

CHANGES IN AGRICULTURAL LAND USE:
INSTITUTIONAL CONSTRAINTS AND OPPORTUNITIES
TRADITIONAL SECTOR SURVEY

By

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Preface

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This [REDACTED] report presents the findings of the Changes in Agricultural Land Use. Institutional Constraints and Opportunities Project Traditional Sector Survey of Swazi Nation Land. The study was funded by the USAID-Swaziland Cropping Systems Research and Extension Training Project.

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The opinions expressed in the report and recommendations of the report solely reflect those of the author and are not to be construed to reflect those of the Ministry of Agriculture and Cooperatives-Swaziland, the University of Wisconsin-Land Tenure Center, nor the United States Agency for International Development.

EXECUTIVE SUMMARY

This paper presents the findings of the Traditional Sector Survey, the principle component of the project "Changes in Agricultural Land Use: Institutional Constraints and Opportunities". It is divided into three major sections.

The first presents a general overview and description of the response frequencies to the survey which was divided into eight sections (land acquisition, general land tenure issues, income, agricultural production, tribute labour, decision making, fencing, livestock, and pasture management).

A number of general conclusions were drawn from this overview. Almost a third of the land has been acquired since 1980. Nearly 1/4 of the the homesteads have land which has not been cleared, and 16% indicated the existence of cleared land which was not being used. Unused land is not being lent out, most commonly because the head of homesteads doesn't want to make enemies. Homesteads readily identified various problems with borrowing and lending land, but few had personally had any of these problems. Slightly less than 30% of the homesteads had land which they no longer have, most commonly lost through resettlement or having simply abandoned the land. Nearly half of the homesteads indicate that they are presently looking for land.

Wage employment or business income is the primary source of income for two-thirds of the homesteads. Homesteads are as likely to hire draught power as to use their own. Cattle ownership is skewed. Slightly less than forty percent of the homesteads own no cattle. The average herd size is 16.3 head. The 31 homesteads holding more than 20 head of cattle own 44.6% of all of the cattle. Labour shortages were most commonly felt during weeding and harvesting. Hired labour was the most frequent solution to these shortages.

A number of nontraditional land use practices appear to be gaining acceptance. Over 60% of the homesteads have part of their land holdings fenced. Over half of the respondents indicated that their communities favoured fencing; only 6.2% indicated that the community was opposed to fencing. Over one-third of the homesteads winter plough, while only 21.7% utilize their crop stover. In locations where the chief announced when cattle were to be removed from the fields in the spring, forty percent of the respondents indicated that they would have ploughed earlier had the cattle been removed earlier.

Grazing land in Swazi Nation Land areas is communally utilized. Much of the literature indicates a deteriorating range condition, yet little appears to be done by communities to manage their community grazing resources.

The second addresses four general tenure issues which the project paper identified for investigation: fragmentation and subdivision, farmer control over production decisions, uncultivated farmland of good potential, and pasture management. Fragmentation and subdivision are policy constraints when they lead to inefficiencies in the use of scarce resources (capital and labour) and less intensive utilization of the land. The recent literature on agriculture in Swaziland repeatedly raises the issue of constraints on a farmer's ability to make independent decisions on the utilization of his land. Given that fencing was seen to be an innovative modification of traditional land use practices, the analysis used fencing as indicative of changing community attitudes toward more independent production decision making. Casual observation seems to indicate the existence of sizable amounts of good potential land which is not being fully utilized. It is accepted that homesteads are constantly evolving entities and that at certain times there may be land which the homesteads is unable to fully utilize. Overgrazing and the resultant land degradation is common in communal tenure systems where an increasing human population puts a greater demand on the land base for arable production thereby squeezing a growing livestock herd onto a decreasing pasture. As the intensity of land utilization increases community attitudes toward land management will change.

Section three then looks at specific subsets of the general population to determine if the above mentioned land tenure issues are of particular concern to that specific group. The analysis focused on seven subsets of the population with the expectation that their uniqueness in relation to the general population would identify specific tenure constraints which they face. Three definitions of commercial farmers, homesteads having agriculture as their primary or secondary source of income, homesteads at different stages of the homesteads life cycle, female headed homesteads, two definitions of poor homesteads, homesteads having demonstrated a willingness to adopt innovative agricultural practices, and homesteads with investment potential were analyzed. A further set of hypotheses was developed to test the significance of these land tenure issues as they impacted upon each subset of the general population in relation to the population as a whole.

Tables 41 and 42 (page 35-39) summarizes the analysis of these groups. The differences between the groups is primarily a result of the definition of the groups, and secondarily what one would expect to find. There is little evidence of differences between any of the groups and the general population in terms of the identified land tenure issues of access to existing land, fragmentation of land holdings, utilization of land holdings, access to additional land, borrowing and lending of land, security of tenure, or land use constraints.

Agricultural production is closely tied to the life cycle of the homestead, following a logical progression of capital accumulation through wage employment at the earlier stages of the cycle and an increasing dependence on agriculture at the later stage when land holdings have increased, cattle herds have been built up, and family labour is available. Given the general availability of wage employment this cyclical progression is quite rational.

The general conclusion that one must draw from the analysis is that the traditional tenure system does not appear to be a major constraint to agricultural production as it is presently practiced. Homesteads generally appear to be able to gain access to land and are increasingly able to make independent (of their community) production decisions. That there does not appear to be significant differences between the identified subsets of the population indicates a relatively homogeneous population on Swazi Nation Land.

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I. INTRODUCTION:

This paper presents the findings of the Traditional Sector Survey, the principle component of the project "Changes in Agricultural Land Use: Institutional Constraints and Opportunities".

Discussions of land tenure in Swaziland have relied heavily upon the work of A.J.B. Hughes Land Tenure, Land Rights and Local Communities in Swaziland(9172). That study was based on survey data from nonrandomly selected localities used primarily for descriptive purposes. A number of studies since then, while not focused on land tenure, have touched upon it (Magagula, 1978; Sibisi, 1981, de Vletter, 1983, Testerink, 1984 and 1987; and Low, 1987). Other studies have suggested that certain aspects of the traditional tenure system may be constraining agricultural development (Holleman, 1964; Whittington and Daniel, 1969; Maina and Stricker, 1971; Magagula, 1982; and Tate and Lyle, 1982).

The project paper identified four general tenure issues to be investigated: fragmentation and subdivision, farmer control over production decisions, uncultivated farmland of good potential, and pasture management. Fragmentation and subdivision are policy constraints when they lead to inefficiencies in the use of scarce resources (capital and labour) and less intensive utilization of the land. The recent literature on agriculture in Swaziland repeatedly raises the issue of constraints on a farmer's ability to make independent decisions on the utilization of his land. Given that fencing was seen to be an innovative modification of traditional land use practices, the analysis used fencing as indicative of changing community attitudes toward more independent production decision making. Casual observation seems to indicate the existence of sizable amounts of good potential land which is not being fully utilized. It is accepted that homesteads are constantly evolving entities and that at certain times there may be land which the homesteads is unable to fully utilize. Overgrazing and the resultant land degradation is common in communal tenure systems where an increasing human population puts a greater demand on the land base for arable production thereby squeezing a growing livestock herd onto a decreasing pasture. As the intensity of land utilization increases community attitudes toward land management will change.

The analysis focused on seven subsets of the population with the expectation that their uniqueness in relation to the general population would identify specific tenure constraints which they face. Three definitions of commercial farmers, homesteads having agriculture as their primary or secondary source of income, homesteads at different stages of the homesteads life cycle, female headed homesteads, two definitions of poor homesteads, homesteads having demonstrated a willingness to adopt innovative agricultural practices, and homesteads with investment potential were analyzed.

The research sample was designed with the cooperation of the Central Statistics Office and based upon the the sample frame which was used by the 1984 Agricultural Census. Details of the sampling methodology are presented in Appendix 1. A stratified random sample of 480 homesteads was taken from a population of approximately 52,000 homesteads. Stratification was based on agricultural census enumeration areas in different ecological zones and with different RDA experiences. Sixty enumeration areas with 8 homesteads per enumeration area were selected.

Table 1: DISTRIBUTION OF SAMPLE ENUMERATION AREAS

Ecological zone	Non-RDA	Min-RDA	Max-RDA	Total
HIGHVELD	6	4	6	16
MIDDLEVELD	8	6	6	20
LOWVELD	6	6	4	16
LEBOMBO	4	--	4	8
	--	--	--	--
Total	24	16	20	60

Two questionnaires were designed to gather information from the homesteads. The first of these gathered primarily demographic data on homestead composition, employment, and homestead histories (Appendix 2A). Analysis of this information permitted later reduction of the sample size for the detailed information gathering of the second questionnaire (Appendix 2B). Thus only 30 enumerations were visited for the second round of data collection.

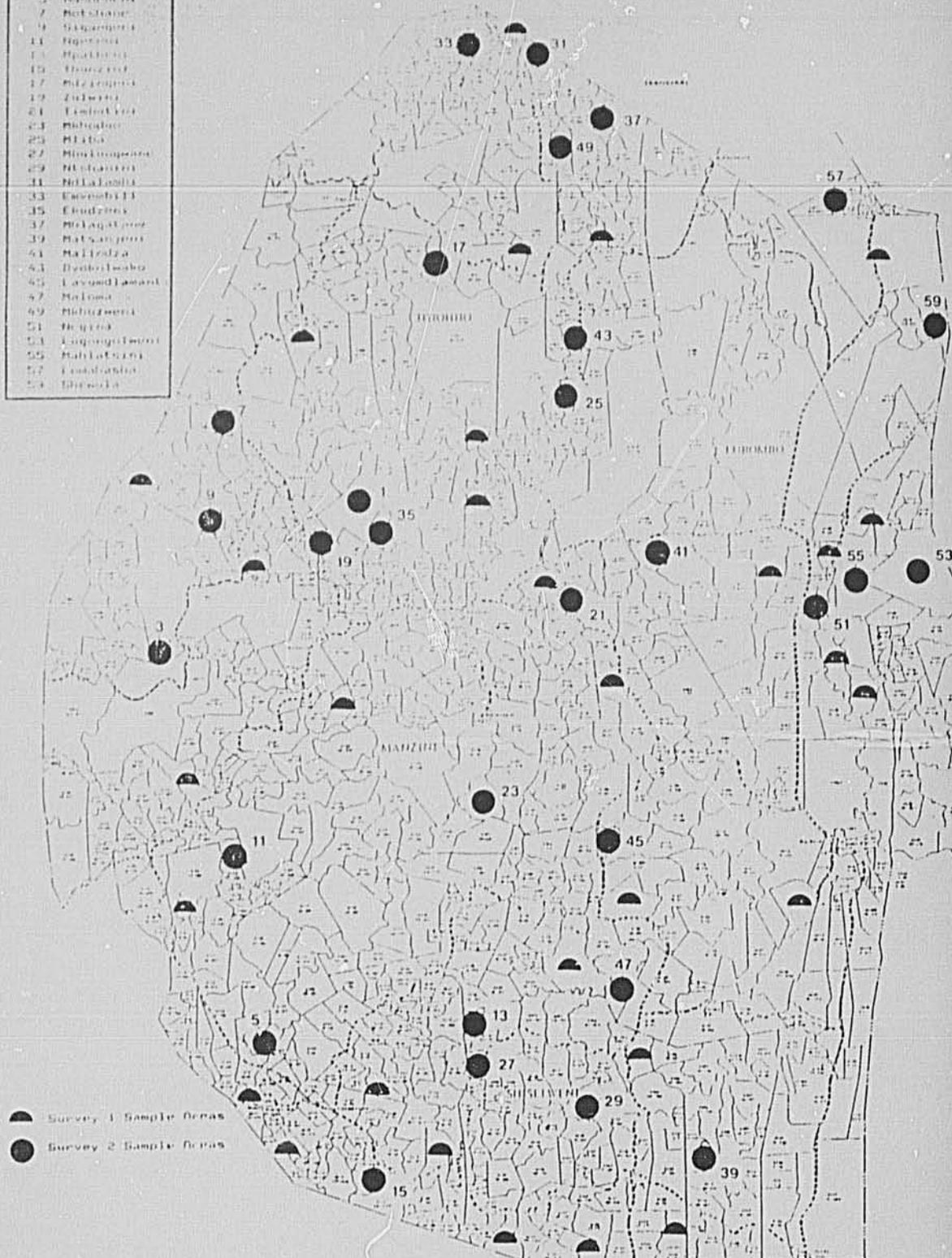
Table 2: SAMPLE ENUMERATION AREAS QUESTIONNAIRE TWO

Ecological zone	Non-RDA	Min-RDA	Max-RDA	Total
HIGHVELD	3	2	3	8
MIDDLEVELD	4	3	3	10
LOWVELD	3	3	2	8
LEBOMBO	2	--	2	4
	--	--	--	--
Total	12	8	10	30

Map 1 illustrates the location of the enumeration areas for both rounds of data collection.

Map 1 SAMPLE ENUMERATION AREAS

- | | |
|----|-----------|
| 1 | Ilagana |
| 3 | Zamboanga |
| 5 | Marikina |
| 7 | Marikina |
| 9 | Marikina |
| 11 | Marikina |
| 13 | Marikina |
| 15 | Marikina |
| 17 | Marikina |
| 19 | Marikina |
| 21 | Marikina |
| 23 | Marikina |
| 25 | Marikina |
| 27 | Marikina |
| 29 | Marikina |
| 31 | Marikina |
| 33 | Marikina |
| 35 | Marikina |
| 37 | Marikina |
| 39 | Marikina |
| 41 | Marikina |
| 43 | Marikina |
| 45 | Marikina |
| 47 | Marikina |
| 49 | Marikina |
| 51 | Marikina |
| 53 | Marikina |
| 55 | Marikina |
| 57 | Marikina |
| 59 | Marikina |



 Survey 1 Sample Areas
 Survey 2 Sample Areas

The information gathered in the second questionnaire necessitated two visits to each of the homesteads, the first for the information in the questionnaire which dealt with the land tenure issues addressed in the project proposal, and the second to measure all of the landholdings of the homestead. Appendix 2C explains the procedures followed in measuring the land holdings of the homesteads.

The following discussion is broken into three major parts to address the above described issues. Each section highlights the findings of the statistical analyses of the data. The complete analyses are found in Appendices 3-1, 3-2, and 3-3. The introduction to Appendix 3 explains the general criteria used for hypothesis testing.

Section two presents a general overview and description of the response frequencies to the second questionnaire. The questionnaire was divided into eight sections which the following discussion will address (land acquisition, general land tenure issues, income, agricultural production, tribute labour, decision making, fencing, livestock, and pasture management).

Section three addresses general land tenure system problems. Four general land tenure issues were addressed by the research: fragmentation and subdivision, farmer control over production decisions, unused land of good potential, and range management. A number of hypotheses were developed to test the significance of these issues.

Section four then looks at specific subsets of the general population to determine if the above mentioned land tenure issues are of particular concern to that specific group. The groups identified are: commercial farmers, homesteads whose income is primarily from agriculture, homesteads at different stages of the life cycle, female headed homesteads, investors, innovators, and rural poor. A further set of hypotheses was developed to test the significance of these land tenure issues as they impacted upon each subset of the general population in relation to the population as a whole.

II. GENERAL OVERVIEW: DESCRIPTION OF RESPONSE FREQUENCIES

Initial analysis was undertaken by reviewing the frequency distributions of the responses to the issues raised in the questionnaires. The first questionnaire provided general homestead characteristics and employment information. The second questionnaire had been divided into nine sections dealing with land acquisition, general land tenure issues, income, production decisions, tribute labour, decision making, fencing, livestock, and pasture management. Responses to the questions of the second questionnaire can be found in Appendix 3-1. A summary of these responses are the basis of the following discussion.

Homestead characteristics:

Of the 240 homesteads selected for the second survey only 226 were interviewed. Twelve homesteads had been abandoned within the year and 2 were not able to be contacted to be interviewed.

Two hundred of these homesteads were headed by men and 26 by women. Homesteads ranged in size from 1 to 60 individuals. The average homestead size was 11 people with an average of 5.4 adults present. The age of the head of homestead ranged from 22 to 80 years averaging 50.9 years. A total of 463 individuals were employed averaging 2.0 individuals per homestead.

Land holdings and acquisition:

The 226 homesteads held 400 pieces of land. The maximum number of land holdings in a homestead was five.

Table 3: NUMBER OF LAND HOLDINGS PER HOMESTEAD

	1	2	3	4	5	total
Homesteads	109	75	30	9	3	226

The total land holdings of the homesteads ranged in size from 0.10 ha to 22.10 ha with an average holding of 2.10 ha.

Acquisition of land through inheritance was the most common means of obtaining land (45.8% of the land holdings). Acquisition of land through the khonta process (allocated) accounted for a further 34.8%, gifts of land for 12.0%, borrowing 3.3%, and other methods 1.4% (Table 4).

Table 4: HOW LAND WAS ACQUIRED

	Value	Frequency	Percent
INHERITED	1	183	45.8
ALLOCATED	2	139	34.8
GIVEN TO USE	3	48	12.0
PURCHASED	4	1	.3
BORROWED	5	13	3.3
OTHER	7	4	1.1
DON'T KNOW/BLANK	8	12	3.0
TOTAL		400	100.0

Respondents were asked when the land was acquired by the present homestead. Thirty-five percent of the respondents did not know (or did not remember) when the land was acquired. (Most of these unknown dates were a result of not interviewing the head of homestead.) However, using only the land acquisitions with known dates, the data shows that 32.3% of the land has been acquired since 1979, and an additional 30.8% between 1970 and 1979 (Table 5).

Table 5: DATE OF LAND ACQUISITION

Value Label	Frequency	Percent	Percent (known dates)
BEFORE 1950	26	6.0	10.0
1950-1959	24	6.5	9.2
1960-1969	46	11.5	17.7
1970-1979	80	20.0	30.8
1980 TO PRESENT	84	21.0	32.3
UNKNOWN	140	35.0	
TOTAL	400	100.0	100.0

Inherited land holdings tended to be slightly smaller than the size of the average land holding (2.00 ha). Of the land which was inherited (183 pieces of land) 77 units were shared with others, in 54 cases brothers. Only three disputes about the inheritance were indicated, only one with a brother.

Allocated land holdings were larger than the size of the average land holding (2.46 ha). Of the land which was acquired through the khonta process 59.7% of the units were requested because of a desire to establish an independent homestead, 23.7% had no land, and 16.6% gave other reasons (Table 6).

Table 6: REASON FOR REQUESTING ALLOCATION

Value Label	Value	Frequency	Percent
HAD NO LAND	1	33	23.7
INDEPENDENT HOME	2	83	59.7
NEEDED MORE LAND	3	8	5.8
OTHER	7	15	10.8
TOTAL		139	100.0

Considerable variation in the length of time for this process was given by the respondents. Over 15% indicated that this process took more than one year (Table 7).

Table 7: LENGTH OF TIME FOR ALLOCATION PROCESS

Value Label	Value	Frequency	Percent
LESS THAN 4 WEEKS	1	48	34.5
LESS THAN 12 MONTHS	2	51	36.7
1 YEAR OR MORE	3	21	15.1
DON'T KNOW/BLANK	8	19	13.7
TOTAL		139	100.0

Most homesteads reported having given the chief a token of appreciation for the allocation of land. Money (34.5%) or cattle (27.3%) were most commonly cited. However, in 28.1% of the allocations nothing was reportedly given to the chief (Table 8).

Table 8: TOKEN OF APPRECIATION

Value Label	Value	Frequency	Percent
MONEY	1	48	34.5
CATTLE	2	38	27.3
NOTHING	3	39	28.1
OTHER	7	8	5.8
DON'T KNOW/BLANK	8	6	4.3
TOTAL		139	100.0

Forty-eight pieces of land were given to homesteads for their use. In thirty cases land was given by relatives. Such gifts might occur in situations where a father, while he is still alive, gives land to a younger son to ensure that he has rights to land after he (the father) dies. This land would then not be

part of the father's estate at the time of his death. Similar gifts might be made by other relatives. Gifts of land from nonrelatives seems less likely to occur, but there were eighteen such transactions. Of the four gifts which were temporary two were from relatives (two responses were incomplete). None were gifts from neighbours. The temporary gifts, more logically, should be treated as borrowed pieces of land rather than gifts.

In a situation of land shortage one would expect to find a significant number of borrowed pieces of land, as those who are desperate for land will obtain some land from those having an excess amount of land. Only thirteen pieces of land were borrowed. Two possible conclusions might be drawn, either there is sufficient land (and the opportunities to gain access to it) not to warrant borrowing additional land or there are institutional constraints which restrict the ability to borrow land. The majority of the borrowed land was obtained from relatives rather than neighbours (Table 9). Insufficiency of land was the major reason given for borrowing land. Only one homestead indicated any payment for the land being borrowed.

Table 9: FROM WHOM WAS THE LAND BORROWED

Value Label	Value	Frequency	Percent
BROTHER	2	2	15.4
NEIGHBOUR	4	5	38.5
OTHER RELATIVE	5	6	46.2
		-----	-----
TOTAL		13	100.0

General Land Tenure Issues:

Homesteads were asked further about the development and utilization of their own land. This section addresses both the issues surrounding land availability and utilization as well as access to land.

If there is a perceived shortage of land in an area, a number of issues must be addressed to determine how real that shortage is and what constraints there are to overcoming the problem. Initially, one should look at the amount of land which has not been allocated to anyone. This will give an indication of the amount of land available for further distribution. (Such analysis, however, was beyond the scope of this project.) Secondly, one should look at the land which has already been allotted to individuals to determine how that land is being utilized. For example, how much of the land has been cleared, how much of the cleared land is fallow, what constraints there are to the borrowing and lending of land. There is a much greater justification to argue about a land shortage when land

which has been allocated has been cleared and is utilized (either by the homestead or others) than where substantial part of the land has not been cleared, or that which has been cleared is not being utilized. Finally, if there is a perceived shortage of land a number of factors might influence how that 'land shortage' is addressed. For example, institutional mechanisms may be introduced to limit the fallow period; to encourage the borrowing and lending of land; or, at the extreme, to reallocate unused land to individuals capable of putting it to better use.

Fifty-four homesteads (23.9%) indicated that they had arable land which had not been cleared. A number of reasons were given for not having cleared the land (Table 10), but nearly half cited a shortage of money, labour, or equipment. When asked when the land would be cleared 50% of the people indicated 'next year'. However, the second most common response was again, 'when I have the money, labour, equipment' (Table 11).

Table 10: WHY HASN'T THE LAND BEEN CLEARED?

Value Label	Value	Frequency	Percent
JUST GOT IT	0	7	13.0
LABOR/ TIME SHORTAGE	1	6	11.1
MONEY EQUIPMENT	2	19	35.2
LAND IS FAR	3	1	1.9
HAVE ENOUGH LAND	4	2	3.7
LAND STONEY, SWAMPY	5	4	7.4
DROUGHT	6	4	7.4
OTHER	7	11	20.4
TOTAL		54	100.0

Table 11: WHEN WILL YOU CLEAR THE LAND?

Value Label	Value	Frequency	Percent
WHEN HAVE MONEY, LABOUR, EQUIPMENT	1	12	22.2
CHILDREN WILL USE	2	6	11.1
NEXT YEAR	3	27	50.0
WITHIN 5 YEARS	4	2	3.7
OTHER	7	6	11.1
DON'T KNOW/BLANK	8	1	1.9
TOTAL		54	100.0

Thirty seven homesteads (16.4%) indicated that they had land which had been cleared, but was not presently being used. Only four of these holdings were being loaned out, 13 were fallowed (Table 12). When asked why the land had not been lent out most respondents indicated that they did not want to make enemies (Table 13).

Table 12: HOW IS THIS LAND BEING USED?

Value Label	Value	Frequency	Percent
LOANED OUT	1	4	10.8
GRAZING	2	12	32.5
FALLOW	3	10	27.0
DIDN'T PLOW THIS YEAR	4	3	8.1
OTHER	7	8	21.6
TOTAL		37	100.0

Table 13: WHY HASN'T THIS LAND BEEN LENT?

Value Label	Value	Frequency	Percent
DON'T WANT ENEMIES	1	16	48.5
NO DEMAND FOR IT	2	2	6.1
NOT MY RIGHT	3	4	12.1
NOT ENOUGH MONEY	4	1	3.0
PLANNING TO USE IT	5	4	12.1
OTHER	7	5	15.2
DON'T KNOW/BLANK	8	1	3.0
TOTAL		33	100.0

Only seven homesteads indicated that there was a limitation on the amount of time land could lie fallow before it would be reallocated. This limit ranged from 1 to 5 years.

A number of issues were raised with respect to the borrowing and lending of land. However, in most cases responses were so one-sided that further analysis was fruitless. For example, only 15 of the 226 homesteads borrowed any land within the last five years, only 17 had loaned any land out in the past year, and only 5 had lent any other land out within the last five years. Land was as likely to be borrowed from a relative as a nonrelative (8 vs. 6, respectively). However, land was more likely to be lent to a relative (14 vs. 3 for nonrelative).

Homesteads were asked about the potential problems of lending and borrowing land, from the viewpoint of the borrower as well as from the viewpoint of the lender. Tables 14 and 15 present these findings. In both cases, of those responding to the question most indicated potential problems with the borrower (70 of 116) or problems with the lender (91 of 125). However, when asked if they personally had had any of these problems, only 23 people indicated that they had. Most of these (8) were cases where the owner took the land back (perhaps before the borrower was ready to return the land, but not an unreasonable event).

Table 14: PROBLEMS OF BORROWING FROM VIEWPOINT OF BORROWER

Value Label	Value	Frequency	Percent
ALWAYS NEEDING LAND	1	17	7.5
CONFLICTS WITH OWNER	2	29	12.8
USING/OWNER WANTS BACK	3	41	18.1
NO PROBLEMS	4	17	7.5
OTHER	7	12	5.3
DON'T KNOW/ BLANK	8	94	41.6
DON'T BORROW/LEND LAND	9	16	7.1
TOTAL		226	100.0

Table 15: PROBLEMS OF BORROWING FROM VIEWPOINT OF LENDER

Value Label	Value	Frequency	Percent
REFUSE TO RETURN	1	31	40.3
OWNER GETS JEALOUS	2	4	1.8
NO PROBLEMS	3	11	4.9
PAIN WHEN TAKE BACK	4	8	3.5
OTHER	7	11	4.9
DON'T KNOW/ BLANK	8	95	42.0
DON'T BORROW/LEND LAND	9	6	2.7
TOTAL		226	100.0

The vast majority (173) said that they did not have these problems simply because they never borrowed nor lent land.

Sixty-seven homesteads indicated that they had had land which they no longer had. A number of reasons were given for no longer having this land, resettlement and simple abandonment of land were the most frequent responses (Table 16).

Table 16: WHY DID YOU LOSE THAT LAND?

Value Label	Value	Frequency	Percent
TAKEN BY CHIEF	1	10	14.9
RESETTLEMENT	2	18	26.9
GIVEN TO SOMEONE	3	10	14.9
ABANDONED	4	18	26.9
RETURNED TO OWNER	5	3	4.5
TAKEN BY RELATIVE	6	2	3.0
OTHER	7	6	9.0
TOTAL		67	100.0

A number of people had indicated that a certain insecurity of tenure existed in the chief's ability to take land away from individuals. One such mechanism which the chief can exercise is through the banishment of individuals from a chiefdom for any of a number of causes. Reportedly banishment might occur when a given farmer is more successful with his agricultural production than his neighbours. The neighbours might become jealous. The farmer might spend less time in community activities. If this is a consistent occurrence he might be accused of using witchcraft and be banished.

Respondents were asked if they knew of any such banishment cases in their chiefdoms in the last five years. Thirty-eight knew of cases. Table 17 shows the causes for these banishments. Witchcraft, unacceptable conduct, and serious crimes (murder) were the cause of 17 of the expulsions. Seven people either did not know or were unwilling to talk about the case.

Table 17: WHY WAS HE BANISHED?

Value Label	Value	Frequency	Percent
NONALLEGIENCE	1	8	21.1
UNACCEPTABLE CONDUCT	2	7	18.4
SERIOUS CRIMES	3	4	10.5
WITCHCRAFT	4	6	15.8
OTHER	7	6	15.8
DON'T KNOW/ BLANK	8	7	18.4
TOTAL		38	100.0

Ninety-three people indicated that they were presently looking for land. Table 18 indicates how long people have been looking. Forty-four people have been looking for land for over one year. Twenty-two indicated that they hadn't done anything.

Table 18: FOR HOW LONG HAVE YOU BEEN LOOKING?

Value Label	Value	Frequency	Percent
<6 MONTHS	1	10	10.8
6 MO. TO 1 YR.	2	8	8.6
1 TO 2 YRS.	3	8	8.6
OVER 2 YRS.	4	36	38.7
HASN'T DONE ANYTHING	5	22	23.7
OTHER	7	9	9.7
TOTAL		93	100.0

However, when queried further if they had ever tried and failed to get land, only 34 people indicated the failure. Reasons for failure are given in Table 19.

Table 19: WHY WERE YOU UNSUCCESSFUL?

Value Label	Value	Frequency	Percent
LAND GIVEN TO SOMEONE	1	4	11.8
CHIEF SAYS HAVE ENOUGH	2	5	14.7
NOT WILLING TO KHONTA	3	1	2.9
LAND IS SCARCE	4	6	17.6
WAITING FOR CHIEF	5	4	11.8
CHIEF DIED	6	3	8.8
OTHER	7	7	20.6
DON'T KNOW/BLANK	8	1	2.9
TOTAL		31	100.0

Six of the 34 indicated a failure because land is scarce. Fourteen of the 30 respondents who knew of others who had failed to get land cited the lack of land availability as the cause of the failure (Table 20).

Table 20: WHY HAVE OTHERS FAILED?

Value Label	Value	Frequency	Percent
NO LAND AVAILABLE	1	14	46.7
NO REASON GIVEN	2	3	10.0
OTHER	7	3	10.0
DON'T KNOW IF DENIED	8	8	26.7
DON'T KNOW WHY	9	2	6.7
TOTAL		30	100.0

The majority of respondents who gave an answer indicated that the sizes of the allocations of land from the chiefs are getting smaller (94 of 118) and that the period of the allocation process is getting longer (51 of 85). Eighty three of the respondents indicated that the token of appreciation given to the chief is changing (or they don't know). Most of these people indicated that it is either getting more expensive (16) or changing from the traditional gift of livestock to money.

All of these factors seem to indicate that there are some general constraint to access to and utilization of land on SNL.

The majority of homesteads (162) indicated that they did not have any land located away from the homestead. Of those that did, transport and monitoring of the land was most often cited as problems of fragmented holdings. (Table 21).

Table 21: PROBLEMS ASSOCIATED WITH LAND AWAY FROM THE HOMESTEAD

Value Label	Value	Frequency	Percent
NO LAND LOCATED AWAY FROM HOMESTEAD	0	162	71.7
CONSUMES WOMEN'S TIME	1	6	2.7
TRANSPORT	2	18	8.0
MONITORING	3	17	7.5
NO PROBLEMS	5	13	5.8
COMBINATION 1+2, 2+3	6	5	2.2
OTHER	7	2	.9
DON'T KNOW/BLANK	8	1	.4
NOT APPLICABLE	9	2	.9
TOTAL		226	100.0

Income:

Analysis of cash income sources not only reflects the amount of resources available to the homesteads for agricultural investment, but, on the other hand, reflects the reliance on agriculture as a source of that income. Homesteads were questioned about their sources of cash income. After having indicated cash income from the various sources, respondents were then asked to indicate their primary and secondary sources of cash income. For purposes of this present analysis these were combined into four income categories: wage employment, agricultural sales, other homestead activities, and businesses. (Income from businesses was combined with wage employment in subsequent analyses). Wage employment is the primary source of income for 62.4% of the homesteads, agriculture the primary source for 21.7%, homestead activities 9.2%, and businesses 4.0%. Six homesteads had no cash income. (Table 22). Agricultural sales plays a much more significant role as a secondary source of cash income (wage employment 14.6%, agriculture 27%, homestead activities 22.1%, and business 2.7%). A third of the homesteads reported no secondary cash income source. (Table 23).

Table 22: MAIN SOURCE OF CASH INCOME

Value Label	Value	Frequency	Percent
WAGES	A + B	141	62.4
AGRICULTURAL SALES	C - H	49	21.7
OTHER HOMESTEAD ACTIVITIES	I - K	21	9.2
BUSINESS	L	9	4.0
NO CASH INCOME	X	6	2.7
	TOTAL	226	100.0

Table 23: SECONDARY SOURCE OF CASH INCOME

Value Label	Value	Frequency	Percent
WAGES	A + B	33	14.6
AGRICULTURAL SALES	C - H	61	27.0
OTHER HOMESTEAD ACTIVITIES	I - K	50	21.1
BUSINESS	L	6	2.7
NO SECONDARY CASH INCOME	X	76	33.6
	TOTAL	226	100.0

Twenty-six percent of the homesteads reported some crop sales last year (1985/86).

Production Decisions:

A number of factors influence a farmer's ability to make independent production decisions. Three major issues were addressed in this part of the questionnaire, those concerning the movement of cattle off of and onto the fields before and after the cropping seasons, the community's attitude toward the introduction of innovative agricultural practices such as winter ploughing and the harvesting of stover, and the availability of draught power and labour.

Cattle movement off of the fields in the spring determines the earliest dates that a farmer can begin ploughing. If the rains are early, the farmer owns adequate draft power, and/or wishes to plant earlier varieties, he may be constrained by cattle which are still grazing in the fields. Nearly 80% of the respondents indicated that the chief announces when cattle have to be off of the fields in the spring. In 57.9% of the cases this meant immediate removal, while another 19.9% indicated that there was a set time limit for removal. Where such an announcement was made 40% of the farmers indicated that they would have ploughed earlier had the announcement been made earlier (Table 24).

Table 24: WOULD YOU HAVE PLOUGHED EARLIER?

Value Label	Value	Frequency	Percent
YES	1	72	40.0
NO	2	92	51.1
DON'T KNOW/BLANK	8	14	7.8
DIDN'T PLOUGH	9	2	1.1
TOTAL		180	100.0

This situation is not so restrictive in the fall at the end of the growing season. While 64.6% of the respondents indicated that the chief makes an announcement when cattle are permitted to return to the fields in the fall, over 50% indicated that return was not immediate, but that a time limit was given.

Neighbours' attitude about the use of stover did not seem to be restrictive. Only a small percentage of homesteads indicated that they made use of their crop residue (Table 25). Of these 51 homesteads making use of the stover 41 indicated that their neighbours didn't mind them using the stover. When the respondents were asked if the neighbours minded having their cattle feed on the neighbours' fields when there was nothing on their fields for the neighbours' cattle, 36 of the cases indicated that the neighbours said nothing.

Table 25: WHAT DO YOU DO WITH YOUR STOVER?

Value Label	Value	Frequency	Percent
CUT AND STORED	1	30	13.3
PLOW UNDER JUST AFTER HARVEST	2	19	8.4
LEFT FOR CATTLE	3	169	74.8
1,2,3 or 1,2	7	2	.9
NOT APPLICABLE	9	6	2.7
TOTAL		226	100.0

A much larger percentage of homesteads practice winter ploughing (33.6%) than harvesting their stover. Homesteads most commonly winter ploughed to plough in the remaining crop stover or to take advantage of the first rains (Table 26).

Table 26: WHY DO YOU WINTER PLOUGH?

Value Label	Value	Frequency	Percent
PLOUGH IN STOVER	1	31	40.8
FIRST RAINS BENEFIT	2	22	28.9
KEEP CATTLE OUT	3	1	1.3
MAKES SOIL FERTILE	4	10	13.2
REDUCES WEEDS	5	4	5.3
OTHER	7	8	10.5
TOTAL		76	100.0

Community attitudes toward winter ploughing seem to be quite favourable. Over one third of the respondents indicated that their neighbours winter ploughed. And the majority (62.4%) indicated that their chief said nothing by way of encouraging or discouraging the practice.

Timely access to draft power influences when a farmer can begin ploughing in the spring. Slightly more homesteads borrowed or hired draught power than those who owned their own (Table 27).

Table 27: OWNERSHIP OF DRAUGHT POWER

Value Label	Value	Frequency	Percent
OWNED	1	93	41.2
HIRED OR BORROWED	2	100	44.2
OTHER	7	3	1.3
DIDN'T PLOUGH	9	7	3.1
OWNED AND HIRED OR BORROWED	12	22	9.7
HIRED OR BORROWED AND OTHER	27	1	.4
TOTAL		226	100.0

The most commonly occurring source of draught power was that of owned oxen. However, the majority of those hiring or borrowing draught power borrowed/hired tractors instead of oxen (Table 28).

Table 28: DRAUGHT POWER 1986

Value Label	Value	Frequency	Percent
TRACTORS OWNED	1	10	3.9
TRACTORS HIRED/BORROWED	2	81	31.3
OXEN OWNED	3	109	42.1
OXEN HIRED/BORROWED	4	45	17.4
OTHER	7	6	2.3
DIDN'T PLOUGH	9	8	3.1
TOTAL		259	100.0

The majority of homesteads indicated that there was enough labour for agricultural activities (86.3% indicated enough labour for ploughing, 87.6% for planting, 80.1% for weeding, and 82.7% for harvesting). For those homesteads indicating a shortage, the majority of them relied on hired labour to overcome their shortage (Table 29). Of the 22 homesteads hiring labour, 14 hired the labour for at least one week.

Table 29: WHAT DO YOU DO IF LABOUR IS SHORT?

Value Label	Value	Frequency	Percent
HIRED LABOUR	1	22	47.8
EXCHANGED LABOUR	2	7	15.2
SUMMONED LILIMA	3	9	19.6
OTHER	7	6	13.0
DON'T KNOW/BLANK	8	2	4.3
TOTAL		46	100.0

Only 4.0% indicated that they summoned lilima, a traditional mechanism for overcoming a labour shortage at critical times during the year. However, 46.5% of the homesteads indicated that they participated when others invited lilima predominantly to help their neighbours. Forty two of those who indicated that they did not participate reported that lilima is not practiced in their area.

Tribute Labour:

Labour demands are also made on the homesteads in the form of tribute labour duties performed for the King and for the chief. While the actual amount of time spent performing these duties was not determined, the extent to which homesteads participate was.

Tribute labour is provided to the chief by over 95% of the homesteads. Most of this labour is provided for weeding and harvesting (85.4% and 73.5% of the homesteads respectively). Most homesteads indicated that their neighbours also provided tribute labour. Only 14 homesteads (6.2%) indicated that these duties affected work on their own fields.

A similar case is found in the provision of tribute labour to the king (77.4% of the homesteads). Again most of this labour is provided for weeding (67.3%) and harvesting (66.4%). Over ninety five percent of the homesteads said that their neighbours provided tribute labour to the king. Only 9 homesteads (4.0%) indicated that these duties affected work on their own fields.

Decision Making:

A number of factors influence the amount of land which a homestead is going to plough in a given year. The largest number of homesteads indicate that their decision on the amount of land which will be ploughed is dependent on money or other inputs (29.2%). Over 27% of the homesteads ploughs everything every year. The amount of last year's harvest influences the decision of 20.8% of the homesteads. The amount of rain is the deciding factor for 16.4% of the homesteads (Table 30).

Table 30: HOW DO YOU DECIDE AMOUNT YOU WILL PLOW?

Value Label	Value	Frequency	Percent
WHAT IS MANAGABLE	0	2	.9
DEPEND ON HIS MONEY	1	32	14.2
DEPEND ON HIS INPUTS	2	34	15.0
AMOUNT OF RAIN	3	37	16.4
LAST YEAR'S HARVEST	4	47	20.8
PLOUGHS EVERYTHING	5	62	27.4
OTHER	7	6	2.7
DON'T KNOW/BLANK	8	1	.4
DIDN'T PLOUGH	9	5	2.2
TOTAL		226	100.0

Fencing:

The literature indicates that traditional land use practices did not permit the fencing of individual holdings. The free movement of livestock onto the fields at the end of the growing season to feed on the crop residue was an essential part of those land use practices. Cattle were moved off the fields in the spring after the chief announced that ploughing could begin and that cattle had to be removed.

An individual farmer who had access to adequate draught power which would permit early ploughing, who wishes to introduce hybrid maize varieties which required slightly different growing season, or who wished to practice winter ploughing would be as constrained by a prohibition of fencing as the individual who simply wanted to protect his crops from livestock damage during the growing season.

Fencing was looked at as one of the major issues in terms of the individual farmer's control over the management of his land holding in relation to what were seen to be traditional communal uses of that land.

Casual observation shows that fencing is much more common than one is lead to believe from the literature. The findings of the research indicate quite a different situation than was anticipated in the project design. Over 60% of the homesteads have part of their landholding fenced. Of those who have not fenced, a shortage of money (64.0%) or shortage of materials (12.8%) were the most commonly given responses (Table 31).

Table 31: WHY HAVEN'T YOU FENCED?

Value Label	Value	Frequency	Percent
NO MONEY	1	55	64.0
SEE NO ADVANTAGE	2	8	9.3
SHORTAGE OF MATERIAL	3	11	12.8
FENCED GRAZING AREA	4	2	2.3
OTHER	7	8	9.3
DON'T KNOW/BLANK	8	2	2.3
TOTAL		86	100.0

Curiously, the majority of neighbors of nonfencers have not fenced either.

A number of reasons for fencing may be postulated. Any of the individual management decisions delineated above could justify the extent of fencing. In areas where land shortage is becoming acute, fencing might be undertaken for the purposes of demarcating boundaries.

The protection of crops is the most commonly given response by the nonfencers to the advantages of fencing (Table 32).

Table 32: ADVANTAGES OF FENCING NONFENCERS

Value Label	Value	Frequency	Percent
PROTECT CROPS SUMMER	1	59	68.6
PROTECT CROPS WINTER	2	10	11.6
IRRIGATED FARMING	3	3	3.5
PROTECT TREE CROPS	4	1	1.2
BOUNDARY DEMARCATION	5	2	2.3
CROPS AND BOUNDARY	6	4	4.7
OTHER	7	4	4.7
DON'T KNOW/BLANK	8	3	3.5
TOTAL		86	100.0

The protection of crops was also the reason most commonly given by fencers for having fenced (Table 33).

Table 33: ADVANTAGES OF FENCING FENCERS

Value Label	Value	Frequency	Percent
PROTECT CROPS	1	111	80.4
PROTECT OTHER CROPS	2	6	4.3
BOUNDARY DEMARCATION	3	3	2.2
CROPS AND BOUNDARY	4	10	7.2
PLOW/PLANT EARLY	5	3	2.2
OTHER	7	5	3.6
TOTAL		138	100.0

Combining both groups results in the protection of crops is the predominant reason for fencing (88.9%), while boundary demarcation is mentioned by less than 10% of the homesteads.

Most homesteads did not consult their neighbours (75.4%) nor did they feel that their chief needed to be consulted (79.7%) when they fenced. Where the neighbours or chief were consulted, consultation was done so that the neighbours and chief would know that cattle were being kept out of the fields. Of those people who have fenced, most (78.3%) have indicated having no problems in maintaining their fence. Intentional or cattle damage was reported by only 6.5% of the homesteads.

In the majority of cases the chief does not have any of his land fenced (59.3%). The community's attitude toward fencing is generally favourable (56.6%) or ambivalent (27.4%) (Table 34).

Table 34: COMMUNITY'S ATTITUDE TOWARD FENCING

Value Label	Value	Frequency	Percent
THEY LIKE IT	1	128	56.6
THEY SAY NOTHING	2	62	27.4
THINK CONVERT TO TITLE DEED LAND	3	7	3.1
DON'T LIKE IT	4	1	.4
SOME LIKE/SOME NOT	5	6	2.7
OTHER	7	3	1.3
DON'T KNOW/BLANK	8	18	8.0
NOT APPLICABLE	9	1	.4
TOTAL		226	100.0

In addition to cattle moving back onto the fields at the end of the growing season, there is considerable movement of cattle throughout the year as cattle are taken out to graze each day and returned to the kraal every night. Only 16.2% of the homesteads indicated that there were some of their cattle which were not returned to the kraal every night.

This daily livestock movement, the prevalence of crop damage disputes (58.8% of the homesteads reported crops disputes being common in their area), and the lack of community action to limit the number of crop disputes may be the major factor in the acceptance of fencing (Table 35).

Table 35: COMMUNITY ACTION TO LIMIT DISPUTES

Value Label	Value	Frequency	Percent
NOTHING	1	24	17.9
TAKE CARE OF ANIMALS	2	66	49.3
BUILD GRAZING CAMPS	3	3	2.2
DISCUSS PROBLEM	4	17	12.7
FINE CATTLE OWNERS	5	10	7.5
FORCED TO FENCE FIELDS	6	7	5.2
OTHER	7	5	3.7
DON'T KNOW/BLANK	8	2	1.5
TOTAL		134	100.0

Livestock:

The ownership of cattle provides access to draught power as well as milk and meat. As shown earlier, draught animals were the most common sources of draught power. Cattle also serve as a store of wealth, providing significant returns on investment, as well as being fairly readily convertible to cash.

Cattle ownership is skewed. Slightly less than 40% of the homesteads own no cattle. Of those owning cattle the average herd size is 16.3 head. Homesteads owning more than 20 head of cattle own 44.6% of all the cattle owned (Table 36).

Table 36: NUMBER OF CATTLE OWNED

Value	Frequency	Percent
0	89	39.4
1-5	20	8.8
6-10	40	17.7
11-20	44	19.5
>20	31	13.7
DON'T KNOW	2	.9
TOTAL	226	100.0

Respondents were asked the most important reasons for owning cattle. More than one answer to the question was permitted. The most common response indicated the need for draught power (26.3%), followed by milk and meat (21.8%), and manure (20.6%). Status, investment, and lobola were only indicated 4.4%, 11.8%, and 11.1% of the time, respectively (Table 37).

Table 37: MOST IMPORTANT REASON FOR HOLDING CATTLE

Value Label	Value	Frequency	Percent
STATUS	1	21	4.4
INVESTMENT	2	56	11.8
LOBOLA	3	53	11.1
DRAUGHT POWER	4	125	26.3
MANURE	5	98	20.6
MILK AND MEAT	6	104	21.8
OTHER	7	19	4.0
DON'T KNOW/BLANK	8	1	.4
NO CATTLE HELD	9	68	30.1
TOTAL		476	100.0

Respondents were further asked the most important reason for holding goats. While meat was the most commonly given reason, ceremonial purposes was the second most frequently cited response (Table 38).

Table 38: MOST IMPORTANT REASON FOR HOLDING GOATS

Value Label	Value	Frequency	Percent
CEREMONIAL PURPOSES	1	47	26.3
RATE OF REPRODUCTION	2	24	13.4
MEAT	3	62	34.6
MONEY	4	40	22.3
OTHER	7	6	3.4
TOTAL		179	100.0

Pasture Management

Grazing land in Swazi Nation Land areas is communally utilized. Cattle are generally free to graze wherever land is not being utilized for arable production or residences. Much of the literature indicates a deteriorating range condition, yet little appears to be done by communities to manage their grazing resources.

A number of questions were asked concerning the community's ability to control their grazing areas such as whether cattle came from other runners or chiefs areas to graze in their area and if the grazing area was determined by the dip tank area. Only respondents who had indicated holding cattle were asked question related to pasture management.

Forty respondents indicated that the community had a fenced grazing area, in 27 cases fenced as a result of the RDA program. Only half of the respondents indicated that the grazing area was determined by the dip tank area.

The majority of respondents indicated that their grazing area was not grazed by cattle from other runner areas either in the summer (81.1%) or in the winter (82.1%). Nor was it grazed by cattle from other chiefs' areas (88.5% in summer and 89.3% in winter). However, more than half of the respondents indicated that it didn't bother them if outsiders grazed their cattle in their grazing area (Table 39).

Table 39: ATTITUDE TO OTHERS IN YOUR GRAZING AREA

Value Label	Value	Frequency	Percent
DOESN'T BOTHER THEM	1	80	54.1
BOTHERS THEM	2	43	29.1
NEVER GRAZE HERE	3	14	9.5
OTHER	7	6	4.1
DON'T KNOW/BLANK	8	4	2.7
NOT APPLICABLE	9	1	0.7
TOTAL		148	100.0

The majority of homesteads (57.4%) felt that there was enough grass for their animals to feed throughout the year. However, of those who felt that there was not enough grazing throughout the year (63 homesteads), 53 respondents indicated that they had perceived a decline in the quality of grazing over the years. A number of reasons were given for this (Table 40).

Table 40: CAUSES OF DECLINE IN GRAZING

Value Label	Value	Frequency	Percent
TOO MANY CATTLE	1	19	35.8
GRAZING AREA TOO SMALL	2	7	13.2
CATTLE FROM OUTSIDE	3	19	35.8
BUSH ENCROACHMENT	5	2	3.8
OTHER	7	5	9.4
DON'T KNOW/BLANK	8	1	1.9
TOTAL		53	100.0

III. GENERAL LAND TENURE SYSTEM PROBLEMS:

Having provided a general overview of the tenure situation on Swazi Nation Land the discussion now will focus on specific tenure issues. Four general areas for investigation were identified in the project paper. They were:

- a) fragmentation of land holdings;
- b) farmer control over production decisions;
- c) uncultivated farmland of good potential; and
- d) pasture management.

The following discussion addresses each of these areas of concern in turn. A number of hypotheses, based upon the initial review of the data through the frequency distributions, were proposed to test the relationships between variables associated with these issues. The results of the statistical tests are to be found in appendix 3.

A. Fragmentation of land holdings:

Fragmentation of land must be distinguished from the subdivision of land. Fragmentation refers to a situation where the landholding of an individual or homestead is comprised of several non contiguous units. Subdivision, on the other hand, is the process by which a piece of land is broken into smaller pieces. Subdivision occurs primarily through inheritance, though it also occurs through allocations of land by the land holder and transactions, such as the borrowing and lending of land.

Fragmentation is potentially a policy concern because it can lead to inefficiencies in the use of scarce resources (capital and labour) and less intensive utilization of the land. It may, however, confer a number of benefits as homesteads are able to spread their risks by taking advantages of different soil types and permitting a wider range of crops to be planted. Subdivision becomes a problem as it leads to the fragmentation of land into sub-economic units and eventual landlessness.

Fragmentation and subdivision are related. Given a high rate of subdivision a homestead will eventually be required to have a number of units of land to support the needs of that homestead. In the third and subsequent generations these units become increasingly fragmented. Fragmentation may also result from individuals seeking available land for the expansion of their agricultural enterprise.

Seven hypotheses were proposed to test the significance of the fragmentation and subdivision issue in relation to Swazi Nation Land homesteads.

1. Inheritance results in subdivision.
2. Rate of subdivision is increasing
3. Inheritance/subdivision relationship varies by ecological zone
4. Younger homestead heads need more parcels to get a given hectareage than older homestead heads.
5. Fragmented holdings will have a higher percentage of fields fallow than nonfragmented holdings.
6. Fragmentation varies by ecological zone
7. Older homestead heads more frequently have fragmented parcels than younger homestead heads.

The relationship of inheritance to subdivision does not appear to be of significance. Individuals inheriting land are more likely to inherit all of the land rather than a portion of the holding, that is, subdivision at inheritance does not seem to be taking place. There is no relationship between the inheritance of portion of the landholding or the entire land holding and when the land holding was inherited. Thus, there is not an increase in the occurrence of subdivision over time. Further testing also showed that the prevalence of subdivision of land holdings is not related to ecological zones of the country.

There do not appear to be significant constraints imposed by existing fragmentation. Holdings which are fragmented show no difference in the amount of land which is fallow than those holdings which are unfragmented. The argument that fragmented holdings are less likely to be fully utilized is refuted by the data. Younger homesteads require a larger number of land holdings to reach a given hectareage of land, while older homesteads tend to have more land holdings in general. This would seem to indicate that individual units of land are becoming smaller. Again there is no relationship between ecological zone and the extent of fragmentation.

B. Farmer control over production decisions:

The recent literature on land use in Swaziland repeatedly raises the issue of constraints on the farmer's ability to make independent decisions on the utilization of his land holdings. These issues are primarily center around the impact of cattle grazing on crop residues at the end of the traditional growing season and its relation to the adaptation of innovative land use practices such as winter plowing and the utilization of crop residues (harvesting for fodder or ploughing under to return organic matter to the soil).

This literature has also indicated that traditionally, fencing is not permitted on Swazi Nation Land. However, casual observation will show that fencing is commonly practiced throughout the country reflecting an increased acceptance of this individualization of land use.

Given that fencing was seen to be an innovative modification of the traditional land use practices it is used as a critical indication of the acceptance of these other land use practices. The majority of the analysis concentrated on the communities' acceptance of fencing by individuals. Twelve hypotheses were proposed to test the significance of fencing and these production innovations as well as an assessment of community attitudes toward fencing.

1. Farmers who fence are more likely to winter plow.
2. Farmers who fence are more likely to harvest their stover.
3. Farmers who have not fenced have been constrained by community attitudes toward fencing.
4. Farmers who fence will consult their neighbors.
5. Farmers who fence will consult their chief.
6. If a chief fences his land farmers are more likely to fence theirs.
7. Farmers are more likely to fence if the community attitude is favorable.
8. Farmers are more likely to fence if crop damage disputes are common.
9. Community attitude toward fencing will vary by ecological zone.
10. Farmers with larger cattle herds are more likely to fence.
11. Farmers who fence and who think that the community attitude toward fencing is not favorable will not use wire to fence.
12. Farmers who would have ploughed earlier if cattle had been removed earlier will winter plough.

The relationship between fencing and the adaptation of the two production techniques of winter ploughing and utilization of stover show mixed results. There is no relationship between fencing and winter ploughing. Farmers who have fenced are as likely to winter plough as those who have not. However, farmers who have fenced are more likely to utilize the crop residue than those who have not fenced.

Analysis of the data reveals a significant change in attitudes about fencing from what one is led to believe from the literature. Generally speaking, only 6.9% of the respondents indicated that the community did not like fencing, 30.5% were ambivalent, and 62.6% favoured it. Consequently it is not surprising that there is no relationship between a farmer having fenced and the community's attitude toward fencing or that a farmer feels constrained about fencing because of the community attitude toward fencing. Individuals are more likely to have fenced if their chief has part of his holding fenced, but they are as likely to consult their neighbours or chief about their proposed fencing as they are to not consult them. There is a slight variation in community attitudes toward fencing across ecological zones, but not significantly so.

The frequency distributions had indicated that people fenced, or saw the advantages of fencing, to be the protection of crops from livestock damage. However, there is no relationship between the commonality of crop damage disputes in a given area and the likeliness of an individual fencing. Similarly, owners of larger cattle herds, who are more likely to be sensitive to crop damage by their own cattle, are no more likely to fence than owners of fewer animals. Analysis shows a significant relationship between the type of fencing materials used and the community attitudes toward fencing, wire fencing materials are more likely to be used in communities favouring or opposed to fencing, while other materials are more likely to be used in communities which are ambivalent toward fencing.

A further test looked at the inter-relationship between winter ploughing and the timing of spring ploughing. The timing of spring ploughing is dependent on the coming of the first rains. The rains loosen the soils on the fields as well as bring the first flush of grass in the grazing areas with which cattle begin to rebuild their strength. The harder the soil is the stronger the oxen must become before ploughing can begin. A major advantage of winter ploughing is the loosening of the soil after the growing season which permits earlier access to the land in the spring. Analysis indicates that farmers would have winter ploughed would have ploughed earlier if the cattle had been removed earlier.

C. Unused land of good potential:

Causal observation seems to indicate that there exist sizable amounts of good potential land which is uncultivated, land which has obviously been cultivated at some time in the past. There will be a certain amount of intentional and unintentional fallowing as a result of such factors as rainfall and resource (labour and other inputs) availability in a given year. However, at issue are pieces of land which have lain idle for long periods of time, unutilized by the homestead but not being lent out to neighbours who may have the resources to cultivate the land. The availability of new land may not necessitate the borrowing by resource rich homesteads of additional land from resource poor homesteads. On the other hand social and institutional constraint may inhibit these temporary land transactions.

Low (1986, 79-86) has identified five stages of the Swazi homestead life cycle: establishment, expansion, consolidation, fission, and decline. These stages reflect the age of the head of the homestead and the growth of the family associated with that homestead. Thus the establishment phase is comprised of a young head and most commonly a nuclear family. As the family grows the homestead expands. Consolidation occurs as the head ages and married children and grandchildren are present in the

homestead. As these married children break away from the homestead (fission) the number of homestead members begin to decrease. And finally in the decline stage most of the children have left the homestead.

During this process the homestead will have different resource endowments (land, labour, and capital) and different needs for these resources. In all likelihood in the earlier stages of the life cycle the head of the homestead will be involved in wage employment, while at the later stage of the cycle, the children will be in wage employment and sending remittances back to the homestead. Similarly, at the earlier stage of the cycle fewer members in the homestead will necessitate a lower level of production to sustain the homestead than at the later stage of the cycle. It was therefore hypothesized that at different stages of the life there will be different demands for the land which is available to the homestead and, consequently, different amounts of land fallow.

Three hypotheses were developed to test these life cycle relationships and three were developed to look at the relationship between land scarcity and utilization.:

1. Homesteads with older heads will have a lower percent of land fallow.
2. Homesteads with larger numbers of cattle have a smaller percentage of fallow land.
3. Homesteads with a larger number of adults will have a lower percentage of fallow land.
4. borrowing of land will occur more frequently in land scarce areas.
5. The percentage of land fallow will increase in land scarce areas.
6. Land taken by the chief and reallocated will occur more frequently in those areas of land scarcity.

Analysis shows that there is no relationship between any of the variables tested and the amount of land which is fallow. Life cycle analysis of the data will be treated in greater detail in the next section of the report. Homesteads with older head appear to have more land fallow, while homesteads with more cattle or more adults appear to have less land fallow, but the relationships are not significant.

A scarcity index was devised to analyse to remaining three hypotheses. The index considered perceptions of declining size of allocations, increasing amounts of the token of appreciation given to the chief in the allocation process, and increasing length of time of the allocation process itself. While the index relies on perceptions by the individual, the borrowing of land and utilization of land might be related to the perceptions of scarcity. However, no relationships were seen to exist. Perceptions of the community situation bears no relationship to the individual's action.

D. Range management and tenure rules:

Overgrazing and the resultant land degradation is quite evident in Swazi Nation Land areas. This situation is quite common in communal tenure systems where an increasing human population puts a greater demand on the land base for arable farming and squeezes a growing cattle herd onto a decreasing pasture. However, livestock play a significant economic and social role in the Swazi homestead. Mitigation of the continuing degradation of the range resources of the community necessitates the evolution of community based livestock management systems as well as community and individual recognition of the costs of keeping cattle. Community attitudes toward range management will be addressed in the analysis of the case study findings.

However, seven hypotheses were formulated to look at issues related to cattle movement, communal grazing, fencing.

1. Smaller herds will graze closer to the homestead.
2. Larger herds will not be returned to the kraal every night.
3. Homesteads more dependent on draught power for ploughing will have larger herds.
4. Tenure rules for grazing will be most strict in areas without enough grass.
5. Homesteads with a lower percentage of land fallow will be in areas with fewer crop damage disputes.
6. Individuals in areas with fenced grazing will not have their own holdings fenced.
7. Individuals with large numbers of cattle owned will keep them in fenced grazing areas.

Homesteads having cattle herds of different sizes are expected to make different utilization of those animals. Demand for the utilization of those animals should dictate their accessibility or where they are grazed. Owners of smaller herds are likely to make greater demands on individual animals for milk, meat, and draught purposes than owners of larger herds. Younger homesteads have fewer cattle. They also have less labour available for herding. However, the analysis indicates that there is no relationship between herd size and the location in which the cattle.

While it was assumed that some cattle of the homestead did not return to the kraal every night, this proved to not be the case as nearly all cattle returned to the homestead every night throughout the year. Further investigation should be made of the seasonality of sisa arrangements.

As grazing deteriorates, and as individual and community realization of the causes and consequences of a declining range resource become evident attempts are made to ameliorate the situation.

As the intensity of land utilization increases community attitudes toward land management will change. The analysis indicates, for example, that individuals in areas of fenced grazing areas are less likely to have their holdings fenced. Where community action has been taken to limit the number of crop damage disputes by establishing a fenced grazing area, the individual sees the advantage and does not have to absorb the individual cost of fencing. However, there is no significant relationship between homesteads having a lower percentage of land fallow (a proxy for intensity of land use) and whether or not crop damage disputes (a proxy for livestock management) are common in the area.

Perceptions about the existence and cause of a declining grazing area are not as developed. As noted earlier, over 57% of the respondents indicated that there was enough grass for their animals to graze throughout the year. Where it was felt that there was not enough grazing over 35% indicated that there were too many cattle and a similar 35% indicated that there were cattle coming from outside their area.

As the community is forced to recognize the problem tenure rules should change. However, an index of grazing tenure rules based on the existence of a RDA fenced communal grazing area and the grazing of cattle from other chiefs' or runners' areas during the summer or winter bore no relationship to the perceptions of the amount of grass available.

Finally, no relationship was established between the size of the herds and the likelihood that they would be kept in a fenced grazing area.

IV. POPULATION GROUPS AND TENURE ISSUES

Does the current land tenure system create problems for particular groups of people within the population?

In the preceding section general land tenure issues were analyzed for the population as a whole. As was concluded, generally speaking, there appear to be no significant land tenure problems. However, while this may be true for the entire population as a whole, it may not be the case for certain subsets of that population. Homesteads at different stages of it's life cycle, homesteads with different production objectives, homesteads with different resource endowments may find constraints in the land tenure system which inhibit or prevent agricultural activities.

This section will look at these cases.

Seven such groups were identified for further analysis.

They are:

1. Commercial farmers
2. Homesteads classified by source of income
3. Homesteads classified by stages of the life cycle
4. Female headed homesteads
5. Poor homesteads
6. Investors
7. Innovators

Each of these groups was compared to the rest of the population, first to test for characteristic differences between the specific group and the entire population, and secondly to determine if there were significant differences between the specific group and the rest of the population with respect to various tenure issues. A standard set of hypotheses was used for all of the groups for each analysis. Results of the statistical analyses are to be found in Appendix 3-2.

Nineteen characteristics were tested which addressed five major issues dealing with homestead composition, land holdings, cattle, income and maize production, and agricultural innovations:

A. Homestead composition

1. The number of people in the homestead
2. The number of adults in the homestead
3. The age of the homestead head
4. The life cycle stage of the homestead

B. Land holdings of the homestead

5. The size of the landholding of the homestead
6. The number of land holdings of the homestead
7. The total area land devoted to maize production
8. The percentage of field area which was fallow
9. The area of cultivated land devoted to the production of cash crops
10. The percentage of cultivated land in cash crops

C. Cattle ownership

11. The number of cattle owned

D. Income and maize production

12. The grouped main income source of the homestead
13. The wage and agricultural income of the homestead
14. If the homestead produces enough maize to feed itself.
15. If the homestead produces enough maize to sell

E. Agricultural innovations

16. The existence of fencing of part of the landholding
17. If there is a fenced grazing area
18. If the homestead makes use of the crop stover
19. If the homestead practices winter plowing

Additionally twenty-four tenure issues which might present tenure constraints for specific subsets of the population were identified for further analysis. These dealt with issues of access to existing land, fragmentation of land holdings, utilization of land, access to additional land, borrowing and lending of land, security of tenure, and cattle movement/range management issues.

A. Access to existing land

1. The percentage of the inherited land which was a part of a larger landholding
2. The number of the homestead's land holdings which were inherited
3. The number of the homestead's land holdings which were allocated
4. If the land allocation was sought because the homestead had no land
5. If the allocation was sought because the homestead head wished to establish a homestead

B. Fragmentation of land holdings

6. What percentage of the land is at homestead
7. What percentage of the land is fragmented within 500 meters of the homestead
8. What percentage of the land is fragmented over 500 meters from the homestead

C. Utilization of land

9. Is there any arable land which is uncleared
10. Is there any arable land which has been cleared but is presently unused

D. Access to additional land

11. Is the homestead currently looking for land
12. How far is the homestead head willing to go for land
13. Has the homestead ever tried but failed to get land
14. Are the allocations of land getting smaller
15. Is the token of appreciation given to the chief changing

E. Borrowing and Lending of land

16. Has the homestead borrowed land which it is not presently borrowing
17. Is the homestead currently lending any of its land
18. Does the homestead see any problems with borrowing land from the viewpoint of the borrower
19. Does the homestead see any problems with borrowing land from the viewpoint of the lender
20. Has this homestead had any of these problems

F. Security of Tenure

21. If the homestead had land in the past which does not currently have, why did it lose that land
22. Does the homestead head know of any banishment case

G. Land Use Constraints

23. Would the homestead have plowed earlier if the cattle had been removed from the fields earlier
24. Is there enough grass for the cattle to feed.

Tables 41 and 42 summarize the results of the analysis for each of the groups. The more detailed explanations are found in the relevant portions of appendix 3.

Table 41: HOMESTEAD CHARACTERISTICS

Homestead Characteristics	1970		1971		1972		1973	
	Sample	100%	Sample	100%	Sample	100%	Sample	100%
A. Homestead composition								
1. The number of people in the homestead	See	14	See	14	See	14	See	14
2. The number of adults in the homestead	See	18	See	18	See	18	See	18
3. The age of the homestead head	See	41	See	41	See	41	See	41
4. The life cycle stage of the homestead	See	See	See	See	See	See	See	See
B. Land Holdings of the homestead								
5. The size of the landholding of the homestead	More	17	See	17	See	17	See	17
6. The number of land holdings of the homestead	Large	17	See	17	See	17	See	17
7. The total area land devoted to maize production	See	14	See	14	See	14	See	14
8. The percentage of field area which was fallow	Less	18	See	18	See	18	See	18
9. The area of cultivated land devoted to the production of cash crops	N/A	5	See	5	See	5	See	5
10. The percentage of cultivated land in cash crops	N/A	18	See	18	See	18	See	18
C. Cattle ownership								
11. The number of cattle owned	More	21	See	21	Tend Less	N/A	See	See
D. Income and maize production								
12. The grouped main income source of the homestead	N/A	N/A	See	Other	N/A	More Ag	N/A	
13. The wage and agricultural income of the homestead	N/A	N/A	See	(23)	N/A	More Ag	Tend More	
14. If the homestead produces enough maize to feed itself	See	19	See	Tend Less	N/A	See	See	
15. If the homestead produces enough maize to sell	N/A	19	See	See	N/A	More	See	
E. Agricultural innovations								
16. The existence of fencing of part of the landholding	Tend more	See	See	See	Tend Less	See	See	
17. If there is a fenced grazing area	Tend less	See	See	See	N/A	See	See	
18. If the homestead makes use of the crop stover	Tend to use	See	(16)	See	Less	See	Less	
19. If the homestead practices winter plowing	Winter crop	(21)	(27)	Tend Less	Less	See	See	

Notes to Table 41:

1. Group 1 is oldest (55.4 years), Group 3 is youngest (48.3 years)
2. Group 1 has the largest land holdings (4.9 ha), Group 3 the smallest (2.9 ha)
3. Group 1 has the most land holdings (2.2), Group 4 the least (1.5).
4. Group 2 has the most land devoted to maize production (1.7 ha), Group 3 the least (1.2 ha)
5. Group 2 has the most land devoted to cash crop production (0.88 ha), Group 4 the least (0.0 ha)
6. Group 2 has the highest percentage of land in cash crops (20.3%), Group 4 the least (0.0%)
7. Group 1 have the most cattle (16.5 owned and sisa'd in and 15.2 owned and sisa'd out), Group 4 the least (8.2 owned and sisa'd in and 6.5 owned and sisa'd out)
8. Group 1 most often produces enough maize to feed itself, Group 4 least often
9. Group 1 most often produces enough maize to sell, Group 4 least often
10. Group 1 most likely to winter plow, Group 3 least likely
11. Establishment phase has 3.0 ha, consolidation 4.9 ha, and decline 2.9 ha.
12. Establishment phase has 0.67 ha, consolidation 2.0 ha, and decline 1.2 ha.
13. Expansion has 17%, decline 0.0%
14. Establishment have the fewest animals, increasing to consolidation phase, and then decreasing to decline
15. Establishment phase is most likely to never have enough in comparison to later stages
16. Expansion phase is more likely to use than others
17. Fission phase is most likely to winter plough
18. No agriculture as a secondary income source
19. Most commonly establishment and expansion phases

Table 42: LAND TENURE ISSUES

LAND TENURE ISSUES

A. Access to existing land

1. The percentage of the inherited land which was a part of a larger inheritance
2. The number of the homestead's land holdings which were inherited
3. The number of the homestead's land holdings which were allocated
4. If the land allocation was sought because the homestead had no land
5. If the allocation was sought because the homestead head wished to establish a homestead

B. Fragmentation of land holdings

6. What percentage of the land is at homestead
7. What percentage of the land is fragmented within 500 meters of the homestead
8. What percentage of the land is fragmented over 500 meters from the homestead

C. Utilization of land

9. Is there any arable land which is uncultivated
10. Is there any arable land which has been cleared but is presently unused

D. Access to additional land

11. Is the homestead currently looking for land
12. How far is the homestead head willing to go for land
13. Has the homestead ever tried but failed to get land
14. Are the allocations of land getting smaller
15. Is the token of appreciation given to the chief changing

E. Borrowing and lending of land

16. Has the homestead borrowed land which it is not presently borrowing
17. Is the homestead currently lending any of its land
18. Does the homestead see any problems with borrowing land from the viewpoint of the borrower
19. Does the homestead see any problems with borrowing land from the viewpoint of the lender
20. Has this homestead had any of these problems

F. Security of tenure

21. If the homestead had land in the past which does not currently have, would it lose that land
22. Does the homestead head know of any banishment case

G. Land Use Constraints

23. Would the homestead have allowed earlier if the cattle had been removed from the field earlier
24. Is there enough grass for the cattle to feed

	1980	1981	1982	1983	1984	1985	1986
1	100	100	100	100	100	100	100
2	100	100	100	100	100	100	100
3	100	100	100	100	100	100	100
4	100	100	100	100	100	100	100
5	100	100	100	100	100	100	100
6	100	100	100	100	100	100	100
7	100	100	100	100	100	100	100
8	100	100	100	100	100	100	100
9	100	100	100	100	100	100	100
10	100	100	100	100	100	100	100
11	100	100	100	100	100	100	100
12	100	100	100	100	100	100	100
13	100	100	100	100	100	100	100
14	100	100	100	100	100	100	100
15	100	100	100	100	100	100	100
16	100	100	100	100	100	100	100
17	100	100	100	100	100	100	100
18	100	100	100	100	100	100	100
19	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100
21	100	100	100	100	100	100	100
22	100	100	100	100	100	100	100
23	100	100	100	100	100	100	100
24	100	100	100	100	100	100	100

Notes to Table 42

1. Group 1 is most likely to inherit (63.3%), Group 2 is least likely (38.2%)
2. Group 1 has the smallest percentage at the homestead, Group 4 has the largest percentage (78.6%)
3. Group 1 has the largest percentage over 500 m from the homestead (21.1%), Group 4 has the smallest (7.1%)
4. Group 1 most frequently indicates unused land (36.1%), Group 4 least frequently (0.0%)
5. Group 1 homesteads have failed least (4.1%), Group 3 homesteads the most (21.1%)
6. Group 4 homesteads more frequently had problems
7. Group 1 homesteads would have ploughed earlier
8. Group 1 homesteads see a decline in the quality of grazing
9. Expansion phase homesteads are most likely to be looking for more land
10. Establishment and expansion phase homesteads are more likely to have tried and failed to get land
11. Establishment phase homesteads do not see a decline in the size of allocations (less than 50%), while over 70% of the other groups see a decline

4-1 Commercial Farmer:

Three definitions of commercial farmers were developed from Testerink's earlier analysis. His analysis considered hectareage devoted to maize and cash crops as well as production/consumption variables. This survey data does not have production nor consumption figures per se, but a proxy can be used with variables of 'enough maize to feed' and 'enough maize to sell'.

Definition 1 is basically Testerink's definition. A farmer is classified as being commercial if he fulfills one of the following criteria:

1. The main source of income is the sale of maize and the homestead grows enough maize to sell most or every year.
2. The second major source of income is the sale of maize and the homestead grows enough maize to sell every year.
3. The main source of income is the sale of other crops (not maize, cotton, or tobacco) and the homestead grows enough maize to feed everyone most or every year.
4. The total hectareage of vegetables exceeds .49 ha., or vegetables are grown outside the normal cropping season whose sale is the primary or secondary source of income, or irrigated farming is practiced with sale of vegetables being the primary or secondary source of income.

Definition 2 modifies Testerink's definition making the conditions more strict:

1. The total hectareage of cotton is at least 2.5 ha and the sale of cotton is the primary source of cash income.
2. The total hectareage of tobacco is at least 1 ha and the sale of tobacco is the primary source of cash income.
3. The total hectareage of cotton is at least 4 ha and the sale of cotton is the second most important source of cash income.
4. The total hectareage of tobacco is at least 2 ha and the sale of tobacco is the second most important source of cash income.
5. At least 50% of the total hectareage planted is cotton and the sale of cotton is the primary source of cash income.
6. At least 25% of the total hectareage planted is tobacco and the sale of tobacco is the primary source of cash income.

7. At least 75% of the total hectarage planted is cotton and the sale of cotton is the second most important source of cash income.
8. At least 50% of the total hectarage planted is tobacco and the sale of tobacco is the second most important source of cash income.
9. The main source of cash income is the sale of cotton and the homestead grows enough maize to feed its members every year, AND enough maize is grown for sale most or every year.
10. The second most important source of cash income is the sale of cotton and the homestead grows enough maize to feed its members every year, AND enough maize is grown for sale every year.
11. The total hectarage devoted to vegetable production is at least .5ha. AND the primary or secondary source of income is the sale of vegetables.

And definition 3 modifies the base definition making the conditions less strict:

1. The total hectarage of cotton is at least 1ha. OR the total hectarage of tobacco is at least .5ha. OR the percentage of land devoted to cotton growing is at least 35% OR the percentage of land devoted to tobacco growing is at least 15%.
2. The primary source of cash income is the sale of cotton and the homestead grows enough maize to feed itself and to sell in most or every year.
3. The second most important source of income is the sale of cotton and the homestead grows enough maize to feed itself and to sell every year.
4. The total hectarage devoted to vegetables is at least .5ha. OR farming outside the normal cropping season is practiced resulting in the sales of vegetables as the primary or secondary source of cash income OR irrigated farming is practiced resulting in the sales of vegetables as the primary or secondary source of cash income.

The numbers of commercial farmers falling into each definition are as follows:

Definition 1	28
Definition 2	15
Definition 3	32

Each definition will be discussed in turn looking first at the homestead characteristics in relation to the rest of the population and then at the specific tenure related issues. More time will be spent with the first definition and only differences which appear in analyses of definitions 2 and 3 will be noted.

The first definition of commercial farming is based on the regular sale of maize or the sale of other cash crops (cotton, tobacco, or vegetables). To reach this level of production one assumes a certain endowment of resources; land and capital accumulated over time and adequate labour.

The composition of the homestead addresses the issue of adequate labour. Older homesteads are more likely to have adequate labour for commercial operations. The analysis of the four hypotheses show that commercial farmers are no different than the rest of the population in terms of all of the variables considered. The number of individuals and adults in the homestead are not significantly different, nor are the ages of the head and the stage of the homestead life cycle.

The analyses of land holdings does indicate significant differences. Commercial farmers have more units of land (42% have three or more in comparison to 14% of the general population) and have larger land holdings (6.5 ha vs. 3.2 ha). Given the definition one would expect a larger total area of maize production and cash crops and a higher percentage of land in cash crops. However, the area of land devoted to maize production was not significantly different. Commercial farmers made more intensive use of their land (only 3% fallow in comparison to 7% for others).

Similarly, commercial farmers differ from their neighbours in terms of the numbers of cattle they hold. Commercial farmers own and have sisa'd in an average of 14.7 animals in comparison to only 10.7 animals for the general population. A less significant difference exists in terms of the number of cattle owned and sisa'd out (14.1 vs. 10.3 animals).

Analysis of the income sources of commercial farmers in comparison to the rest of the population is obviously inappropriate by definition, as are comparisons of having adequate amounts of maize to sell. However, there appears to be no differences between the groups in terms of having enough maize to feed the homestead.

Differences between the groups in terms of agricultural innovations are not substantial. While 75% of the commercial farmers fence in comparison to 59.7% of the general population this is not statistically significant and there is no difference in relation to community fencing or fenced grazing area. Commercial farmers are no more likely to utilize their stover. However, they are more likely to winter plough (50% vs. 32%).

The stricter definition commercial farmers (definition 2) differ only slightly from the first definition in terms of their characteristics vs. the rest of the population. Comparisons of the means of the two groups shows a sizable increase in the number of cattle owned and sisa'd out by the second group of commercial farmers in comparison to the first group (18.1 head vs. 14.8 head). There is little change in the number of cattle owned and sisa'd out by the general population (10.3 head and 10.2 head). Definition 2 commercial farmers are significantly less likely to be in an area with a fenced grazing area than the general population. However, they are no more likely than the general population to winter plough.

The third definition of commercial farmers, being the least strict, begins to show closer similarities to the general population resulting in fewer variables where the two groups differ. There is no longer a significant difference between the commercial farmer and the general population in terms of the amount of land fallow, the number of cattle owned and sisa'd in or owned and sisa'd out, nor in the practice of winter ploughing. However, there is a difference between them and the general population in terms of fencing. The definition three commercial farmers are more likely to have some of their land fenced (78% vs. 59%) and are less likely to live in areas where there are fenced grazing areas (12.5% vs. 29.8%); an inverse relationship which was demonstrated earlier.

Given that the identified differences between commercial farmers and the general population predominantly relate to land holdings, are there any significant tenure constraints facing the commercial farmers?

Commercial farmers differ from the general population in a number of the issues related to access to their existing land holdings. It has already been shown that they have more land holdings so it is expected that they will differ from the general population in terms of the number of land holdings which were inherited and allocated. There is no difference between the two groups in terms of the likelihood of inheriting only a part of the inheritance, nor in terms of requesting an allocation because they have no land. However, commercial farmers are more likely than the general population to request an allocation for the purposes of establishing an independent homestead.

Since commercial farmers have more land (in terms of numbers of holdings as well as total land area) than the general population, it would be expected that differences in terms of fragmentation should be evident. Indeed, they are significantly different in terms of the number of land holdings away from the homestead. (Thirty-six percent of the commercial farmers had at least one holding within 500 meters and 18% had more than one, while only 22% of the general population had one and only 9% had more than one. Twenty-one percent of the commercial farmers had one land holding over 500 meters from the homestead and 15% had

two or more, in comparison to the general population's 16% with one and only 3% with two or more).

Commercial farmers have a significantly lower percentage of their land holdings at the homestead (56.2%) in comparison to the rest of the population (73.3%). This is to be expected it having been shown that commercial farmers have more land holdings. Commercial farmers also have a significantly higher percentage (27.7%) of their land fragmented within 500 meters of the homestead than that of the general population (17.3%). However, at distances greater than 500 meters there is no statistically significant difference between the two groups in the amount of land at that distance (15.9% of commercial farmer land holdings vs. 10.2% of the general population holdings).

As indicated earlier commercial farmers have a lower percentage of their land fallow. However, there is no difference between commercial farmers and the general population in terms of the existence of some uncleared land nor in terms of cleared land which is not being utilized at a given point in time.

The question of access to land is of importance to an individual who wishes to expand a farming operation. If there is a tenure constraint to getting access to adequate amounts of land commercial farmers should most likely be constrained. However, the analysis shows that commercial farmers do not differ from the general population in terms of any of the issues identified for analysis. Forty three percent of the commercial farmers indicate that they are looking for land in comparison to 41% of the general population. Only 27% of the commercial farmers are willing to go any distance to get land in comparison to 38% of the general population, but this is not a significant difference. Fourteen percent of the commercial farmers and 15% of the general population have tried and failed to get land. Finally, commercial farmers are no different from the general population in terms of their perceptions about the size of allocations and tokens of appreciation given to the chief.

The borrowing and lending of land shows some difference between the two groups. Commercial farmers are more likely to have borrowed land in the past (14% vs. 6%) and to be lending land in the present (15% vs. 5%). Eighty-three percent of the commercial farmers and 85% of the general population identified potential problems with borrowing and lending land from the viewpoint of the borrower and 78% of the commercial farmers and 94% of general population indicated potential problems from the viewpoint of the lender. Not only was there no statistical difference between the two groups in terms of these perceptions, only 18% of the total population indicated that they personally had had any of the problems.

The perception of security of tenure will impact upon the willingness to make investments in one's land holdings. Sixty-seven homesteads reported having had land which they no longer

have. Forty-two percent of the land which is no longer held by the homestead was either taken by the chief (15%) or taken in a resettlement programme (27%). A similar 42% was either given (presumably by the owner) to someone else (15%) or abandoned/left idle (27%). Commercial farmers are no different than the general population with respect to how the land was lost. Nor are they any more likely than the general population to know of any banishment cases.

Commercial farmers are no more likely than the general population to have ploughed earlier if cattle had been removed earlier. Commercial farmers are more perceptive in terms of the decline in amount of grazing for livestock. Sixty-four percent indicate that there is not enough grazing for the livestock in comparison to only 39% of the general population.

The stricter definition commercial farmers (def. 2) differ slightly from the definition one farmers in relation to the general population on tenure issues. They were no more likely than the general population to request an allocation for the purposes of establishing a homestead. Nor are they any more likely to be lending land. They do differ from the general population (unlike the definition 1 commercial farmers) in their perceptions of a changing token of appreciation (They see a movement toward cash payments.) and in their awareness of banishment cases.

And there are slight differences with definition 3 commercial farmers. As with the definition 2 commercial farmers they are no more likely to have requested an allocation for the purposes of establishing a homestead than the general population. They differ from the previous definition in comparison to the general population with respect to the percentage of land within 500 meters of the homestead (no difference) and the percentage of land over 500 meters from the homestead (significantly different from the general population). They are not different from the general population in terms of their having borrowed land in the past. Like definition 2 they are more likely than the general population to be aware of banishment cases.

4-2 Homesteads classified by source of income:

The main source of income was used to classify a second subset of the population. Homesteads had been asked to indicate their primary, secondary, and tertiary source of income. These responses were combined to give four possible income categories into which homesteads were classified.

1. The primary source of income is agriculture (Group 1).
2. The primary source of income is wage employment and the secondary source is agriculture (Group 2).

3. The primary source of income is wage employment and the secondary source is nonagriculture (Group 3).
4. The primary source of income is nonagriculture and nonwage employment (Group 4).

The number of homesteads in each group were as follows:

Group 1	49
Group 2	34
Group 3	115
Group 4	21
<hr/>	
Total	219

Significant differences between these groups were sought in the analysis. Homesteads with no cash income were excluded from this analysis.

Homestead composition should give some indication of the amount of labour available to the homestead. Where agriculture is the primary or secondary source of income there should be greater labour demands than in the other groups. However, there is no significant differences between the groups in terms of the number of individuals nor the number of adults in the homestead. There is a significant difference between the groups in terms of the age of the head of homestead. Group 1 homesteads have older heads (55.4 years) while group 3 have the youngest heads (48.3 years). However, no significant difference between groups is evident in relation to different stages of the life cycle.

Agriculture being the primary or secondary source of income should be reflected in the size and utilization of land holdings. There is a significant difference between the groups in terms of the size of land holdings (group 1 with 4.9 ha, group 2 with 4.8 ha, group 3 with 2.9 ha, and group 4 with 3.3 ha), as well as the number of holdings. Differences between the groups are demonstrated in terms of the total area of land devoted to maize production (Group 3 had the least with 1.2 ha in comparison to the other groups which ranged from 1.5 ha to 1.7 ha.); in terms of the total area of land devoted to cash crop production (Groups 1 and 2 have 0.61 ha and 0.88 ha respectively in comparison to 0.01 ha and nothing for groups 3 and 4 respectively.); and in terms of the percentage of land devoted to cash crop production (Groups 1 and 2 have over 14% of their land in cash crop production in comparison to less than 1% for the other two groups.). Surprisingly, there is no difference between the groups in terms of the amount of land which is fallow.

It is expected that homesteads deriving their primary or secondary income sources from agriculture will have larger cattle herds, as with the commercial farmers discussed earlier. There is a significant difference between the four groups both in terms of the number of cattle owned and sired as well as owned and

sis'd out. Homesteads deriving their primary source of income from agriculture have over 15 head of cattle; where agriculture is the secondary source of income cattle herds average between 13 and 14 head. Nonagricultural income homesteads have between 6 and 10 head of cattle.

Homesteads whose primary source or secondary source of income is from agriculture have been shown to have planted more maize. One would expect that they would also differ from the other groups and more often have enough maize to feed themselves as well as have enough maize to sell. Over 22% of group 1 homesteads have enough maize to feed itself every year in comparison to 15.2% for group 2, 8.0% for group 3, and 14.3% for group 4 homesteads. Eighteen percent of group 1 always or most years have enough maize to sell in comparison to 9%, 4%, and 5% for groups 2, 3, and 4 respectively. Only 34.7% of these homesteads never have enough maize to sell in comparison to 54.5%, 74.3%, and 71.4% of homesteads of groups 2, 3, and 4.

Finally, it would be expected that homesteads deriving their primary or secondary income sources from agriculture would be more likely to have taken advantage of agricultural innovations. However, there is no significant difference between the groups in terms of fencing, the existence of a fenced grazing area, or in the use of crop stover. Only in terms of winter ploughing do differences show. Over half (55.3%) of group 1 homesteads winter plough in comparison to only 24.1% of group 3 homesteads.

Having earlier looked at commercial farmers to see if they appeared to be constrained by tenure issues, the discussion now poses the same questions to the four income groups.

There appears to be almost no difference between groups in terms of how or why they acquired their existing holdings. Only in terms of the number of inherited land holdings do significant differences appear. Only 36.7% of group 1 homesteads did not inherit any land in comparison to 61.8% for group 2, 54.8% for group 3, and 47.6% for group 4. Over sixteen percent (16.3%) of group 1 homesteads inherited 3 or more pieces of land, in comparison to 8.8% for group 2, 6.1% for group 3 and none for group 4. There was no difference between groups in terms of the number and reasons behind land allocations.

Some differences between the groups exist in the location of their land holdings. While there are no significant differences in terms of the number of land holdings at various distances from the homesteads, though group 1 homesteads tend to have more holdings over 500 m from the homestead, the percentages of land holdings at the various distances differ significantly between groups. Group 1 homesteads have a smaller percentage of land at the homestead (60% in comparison to 73% to 79% for the other three groups) and have a larger percentage of land holdings at more than 500 m from the homestead (21% in comparison to 7% to 10% for the other three groups).

One would expect homesteads deriving their primary or secondary income from agriculture to be using their land more intensively. There are no significant differences between the groups in terms of the existence of uncleared arable land. However, group 1 homesteads are more likely to have land fallow than the other groups (26.5% in comparison to 12.1%, 16.7%, and nothing for groups 2 through 4 respectively).

There appears to be no differences between the groups in terms of looking for additional land or in the distances which the homestead is willing to go for land. However, the groups do differ in their experiences of failure in attempts to get land. Only 4.1% of group 1 homesteads have tried and failed in comparison to 14.7% for group 2, 21.1% for group 3, and 9.5% for group 4. Perceptions about the size of allocations and tokens given to the chief do not differ between groups.

There is little difference between groups on the issues associated with the borrowing and lending of land. When the small numbers of previous borrowers or present lenders are divided between the four groups further statistical analysis is debatable. There are no differences between groups in terms of their perceptions of problems associated with the borrowing and lending of land. However, group 4 is significantly more likely to have had problems themselves (23.8% vs. 6.1% to 12.2% of the other groups).

Little differences are shown in the security of tenure issues. Small numbers again preclude analysis of why land has been lost by homesteads in the various groups. There are no differences between the groups in terms of their awareness of banishment cases.

Significant differences do exist between the groups in terms of land use constraints. Fifty-seven percent of group 1 homesteads would have ploughed earlier had cattle been removed earlier in comparison to 36% of group 2, 45.3% of group 3, and 12.5% of group 4 homesteads. Nearly 60% of group 1 homesteads feel that there is not enough grass for animals to feed compared to only 25% to 40% of the homesteads of the other groups.

4-3 Homesteads classified by stages of the life cycle.

Homesteads at different stages of the life cycle will have different resource endowments, (different amounts of land and labour available for agricultural activities, and different amounts of capital available as a result of wage employment, agricultural production and wealth accumulation) and different consumption requirements. Younger homesteads will be smaller, having fewer members will require less land, and will have fewer resources available to it. Older homesteads will be larger, requiring more land/production for subsistence, but will have

more resources (labour and capital) available to it. And finally declining homesteads will have fewer people as the children have left, but may still have resources (particularly land and capital) for agricultural production. The premise of the life cycle theory is that homesteads expand and decline over time in terms of the number individuals (labour) in the homesteads as well as in terms of land (the size of the land holdings), and capital (the number of cattle and income from wage employment).

Low [1986, 79-86] identified six different phases in his life cycle analysis of the Swazi homestead. Female headed homesteads were classified separately. Male headed homesteads were classified on the basis of family size, age of the head of the homestead, and the number and ages of children. Low identified the following phases of the homestead life cycle which was adapted for this analysis:

1. Female headed homesteads
2. Establishment: Homesteads with less than 7 individuals, the age of the head is less than 51 years, and there are no children over the age of 15 years.
3. Expansion: Homesteads with more than 6 but fewer than 13 individuals with a head aged less than 51 years.
4. Consolidation: Homesteads where the number of individuals exceeds 12.
5. Fission: Homesteads with more than 6 but fewer than 13 individuals and the homestead head is over 50 years.
6. Decline: Homesteads with less than 7 individuals and the homestead head is over 50.

(Note: Low used 6-10 individuals in the expansion and fission phases and 11 or more in the consolidation phase.)

Since female headed homesteads are being analyzed as a separate group they have been excluded from this analysis. The population was divided between the groups as follows:

Establishment	16
Expansion	62
Consolidation	61
Fission	38
Decline	23

Total	200

The remaining groups were analyzed for significant differences between them.

Homesteads at different stages of their life cycle are expected to have different sizes of land holdings. The analysis does show that there is a significant difference between the different life cycle phases. As homesteads progress through the life cycle the average size of land holdings first expand, and then decline (3.0 ha, 3.5 ha, 4.9 ha, 3.0 ha, and 2.9 ha for groups 2 through 6 respectively). However, there is no difference between groups in terms of the number of land holdings. Given that there is a significant difference between groups in terms of the size of the land holdings it is not surprising that there are also differences between the groups in terms of the total area devoted to maize production increasing for 0.67 ha to 1.19 ha, 2.04 ha, 1.23 ha, and 1.23 ha as one progresses through the life cycles. The analysis shows that there is no significant difference between groups in terms of the percentage of land which is fallow, however, establishment phase and decline phase homesteads, having less resources and labour, have a higher percentage of their land fallow. There is no difference between groups in terms of the total amount of land devoted to cash crop production, but there is a significant difference between groups in terms of the percentage of the homestead's land devoted to cash crop production. Surprisingly, establishment phase homesteads have devoted the largest percentage of their land to cash crop production (17.4%) in comparison to only 5.9% for expansion, 7.2% for consolidation, 10.1% for fission, and 0% for decline phase homesteads.

One would expect the cattle herds to increase as the homesteads ages through purchase of animals and the natural growth of the herd. Analysis shows a significant difference between the groups both in terms of the number of cattle owned and sisa'd out as well as in terms of the numbers of cattle owned and sisa'd in. Establishment phase homesteads have the fewest cattle owned and sisa'd out (3.7 head) while the expansion phase have the most (13.2 head), only slightly more than the consolidation phase homesteads (13.1 head). Fission homesteads have 11.9 head and decline phase homesteads have only 5.0 head. These differences vary slightly in terms of the numbers of cattle owned and sisa'd in. Establishment phase homesteads still have the fewest animals (3.3 head), but expansion phase homesteads have fewer animals under their direct control (11.5 head) than both the consolidation phase homesteads (14.8 head) and the fission phase homesteads (12.7 head). The decline phase homesteads still have a sizable number of animals (8.2 head).

These numbers are quite self-explanatory. Establishment phase homesteads are just developing their herd. Expansion phase homesteads are increasing the size of their herd, but there is a tendency to have the animals sisa'd out, probably because the head of homestead is still involved in wage employment and agricultural production is low. Consolidation phase homesteads have the largest numbers of animals. In the fission phase the herd begins to decline, perhaps a reflection of children moving out of the homestead. And finally the decline phase homestead

which still has relatively large numbers of animals under its control, but no need for culling animals out.

The analysis of income and maize production also show predictable results. While there is no significant differences between groups in terms of income sources, the tendency is for wage income to decline and agricultural income to increase through the cycle. Significant differences do exist between groups in their ability to grow enough maize to feed themselves (43.8% of the establishment phase homesteads never have enough maize to feed themselves in comparison to 28.3% for expansion, 15.0% for consolidation, 15.8% for fission, and 13.0% for decline phase homesteads). There is no significant differences between groups in terms of having enough maize to sell.

There is some difference between groups in terms of some of the agricultural innovations. Significant differences between groups with respect to fencing, either by the individual homestead or by the community, do not exist. However, expansion phase homesteads are more likely than others to utilize stover (32.1% in comparison to 13.3% for establishment, 11.9% for consolidation, 27% for fission, and 26% for decline phase homesteads). On the other hand fission phase homesteads are most likely to winter plow (55.3% in comparison to 20% for establishment, 35% for expansion, 30% for consolidation, and 34.8% for decline phase homesteads).

Having demonstrated some characteristic differences between groups, primarily in terms of land and cattle holdings, the discussion will now focus on land tenure issues.

No differences between groups was found in relation to existing land holdings. Establishment phase homesteads were more likely to inherit some land (68.7% of the homesteads), but inherited fewer pieces on average than other groups. Similarly, they were less likely to have allocated pieces of land, but not significantly different.

Given that there are no differences between groups in terms of the numbers of land holdings, it is to be expected that there may not be differences between groups in terms of numbers of land holdings at different locations in relation to the homestead. This is indeed the case. Nor is there any difference between groups in the percentages of land holdings located at the various distances.

The utilization of land holdings indicates some anticipated trends, but again, significant differences between groups do not exist. The percentage of homesteads in each phase of the life cycle which have uncleared land declines (from 37.5% to 26.2%, 25.0%, 18.4%, and 13.0% respectively) as one moves through the cycle. Establishment and expansion phase homesteads are least likely to report some unused land (12.5% and 11.5% respectively), while fission phase homesteads are most likely to report some

unused land (21.1%). Consolidation and decline phase homesteads have 16.7% and 17.4% respectively, of their land unused).

Significant differences between the groups do exist in terms of gaining access to additional land. Significantly, 54.8% of the expansion phase homesteads are looking for more land in comparison to 37.5% of the establishment, 42.6% of consolidation, 28.9% of fission, and 31.8% of decline phase homesteads. However, (though not significant differences) expansion and consolidation phase homesteads appear most desperate with 42.3% and 34.6% respectively indicating a willingness to go any distance for land, in comparison to only 7.7% of expansion, 3.8% of fission, and 11.5% of decline phase homesteads. Establishment and expansion phase homesteads are significantly less successful in getting land 25% of the former and 27.4% of the latter have failed in comparison to 9.8%, 5.3%, and 9.1%, respectively of the later life cycle phase homesteads. Establishment phase homesteads are least likely to perceive a decline in the size of land allocation. More than 50% believe the allocations are not declining in comparison to over 70% for all other categories. (This probably reflects their being newer homesteads as well as having fewer allocations.)

There are no differences between groups in their experiences of the borrowing and lending of land. Less than 10% of the homesteads in any of the life cycle categories have either borrowed or are presently lending any land. Perceptions of problems associated with borrowing and lending land from either the borrower's or the lender's viewpoint do not differ between groups, nor does the experience of any problems.

Group differences do not exist for either of the two security issues. Small numbers in the analysis of why land has been lost preclude any conclusions. However, the distribution of the number of responses of 'resettlement' or 'abandoned' crossed all groups. Establishment phase homesteads seem least informed of banishment cases, but are not significantly different.

And there are no significant differences between groups in terms of the land use issues. While only 25% of the establishment phase homesteads would have ploughed earlier had cattle been removed (a reflection of limited access to draught power?) and as many as 51.3% of other groups would have, this is not significant. Similarly, a much smaller percentage of the establishment phase homesteads perceive a shortage of grass (20%) in comparison to up to 61.5% of the others, this, as well, is not significant. Relatively small numbers in the establishment phase account for these differences.

4-4 Female headed homesteads.

Female headed homesteads were thought to be presented with problems different from that of the population as a whole. In 23 of the 26 cases female headed homesteads were headed by widowed women. The other three were headed by divorced or separated women. While it might be argued that they should be no different than the rest of the population, because of the development of the homestead prior to the death of the husband, it was none the less expected that homesteads in this group would have less continued access to resources for agricultural production. And that this would be reflected in their current status in relation to the rest of the community. It was felt, further, that they might be facing unique constraints on their agricultural activities because of their unique status.

There is no significant difference between male and female headed homesteads in terms of homestead composition issues. Female headed homesteads tended to have more individuals in the homestead, but fewer adults. The heads of these homesteads tend to be older (54.5 years in comparison to 50.5 years for the rest of the population). Given that the majority of female headed homesteads are headed by widows, one would expect older homesteads, hence more individuals. Fewer adults may be a reflection of the late husband.

The analysis of land holdings begins to differentiate between the two groups. While female headed homesteads had nearly the same number of land holdings as male headed homesteads, they had significantly less total land (2.7 ha in comparison to 3.7 ha). As a consequence female headed homesteads also had significantly less land in maize production. The tendency is also for female headed homesteads to have a larger percentage of land fallow (9.9% vs. 6.5%) and to have less land devoted to cash crop production (0.13 ha vs. 0.31 ha), a possible reflection of less access to resources and labour, but neither of these differences is statistically significant. However, female headed homesteads have a significantly smaller percentage of their land devoted to cash crops (3.5% vs. 7.4%).

In terms of both the number of cattle owned and *sisu'd* in and owned and *sisu'd* out, female headed homesteads have fewer cattle than male headed homesteads (8.2 vs. 11.6 for cattle owned and *sisu'd* in and 7.4 vs. 11.2 for cattle owned and *sisu'd* out. The initial analysis indicates that these are not significant differences (Table IVel0ab). However, the standard deviations are extremely high, which will bias the statistical analysis.

Given the land resources and the number of adults in the homestead one would expect female headed homesteads to differ from male headed homesteads in terms of income sources and maize production. Less land could limit the possibility of agricultural income. Similarly, fewer adults in the homestead,

would likely mean fewer people in wage employment. Female headed homesteads are indeed different in terms of their main source of income. Twenty five percent of them indicate nonagriculture, nonwage earnings as their primary income source, while only 7.7% of the male headed homesteads indicated this. Male headed homesteads were more likely to have indicated wage income (69.2% vs. 58.3%) or agricultural income (23.1% vs. 16.7%). Looking further at the secondary source of income when wage income is the primary source, the analysis shows an even higher level of significance. No female headed homesteads indicated agricultural income as a secondary source when there was wage income as the primary source, while over 17% of the male headed homesteads indicated this category. However, female headed homesteads tend to be slightly less able than male headed homesteads to grow enough maize to feed itself, but do not differ from male headed homesteads in terms of having enough maize to sell.

There appears to be little difference between groups in terms of the adaptation of agricultural practices. Female headed homesteads are as likely as male headed homesteads to have fenced, utilized their crop residue, but tend to be less likely to practice winter plough. This may be a reflection of female headed homesteads having smaller cattle herds.

The above discussion has shown that female headed homesteads differ from male headed homesteads in terms of land holdings, area of land devoted to maize production and percentage of land devoted to cash crop production, and income sources. Given these potential handicaps to agricultural production, do tenure problems also constrain these homesteads?

The analysis shows that female headed homesteads are no different from male headed homesteads in terms of access to land. The number of inherited and allocated land holdings do not differ, nor do the reasons for requesting the allocation. The number and percentage of land holdings at various distances from the homesteads do not differ also. For both issues, while there appears to be no difference, this is probably a reflection of the land acquisition of the late husband who acquired the land in the first place.

Utilization of land presents a similar case. Female headed homesteads are no different than male headed homesteads in terms of the existence of uncleared arable land as well as in terms of unused cleared land.

No differences between the groups exist in terms of access to additional land. While slightly fewer female headed homesteads are looking for land (34.6% vs. 42.2%), there seems to be a willingness to go further to get land, and they are less likely to have tried to get land and failed, all of these differences are not significant. Perceptions of a changing size of land allocations and changing token of appreciation given to the chief do not differ from male headed homesteads.

Some differences between the groups do exist when dealing with borrowing and lending land. There is no difference between groups in terms of having borrowed land. However, female headed homesteads are more likely to be lending land. Over 19% of female headed homesteads are presently lending land in comparison to only 4% of male headed homesteads. There appears to be a slight difference between the two groups in terms of their perceptions about problems associated with the borrowing land from the viewpoint of the borrower. Over 30% of the female headed homesteads indicated that they were always needing in comparison to only 12.6% of male headed homesteads. Conversely over 16% of the male headed homesteads indicated that there were no problems associated with borrowing land in comparison to no female headed homesteads. No differences in perceptions of problems from the viewpoint of the lender were seen between the two groups. This is worth noting as it has been shown that female headed homesteads are more likely to be lending land. Female homesteads did not differ from their male counterparts in their having had any of those problems themselves.

No differences exist between the groups in terms of the security of tenure issues. A smaller ratio of female headed homesteads have lost land (4 of 26) than male headed homesteads (63 of 200). However, these small numbers prevent analysis of why that land was lost. No differences between the groups in the knowledge of banishment cases are seen.

Fifty percent of the female headed homesteads indicated that they would have ploughed earlier if the cattle had been removed earlier (in comparison to 43.2% of the male headed homesteads). This is not a significant difference. Female headed homesteads are no different than their male counterparts in their perceptions of the availability of grazing for livestock.

4-5 Poor

A fifth population group addressed those homesteads found to have the least opportunity to increase their agricultural production because of their resource endowment or to have been the least successful with agricultural production. Two definitions were used.

The first definition identified homesteads on the basis of the maize production, their resource endowments (size of their land and cattle holdings), and cash income. A homestead is considered poor by definition 1 if it meets one of the three following criteria:

1. The homestead never produces enough maize to feed everyone in the homestead, AND no cattle are owned or sisa'd in.
2. The homestead's total land holding is less than 1 ha.
3. The homestead has no cash income.

The second definition identified homesteads on the basis of maize production, cattle holdings and cash income. Land holdings were specifically not included to permit consideration of land factors in the analysis. A homestead is considered poor by definition 2 if it meets either one of the following criteria:

1. The homestead never produces enough maize to feed everyone in the homestead, AND no cattle are owned or sisa'd out.
2. The homestead has no cash income.

Thirty five homesteads fit the first definition and 34 homesteads fit the second. A number of the analyses were not done as the definition precluded analysis. For example, a comparison of the size of land holdings would obviously show significant differences between the two groups of the first definition because poor homesteads are defined partially on the basis of having very small land holdings.

As with the three groups of commercial farmers, the first group will be discussed in detail. Discussion of the second group will only be made where that group differs significantly from the first. If there is no difference between the two groups in terms of the analysis the discussion of the first group will equally pertain to the second.

Poor homesteads are significantly different from the rest of the population in terms of homestead characteristics. Poor homesteads are smaller (7.9 vs. 11.7 individuals) and have fewer adults (4.1 vs. 5.7 adults). The heads of these homesteads are younger (44.7 vs. 52.0 years). This is further reflected against the life cycle variable which indicates the poor homesteads are concentrated in the establishment and expansion phases (63.3% vs. 34.7% of the general population) and are less evident in the consolidation phase (6.7% vs. 34.7%).

Poor homesteads would be expected to differ from the general population with respect to their landholdings because of the definition. However, in terms of the percentages of land fallow and devoted to cash crops there are no differences. The analysis shows that poor homesteads are no different from the general population. However, they have significantly less land devoted to cash crop production (7.7% vs. 2.8%).

Poor homesteads which had cash income (29 of 35) are significantly different from their neighbours. Twenty seven (93.1%) of them reported wage employment as their primary income source. Agriculture was reported as a secondary income source by only 8.6% of the homesteads.

These homesteads also differ in terms of their adoption of agricultural innovations. They tend to fence less (only 51.5% vs. 63.4% of the general population), but, significantly fewer use their crop residue (6.6% vs. 25%) or winter plough (12.9% vs. 37.9%).

The second definition poor homesteads confirmed the land holding issue characteristics that could not be addressed by the first definition poor homesteads. Poor homesteads have fewer land holdings (1.5 vs. 1.8) which give a smaller total land area (1.9 ha vs. 3.9 ha). It follows that there will be less total area planted to maize and less area devoted to cash crop production. Definition 2 poor homesteads are comparable to definition 1 homesteads in all the other characteristics with the one exception that they do not differ from their neighbours in terms of fencing.

In terms of homesteads characteristics poor homesteads generally, appear to be much different from their neighbours. They have less labour and show less agricultural production. By definition they have less land and cattle. Are they hampered by the land tenure situation?

Poor homesteads are not different from their neighbours in their access to their existing land holdings. They tend to inherit land as frequently. They have a slight tendency to be allocated land more often, but are no more likely to have requested the allocation because they had no land or for the establishment of a new homestead than their neighbours.

Fragmentation of land holdings offers little insight to the differences between the two groups. There is no difference in terms of the number of land holdings located at the various distances. However, there is a significant difference in terms of the percentage of land holdings located at the various distances. Poor homesteads tend to have a higher percentage of their holdings at the homestead (82.6% vs. 69.1%) and a lower percentage within 500 m of the homestead (11.7% vs. 19.9%).

There are no differences between groups in the utilization of land. Poor homesteads are as likely as the general population to have some uncleared arable land as well as to have some cleared, but unused land.

Significant differences between the groups do exist in terms of gaining access to additional land. The poor homesteads are much more likely to be looking for land (57.1% vs. 38.4%). They

are no different from their neighbours in terms of the distance they are willing to go for land, but they do report that they more frequently fail in their attempts to get land (31.4% vs. 12.1%). Their perceptions about the changing size of allocations are no different from the perceptions of other. The analysis indicate that there is a difference in terms of perceptions about the token given to the chief, but small numbers make definite conclusions debatable.

Little differences exist between the groups in terms of their experiences and perceptions of problems associated with the borrowing and lending of land. They are as likely as the general population to have borrowed land in the past or to be presently lending land. They do differ in terms of the possible problems to be encountered in borrowing and lending land from the viewpoint of the lender, less frequently indicating a refusal of the borrower to return the land (50.0% vs. 75.7%). However, they are as likely as their neighbours to have experienced these problems.

The poor homesteads do not differ from their neighbours in terms of the reasons given for no longer having land which they had had in the past, but they are less likely to be aware of banishment cases. Only 5.9% of them had heard of such cases in comparison to 19.0% of their neighbours.

Similarly, they are not different in terms of their wish to have ploughed earlier had cattle been removed from the fields earlier. They are more likely to feel that there isn't enough grass for grazing, but small numbers make this a dubious conclusion.

With respect to tenure issues there is again little difference between the first and second definitions of poor homesteads. The second group are more likely to have requested a land allocation because they didn't have land. Both groups are similar in terms of fragmentation of land holdings as well as in terms of land utilization. There are little differences between this group and their neighbours in terms of looking for land. (While 51.5% of the poor homesteads are looking for land in comparison to only 39.6% of their neighbours, this is not significant.) Finally definition 2 poor homesteads differ from the general population in terms of their perceptions of problems associated with the borrowing and lending of land from the viewpoint of the borrower. Slightly under 38% of the homesteads saw no problems in comparison to 12% for the others.

4-6 Innovators.

Innovators were classified as a group on the basis of utilization of innovative agricultural production methods. Homesteads were classified as innovative if they fulfilled one of the following requirements:

1. Homesteads who practice farming outside the normal cropping season.
2. Homesteads who practice irrigated farming.
3. Homesteads who use their stover (harvest it or plow it under) AND fence AND winter plow.

It was felt that this group, which has demonstrated an adaptation of agricultural innovations might be constrained by the land tenure and, therefore, warrants analysis as an independent group. Thirty one homesteads were classified as innovators.

Innovator homesteads differ from the general population in some homestead characteristics. They tend to have fewer people (9.3 vs. 11.4 individuals) and fewer adults (4.6 vs. 5.5 adults). There is no significant differences in the age of the heads of homesteads nor in the stage of the life cycle in which the homestead finds itself. However, a larger percentage of the innovator homesteads are in the fission stage (31% vs. 17%) and a smaller percentage are in the consolidation phase (13.8% vs. 33.3%) than their neighbours.

No significant differences exist between the groups in relation to any of the analyses concerning their land holdings. Innovators tend to have slightly larger land holdings (4.6 ha vs. 3.4 ha), but the number of holdings, the total area of land devoted to maize or cash crop production, or the percentage of land which is fallow show no differences between the groups. They also tend to have a higher percentage of their land devoted to the production of cash crops.

As innovators are defined to practice winter plowing, harvest their stover, and fence their fields, one would expect those homesteads to have larger cattle herds providing timely access to draft power. However, the analysis shows no difference between the innovator homesteads and the general population both in terms of the number of cattle owned and sisa'd in as well as the number of cattle owned and sisa'd out.

Innovator homesteads are significantly different from the general population in terms of their income sources as well as in terms of maize production. Agriculture is the primary source of income for 38.7% of innovator homesteads in comparison to only 19.7% of the general population. In only 51.6% of innovator

homesteads is wage income the primary income source, in comparison to 70.7% of the general population. Looking further at wage income with nonagriculture vs. agriculture as the secondary source of income, one sees that noninnovator homesteads are more likely to have other income (56.9%) rather than agriculture (13.8%) as the secondary income source after wage income. Innovator households are evenly split with 25.8% having agriculture and nonagriculture as their secondary income sources. Innovative farmers would be expected to be produce more and hence have more maize to feed the homestead members. Analysis indicates no significant difference between the two groups. However, innovative farmers are significantly different from the general population in their ability to grow enough maize to sell most or all years. The analysis indicates that 25.8% of them grow enough maize for sale most or all years in comparison to only 5.2% for the general population.

While major characteristic differences do not seem to be apparent, innovators appear to be more dependent on agriculture as their main income source. Do the land tenure issues indicate that they are more constrained by the system than their less innovative neighbours?

Generally speaking, innovators are no different from the general population in the analysis of most of the land tenure issues. Slight differences exist in terms of access to existing land, land utilization, the borrowing and lending of land, and land use constraints.

Innovator homesteads are more likely to request an allocation to establish an independent homestead than their neighbours (38.7% vs. 23.6%).

Slight differences appear in terms of land utilization. Innovator homesteads tend to have less land uncleared. Only 16.1% of the innovators had uncleared land in comparison to 25.4% of the general population. A slightly higher percentage of innovators (19.4%) indicated the presence of unutilized cleared land in comparison to 16.1% of the general population. However, in either cases these differences were not significant.

Innovators tend to have borrowed more land in the past than the general population (12.9% vs. 5.7%). They also tend to see less problems with the borrowing and lending of land from the viewpoint of the lender than their neighbours.

Significant differences do appear in terms of wishing to plough earlier. Over three fourths of the innovators would have ploughed earlier had the cattle been removed in comparison to only 37.7% of the general population.

The final subset of the population was defined to be investors. These were classified on the basis of the homestead head being a 'professional' (those with formal training, seniority in the civil service, or some entrepreneurship such as agronomists, nurses, accountants, middle or senior level government officers, business owners or managers, and teachers) or a skilled technician (those with some technical training or acquired skills such as plumbers, mechanics, welders, veterinary assistants, farm managers/supervisors, metal processors, and wood processors). Thirty homesteads were classified as investors.

These individuals were identified from information gathered in the first questionnaire. The assumption was made that individuals falling into this 'investor' category might have disposable income which could be invested in an agricultural enterprise. Analysis of the data was made to see if indeed they differed from the general population.

Little differences existed in terms of homestead composition. Investor homesteads tend to be slightly smaller and have fewer adults, but these differences are not significant. However, investors are younger averaging 45.1 years in comparison to 51.8 years for the general population. Investors tend to be in the earlier stages of the life cycle as would be expected by the employment component of the definition. However, the differences are not significant.

Similarly, little differences existed between investors and the general population in terms of land holdings and utilization. There are no significant differences in terms of the number and size of land holdings, nor in the amount of land devoted to maize or cash crop production. However, investors are dramatically different from the neighbours in terms of the amount of land fallow (0.7% in relation to 7.8% for the general population).

They do not differ from the general population in terms of cattle owned and sisa'd in nor in terms of cattle owned and sisa'd out.

Given the definition of investors one would expect differences in the analysis of income. However, in looking at secondary sources of income, where wage employment is the primary source one sees a slightly higher (though not significantly different) percentage of investors having nonagricultural income as the secondary source as well.

Investors do not differ from the general population in terms of maize production. Their ability to produce enough maize to feed themselves or to be able to sell is no different from that of their neighbours.

Finally, investors display little differences from their neighbours in terms of their adaptation of agricultural innovations. There is no difference between groups in terms of fencing, the existence of fenced grazing areas in the community, nor in winter ploughing. Investors, however, are less likely to utilize their crop residue. Nearly 90% of the investors leave the residue on the fields in comparison to slightly over 75% of the general population. None cut and store the stover in comparison to 15.9% of the general population.

Having seen that there appears to be little differences between the characteristics of the investors and the general population, are they facing tenure constraints which might be limiting their willingness to invest in agriculture?

Differences between the two groups do exist in the acquisition of present land holdings. While it has been shown in the earlier discussion that there was no difference between groups in terms of the number of land holdings, investors are less likely to inherit land. Over 75% of the investors did not inherit land in comparison to less than 50% of the general population. Investors tend to get a slightly higher, though not significantly higher, percentage of their land through allocation. Investors are more likely to request these allocations for the purpose of establishing an independent homestead (40% of the investors in comparison to 23.5% of the rest of the population).

There is no difference between groups in terms of the location of land holdings in relation to the homestead. Slightly more than 70% of holdings of both groups are at the homestead, slightly less than 20% are within 500 meters, and the remaining holdings are over 500 meters.

Investors have tended to develop less of their land holdings. A larger percentage of investors than the general population responded that they had some arable land which had not been cleared (36.7% vs. 22.2%). However, they were no different from the general population in terms of the utilization of existing cleared land.

Investors appear to be no different than the general population in terms of their experience with gaining access to additional land. Fewer investors appear to be looking for land (33.3% vs. 42.6%) and more appear to have tried and failed (20% vs. 14.4%), but these differences are not statistically significant. Their perceptions of changes in the size of allocations and the token of appreciation given to the chief are comparable to that of their neighbours.

Some variation between the groups appears to be the case in terms of the borrowing and lending of land. The analysis show a higher percentage of investors having borrowed land in the past

(13.3% vs. 5.6%), while none of the investors are currently lending land in comparison to 6.7% of their neighbours. However, these are not significant differences. Investors' perceptions of problems associated with the borrowing and lending of land from both the borrower's and lender's viewpoint is no different than that of the general population. Experiences of these problems are also comparable.

The security of tenure questions do not depict significant differences between the two groups. Investors are not different from their neighbours in the various reasons for no longer having land which they had previously held. However, they tend to be more aware of banishment cases.

Investors do not differ from the general population in terms of their inability to plough earlier, nor in their perceptions of a decline in the quality of grazing.

CONCLUSIONS:

A number of general conclusions may be drawn from the above discussion. Almost a third of the land has been acquired since 1980. Nearly 1/4 of the the homesteads have land which has not been cleared, and 16% indicated the existence of cleared land which was not being used. Unused land is not being lent out, most commonly because the head of homesteads doesn't want to make enemies. Homesteads readily identified various problems with borrowing and lending land, but few had personally had any of these problems. Slightly less than 30% of the homesteads had land which they no longer have, most commonly lost through resettlement or having simply abandoned the land. Nearly half of the homesteads indicate that they are presently looking for land. Only 15% have ever failed in an attempt to get land (not necessarily implying that they failed in a later attempt).

Wage employment or business income is the primary source of income for two-thirds of the homesteads. Homesteads are as likely to hire draught power as to use their own. Cattle ownership is skewed. Slightly less than forty percent of the homesteads own no cattle. The average herd size is 16.3 head. The 31 homesteads holding more than 20 head of cattle own 44.6% of all of the cattle.

Labour shortages were most commonly felt during weeding and harvesting. Hired labour was the most frequent solution to these shortages. Over 95% of the homesteads provided tribute labour for their chiefs. Only 6.2% indicated that this tribute labour interfered with work on their own fields.

A number of nontraditional land use practices appear to be gaining acceptance. Over 60% of the homesteads have part of their land holdings fenced. Seventy-seven percent of the nonfarmers haven't fenced because of a shortage of money. Over half of the respondents indicated that their communities favoured fencing; only 6.2% indicated that the community was opposed in some fashion. Over one-third of the homesteads winter plough, while only 21.7% utilize their crop stover. In locations where the chief announced when cattle were to be removed from the fields in the spring, forty percent of the respondents indicated that they would have ploughed earlier had the cattle been removed earlier.

Grazing land in Swazi Nation Land areas is communally utilized. Much of the literature indicates a deteriorating range condition, yet little appears to be done by communities to manage their community grazing resources. Defining a 'community' is a first step. There is no relationship between dip tank areas and grazing areas. And, while the majority of the respondents indicated that their grazing area is not being grazed by cattle from other runner or chieftancy areas, the majority indicated that it wouldn't bother them if it was.

The project paper identified four general tenure issues to be investigated: fragmentation and subdivision, farmer control over production decisions, uncultivated farmland of good potential, and pasture management. A number of hypotheses were developed to test the significance of these constraints.

Fragmentation and subdivision are policy constraints when they lead to inefficiencies in the use of scarce resources (capital and labour) and less intensive utilization of the land. The analysis shows that there is not a significant relationship between inheritance and subdivision, there is not an increase in the level of subdivision over time, nor is there variation in subdivision or fragmentation between ecological zones. Fragmented holdings, where they exist, have as much land fallow as nonfragmented holdings.

The recent literature on agriculture in Swaziland repeatedly raises the issue of constraints on a farmer's ability to make independent decisions on the utilization of his land. Given that fencing was seen to be an innovative modification of traditional land use practices, the analysis used fencing as indicative of changing community attitudes toward more independent production decision making. Community attitude toward fencing has changed remarkably. Farmers are more likely to have fenced if their chief has part of his holding fenced. However, they are as likely as not to consult their neighbours and chief when they are beginning to fence. The majority of homesteads have fenced some of their holdings; those who have not fenced have indicated cash and material shortages rather than community opposition to fencing as the constraints preventing them from having fenced. There is no relationship between fencing and winter ploughing. However, those who have fenced are more likely to utilize their crop residue rather than simply leaving it for cattle to feed.

Casual observation seems to indicate the existence of sizable amounts of good potential land which is not being fully utilized. It is accepted that homesteads are constantly evolving entities and that at certain times there may be land which the homestead is unable to fully utilize. However, the analysis shows that there are no significant relationships between the amount of fallow land and the number of adults in the homestead, the age of the homestead head, nor in terms of the number of cattle owned by the homestead. The extent of borrowing was so limited that an analysis of these informal markets was nearly impossible. Perceptions of scarcity of land in terms of length of time for allocations to be made, declining size of allocations, etc. do not significantly relate to the frequency of lands being retaken by the chief, the intensification of land use, nor in the frequency of borrowing.

Overgrazing and the resultant land degradation is common in communal tenure systems where an increasing human population puts a greater demand on the land base for arable production thereby squeezing a growing livestock herd onto a decreasing pasture. As

the intensity of land utilization increases community attitudes toward land management will change. Presently most cattle return to the kraal every night, a possible explanation for the frequency of crop damage disputes. Yet, there is no relationship between the intensity of land use and the extent of crop damage disputes. Where communal fencing has taken place individuals are less likely to have their holdings fenced. Nearly 60% of the homesteads indicated that there was enough grass for their cattle throughout the year. Where there was not enough grazing too many cattle or outsiders' cattle were the primary 'causes'. However, there was no relationship seen between perceptions of declining range conditions and the community's index of grazing tenure restrictions.

Having seen little evidence of general tenure constraints to agricultural productivity, the analysis focused on seven subsets of the population with the expectation that their uniqueness in relation to the general population would identify specific tenure constraints which they face. Three definitions of commercial farmers, homesteads having agriculture as their primary or secondary source of income, homesteads at different stages of the homesteads life cycle, female headed homesteads, two definitions of poor homesteads, homesteads having demonstrated a willingness to adopt innovative agricultural practices, and homesteads with investment potential were analyzed.

Tables 41 and 42 (page 35-39) summarize the analysis of these groups. The differences between the groups is primarily a result of the definition of the groups, and secondarily what one would expect to find. There is little evidence of differences between any of the groups and the general population in terms of the identified land tenure issues of access to existing land, fragmentation of land holdings, utilization of land holdings, access to additional land, borrowing and lending of land, security of tenure, or land use constraints.

Agricultural production is closely tied to the life cycle of the homestead, following a logical progression of capital accumulation through wage employment at the earlier stages of the cycle and an increasing dependence on agriculture at the later stage when land holdings have increased, cattle herds have been built up, and family labour is available. Given the general availability of wage employment this cyclical progression is quite rational.

The general conclusion that one must draw from the analysis is that the traditional tenure system does not appear to be a major constraint to agricultural production as it is presently practiced. Homesteads generally appear to be able to gain access to land and are increasingly able to make independent (of their community) production decisions. That there does not appear to be significant differences between the identified subsets of the population indicates a relatively homogeneous population on Swazi Nation land.

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SUMMARY

CHANGES IN AGRICULTURAL LAND USE: INSTITUTIONAL CONSTRAINTS AND OPPORTUNITIES-- THE TRADITIONAL SECTOR SURVEY

This paper by Mark Marquardt reports the findings of the major component of the 30 month study of land tenure in Swaziland. The study was based on data obtained from scientifically selected surveys. The 4 ecological zones, RDA and non-RDA areas, and all classes of homestead/farmers were covered.

The paper focuses on the 4 problems traditional Swazi tenure (SNL) is frequently purported to foster:

1. Fragmentation of land holdings,
2. Inadequate farmer control over production decisions,
3. Good potential land being unused, and
4. Poor range and pasture management.

Recognizing that all people do not have the same needs or face similar situations, therefore may be affected differently by tenure, 7 population groups were studied:

- Commercial farmers,
- Homesteads classified by source of income,
- Homesteads classified by life cycle,
- Homesteads headed by women,
- Poor homesteads,
- Innovators, and
- "Investors".

The first section of the report is an overview which describes the typical situations found among homesteads cum tenure issues. The second section reports findings in terms of the 4 purported tenure problems (see above), and the third in terms of the 7 population groups.

MAJOR CONCLUSION: The traditional tenure system does not appear

to be a major constraint to increasing agricultural production.

The study found that homesteads who want land and have managerial skills to use it effectively either have it available or appear to be able to get it. Homesteads are increasingly able to make independent production decisions.

The major conclusion is terribly important for policy makers. It means that changing traditional tenure will not be a "miracle drug" which will "cure" problems associated with low productivity. (Changing tenure rules alone will not lead to rapid increases in production). Constraints other than tenure are at work in the system and they must be confronted.

The research also shows that while land tenure alone is not constraining production, it may be integrally related to removing some of the other constraints so it is NOT a dead issue. The conclusions call attention to the fact that there is room for improvement in the tenure system, and it is important for those improvements to be made as soon as possible.

Section I: The Overview

The research into the homestead situation cum tenure reinforced the general knowledge agricultural professionals have of the situation. From a tenure/productivity standpoint the following stand out.

- One quarter of the homesteads have unused land of high farming potential
- 16% have cleared land not farmed
- Land lending is a practice in decline
- 63% of the land acquisitions have been since 1970 (Resettlement is important.)
- Sales from farm products are the major source of cash for one-third of the homesteads
- The traditional land tenure system is flexible
- The traditional land tenure system IS CHANGING
- Land disputes are increasing.

Section II: The Purported "Tenure Problems"

1. Fragmentation of land holdings: At the present time it is not a constraint. Subdivision was not found to be increasing over time; however, it could become a problem in

the future.

2. Farmer control over production decisions: The commonly held complaint that farmers do not have adequate control over decision making was found to be only marginally true, and the situation is changing rapidly. In general, farmers can fence and make the strategic decisions which are required to increase productivity, but uniform policies of the right type among chiefs could improve the situation.
3. Unused land of good potential: There is land available, and tenure does not seem to be a big issue. Different homestead needs over its life cycle and other considerations are the important elements.
4. Pasture management: A special study not yet available looks at this problem in depth. However, it was recognized that the increase in human population linked to the desire to own livestock puts a greater demand on the land base. Low productivity in livestock is a logical consequence. The tendency is to overgraze and damage the land base through erosion.

Section III: Population groups.

These in-depth analyses will be very helpful to policymakers, and attempts to summarize the findings must leave out important aspects.

The differences among the groups are primarily what a learned agriculturalist would expect.

- There is little evidence of differences between any of the groups and the general population in terms of the identified land tenure issues of access to existing land, fragmentation, utilization of land, access to additional land, borrowing and lending of land, security of tenure, or land use constraints. That there does not appear to be significant differences indicates a relatively homogenous population on SNL.
- As one would expect, agricultural production, hence the "need" for land, is closely tied to the life cycle of the homestead.
- Commercial farmers have more land, but most practices utilized differ little from the general population. They have found ways to get the land they need.
- Homesteads deriving more income from wage employment own fewer cattle and plant less maize, but they differ little on key tenure issues.

- There were no significant differences between male and female headed homesteads in terms of homestead composition issues. Female headed homesteads had significantly less land. Most of the females heading homesteads were widows.
- Poor homesteads were different in terms of homestead characteristics. They have fewer people, and smaller land holdings. Farm practices are different. However, on land tenure issues, it is only in terms of gaining access to land that they appear to differ greatly.
- Innovators were not found to be unique on land tenure.
- Investors face no unusual issues or problems.

The basic conclusion with regard to the various population groups is that they are not seriously constrained from increasing production by traditional tenure, but there are some modest changes in the system which would be helpful.

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An Executive Summary
of a [REDACTED] Report Entitled

CHANGES IN AGRICULTURAL LAND USE:
INSTITUTIONAL CONSTRAINTS AND OPPORTUNITIES
SUMMARY OF RESEARCH FINDINGS
AND POLICY OPTIONS

I: INTRODUCTION

The [REDACTED] report by Dr. John Bruce presents the summary findings and POLICY OPTIONS of what is commonly called the "land use and land tenure policy options" study. The final draft will be circulated prior to the seminar on the topic which is tentatively scheduled for late August 1988.

Why was the study conducted? While a number of African countries have opted for dramatic reforms in their customary systems of land tenure, Swaziland has so far elected to retain its customary system largely unaltered. However, many commentators have suggested certain aspects of the system are constraining agricultural productivity. The commentators have had access to very little good data and relied heavily on studies more than 20 years old which were only modestly quantitative at the time. In September 1985 the Research and Planning Department of the MOAC launched a major research project to clarify the issues.

How was the study conducted?

1. Basic facts, in contrast to heresy, were accumulated by field surveys.
2. Drawing from the facts, potential constraints to increasing productivity were identified, and hypotheses developed and tested to confirm whether they were, in fact, constraining productivity.
3. When some degree of constraint to increasing productivity

was found, it was determined whether:

- all farmers were affected
 - there were counterbalancing benefits
 - it was related ~~to~~ other constraints so that tenure change alone would have little impact.
4. The customary system was analyzed to determine whether it was evolving satisfactorily to meet the challenges of changing times.
 5. Models within Swaziland and elsewhere in Africa were analyzed for lessons.
 6. Finally, policy options were prepared.

The study has produced:

1. Three broadly based study reports entitled:
 - Changes in Agricultural Land Use: Institutional constraints and opportunities (the Swazi Nation Land Tenure Survey)
 - Land Tenure and other constraints to Commercial Agriculture: A Survey of Swaziland's Advanced Farmers
 - Case Studies of Land Tenure Issues in SNL communities (not yet available)
2. Five narrowly focused "special studies" reports entitled:
 - Legal Aspects of Land Tenure in Swaziland
 - Customary Land Disputes and Their Management
 - Innovations and Adaptation: A Study of Land Tenure and Smallholder Irrigation Schemes in Swaziland
 - Land Tenure Arrangements in Agricultural Development Projects on SNL
 - Individual Tenure Farms in Swazi Ownership.

The report summarized herein synthesizes all of the data and information from all of the studies and presents a summary of the research findings and the policy options available to government.

II SUMMARY OF RESEARCH FINDINGS

The findings from the entire body of research are consolidated with regard to the eight important tenure issues or experiences, as identified from the research. The discussion of each of the eight closes with an identification of the "clear needs".

A. Security of Tenure

The commentators urging tenure reform in Swaziland focus more attention on this issue than any other, and it was studied thoroughly. The commentators' arguments usually center on the chiefs' authority to allocate land, and the resultant uncertainty which it is claimed kills incentive to invest and increase production. Also, it is frequently claimed success in commercial farming generates jealousy, and even banishment may result.

The research found that there was much more "smoke than fire" on this issue. While chiefs and community jealousy over successful commercial farming was a common topic of conversation, in only one case was it really found to be a factor. Perceptions may be as important as facts, so it is not a dead issue, but it is not very important.

Resettlement IS an issue. Until it is done and people feel secure, it worries them. Also it is a fertile source for land disputes which are increasing.

Clear needs include:

- Working at making success in agriculture a status symbol
- Protecting successful commercial farmers from POTENTIAL harassment
- Greater uniformity in policies and regulation by chiefs
- Authoritarian statements clarifying and reinforcing some parts of customary law
- Clarifying the future of resettlement in all areas.

B. Sub-division and Fragmentation

Not a problem at this time, but it could be in the future.

Clear needs include reinforcing elements in the system discouraging fragmentation.

C. Access to Land

There is unused land available almost everywhere. About 40% of the homesteads said they wanted more land, but only 5% had tried to do anything about it. The homestead cycle was found to be related to the need (demand) for land i.e. labor availability and "mouths to feed". Land borrowing is on the decline because of concerns about getting it back.

Clear needs include a more adequate mechanism for shifting land among homesteads in response to the life cycle and for other reasons.

D. Land as Collateral for Loans

This is an issue which has received much attention by commentators. The research gave careful attention to it. Key findings include

- There is a bias against credit use! 40% "prefer" to do without credit which is not viewed positively as an income producing tool
- Lack of deeds is probably not a constraint for larger, proven farmers
- High wage earning homesteads had little problem
- Small homesteads and those aspiring to become commercial farmers were constrained by lack and terms of credit.

The clear need is for changes and reform in the financial structure, but for land to serve as collateral would require quite substantial changes in the tenure system, and there are other ways to solve the problem.

For land to serve effectively as collateral there must be an effective market for land, and Swazi society must be willing to see people dispossessed and have their land taken from them for failure to repay debts.

E. Farmer Control over Production Decisions

The system is changing, and it was not found to be particularly constraining. Fencing, once regarded as undesirable in many areas, is now accepted. Chiefs' prerogatives, such as saying when cattle are to be removed from fields, are a slight constraint in selected areas, but nation-wide it is not a serious problem.

Clear needs include

- Confirming the evolution of custom which is taking place

- Establishing mechanisms to foster improvements in the functioning of the system where there are minor problems such as early removal of livestock from fields.

F. SNL Tenure and Irrigation

SNL tenure was not as constraining as has been commonly believed. At minimum great doubt was cast on "hard" conclusions such as were reached in Tate and Lyle (1982). It was found there are project models in existence in Swaziland which show great promise. No particular model was recommended.

Clear needs include:

1. All irrigation schemes should be governed by written documents clearly setting out rights and obligations
2. Access to land in the scheme should be a privilege -- NOT A RIGHT -- conditional upon fulfilling specific terms and obligations
3. Admission policy should insure openness to all, including those often regarded as disadvantaged at the present time
4. Governmental policies clearly promoting such schemes and ensuring a means for higher authorities to settle disputes as do arise promptly and sustaining the schemes.

G. Communal Tenure in Range/pasture

The final special study is not available. At this time tentative conclusions are that there is indeed a remarkable lack of community control over SNL grazing and there is good reason to believe the situation corresponds to the "tragedy of the commons" scenario (Hardin, 1968). If this is so, "clear needs" must include either individualization or the creation of a more effective system for common property management.

H. Alternative Systems: ITL and "project" tenure land

The study found that ITL is a viable option for many Swazis. About 30% of the ITL holdings, constituting 12% of the area of ITL, are now in Swazi hands. However, little or no evidence was found that ITL arrangements were an alternative to SNL. Swazi freeholders are, in fact, deeply involved in both. All Swazi freeholders had active links with local chiefs. To Swazis, the two systems appear to be complimentary and supportive.

The various "projects" which reflect a great deal of tenurial experimentation hold many lessons. Conclusions from "projects" include the following:

1. The chief's capability to reallocate land to form a scheme i.e. for a block of land on which certain activities can be concentrated, is an important advantage.
2. Where project activities are on customary holdings, outrigger farming models have special potential for working "around" the customary tenure system. They can deal with many problems --- extension, inputs, credit.
3. It is clear that on repurchased ITL, Government has had difficulty arriving at a satisfactory tenure formula for smallholder farming. The outcome of some experiments, such as the Vuvulane dispute, tend to undermine the argument (such as advanced by Tate and Lyle) that leaseholds provide better control authority than do the chiefs.

III: POLICY OPTIONS

Four basic policy options are outlined and analyzed. They are drawn from the research and experience in Swaziland, as well as elsewhere. The options take into account the "clear needs" which were identified in the study.

A. Individualization of Tenure: The Freehold Model

Where shifting traditional systems to freehold has been tried, it has been found to be expensive and does not solve many problems. Common unsolved problems are:

- It has not contributed much to economic security for the family,
- Landlessness is being generated by the operation of the land market, and
- Land sales are in some areas for speculative, rather than productive purposes.

While conversion to freehold would meet or assist in most of the "clear needs" identified, it would not be consistent with many of the elements in Swazi culture which provide its cohesion. The relevant question is whether the same needs might not be met better in other ways. A sub-option which the research would seem to favor would be a voluntary conversion model because a relatively few commercial farmers seem to have a serious need for change at this time.

B. The Cooperativization of Production Model.

The model looks good in theory, but in practice it has not been

very successful anywhere. All countries that have tried it on a large scale are backing off.

In terms of meeting the "clear needs" identified in the project, a drastic shift toward cooperativization would not meet them, but rather make them irrelevant! A whole new list of needs would emerge.

The customary model in Swaziland where the chief appears to have the power to make labor discipline more easy to maintain could be an advantage in a cooperativization approach. Cooperativization built around the chief may have limited potential and be worth exploring.

C. The State Leasehold Model

This has been the most popular "reform model" in Africa. It has been tried extensively in Swaziland.

One reason for the popularity of the leasehold idea is that there has been a wide diversity of views concerning what it would accomplish. For example, individualists see it as a step toward individualization, but moderate socialists see it as a means to retain governmental control. To traditionalists, it retains the centralization of authority with government replacing the old traditional authority.

If leasehold systems serve quite different ends to different people and in different situations as indicated above, they also affect cultivators very differently from situation to situation. They can provide either more, or less security! They can be fair and honest, or corrupt! They can increase farmer control over production (grow certain crops, use specified technology, etc.) or lessen it.

Experience with leasehold systems raises several issues which should be carefully considered in Swaziland.

1. Leases are often encumbered with requirements and restrictions so that farmers prefer the customary allocation system. Many conditions and restrictions have been proven impossible to enforce, and this is demoralizing.
2. Leases cannot be producers of revenue for government. (High rents make leases unattractive and low rents cost more to collect than they are worth!)
3. Leasehold administration is very subject to inefficiency and corruption. (A realistic assessment is required).
4. Administering a leasehold system is very expensive, and

everywhere the costs have been underestimated in the beginning.

D: Incremental Reform of the Customary Tenure System

The above 3 options involve a dramatic departure from the present customary (SNL) system. They all break the link between the traditional Swazi social system and land tenure. They all reflect a contention that the customary Swazi system is inherently incompatible with agricultural modernization, and its short-comings can best be corrected by dramatic, incisive change in tenure. The research does not support the contention.

This option recognizes that some change in Swazi customary tenure is necessary and desirable, while recognizing that it has been evolving and is basically not incompatible with the requirements for a modern agriculture.

The choice is not between no change or change, but between the present gradual and uneven evolution which, although its direction is satisfactory, does create uncertainties for some homesteaders, and a greater degree of leadership and guidance by government in order to clarify, ease and perhaps speed up the change.

Although the author has painstakingly avoided any recommendations, it is clear this option is his choice. He has gone into detail as to what are the crucial issues and how they would impact on the "clear needs" identified in the research. This section merits careful reading by all policy makers.

The authors conclude by

1. Showing how the model of gradual, incremental change could address the needs of SNL homesteads.
2. Noting that the possibility of harassment of successful, progressive, commercial farmers does exist, and consideration should be given to providing an expeditious means of review to protect them.
3. Indicating that it may be advantageous for fees, labor etc. owed as tribute or serving to finance local activities to be standardized. (If it is felt the more wealthy should pay more, fine, but standardize it.)
4. Suggesting that providing a means for preventing, and when they arise settling, land disputes quickly and fairly would be beneficial.

5. Pointing out that it would be appropriate and very helpful to confirm, by an authoritarian declaration, the evolution in farmer control over production decisions that has already taken place in most localities.

Crucial questions concerning levels and types of changes are identified. They are:

- What are the PARTICULAR modifications, and clarifications which are needed?
- What degree of formality is needed to induce the needed changes?
- How are the changes to be enacted AND communicated?
- Are changes in the role of chiefs as administrators needed?

IV Communal Range and Pasture Management

The policy options are not as clearly defined as they are for arable land. These will be expanded in the final draft of the policy options paper.

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