allocated when a male got married. Residence and garden plots could not be taken away under any circumstances and followed different lines of succession from cultivable land — in effect, they were not treated as "land". These rules were mainly applied in the lowlands which were settled and where most of the cultivable lands lay.
3.25 After Independence, questions were raised, mainly by external aid agencies, about the effectiveness of the customary laws, particularly with respect to arable land. First, there was the question of security of tenure. It was suggested that the absence of formal legal titles was a constraint on investment; land could not be used as collateral and title could not be transferred to more efficient operators. Second, the allocations of land were based on estimates of the total area necessary to provide subsistence for a family. In theory, it was argued, this could be a disincentive to the production of surpluses since, if surpluses were produced, the allocated lands could then be considered excessive and the area could be reduced; the laws, therefore, could penalize the successful farmer. Third, it was argued that the laws of Lerotholi were conceived at a time when population densities were low, the highlands were largely used for grazing, and the people were limited to subsistence cultivation. It was suggested that the laws could not function efficiently with a growing population, even considering the absorption of labor in RSA and that informal sub-divisions of land between parents and sons were increasing. In short, the role of the customary authorities and the relevance of the laws to present-day conditions were disputed.

2. Cropped Land

3.26 The Land Act (1979) was conceived initially as a measure to address tenure problems in urban areas. In rural areas, however, the Act provides for the grant of individual, registrable leases to customary allottees. Further, the Government may designate areas for agricultural development as Selected Agricultural Areas (SAAs) with the consent of the "majority" of the occupants in those areas. Once designated, all occupants within the area would then have to register leases and participate in the development program. The Act also aimed to reduce the powers of customary authorities by providing for the formation of land allocation committees which would be responsible for administration. The Chiefs would have nominal roles as committee chairmen. As yet, no SAA has been designated. It was hoped that the granting of leases would afford the security of tenure thought to be lacking under the customary system. Further, it was believed that the Act would form the basis of land consolidation to provide "economically viable units". Only a small number of leases have so far been registered.

3.27 The Act appears to have been based on a misunderstanding of the nature of security of tenure under the customary laws, under which there had been few revocations of allotments, even though allottees had not complied strictly with terms of the allotment. Passage of the Act, however, has tended to increase a feeling of insecurity. Moreover, the Government does not have adequate administrative capacity to implement the Act, and thus there has been a hiatus in implementation. The Chiefs continue as de facto authorities, and the people are unsure as to whether the customary or the statutory law applies. There is also a lack of clarity as to when an area can be designated as a "selected area", and as to the effect of such a designation on residents who decide not to participate. The assumption that passage of the legislation and the potential for obtaining leases would provide sufficient incentive to increase production generally tended to underestimate the attraction of alternative off-farm employment opportunities which, in most instances, would result in far greater income to the farm family than improved cultivation.
3.28 It is interesting to note that the most prevalent changes in land tenure practices that have taken place in recent years have occurred outside the control of either customary laws or formal legislation. There is, first, the cultivation of vegetables and planting of fruit trees. These are done mainly in garden plots. In some instances, "farms" are being redesignated as "gardens" with residences constructed in their midst. Even the formal legislation does not affect garden lands.

3.29 Second, a significant recent development has been the increase in land "loans" or "informal leases" by private agreement, from original allottees to entrepreneurs, most of whom have established vertically integrated high value crop production enterprises. Although such "loans" are outside formal law, and are considered illegal since land cannot be sold or otherwise dealt with, such practices are occurring and are evidence of an incipient land market. In almost all cases the production ventures have been financially successful, with returns from land substantially exceeding those in the past, and some of the allottees provided gainful employment. Agreements for these informal leases contain varying provisions regarding financial consideration and period of the arrangement. As these transactions are illegal, those who enter into them are more likely to be wealthier entrepreneurs.

3. Grazing Land

3.30 Grazing rights and management are defined under traditional law, and reaffirmed or modified by recent legislation. The laws relating to grazing rights have these two features under customary law: there is no necessary relationship between residence and rights to grazing; and cattleposts are owned by persons usually from outside the districts where these posts are situated. In theory, the Chiefs controlled grazing and the closure of grazing areas. In practice, however, it was the village headman and the local chief who did so. Nor could the chiefs be said to have "managed" grazing lands. Management mainly involved closure of grazing areas to permit the land to recuperate. These techniques were adequate when the highlands areas were not populated and were used mainly as a grazing reserve. Settlement in the highlands with increased investment in livestock merely increased conflict and exacerbated erosion potential. Although local chiefs were expected to exercise control over grazing and levy fines, these were, in most instances, uncollectable. Further, with the growth of population, the ownership of cattleposts (restricted to persons resident within the jurisdiction of the chief and not resident within the range area) by outsiders increased tensions.

3.31 The Land Husbandry Act, 1969, and implementing Regulations (para 3.20) were aimed at controlling access to grazing lands, and introducing appropriate practices for erosion control, pasture management and control of livestock numbers. The Regulations increased individual rights over arable lands by entitling the lawful cultivator to all crop residues and designating permanent grasses as "crops", thereby exempting the land sown to such grasses from customary communal grazing. The Regulations reaffirmed the role of chiefs in administering grazing areas (which, as noted earlier, involved little management, and was implemented by local chiefs). MOA was to appoint agricultural officers to "advise" chiefs on range management and other matters (including restriction of grazing rights to certain groups of individuals), and their advice was to be conclusive. The last-mentioned provision, inter alia, has been invoked to establish
grazing associations, which are voluntary organizations. The Act provides for the formation of land committees to manage grazing within the village jurisdiction, and they have now been constituted. However, the Government's capacity to implement the above provisions of the Regulations is limited.

3.32 The grazing Regulations emphasize culling of undesirable stock, controlled access to the range, and rotational grazing to regenerate the range. To date these measures have not had a significant effect on lowering stocking rates. There have been a number of externally-financed livestock projects using land husbandry legislation to attempt range management through local associations, usually "grazing associations" of stock owners. The projects had redefined access rights to specific range areas. Except for the most recent of these projects [the USAID-financed Land Conservation and Range Development (LCRD) project], they were predicated on the expulsion of all stock except those of association members. They have all been afflicted by substantial trespass problems, the major cause of their failure. The LCRD project, requiring the exclusion of stock not belonging to residents of the area, has faced trespass from those whose stock hitherto grazed in the area. Furthermore, even if a defined grazing area reduces stocking rates in the area, the national overstocking problem is being made more pronounced and range management problems more intractable elsewhere.

IV. AGRICULTURAL PROSPECTS, ISSUES AND STRATEGY

4.01 This Chapter synthesizes the analysis and findings of the previous chapters, and constructs a strategy for agricultural development in Lesotho, in light of the prospects for the economy, and the constraints that have been identified. During 1985-86 there have been opportunities for review and discussions between the Government and the Bank on the findings of this report. The Government is familiar with the issues and many of the recommendations. In fact, MOA's policy papers deal with almost all of these subjects, and actions are already being taken in many of these areas. However, to date an overall strategy framework, within which to set priorities, has been lacking.

A. General Prospects

4.02 The prospects for Lesotho's future economic growth continue to be modest. Income from mine work and other employment in RSA or from customs union receipts may decline in the future, in real terms. Foreign aid is unlikely to increase in real terms (not counting aid for the Lesotho Highlands Water Project, LHWP), though so long as policies are put in place to make efficient use of aid, this should not be a constraint to economic growth. The potential impact of LHWP presents the greatest uncertainty in making economic projections for Lesotho. In agriculture, the country will have to contend with an eroded resource base and low returns from the heavy investments already made, providing very little margin for error. Policies will need to be exactly on target to realize the modest growth potential that exists. Agriculture would assume increasing importance with the likely decline in mine incomes, and it is important that all opportunities for agricultural development be fully explored.
1. **Prospects for Employment and Agricultural Earnings**

4.03 Unemployment is a rapidly growing problem, which is compounded by a fairly high population growth rate. Employment opportunities for Basotho in RSA (in mines or elsewhere) are likely to continue declining. Thus the proportion of rural households with access to external income would be substantially reduced over time, as would the average proportion of total household income derived from these sources. At present, about 64 percent of the rural male population aged 20 to 44 are mineworkers. By the years 2000 and 2030, the mining sector in South Africa is projected to employ less than 44 percent and 19 percent, respectively, of the Lesotho population in this age group, assuming that the population and labor force grow at a rate just below three percent during the coming years. The most serious consequence of the combination of a decline in mine employment and slow growth in other sectors will be a rapid increase in the residual labor force available for employment in agriculture, after accounting for those expected to be employed in other sectors, as may be seen from the following estimates:

<table>
<thead>
<tr>
<th>Year</th>
<th>Residual Labor Force Available for Work in Agriculture ('000)</th>
<th>Percentage of Rural Households Receiving Mine Income (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>451</td>
<td>64</td>
</tr>
<tr>
<td>2000</td>
<td>738</td>
<td>72</td>
</tr>
<tr>
<td>2030</td>
<td>1,802</td>
<td>79</td>
</tr>
</tbody>
</table>

Source: Data derived from a study of employment by Meredith Burke, with figures for the year 2030 extrapolated.

4.04 Of the increasing numbers of those likely to seek employment in agriculture, only a part can realistically expect to find such employment. Employment in other sectors and non-farm rural activities is a priority concern of the Government, which had planned a study of rural non-farm employment, with the Bank's assistance; the study has not yet been started. Non-farm rural employment will be dealt with to some extent in the Bank's country economic work. Overall, the implications for the year 2000 are sobering, and those for the year 2030 are daunting.

4.05 The gradual decline in off-farm income, particularly from RSA mine remittances, would not compel farm families to reevaluate their present minimal reliance on agriculture in the near future. But, as agricultural income rises relative to other sources of income, and with population growth, agriculture should eventually become a more attractive employment option. The consequent pressure on land should increase the urgency to deal with land management and tenure issues.

4.06 It is evident that in the longer-term, major structural changes in the agricultural sector will occur inevitably, although this pressure will build up gradually. It is of utmost importance that the structural changes which do take place are in the right direction, and that the planning for those changes begins as soon as possible.

2. **Other Major Changes in the Agricultural Sector**

4.07 There are two projects currently being planned which are likely to have a major impact on the rate and pattern of agricultural development. These are the Lesotho Highlands Water Project and the
The USAID-financed Lesotho Agricultural Production and Institutional Support (LAPIS) Project. The Lesotho Highlands Water project, for which engineering design work is expected to begin in 1987, would be by far the largest development project in Lesotho, with a capital cost estimated at three times the country's GNP, and royalties from the sale of water at more than the value of all trading exports. This project would have a direct impact on agriculture in the following ways: (a) arable and grazing land within the project area would be inundated; (b) a portion of the royalty revenues would be used for agricultural development; and (c) a regional development plan would be prepared for range management, soil conservation, crop/livestock production, and irrigation. It is important that this development plan be drawn up within the framework of an overall national strategy for agricultural development, which is the subject of this chapter, and in coordination with MOA and other concerned agencies.

4.08 The USAID-financed Lesotho Agricultural Production and Institutional Support (LAPIS) project, probably the largest agricultural project for the next few years in terms of expenditures, would provide an opportunity to undertake selected activities in high value crops and livestock development, including establishment of new grazing associations. The Government would no doubt wish to make optimum use of resources to be provided under the project for strengthening the MOA headquarters organization, and links between agricultural research and extension.

B. Proposed Agricultural Development Strategy

4.09 The agricultural development strategy recommended in this review is, with a few exceptions, familiar to Lesotho, since the basic elements are contained in various MOA policy papers. While the latter cover a fair amount of ground, the strategy proposed here is more selective and geared, inter alia, to the limited administrative capacity and scarce management and technical staff of the Government and other organizations.

4.10 The general development objectives may be stated as follows: to increase rural income and reduce rural unemployment, with minimum social disruption or discontent. The proposed short-term strategy for achieving these objectives calls for the further development of intensive agricultural production systems in the lowlands, for which there is good potential. For crops, this would mean: relying on productivity increases by the small number of full-time or commercial farmers; further diversification towards a selected variety of high-value and fodder crops; and a further rationalization of the FSSP by decreasing mechanization, reducing subsidies and relying more heavily on low cost appropriate farming techniques. For livestock, intensive systems would involve mainly stallfeeding and dairying in the lowlands. For the mountains and foothills, an "extensive production system" would continue to make sense, with important modifications to the communal grazing and tenure systems as indicated below.

4.11 Development of intensive production systems need to be complemented with land conservation measures (e.g., pasture development and tree planting) as well as better land use management, particularly in the foothills and mountains. In regard to land tenure on crop land, the continuation of traditional tenure, with the possibility of legalizing the "loan" or "informal lease" of land for production by entrepreneurs, should
provide an adequate production incentive. The Land Act could continue to be applied to register tenure on a voluntary basis. However, for grazing land in the mountains and foothills, the strategy proposed is to expand the defined areas under modified communal grazing to cover all major range areas. Only with such comprehensive coverage would it be possible to avoid the trespass problems previously mentioned. These schemes would need to be managed by owner-user groups such as grazing associations rather than by Government-sponsored SAAs, which should be used very sparingly.

Simultaneously, a reallocation of cattleposts should be undertaken through negotiations, to realign the herd owners' residential and grazing areas. While the formation of such managed grazing areas should proceed apace, covering the entire country with these schemes appears to be a longer term proposition, because of difficulties in organizing managing groups and the time it would take to resolve conflicts of interest and land policy issues. Moreover, establishment of grazing associations nationwide would be predicated to some extent upon a reduction in transhumance pressures from lowlands livestock. Although transhumance has been declining, any significant reduction in the volume of transhumance will take time and depend on the availability of viable economic alternatives; the proposed strategy for lowlands development could provide such alternatives. This highlights the fact that the spread of grazing associations would, to some extent, have to follow the development of intensive agricultural production systems in the lowlands.

4.12 Perhaps the greatest development challenge facing the Basotho would be the achievement of satisfactory long-term changes in land management and tenure at minimum social cost. In the long run, population growth itself would render it impossible to implement the policy of giving all Basotho unrestricted equal access to land. A group representing various economic and social interests needs to be established to continuously debate these issues and provide guidance to policy makers.

4.13 For the Government to play an effective role in the above development strategy, it is essential that the management of the agricultural sector be brought into closer alignment with the country's limited managerial, skilled manpower and financial resources. The role of the private sector should continue to be strengthened. The strategy in this regard would be to redefine more narrowly MOA's responsibilities and strengthen MOA in carrying out these responsibilities while improving MOA's capability to set priorities and coordinate foreign aid. MOA would continue to be responsible for defining agricultural policies and strategies. In this regard, the strategy requires that MOA move towards a "programs" approach to investment planning, and reorient its organization and activities away from direct involvement in production to providing and strengthening its technical support services. MOA's district field services would be developed in line with these changes.

C. Elements of the Agricultural Strategy

1. Land Tenure and Management

4.14 As already discussed, the greatest potential for income and employment generation in the agricultural sector lies in the development of intensive production systems for crops and livestock in the lowlands (and small areas of the foothills), together with controlled, extensive livestock production in grazing land in the foothills and highlands. The implications for land management and tenure are dealt with first.
(a) Cropped land

4.15 In the short term, there appears to be little economic or social justification to interfere with traditional tenure for cropped land. At present, land use rights do not appear to have any significant bearing on agricultural investment incentives, which are now primarily a function of the opportunity costs of farming land compared with external wage employment. The Land Act, 1979, provides for voluntary registration of leases, which gives the Government a suitable vehicle for converting traditional allotments into leaseholds. The very few leases registered so far have not tested the administration, but it is evident that the Government's budget and manpower are inadequate to carry out registration on a wide scale. The Government may wish to consider replacing the review process for individual leases with a broader zoning system based on land use plans. This may require an amendment to the legislation, and a reconsideration of the administrative roles of Government departments, traditional authorities and local committees.

4.16 The practice of land "loans" or "informal leases" (para. 3.29), although on a very small scale, implies the existence of an incipient land market. This practice, although not legally recognized, has encouraged production and some employment to the original allottees. It is recommended that the Government recognize and legalize these informal arrangements. By registering such leases, the Government would be in a position to monitor these transactions to protect the interests of the original allottees.

4.17 The Land Act of 1979 provides for the establishment of an SAA, based on a decision by the majority of traditional allottees. This would imply that the process would not be wholly voluntary. An SAA would also require some direct Government involvement at least in the promotional stage, for which it currently has very little capacity. Previous experience with conservation development area projects (comparable to SAAs) indicates lack of farmer commitment or participation in these state-sponsored endeavors, in addition to marketing and other technical problems. These factors argue for proceeding very cautiously with the establishment of SAAs, which may be appropriate and implementable only in a few, small areas.

4.18 In the long run, the major conclusion from the earlier analysis is that the Basotho principle or norm of equal access to land for every adult male will become untenable. With the anticipated increase in the adult male population in the next few decades, the calculated average per capita holding of cultivable and marginal lands would become so small as to become uneconomical. Simultaneously, there would occur, most probably, a profound change in the opportunity cost for agricultural occupations vis-a-vis mine and other employment outside Lesotho, as indicated earlier. Therefore, planning in Lesotho cannot realistically proceed on the assumption of the norm of equal access to land. Once it is recognized that physical factors restrict access to arable land to a minority of families, the issue arises as to what mechanism or system should be used to allocate land. In this regard, it may be noted that legislation may not be a suitable instrument to bring in the better farmers.

4.19 With population pressure, the development of communications and the growth of markets, land can be expected to assume greater value. It
would therefore be logical to recognize the development of a land market, which seems inevitable, and to exercise the necessary supervision and control. As a first step, recommended above, the Government should recognize, register and monitor land leases now taking place as informal land loans. New legislation appears to be necessary further in the future, to enable the introduction of a controlled, diversified market in land and, as a corollary, a land tax.

4.20 Disposition of land raises economic as well as socio-political issues and, in the case of Lesotho, re-examination of the principle of equal access to land. Since the issues are not purely technical, it is important that they be deliberated upon by a representative national body, for instance, a permanent commission with periodically changing or revolving membership. The commission could include representatives of communal tenants, political and community leaders, traditional authorities at various levels, and civil servants.

(b) Grazing land

4.21 Livestock holding in Lesotho, as in many other countries in Sub-Saharan Africa, is motivated by many factors, including its investment potential. There are interrelated values—economic and social—which attach to the acquisition and increase of owned herds. At any one point in time, each of these values can predominate. This is why no single incentive can ensure, for example, regular and foreseeable offtake rates. Until there is a clearer understanding of the methods of inducing regular offtake, and providing alternative paths for the acquisition of prestige, wealth and social linkages, the most practicable and least disruptive policy for the livestock subsector would be to continue controlled communal grazing practices. Nor would the alternative of a forced increase in commercial (or government-sponsored) livestock enterprises succeed. Further, it would require state interventions for which the Government is not equipped, require subsidies, and result in an even greater concentration of livestock in fewer hands than at present.

4.22 The major long-term issue associated with the livestock subsector relates to land management. Specifically, the issue refers to the scope for adjusting communal grazing practices (and for using current legislation) to achieve destocking, restoration of the range and increased commercial activity.

4.23 Some control of communal grazing and livestock numbers is presently being exercised by the herd owners themselves and the authorities using current legislation, which provides for culling, rotational grazing and "resting" of range areas. In addition, selective import restrictions are helping to contain the livestock population; their continuation is recommended. A measure of destocking is also occurring through normal biological processes; herd projections prepared on the basis of the current characteristics of the herd (low reproduction rates, age distribution and male-female ratios) indicate that the cattle population in Lesotho may decline by about 25% by 1991 (from 530,000 to less than 400,000). With a modest projected increase in the small stock population, total livestock units are expected to decline by about 10% through 1991, thus providing a minor and temporary relief to the range.
4.24 Enforcement of culling regulations, import restrictions and demographic factors are, therefore, leading to a relatively small amount of destocking. However, any significant reduction in herd sizes can only be achieved by controlled communal grazing, with a recognition by herd-owners of acute scarcity (and thus high value) of grazing land. From past experience, it is evident that the best policy would be to continue to place the responsibility for management of the range on local range inhabitants themselves through their representatives. This is being done through grazing associations or other types of local bodies. They should now be charged with the economic-ecological management of defined areas. Roles for the traditional authorities and other community leaders would have to be redefined. The Government would continue primarily in an educational and support role.

4.25 Up to now, a few grazing associations have been developed in dispersed locations throughout the country, each one surrounded by the much larger and generally accepted communal grazing system (paras 3.23 and 3.32). Such associations have not been particularly successful in preventing non-members (or non-residents, in one case) from encroaching on the scheme, or from keeping members themselves from reverting to communal grazing outside the scheme. Thus, if grazing associations or other local land management systems are to work, they will need to be established on a contiguous basis in all major rangeland areas of Lesotho, to achieve national coverage. The Government should promote the establishment of these associations on this basis. The organization and operation of these schemes could vary according to local conditions, but all would have in common the fact that each association would have to manage within the prescribed limits of its resources. As more and more local groups, managing their own clearly demarcated area of land on a permanent basis, begin to develop in a geographically contiguous manner, the scope for encroachment from within or outside each scheme should diminish. Ongoing or new projects (such as LAPIS) could be the vehicles for forming some of the grazing associations.

4.26 In addition, the grazing associations could introduce grazing or range user fees, as well as levy their own fines for livestock trespass and impounding. Fines for stock trespass and impounding are provided under the Range Management and Grazing Control Regulations. These are fixed at levels so low as to be nominal and ineffective. It may be necessary to amend the laws and regulations to grant power to grazing associations to recover fees and fines at levels which would constitute a significant incentive to abide by the associations' regulations.

4.27 The establishment of the necessary number of grazing associations or other forms of organization will take time, particularly as the emphasis would be on voluntary formation by communities and users. Once established, however, it would be expected that all users of grazing lands within the jurisdiction of the association would be covered. A further complication which would also take time to resolve is the present cattlepost system whereby livestock holders are assigned to cattleposts irrespective of residence (paras 3.16 and 3.30). A reallocation of cattleposts is called for— an extremely complex matter in view of the technical, physical and social implications involved. In order to bring about a greater overlap between a herd owner's residence and his assigned cattlepost, it may be necessary to experiment with negotiations between the traditional authorities; such an exchange should take place only with the
consent of both parties involved. If this system can be successfully launched, it should reduce the difficulties of organizing cattle owners into common associations.

4.28 Transhumance of lowlands cattle to the highlands for summer grazing is another aspect of the pressure exerted by "non-resident" cattle. Fortunately, transhumance has been declining (para 3.16), although the pace and nature of this decline cannot be foreseen. To the extent that the Government encourages the emergence of a land market in the lowlands and enables more productive use of the land, it is likely that the growing new class of tenants would undertake a larger number of livestock ventures on their land than at present. That should cause a further, progressive decline in transhumance.

4.29 The common theme that runs throughout all the recommendations is shared land management responsibility among those directly affected. An alternative, which has been discussed in MOA, is the possibility of using the SAA provision in the Land Act of 1979 to establish controlled grazing areas. This alternative is not recommended, as it is unlikely to avoid the problems faced by other systems. The SAA provision enables individuals in a designated area to obtain private leaseholds to carry out investment activities. An aggregation of private leaseholds seems to be a considerably less appropriate or effective vehicle than grazing association schemes for achieving controlled communal grazing in a defined area. Private leaseholds may be suitable for large scale ranching, but such an activity should not be Government-sponsored.

4.30 It has become evident that Lesotho's complex and inter-related livestock and land management issues cannot be dealt with by technical units of Ministries alone. Realistically, it will be a difficult and prolonged process to get the support and active participation of the larger herd owners in a program involving voluntary controls over grazing and livestock numbers. The highly skewed livestock ownership distribution, the powers of large herd owners and the complex livestock usage pattern (including "mafisa") all suggest that proposals for change will have to contend with these factors. Lesotho's society and its leaders will themselves have to determine how they can bridge the vast difference between private and national good in the matter of livestock. It is recommended that the economic, political and social issues of grazing and management be deliberated upon by a national commission, similar to that proposed for cropped land, with the inclusion, inter alia, of representatives of small and large herd owners.

2. Production and Investment Strategies

4.31 A strategy for intensive production systems in the Lowlands would comprise development of high-value crops (in particular horticultural products), fodder, livestock production (dairying, stallfeeding), as well as more cost-effective, better directed and more productive development of traditional crops.

(a) Traditional crops

4.32 A strategy with regard to traditional field crops has been adopted by the Government, based partly on lessons learned from implementing the FSSP and BASP. The major elements are:
(i) Provision of improved technical assistance to farmers. This review proposes, further, that these services be targeted at the relatively small group of serious farmers who farm full-time and produce surpluses for the market.

(ii) A restructuring of the FSSP to reduce subsidies and require greater farmer participation and cost-sharing. The Government is aiming at a balance between mechanized and labor-intensive methods of production. It is recommended that MOA services now give greater emphasis to the labor-intensive methods, as they are likely to give higher returns and generate more employment. The recent integration of FSSP with non-mechanized production services in MOA's district agricultural activities should facilitate a re-orientation of priorities as proposed. A continuous evaluation of the costs and benefits of FSSP would seem desirable.

(iii) Further refinement of improved cost-effective technology packages to help in reducing the risks of variable field crop production. (Adaptive research trials in the northern districts have indicated that it is possible to design packages which provide a satisfactory return and are easy to manage).

(b) High-value crops

4.34 Fruit and vegetable production should be expanded beyond its present base, which includes integrated operations initiated by a number of Basotho enterprises. It is recommended that such production be left primarily to the private sector, with the Government providing support services selectively. Given below are three "models" of production which illustrate the possibilities of reasonably cost-effective approaches to promoting horticulture:

(i) Commercial production and marketing for urban centers through Basotho enterprises which at present are primarily importers. Encouragement should be given to expanding local production, through provision of market intelligence and technical advice.

(ii) Vegetable production under simple irrigation by gravity or with handpumps, by groups of farmers with common membership in a voluntary association. Requisite technical advice will have to be provided.

(iii) Cultivation of fruits and vegetables in family gardens. The female-dominated family structure is well suited to home gardening.

4.34 Government assistance for high-value crop production can be extremely beneficial; it is recommended that the assistance take the following forms of technical and marketing services from MOA:
(i) Intensification of horticultural research, both on-station and through adaptive research programs. A very judicious selection of research topics is necessary. Considerable research information could be obtained from countries with similar agro-ecological conditions, particularly South Africa and Turkey. Years of lead time are required to develop suitable cultivars and expertise in management of fruit trees, plant varieties, pest and disease control technologies, irrigation requirements and husbandry practices appropriate to local conditions.

(ii) Strengthening of MOA's horticultural extension service, through appropriate training and development of effective advisory messages. Once again, MOA needs to be selective in its targets, because of the very limited scope for expanding its extension staff. In fact, recommendations for improving extension services for field crops, fodder and livestock, in addition to horticultural crops, will need to be considered as one comprehensive set of organizational improvements, not all of which could be achieved simultaneously. The first task would be to establish priorities, and thereafter provide staff expertise for these areas, including expatriate staff, if necessary.

(iii) Improvement of marketing services, with a better appreciation by MOA of the marketing problem. MOA's work could include a study of specific product markets, establishment of a framework for monitoring of markets and dissemination of market information including advice on import regulations.

(c) Fodder crops

4.35 MOA has encouraged fodder production, particularly the planting of eragrostis hay, in marginal lands as a means of conservation as well as a cash crop. MOA recognizes that more needs to be done to expand and increase fodder production in a systematic way, and to improve its marketing. Extensive benefits can be derived from fodder production, including reduction of grazing demand on ranges, winter feeding of oxen, conservation, and reduction in imports. Clearly, the integrated cultivation of food crops and animal feed makes the best use of scarce land resources.

4.36 Estimates are lacking on the comparative costs of producing and marketing fodder crops as opposed to free range grazing. In this connection, the competition between fodder and subsistence crops in marginal highland areas needs to be taken into account, particularly because the customary rule which encourages the fencing of a crop and prohibits livestock grazing thereon may not apply. For MOA, the first step is to develop an import data collection system; and to collate technical data, admittedly scanty, on prospective fodders for the lowlands, mountains and foothills. Thereafter, the data would form a useful base for development of a strategy for increasing fodder production for different agro-ecological zones. The benefits of increased conservation and reduced erosion should spur further adaptive trials. The potential for greater utilization of eragrostic hay as a lowland crop in the southern lowlands
should be evaluated together with the additional benefits to the soil from a grass cover. Further, there should be a financial evaluation from the farmer's standpoint of the returns from fodder cultivation, compared with the cultivation of cereal crops. In light of these benefits, fodder trials in different agro-ecological zones should be undertaken as a priority. Some of the proposed activities outlined earlier would require technical assistance, most of which could be provided under ongoing projects.

(d) Livestock

4.37 The overall MOA strategy for livestock production is to encourage "intensive" production systems in the lowlands, and "extensive" systems in the highlands and most of the foothills. While the investments for such production are expected to be undertaken by the private sector, the Government's role would also be important, as provider of livestock marketing services and facilities, and owner of the national abattoir and feedlot. Under present conditions, the scope for further commercialization of the livestock subsector is limited, although progress can be made. The Government can help facilitate these changes by providing the following:

(i) A package of taxes and incentives to get herd owners to market livestock regularly rather than hold them;

(ii) Provision of health, inspection and other services;

(iii) Provision of facilities for commercial marketing.

4.38 In regard to taxes, the recommendation of this review is for the grazing associations to institute grazing fees. In regard to incentives, two major proposals have been discussed within the Government;

(i) A price subsidy, to boost the prices of selected cattle products above the level of RSA prices. This is not a practical course of action, as it is likely to involve massive subsidies, and because the impact of this measure would almost certainly be very temporary; higher prices are also likely to trigger supply responses from the sensitive South African market.

(ii) An interest subsidy on savings accounts, to make the returns on such accounts competitive with those on holding stock; the idea is that herd owners would then sell livestock and put the proceeds in savings accounts. The problem with this approach, again, is the possible need for relatively large budgetary outlays, while at the same time the outcome of the "transfer" of savings would remain uncertain. The Government has recently increased interest rates on savings accounts. In the future, the Government should ensure that interest rates on financial savings are at appropriate economic levels and competitive with South African rates.

4.39 As to Government livestock services, the obvious suggestion would be for MOA to upgrade its nutrition and veterinary services selectively, especially those services provided to well-run grazing associations; and to increase its technical support to such associations and traditional
authorities in grazing control management. Budgetary constraints are severe, and there are overall limits to increasing MOA technical staff. It is recommended that the costs of MOA's veterinary and other livestock-related services be recovered from the beneficiaries.

4.40 Aside from investments already made, major new capital investments by the Government in the foreseeable future, whether in the mountains or in the lowlands, are not likely to be able to generate adequate production responses; nor are they likely to contribute meaningfully to reducing overstocking. The Government would be well-advised to concentrate on improving the "quality" of its existing investments and its livestock marketing support system. The key objective would be to generate increasing "supply" responses, without subsidy outlays.

4.41 The national abattoir was commissioned in December 1985, and is now working at 20% to 25% of capacity on a single shift basis, largely meeting the demand from Maseru and the surrounding areas. The bulk of the demand comes from the national feedlot, which continues to be the major purchaser of cattle at local auctions or sales. Without the benefit of a study during the field mission for this review, only a few general observations can be made. Obviously, export of beef is one way of increasing the abattoir's level of production and reducing losses. In the past, studies have been made of the South African market and quotas. Depending on their findings, these studies could be further developed. Another possibility, albeit an ambitious one, is to apply for an EEC quota for beef. Again, no specific advice can be given, except to point out that EEC's health and quality control requirements are very high, and MOA's present veterinary services would probably not be adequate to carry out the requisite inspection and control measures.

4.42 Major investments have been made in the abattoir and feedlot; some supplementary investments to accommodate goats and more sheep are advisable to take advantage of a potential market for such meat in RSA, particularly in the Durban area. In Lesotho, a supply response for sheep and goats for slaughter may be less difficult than for cattle, as there is far less of a tendency for the former to be held as assets, although they are kept for income from wool and mohair production. The nature of the balance between these two factors, i.e., sale to the market for slaughter, and ownership for recurrent income, can be established only when the external and local markets for mutton and lamb are developed. In regard to wool and mohair, their production and marketing are fairly well established as commercial activities. The scope for improvements in quality, breeding control and nutrition can be explored through current or planned projects. A livestock culling and small stock marketing project is planned for the latter part of 1986; the activities, including the market study, could be carried out under its auspices.

4.43 MOA's policy, as indicated, supports programs for livestock by ecological zones, including intensive and extensive development in the lowlands and mountains, respectively. There are possibilities for the development of demarcated grazing systems in the highlands and foothills. Also, dairy and stall-fed beef production in the lowlands is likely to be a high-cost, high-risk activity; it should be
allowed to develop spontaneously, without government subsidies. Government should serve as a catalyst by providing, through MOA, selective technical advice to support such investments. Advice on the introduction of fodder crops would be particularly helpful.

3. Management of the Agricultural Sector

4.44 The major changes and improvements being made in the management of the agricultural sector have been indicated in Chapter II. Among them, at a national level, are the proposal to establish a national planning cadre of economists, and a UNDP project to strengthen CPDO, which should improve the macroeconomic and sectoral planning mechanism. The expectation is that the Fourth Five-Year Development Plan, which is scheduled to begin in FY87, would be different in its approach to planning from the previous plans and, in particular, would provide the framework for determining investment priorities.

4.45 In connection with planning, it may be noted that the Government has wisely played a modest role in the country's mixed, market-oriented economy; a continuation of this policy would be appropriate. Accordingly, MOA should also concentrate on planning, policy formulation, and coordination, with only selective involvement in investments.

4.46 The main areas of needed improvements or changes in MOA management and operational policies are indicated below; MOA has already taken steps to plan or initiate some of these changes:

(i) establishing priorities, and implementing present policy;
(ii) annual investment planning and budgeting;
(iii) reorienting MOA activities away from direct involvement in production to providing technical support services;
(iv) establishing priorities for support services, especially research and extension;
(v) increasing use of district offices for identification and management of projects or programs;
(vi) long-term investment planning ("programs approach");
(vii) formulating and appraising programs and projects; and
(viii) coordinating foreign aid.

4.47 There is an urgent need to bring externally funded projects (including technical assistance) within the scope of investment planning, and thus to ensure their appropriateness, in relation to available resources and priorities. In this connection, MOA is considering adoption of the following procedures and guidelines:

(1) Examine donor-initiated project proposals, eliminating obviously unsuitable ones, and working on needed changes in the others to bring about increased consistency between them and the "programs" prepared in MOA.
(ii) Look more immediately into the next year or two (rather than five years) to determine the sequencing of projects according to criteria agreed within the Government, and come up with annual or bi-annual investment programs, which could be more realistically linked to national budgets than five-year programs.

(iii) Provide the above inputs to the CPDO, in order to improve overall aid coordination.

4.48 A planning cycle comprises policy formulation, preparation of strategies, and policy implementation. MOA's useful series of policy papers needs to be reviewed to: (a) reconcile choices between alternative (but not necessarily mutually exclusive) options; e.g., employment generation versus mechanization, equity versus increasing private leaseholds, grassroots development versus increasing government intervention; (b) restate objectives in a clear, easily monitorable form; and (c) prepare practical guidelines for policy implementation. A fair number of strategies are already contained in the MOA policy papers. The task now is to arrange these proposals more systematically to fit clarified policy objectives. Thereafter, priorities need to be established among the various policy objectives and strategies.

4.49 In trying to define a more realistic framework for agricultural strategy and investment planning, MOA has decided to move from a "projects" to a "programs" approach. This is a step in the right direction. These "programs" can be defined in a number of ways (agro-ecological zones, watersheds, districts are examples); MOA has selected watersheds for this purpose, and is embarking on a watershed management program. Presumably, priority investments would be identified for all major watershed areas, which would then be related geographically to Lesotho's ten districts, and converted into work plans for MOA district staff. It is recommended that all project plans be placed under the authority of the respective District Agricultural Officers.

4.50 A "decentralization" of MOA organization and operations is in progress, which should be facilitated by the "programs" approach described above; appropriate subsector strategies and priority work plans are being developed for the district agricultural offices. It is recommended that these offices gradually assume responsibility for program preparation and implementation, thus correspondingly relieving MOA headquarters of this responsibility. The Government has accepted the principle that in future, projects would be carried out, as far as possible, through the established MOA structure at national and district levels, rather than through ad hoc project-specific units or specialist project staff. When implemented, this decision would place increasing responsibility on district staff for project implementation. Accordingly, the district field services will need to be developed and strengthened (through training and technical support) in line with the above reorientation, and also to provide services of experts at a practical level as indicated below.

4.51 It is recommended that MOA evaluate its priorities for technical support services and enhance the effectiveness of those services. Thus, as recommended earlier, MOA research and extension should focus on the relatively small number of active farmers, provide extension advice for
major field crops, carry out selective research on high value crops and fodder, reduce the direct coverage but improve the quality of livestock extension services, provide selective assistance to livestock owner groups, and coordinate plans for future land use. MOA's priorities should be reassessed on a continuous basis. Principal responsibility for support services would be with MOA headquarters. Its field offices should be provided with a limited number of experts to implement MOA advice at a practical level.

4.52 Other improvements at MOA headquarters are called for, to sharpen its skills in carrying out a narrower range of activities commensurate with available manpower and financial resources. In moving to a "programs" approach, MOA will need to develop an operational framework to determine the consistency of investments with the programs. It should also establish guidelines and procedures for screening investment proposals. The Government should be able to rely mainly on outside resources (including consultancies) to prepare detailed investment project proposals. MOA staff could then concentrate mainly on programs formulation and screening of project proposals.
LESOTHO

AGRICULTURAL SECTOR REVIEW

STATISTICAL TABLES

Table 1: GDP at Factor Cost and Market Prices as Percentage of GNP
Table 2: Suitability of Land for Agriculture
Table 3: Land Under Cultivation per Rural Household
Table 4: Crop Production and Yields
Table 5: Total Supply of Five Major Crops, 1974/75 - 1983/84
Table 6: Fertilizer Use, 1974/75 - 1983/84
Table 7: Grazing Livestock Population
Table 8: Cattle Herd Size Composition, 1974/75 - 1983/84
Table 9: Carcass Meat Offtake
### Table 1: LESOTHO AGRICULTURAL SECTOR REVIEW

**GDP at Factor Cost**

(as % of GNP)

<table>
<thead>
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<td>10.5</td>
<td>9.0</td>
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<td>Mining &amp; Quarrying</td>
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<td>2.8</td>
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<td>Wholesale &amp; Retail Trade</td>
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<td>1.7</td>
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<td>0.7</td>
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<td>Less: Imputed Bank Service Charges</td>
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<td>GDP at factor cost</td>
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<td>39.9</td>
<td>34.8</td>
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<td>Indirect Taxes less Subsidies</td>
<td>10.8</td>
<td>10.3</td>
<td>9.2</td>
<td>7.8</td>
<td>11.1</td>
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<td>GDP at market prices</td>
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<td>Net factor income from abroad</td>
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<td>54.2</td>
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<td>Remittances from Abroad</td>
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<td>SNP up</td>
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(totals may not add due to rounding)

Source: Lesotho Bureau of Statistics
Table 2

**LESOTHO**

**AGRICULTURAL SECTOR REVIEW**

**Suitability of Land for Agriculture**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>km²</th>
<th>% of total area</th>
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<tr>
<td>Semi-intensive cultivation</td>
<td>2,631</td>
<td>8.6</td>
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<tr>
<td>Extensive cultivation</td>
<td>1,300</td>
<td>4.2</td>
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<tr>
<td>Grazing suitable for small stock</td>
<td>7,697</td>
<td>25.3</td>
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<tr>
<td>Grazing suitable for large stock</td>
<td>10,569</td>
<td>34.4</td>
</tr>
<tr>
<td>Cultivation and grazing with poor access</td>
<td>2,201</td>
<td>7.2</td>
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<tr>
<td>Cultivation and grazing with good access</td>
<td>2,467</td>
<td>8.1</td>
</tr>
<tr>
<td>Land unsuitable for agriculture</td>
<td>3,723</td>
<td>12.2</td>
</tr>
<tr>
<td><strong>Total area</strong></td>
<td>30,588</td>
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</table>

Source: The Land Resources of Lesotho, Directorate of Overseas Surveys (1968).
### TABLE 3

**LESOTHO**

**AGRICULTURAL SECTOR REVIEW**

**Land Under Cultivation Per Rural Household**

<table>
<thead>
<tr>
<th>District</th>
<th>Average Persons per Rural HHS.</th>
<th>Number of Rural HHS.</th>
<th>Land Under Cultivation</th>
<th>Land Under Cultivation per Rural HHS.</th>
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<tr>
<td>Butha-Buthe</td>
<td>5.14</td>
<td>13678</td>
<td>10500</td>
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<td>Leribe</td>
<td>5.09</td>
<td>39570</td>
<td>48800</td>
<td>1.23</td>
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<td>Berea</td>
<td>4.98</td>
<td>30300</td>
<td>36000</td>
<td>1.19</td>
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<tr>
<td>Maseru</td>
<td>4.84</td>
<td>31359</td>
<td>47600</td>
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<td>Mafeteng</td>
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<td>Mohale's Hoek</td>
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<td>25069</td>
<td>35300</td>
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<td>Quthing</td>
<td>5.26</td>
<td>19811</td>
<td>18200</td>
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<td>Qacha's Nek</td>
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<td>Mokhotlong</td>
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<td>Lesotho</td>
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<td>1.29</td>
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</table>

1/ An 8 year average from 1976/77 to 1983/84.

**Source:** Bureau of Statistics
# Table 5

**AGRICULTURAL SECTOR REVIEW**

**Total Supply of Five Major Crops, 1974/75-1983/84**

(In '000 Tons)

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<td>76.4</td>
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<td>108.8</td>
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<td>31.7</td>
<td>35.7</td>
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<td>1.0</td>
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<td>0.6</td>
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<td>—</td>
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<td>7.1</td>
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<td>222.2</td>
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<td>19.1</td>
<td>28.7</td>
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<td>16.9</td>
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<td>8.3</td>
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</tr>
</tbody>
</table>

* All figures stated in whole grain equivalents

1/ Includes donated whole wheat sold through commercial channels.

**Sources:**

1) Bureau of Statistics
2) Lesotho Flour Mills
3) Marketing Section, Fleeming Division.
   Ministry of Agriculture
4) Catholic Relief Services
5) World Food Program
<table>
<thead>
<tr>
<th>Years</th>
<th>Tonnes Fertilizer</th>
<th>Nutrients</th>
<th>Hectares Harvested</th>
<th>Kg's Nutrients Per ha. Planted</th>
<th>Kg's Fertilizer Per ha. Planted</th>
<th>Fertilizer to Nutrients Ratio</th>
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<tr>
<td>1974/75</td>
<td>3856</td>
<td>502</td>
<td>284593</td>
<td>1.489</td>
<td>11.439</td>
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<td>1975/76</td>
<td>3840</td>
<td>507</td>
<td>279242</td>
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<td>1976/77</td>
<td>5937</td>
<td>1139</td>
<td>193048</td>
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<td>27.219</td>
<td>5.213</td>
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<td>1977/78</td>
<td>7944</td>
<td>1228</td>
<td>221965</td>
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<td>32.601</td>
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<td>1017</td>
<td>220637</td>
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<td>27.023</td>
<td>6.371</td>
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<td>1925</td>
<td>221207</td>
<td>8.113</td>
<td>41.638</td>
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<td>1891</td>
<td>229874</td>
<td>7.467</td>
<td>38.557</td>
<td>5.163</td>
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<td>1981/82</td>
<td>11026</td>
<td>2279</td>
<td>226101</td>
<td>8.710</td>
<td>42.141</td>
<td>4.838</td>
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<td>1982/83</td>
<td>8543</td>
<td>2564</td>
<td>192452</td>
<td>10.990</td>
<td>36.617</td>
<td>3.332</td>
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<tr>
<td>1983/84</td>
<td>11596</td>
<td>3216</td>
<td>217036</td>
<td>12.603</td>
<td>45.443</td>
<td>3.606</td>
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</tbody>
</table>

*Projected based on historical trends.*

**Source:**
1) Food and Agricultural Organization, United Nations.
2) Technical Operations Unit.
3) G-rop Lesotho.
4) Survey and Statistics Section.
   Planning Division, Ministry of Agriculture.
**Table 7**

**LESOTHO**

**AGRICULTURAL SECTOR REVIEW**

_Grazing Livestock Populations ('000)_

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle (SLU)*</td>
<td>521 (417)</td>
<td>529 (423)</td>
<td>370 (296)</td>
</tr>
<tr>
<td>Sheep (SLU)</td>
<td>1,200 (240)</td>
<td>1,322 (264)</td>
<td>1,407 (281)</td>
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<tr>
<td>Goats (SLU)</td>
<td>616 (123)</td>
<td>795 (159)</td>
<td>795 (159)</td>
</tr>
<tr>
<td>Horses (SLU)</td>
<td>103 (73)</td>
<td>109 (76)</td>
<td>109 (76)</td>
</tr>
<tr>
<td>Donkeys (SLU)</td>
<td>86 (43)</td>
<td>107 (54)</td>
<td>107 (54)</td>
</tr>
<tr>
<td><strong>TOTAL SLU</strong></td>
<td>896</td>
<td>976</td>
<td>866</td>
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</table>

*Standard Livestock Unit.*
### Table 8

**LESOTHO**

**AGRICULTURAL SECTOR REVIEW**

**Cattle Herd Size Composition, 1974/75 - 1983/84**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Herd Size</th>
<th>Imports</th>
<th>Calves Raised</th>
<th>Total</th>
<th>Subtractions</th>
<th>Rate of Death</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Death or Slaughter /b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>or Slaughter /b</td>
<td></td>
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<tr>
<td>1974/75</td>
<td>512,499</td>
<td>20,218</td>
<td>76,900</td>
<td>97,118</td>
<td>4,519</td>
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<td>1975/76</td>
<td>592,499</td>
<td>28,618</td>
<td>61,700</td>
<td>90,381</td>
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<td>98,691</td>
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<tr>
<td>1976/77</td>
<td>485,599</td>
<td>40,364</td>
<td>65,600</td>
<td>105,964</td>
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<td>1977/78</td>
<td>526,181</td>
<td>53,853</td>
<td>57,307</td>
<td>111,160</td>
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<td>69,830</td>
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<td>1978/79</td>
<td>569,327</td>
<td>55,369</td>
<td>61,448</td>
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<td>81,872</td>
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<td>1979/80</td>
<td>593,929</td>
<td>41,998</td>
<td>47,343</td>
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<td>55,009</td>
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<td>1980/81</td>
<td>589,976</td>
<td>18,116</td>
<td>38,155</td>
<td>56,271</td>
<td>2,171</td>
<td>58,053</td>
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<td>49,457</td>
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<td>54,361</td>
<td>62,626</td>
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<td>529,125</td>
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<td>58,000</td>
<td>69,253</td>
<td>2,700 /c</td>
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</table>

**Notes:**

a/ Calculated by: Total herd size (previous year) + additions (current) - exports (current) - total herd size (current).

b/ Death or slaughter in current year divided by herd size in previous year.

c/ Estimate

**Source:** Livestock Division, MDA; BOS.
### Table 9

**LESOTHO**

**AGRICULTURAL SECTOR REVIEW**

**Carcass Meat Offtake**

<table>
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<tr>
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<td>2,042</td>
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**TOTAL** 15,465 4,344 19,809

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<th>Total</th>
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<td>2,042</td>
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<td>2,332</td>
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**TOTAL** 14,187 3,507 17,694

*a/* Imported sheep for slaughter are not included, but at present levels would increase mutton supply by about 1,200 mt annually.

*b/* Mission estimate.