Effects of Traditional Land Transactions on Soil Erosion and Land Degradation

by
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I. INTRODUCTION

The fieldwork for this study was carried out in 1994/95 as part of the Institute of Southern African Studies Land Tenure Transformation Project with a specific focus on the effects of traditional farming transactions and practices on soil erosion and land degradation in Lesotho.

The main objectives of the study were:

(i) to examine the nature of traditional land transactions and farming practices.

(ii) to examine changes over time in traditional farming practices and the major factors that might account for such changes.

(ii) to examine whether or not these transactions and practices have any bearing on people's inclination towards soil conservation.

1.1 A Brief Statement of the Problem

There has been much talk about the constraints of the traditional land tenure system on agriculture in Lesotho. Often indications are that the customary land tenure and farming practices detract from soil conservation. Concern with tenure, on the one hand, revolves around two major issues.

(i) insecurity of title to land,

(ii) small and fragmented land holdings which do not allow for efficient use of land, labour and capital.

Farming practices, on the other hand, involve issues relating largely to sharecropping and rent farming/leasing out. Indications are that sharecroppers or tenant farmers are interested in short-tem returns from their investment with no long-term commitment to the land being farmed including its conservation.

A closely associated issue relates to customary rights of access to

grazing or rangeland. By its nature, customary tenure confers on the members of a community equal rights of access to and use of rangeland (grazing land as common property). It is often argued that where land is common property, each user will aim at deriving maximum benefits from the property (land) without at the same time feeling obliged to conserve or rehabilitate the land resources in question.

Notwithstanding the above, however, a cursory look at the Laws of Lerotholi, often considered a reference point of customary rules and practices, reveals a substantial number of provisions dealing with land use and conservation under the auspices of chiefs and headmen. What appears to have been lacking was a concerted effort on the part of chiefs/headmen to have enforced such provisions (Huisman, 1983:33-34).

The Laws of Lerotholi provided for, *inter alia*, the following:

(i) the setting aside of "leboella" (an area set aside for the propagation of grass) where grazing was strictly forbidden except with the express permission of the chief.

(ii) establishment of anti-erosion works on cultivated fields and pasture land including meadow strips and inlets, dams, fencing of badly eroded areas, etc, - all to these to be protected from ploughing, cultivation and grazing and individuals as well as the village communities were obliged to maintain and repair the anti-erosion works.

(iii) regulations and rules on safeguarding arable land against erosion and over the cultivation of virgin land (thite).

(iv) empowering chiefs to reinstate cultivated land to grazing where serious erosion would likely result despite conservation measures, to sub-divide grazing area for purposes of rotational grazing, etc.

Chakela and Cantor (1992) argued however, that although the above rules were encoded as part of customary practices, they (rules) in effect reflected concerns by the then colonial authorities and were intended to protect works essentially carried out by them. These

conservation works and the colonial conservation strategy have been widely criticized for largely failing to involve the land-users themselves (farmers) and failing to be production-oriented.

However, despite that conservation measures already existed under customary practices, a number of tenure reforms (of a general nature and conservation specific) were instituted early in the 1960s (see for instance, Mosaase 1982, Huisman 1983, Mdee 1992, Mahao 1992). What was found interesting (c.f. Huisman 1986:38) was that most of the conservation instruments proposed under the new laws were similar to those in the Laws of Lerotholi with the exception of rules relating to the culling of undesirable livestock. Chakela and Cantor (1992) concluded that what the reforms did was merely to transfer regulatory powers to the executive authority to force the traditional authorities to work with the executive or under their guidance. However, both the chiefs and the executive were observed to have failed either individually or collectively.

It is against this general problem situation that this study sought, therefore, to investigate the extent to which customary rights to land and its use as well as traditional farming practices detracted from the need to conserve land.

1.2 **Research Methodology**

In pursuing the objectives stated earlier, the study focused on six villages, four in the lowlands and two in the foothills. In the lowlands, the village areas of Ha Mantsebo and Ha Hlalele in the Maseru District were chosen as well as the villages of Baruting and Makujoe in the Berea District. The foothill villages included in the study were those of Setleketseng ha Pholo and Khololikane, both in the district of Maseru.

Comprehensive village household lists were prepared in advance of the actual survey with the assistance of the chief of the respective villages. The lists were stratified into four broad categories made up as follows:

(i) Households with livestock and fields (278)

(ii) Households with livestock but no fields (75)
(iii) Households with fields but no livestock (103)
(iv) Households with no fields and no livestock (204)

Within each stratum, a 50 percent sample was drawn and this yielded a total survey population of 330 households distributed by village as follows:

Village		**Sample Household**
Ha Mantsebo	=	134
Ha Hlalele	=	52
Baruting (includes Masaleng)	=	40
Makujoe (includes Mohotloane)	=	35
Setleketseng ha Pholo	=	30
Khololikane (includes ha Fokoane)	=	39
TOTAL		**330**

The criteria for selecting the villages and sample size was basically purposive in that it sought to address the objectives head-on. The village areas of Ha Mantsebo around the Qeme Plateau and Baruting on the Berea Plateau are fairly proximate to Maseru town whose influence on farming patterns within these areas have been noted on several occasions before (see for example Lawry, 1987). Ha Hlalele and Makujoe were added on as controls for Ha Mantsebo and Baruting respectively as these were located relatively further from the town of Maseru. Setleketseng and Khololikane were chosen because being in the foothills, it was assumed that they would exhibit the attributes of both the mountain and lowland regions in terms of farming practices. Moreover, both these villages were easily accessible from the research base (Roma). The aim was also to avoid villages that might have been affected (either now or in the past) by projects with soil conservation components.

That such a large sample was drawn was also a deliberate attempt to facilitate the capturing of even those farming practices that for the

time being tend to be relatively rare such as renting/leasing of arable land.

A fairly detailed questionnaire encompassing both pre-coded and extensively open-ended questions was used with the aim of collecting both quantitative and qualitative data on the issues identified. The questionnaire thus covered areas ranging from the socio-economic characteristics of each household, the households' inventory of arable land and livestock, the type of erosion prevailing on own fields as well as on those in the neighbourhood, erosion prevention measures used, farming arrangements on own and other's fields, personal opinions regarding grazing fees, livestock culling and revocation of fallow arable land by the chiefs/land allocation authorities, etc. The raw data collected was analyzed and tables generated using the SPSS PC+ computer package. Interesting results were found and these are outlined in the remaining parts of this report.

II. SOCIO-ECONOMIC CHARACTERISTICS

2.1 Introduction

The 330 households surveyed had a total population of 1919 people, thereby giving a household size of 5.8 persons per household; a normal rural household size for Lesotho. In terms of geographic distribution, 80 percent of the population was from the village area of Ha Mantsebo which was by far the largest and most populous village. The smallest village was that of Setleketseng ha Pholo with only thirty (30) households

2.2 Gender Distribution

The gender distribution of the population showed a fairly balanced split, with 51 percent being male and 49 percent female. This was considered a significant departure from previous or accepted distributions and could be a result of the decline in the rate of absenteeism through migrant labour by the male population. It equally appeared paradoxical that the female proportion was in fact two percentage points below that for males. If the possibility of error in data entry and analysis is excluded, then this could be taken to point to increasing mobility on the part of females through rural-to-urban migration or a higher rate of male children born relative to females.

The gender distribution between heads of households however, presented a rather complete contrast to that relating to the overall population. Male heads of households accounted for three quarters of the entire population of household heads while female heads made up only a quarter of all household heads. It should be noted, however, that de facto female heads (i.e. those whose husbands were working outside the study villages) were not counted as heads in

their own right. This would have pushed the proportion of female heads much higher than that indicated here.

2.3 Age Distribution

Close to half of the total household population was economically active (i.e. was between ages 15-60). For household heads only, almost half consisted of middle aged (31-50 years) heads (Table 1).

Table 1: Age Distribution of Household Population and Heads of Households

Age	Number of people (All Household Members)	%	Number of People (House-hold Heads Only)	%
0-10	464	24.2	-	-
11-15	242	12.6	-	-
16-20	226	11.8	-	-
21-30	267	13.9	29	8.8
31-40	180	9.4	67	20.3
41-50	146	7.6	79	23.9
51-60	98	5.1	65	19.7
61-70	58	3.0	42	12.7
71+	49	2.6	32	9.7
Age not known	189	9.8	16	4.9
TOTAL	1919	100.0	330	100.0

Existing evidence has shown that young to middle-aged households

are particularly lacking in arable land resources (Morojele 1960, part 3.30) although they might possess livestock, farming implements or financial resources to hire draught power and purchase inputs such as fertilizer. These are the families which have a higher propensity to sharecrop other peoples' fields.

Older households by contrast, possess relatively ample land resources (Morojele 1960, part 3.30) but many are usually lacking in livestock and farming implements. As a result, older households tend to enter into sharecropping arrangements on their own fields. These points are dealt with in detail under Section 4.0.

2.4 Marital Status of Household Heads

The majority of household heads were married (68%), 26% were widowed and 6% separated. Here again existing evidence suggests that widows were more likely to get involved in sharecropping than households where both spouses were still alive. This is dealt with in detail under Section 5.0.

2.5 Place of Birth of Household Heads

Place of birth is also important in the study of this nature since it is highly unlikely that removers' from other villages would be allocated arable land (fields) in their new areas. It is, therefore, to be expected that similar to young and middle-aged households, they too (if engaged in farming) would tend to rely on sharecropping or leasing/renting other peoples' land.

Although the majority of household heads were born in their home village (68%), a fairly significant proportion of household heads (29%) were removers from areas outside those studied, with the lowland villages of Makujoe (51%), Ha Mantsebo (44%) and Baruting (30%) having accommodated the highest proportion of removers. Makujoe was in fact unique in that the proportion of removers was higher than that of household heads born in the village.

Table 2: Village of Resettlement by Place of Birth of Household Heads

Village of Resettlement	Place of Birth			
	Home Areas	Other Village	Unknown	Not stated
Ha Mantsebo	68	59	3	4
Ha Hlalele	49	2	0	1
Baruting	26	12	2	0
Makujoe	16	18	0	1
Setleketseng	29	1	0	0
Khololikane	36	2	0	1
TOTAL	224 (67.9)	94 (28.5)	5 (1.5)	7 (2.1)

N.B. Figures in brackets denote percentages.

Considering only household heads whose place of birth was reported, the proportions of removers are slightly pushed up to 53, 41 and 32 percent for Makujoe, Ha Mantsebo and Baruting respectively. The villages with the lowest proportion of removers were those of Setleketseng ha Pholo and Khololikane both in the foothill zone. Ha Hlalele similarly had very few removers although located in the lowlands. It is possible that its relative inaccessibility to Maseru town renders the village unattractive to would-be removers.

As it transpired the village areas of Ha Mantsebo and Makujoe also had the highest proportions of landless households (see Section 3.0). In the case of Ha Mantsebo, the relatively high proportion of removers is explicable in terms of its natural attraction due to its proximity to Maseru town. The case of the village of Makujoe is

difficult to comprehend given that it is further from Maseru town than the village of Baruting which is more proximate to the town.

2.6 Occupation of Heads of Households

The type of occupation considered here relates to other work pursued by the heads of households besides subsistence farming/agriculture except where such farming/agriculture was pursued on a career basis, i.e. commercial farming. Table 3 below presents the various types of occupations pursued by the different heads of households.

From Table 3, the majority of household heads were not working (188 or 57% of total heads) or had no other occupation besides subsistence farming. For those with other occupations, clearly labour migration to the Republic of South Africa was predominant with close to 63 percent of all heads with other occupations involved in it. The rest were distributed amongst the various occupations as shown in Table 3 with categories of casual labourer/driver/domestic work and farmer/businessman being the next important occupations after labour migration.

Table 3: Type of Occupation of Household Heads

Occupation	No. of Household Heads	%
Nurse/Civil Servant/Teacher	3	2.1
Security/Soldier/Police	4	2.8
Dress maker/Machine operator/Factory worker	5	3.5
Farmer/Businessman	16	11.2
Brickmaker/Bricklayer	3	2.1

Accountant/Shop Assistant/Cashier or Bank Teller	3	2.1
Miner	88	61.5
Labourer/Driver/Domestic	18	12.6
Unknown	2	1.4
TOTAL	142	100
Not Working	188	-
TOTAL	330	-

N.B. Category "not working" not included in computing percentages.

III. FARM INVENTORY

3.1 Landholding and Land Acquisition

The Agricultural Situation Report (in Chakela, Q.K., Mashinini, I.V. and Makatjane T., 1994) estimated that in 1990, 25 percent of rural households were landless compared to 15 percent in 1970. Landlessness amongst the household heads in this study appear to be almost twice the 1990 national average, with 44 percent of all households reporting no land. Barely 25 percent had two fields and still fewer household heads had more than two fields. The customary principle of three fields per household is thus becoming increasingly difficult to uphold in the face of growing numbers of rural households.

Table 4: Number of Fields Owned

No. of Fields	No. of HouseholdHeads	%
0	146	44.2
1	81	24.5
2	62	18.8
3	24	7.3
4	16	4.8
5	1	0.3
TOTAL	330	100.0

As indicated earlier, the incidence of landlessness tends to be higher amongst young to middle-aged household heads (Table 5) while landed household heads tend to be the eldest.

Clearly from Table 5, it is obvious that about 16% of land owning household heads were below 40 years and younger and the rest were over 40 years.

Table 5: Age of Household Heads by Number of Fields

Age	No. of Fields					
	0	1	2	3	4	5
<21	-	-	-	-	-	-
21-30	23	4	2	-	-	-
31-40	44	18	5	-	-	-
41-50	37	22	15	4	1	-
51-60	21	19	15	6	3	1
61-70	8	6	13	7	8	-
>71	8	8	9	5	2	-
Age not known	5	4	3	2	2	-
TOTAL	146	81	62	24	16	1

As indicated under Section 2.5, knowledge of place of birth is indispensable in terms of land ownership to removers from other villages; the fact that it was highly unlikely for removers to be allocated arable land in their villages of resettlement. It was shown

under Section 2.5 that the village areas of Makujoe and Ha Mantsebo accommodated the largest proportion of removers from other areas (Table 2). As it turned out, these two villages also contained the largest proportions of landless households (Tables 6 and 7) with 66 percent reporting no arable land within Ha Mantsebo and 40 percent within Makujoe.

Table 6: Village by Number of Households With/Without Fields

Village	No. of fields					
	0	1	2	3	4	5
Mantsebo	89	21	12	6	4	1
Hlalele	14	14	16	5	3	0
Baruting	13	12	11	4	0	0
Makujoe	14	12	8	1	0	0
Setleketseng	8	10	7	2	3	0
Khololikane	8	12	8	6	5	0
TOTAL	146	81	62	24	16	1

Overall, 90 percent of landless households were found in the four lowlands village areas of Ha Mantsebo, Ha Hlalele, Baruting and Makujoe with 61 percent of all landless heads being within the village of Ha Mantsebo. Only 10 percent of landless household heads were found within the two foothill zone villages of Setleketseng ha Pholo and Khololikane.

Table 7: Place of Birth by Number of Households With/Without Fields

Place of Birth	No. of Fields						
	0	1	2	3	4	5	TOTAL
Home Village	80(35.7)	64(28.6)	45(20.1)	19(8.5)	15(6.7)	1(0.4)	224
Other village	60(63.8)	17(18.1)	12(12.8)	5(5.3)	0(0.0)	0(0.0)	94
Unknown	3(60.0)	0(0.0)	1(20.0)	0(0.0)	1(20.0)	0(0.0)	5
Not stated	3(42.9)	0(0.0)	4(57.1)	0(0.0)	0(0.0)	0(0.0)	7
TOTAL	146(44.2)	81(24.5)	62(18.8)	24(7.3)	16(4.8)	1(0.3)	330

N.B. Figures in brackets denote percentages.

According to Table 7 above, 64 percent of all remover household heads had no arable land compared to 36 percent of those who were not removers. When it comes to field ownership, the reverse holds true; only 18 percent of removers had at least one field compared to 29 percent of their non-remover counterparts. This pattern holds true in fact throughout all other categories of the number of fields owned. There is therefore a strong association between the place of birth and land ownership with villages having the highest proportion of removers invariably being villages with the highest proportions of landless households.

In terms of land acquisition, the customary principle empowered chiefs to allocate/reallocate land to those who qualified, namely, every married Mosotho male subject. This in theory had to also apply to land of deceased heads of households although priority consideration was to be given to the widow and her dependents. However, in practice land appears to have been passing from father to son(s) without reverting to the chief for reallocation. This has meant that land in reality has been treated as though it was part of the family's estate and therefore capable of being inherited. In the village

areas studied, about 36 percent of all household heads with arable land had obtained such land through direct allocation by the chief and 48 percent had inherited such land (Table 6).

Table 8: Methods of Land Acquisition

Method	No. of Household Heads	%
Allocation by Chief	66	36 1
Inheritance	87	47.5
Gift	9	4.9
Other (eg bought/borrowed	21	11.5
Missing	1	-
Not applicable	146	-
TOTAL	330	100.0

N.B. Percentages exclude the "not applicable" and "missing" categories.

Increasingly, therefore, access to land would seem to be through inheritance. This means that the equity principle inherent in customary tenure has not only been eroded by population increase but also by the tendency for land to remain within the confines of a single family thereby making it easy to pass from father to son *ad infinitum*. This without doubt becomes a source of security of tenure which has to date received scanty attention.

Other interesting cases relate to instances where customary tenure has apparently not deterred people from parting with family land as gifts (5%), sale of such land or even to loan or pledge land to other people (12.5%) in return for a variety of services performed. Clearly arrangements such as these are (in theory) anathema to customary

tenure. All these demonstrate the flexibility of customary tenures and their ability to adapt to changing realities within different societies.

Over half (56%) of those with arable land indicated that they held no formal titles to their land, while 33 percent indicated that they held Form Cs as evidence of title. The rest only indicated their possession of some form of 'written evidence/documents' whose true nature was not clearly explained. However, nearly 93 percent of household heads with land felt their tenure was unquestionably secure compared to 5 percent who felt outrightly insecure and about 2 percent who indicated some degree of uncertainty.

This brings into question the long-standing claim that customary tenure provided no security of tenure. Generally, security of tenure has been interpreted from the point of view of modern or western forms of rights to immovable property. Rarely has interpretation of security been considered from the perspective of the land users. This study has made interesting revelations in this regard. The question "How do you consider your rights on the land?" was met with pretty emotive responses from the majority of respondents. The following are typical examples of such responses:

> "My rights are very secure. It is my field and nobody can take it away from me. Besides, no one is disputing that fact."

> "Secure. My son is the one cultivating my field and as long as he lives, no one can take it away from me."

Those feeling uncertain or insecure indicated that there were either people claiming rights of use to their land or there were disputes concerning field boundaries, but they were a minority compared to those feeling that their tenure on the land was secure.

The basic customary principle was to allocate three discrete pieces of land as fields to ensure a compensatory spatial distribution under conditions of variable soil quality and microclimates. Cantor (1987) has for one pointed to the undesirability of discrete pieces of land in terms of effective farm management. She went further to indicate

that the majority of farmers she interviewed preferred one consolidated piece of land over an equivalent amount of land divided into two or three small holdings. She noted, however, that land consolidation alone was not enough to lead to improved land use that included conservation.

In terms of the type of landholding preferred, the results from this study show that about 34 percent of household heads with arable land preferred discrete pieces as against 15 percent who preferred consolidated pieces. The majority of land users would therefore seem to prefer discrete pieces of land, and reasons included the fact of differing soil quality (16%), reduced exposure to wholesale damage by animals, people, hailstorms, etc (15%) and the ease with which discrete pieces would be distributed between the household's offsprings (3%). For those preferring consolidated pieces, reasons were that these would be easy to manage (14%) as well as reducing walking distances between fields (2%). A fairly high proportion (50%) had no specific reason for preferring either discrete or consolidated pieces of land.

3.2 Household Farm Implements

Ownership of farm implements permits effective and timely operations on the farm and their presence or absence can determine whether or not a household eventually sharecrops its land, rents it to other people or leave it fallow. The types of farm implements investigated and their ownership are summarized in Table 9 below.

Table 9: Household Farm Implements

Implement	No. of Households			
	Yes	%	No	%
Plough	99	30.0	231	70.0
Cultivator	80	24.2	250	75.8
Planter	74	22.4	256	77.6
Cart	58	17.6	272	82.4
Tractor	7	2.1	323	97.9

Clearly the table above shows that implements were owned by a relatively small proportion of heads of households, but given the limited extent of sharecropping and renting (section 5.0) it can be concluded that the majority of farming households were managing to hire farm implements from other households.

Only 2 percent of household heads had tractors and these heads as a result were able to rent as well as sharecrop extensive amounts of arable land especially within the village area of Ha Mantsebo where in fact one very wealthy household reported farming over ten other fields over and above the five that the household owned.

3.3 Livestock Ownership

Possession of livestock especially cattle, donkeys/horses coupled with the ownership of farm implements also facilitates timely farming. Households without livestock either have to hire draught power from other people or similarly enter into some form of farming arrangements on their land.

The population in this study was not very endowed in terms of livestock ownership. On average, 65 percent of household heads had no form of livestock at all. The distribution of the livestock was such that 74 percent had no cattle, 24 percent had between 1 to 4 herd of cattle and only 2 percent had more that 5 herd of cattle. For donkeys/horses, 75 percent had none, 25 percent had 1 to 4 and a mere 0.3 percent had over five.

In terms of small livestock, 75 percent had no sheep and 98 percent no goats. The ownership of small livestock in general was very skewed; for example, only 1 household had more than 500 sheep with the next household with the most sheep having about 200. A similar pattern was observed for goats where the wealthiest household in terms of goats had over 150 goats with the second highest goat owning household having about 80 goats. Livestock ownership in general was highly skewed with only 35 percent of all household heads owning the entire livestock in the six villages surveyed.

IV. CROPPING PATTERNS

4.1 Crop(s)/crop Combination

The general cropping pattern within the study village was largely dominated by monocropping, with about 90 percent of all fields being under sole crops. Maize as a staple food crop was the most predominant being planted on 64 percent of all fields. It was followed by sorghum (16%), wheat (6%) and beans (3%). Only 10 percent of fields were under some form of crop combination, namely sole crops on different plots on the same field (5%) row intercropping[2] (2%) and mixed intercropping[3] (3%). Component crops[4] in row and mixed intercropping were largely grain crops (largely maize) with pulses (beans) and vegetables (pumpkins).

The practice of intercropping (row or mixed) is considered an age-old farming practice in the so-called traditional societies, but that the practice has now almost disappeared in many areas of the developing world (Govinden, 1984). There are many inherent advantages to intercropping of grain crops with pulses or vegetables. Besides the obvious advantage of multiple harvest, intercropping has been shown to reduce both soil moisture loss and the intensity of soil erosion by providing improved soil cover.[5] Given its virtues, it is surprising that intercropping was so rudimentary within the farming population studied with no obvious differences between the foothills and lowlands zones.

4.2 Crop Residue

The increasing use of chemical fertilisers has often been considered to add value to crop residue. The tendency has, therefore, been to remove crop residue or stover to be used as fodder for individual use or sale- a practice which the customary tenure has not discouraged. Although nearly 63 percent of household heads had left their crop

residue for communal grazing, a fairly significant proportion (35%) had in fact removed all crop residue to use as winter animal feed and/or for sale. About 30 percent of respondents felt removing crop residue was a good thing, pointing largely to the use of chemical fertilizers and allowing for timely ploughing. Very few of those who responded (4%) were against the removal of crop residue, arguing that it was against the culture of Basotho. Generally speaking, therefore, removal of crop residue would seem to have been widely supported especially in view of the increasing use of chemical fertilizers as well mechanized farming.

4.3 Fallow Crop Land

The incidence of fallowed cropland came out to be much lower than was expected given the growing national concern about the issue. Only 16 percent of fields were fallow and most of these were amongst the households with more than one field and who invariably were households with older heads.

It would seem as though poverty (poor/sick, no seeds, no resources, no money) and degraded cropland (soil too rocky, water-logging) were the principal causes for fallow fields as shown in Table 10.

The customary principle conferred use rights in perpetuity provided the land was cultivated continuously, with failure to do so for two consecutive seasons meaning that the land would revert to the chief for reallocation to those who would be willing to cultivate such land. As indicated, 16 percent of all households reported at least one fallow field and of these, about 23 percent had fallowed their fields for periods exceeding two consecutive seasons. Despite this, less than one-fifth of those with fallow fields were apprehensive of the possibility that they could lose their land through revocation by the chief. The rest indicated that it was not possible for them to lose their land that way, with the majority arguing that fields belonged to them and that no one had a prerogative to take them away. In essence, the sentiments expressed here were pretty much

similar to those relating to how landowners viewed their rights to their land.

Table 10: Reasons for Fallow Fields

Reason	No. of Household Heads	%
Poor/Sick	12	35.3
Soil rocky/ water logging	4	11.8
No seeds	5	14.7
No resources	9	26.5
No money	1	2.9
No sharecropping Partner	2	5.9
Field Meant for Relative	1	2.9
No response	6	-
Not applicable	290	-
TOTAL	330	100.0

N.B. The "No response" and "not applicable" categories not used in computing percentages.

Whereas it is acknowledged that fallowing can be used as a conservation strategy in as far as it allows for a natural regeneration of the soil structure, it does not appear that it is the case here given that no respondent pointed out this as a reason for fallow fields. Moreover, even if fallowing could be used as a form of conservation strategy, it is doubtful if the soils would in fact be rested given that

such fallowed land often immediately becomes subjected to communal grazing. This results into increased soil compaction by animals as well as limited vegetation cover.

V. FARMING ARRANGEMENTS AND PRACTICES

A variety of farming practices have emerged in rural Lesotho over the years in response to a number of opportunities and constraints. Some of those commonly identified include sharecropping (seahlolo), rental farming/sub-leasing, cash remunerated labour and contract farming (Morojele 1963, Huisman 1983, Leduka 1983, Lawry 1987). An issue of concern has been the effect of such arrangements especially sharecropping, on people's inclination to conserve soil. Cantor (1987) for one, maintains that sharecropping arrangements provide too short planning horizons to allow for long-term investment in land including conservation whose benefits only occur after long periods of time. By implication, therefore, sharecropping acted as a disincentive to soil conservation in as far as people would normally be reluctant to assume added responsibilities and expenses on land that did not belong to them.

Amongst the rural households in Lesotho, sharecropping has been indicated to be the most common form of transaction, especially in the lowlands. Cantor (1987) noted that 68 percent of the farming population she surveyed were engaged in sharecropping arrangements and 6 percent in renting/sub-leasing. Of the sharecropping population 68 percent were 'sharecropping out'[6] and 32 percent were 'sharecropping in'.[7] It becomes clear therefore that a substantial proportion of land was farmed by de facto holders.

Within the areas studied, two farming arrangements were identified; sharecropping which was reported by about 27 percent of all households and renting/sub-leasing reported by 8 percent. Compared to Cantor's (1987) findings, the incidence of sharecropping was found to be much lower here although renting/sub-leasing was comparatively higher. Among the sharecroppers in this study, 44 percent were found to be "sharecropping out' at least one field and 56 percent were 'sharecropping in' at least a field.

Lawry (1987) and Cantor (1987) observed that households 'sharecropping out' had more fields, were elderly and/or widowed and had no factors of production other than their land and labour. Households 'sharecropping in' had none or fewer fields and had younger heads with more of the other factors of production thereby allowing them to farm more land. As it transpired from this study indeed the majority (68%) of those 'sharecropping out' were over 50 years while the majority (52%) of those 'sharecropping in' were younger than 50 years. Over 70 percent of those 'sharecropping in' were providing seeds, farming implements, draught power, chemical fertilizers as well as feeding those working on the farm. Those 'sharecropping out' were predominantly providing labour input into the various farming operations over and above their land, such as in ploughing, planting, weeding and harvesting.

Again, of those 'sharecropping out', 31 percent were doing so with relatives and the rest with other people in the village. For those 'sharecropping in' their proportions were 36 and 64 percent respectively for relatives and other villagers. Therefore, it can be concluded that entering into sharecropping arrangement does not necessarily require that one is a relative although many people would probably prefer such an arrangement.

Although under conventional sharecropping the partners usually divide their farm produce on a 50/50 basis, various sharing arrangements were found here such as 60/40, 65/35, 70/30, 90/10, etc, depending on how much and what each partner had contributed. However, where sharing arrangements departed from the 50/50 norm, the smallest share almost always went to the owner of the field, an obvious indication that partners are the largest contributors in the sharecropping process. Instances where the fieldowner obtained the largest share were predominantly where the partner was a relative.

Lawry (1987) has further noted that sharecropping agreements were usually entered into on an annual basis, usually three to four months before the beginning of the planting season and often involved no written documentation. However, many sharecropping

partners were found to have been farming together for several years. Although this particular study did not investigate the nature of sharecropping agreements along Lawry's lines, it nonetheless was found out that sharecropping partners had been farming together for periods ranging between one to over seven years.

Renting/sub-leasing of land as well as outright purchase of farm land[8] have been associated largely with an emerging (albeit still very small) commercial farming sector in staple foodcrops, irrigated horticultural farming, dairying and poultry production within the sphere of influence of the Maseru town. It is argued that those requiring land for commercial farming (largely civil servants and businessmen) usually found it difficult to obtain such land through the customary system of allocation and that annual agreements under sharecropping did not allow for long-term investment in farm infrastructure (Lawry, 1987:12).

Maseru, therefore, has had a very direct influence on the emergence of rental farming or land purchase by the aspiring commercial farmers. The town acts as a ready market as virtually all renting/sub-leasing and land purchases were reported only by households in the lowland zone. Many of those renting or having bought land were found predominantly within the village areas of Ha Mantsebo, Baruting and Makujoe, all with relatively easy access to the town.

Although earlier arguments have often indicated that commercial farming required secure forms of tenure, e.g. leaseholds, and although the Land Act of 1979 attempted to introduce agricultural leaseholds, it has been found that for a number of reasons (of costs and bureaucratic red-tape) the emerging group of commercial farmers considered a Form C allocation an adequately secure form of title to warrant permanent farm infrastructure for dairying and irrigation as well as ensuring long-term returns from woodlots and fruittrees (Lawry 1987). It was due to this that Lawry came to conclude that customary land tenure in Lesotho was adjusting to contemporary land needs and demands; that renting/ sub-leasing:

> (...) provide(d) the means by which landholders can continue to realize income from their land while putting the management of the land in the hands of those who can farm it more productively. (That) renting and leasing in no way challenge the basic tenets of the customary land tenure system (Lawry 1987:2-22).

One could also argue that in addition to the above, renting/leasing unlike outright purchase, does not only ensure income and improved farming, but in line with custom and the attachment that people have to their land, renting/leasing ensure that the concerned household at all times remains the ultimate holder of use rights to the said land. In other words, leasing/renting would ensure that households are not alienated forever from their land while at the same time providing guarantees on investments made on that land.

In very general terms, it would appear that besides outright purchase of land which gives rise to Form C rights, leasing/renting as secondary use rights confer enough tenurial security to encourage improved farming (presumably inclusive of conservation) by those who can, than the traditional sharecropping arrangements.

The Land Policy Review Commission Report (1987) had as one of its recommendations the formalization of renting/leasing of agricultural land. This study therefore sought general opinions relating to this issue. A majority of respondents (81%) were clearly in favour of such formalization. About 8 percent had some reservations, largely that formalization would render leasing/renting too bureaucratic and others feeling the fields belonged to them and should be left alone in deciding to do whatever they thought appropriate. The remaining 11 percent expressed no opinion on this.

Although the majority of the farming population would seem to favour formalized renting/leasing over conventional sharecropping, it is doubtful that this on its own would be enough to induce people to adopt conservation in their farming practices.

VI. LAND DEGRADATION, EROSION AND EROSION FORMS REPORTED

The precise definition of land degradation is argued to be difficult given the multiplicity of factors responsible for its occurrence. Barrow (1991) has proposed a generalised definition of land degradation, relating to it as:

> The reduction in rank or status, for example a degradation and/or loss of soil, or change to a simpler floral/faunal composition or a substitution of one organic form for a lower organic form (Barrow, 1991:1).

Some land degradation occurs due to natural (biogeophysical) causes while some is due to human causes as well as a combination of both. In general however, land degradation is an end-result of a 'chain of causation' and a consequence of natural, often human causes which may be some distance from the degraded locality (Barrow, op cit: 2).

Chartres (1987 in Chilshom and Dumsday, 1987) defines land degradation as:

> Any causative factor or combination of factors, which damage the physical, chemical or biological status of the land and which may restrict the land's productive capacity (Chartres, 1987:8).

Thus generally speaking, a large number of factors, individually or in combination, may contribute to land degradation. For example, soil erosion, organic waste, pesticides, fertilizers, salts and alkali, etc Degradation in turn leads to a number of environmental problems, e.g. loss of sustainable production, declining water quality, loss of genetic diversity, etc (Chartres, op cit:8).

In terms of erosion, it is argued that even in an environment devoid of human beings or their activities some erosion will occur as a result of natural processes; the type of erosion referred to as "geologic". Human activities within the environment, of agriculture, urban and rural settlements, road construction, etc. lead to erosion rates far in excess of those occurring under natural conditions thereby giving rise to "accelerated erosion" (Chartres, op cit:8). Soil erosion, therefore , is only a part of those processes responsible for land degradation and by definition it can be argued that both land degradation and accelerated soil erosion are induced by human activities and actions. Accelerated erosion by water and wind along with the depletion of vegetation cover are amongst the most serious factors leading to land degradation in Lesotho.

6.1 Responses to Land Degradation and Soil Erosion

Research findings elsewhere (Rickson, R. et al, 1987) show that land degradation in its most 'subtle and devastating forms' tends to invite different responses from farmers. Such responses range from "fatalism (the feeling that nothing can be done), indifference and inertia to active interest and firm commitment to preserving the soil" (Rickson, R et al, op cit:198).

It is further indicated that rill/gully and sheet erosion develop gradually over long periods of time and may be difficult to identify in their incipient stages. As a result many farmers may often refuse to accept the existence of such erosion and land degradation generally. It is argued that erosion and degradation tend to attract attention once gaping gulleys and duststorms begin to be seen and soil depths begin to be too shallow to sustain crop production.

In this particular study, nearly half of the respondents with fields reported some form of erosion and degradation problem on their fields. The most widely reported forms of erosion were rill/gully erosion (67%) followed by sheet erosion (26%) and wind erosion (8%). On fields being 'sharecropped in', nearly all (17 out of 18 respondents) reported rill/gully erosion on the fields being so farmed.

This represented about 10 percent of all households with some form of farming arrangement (sharecropping and/or renting).

Close to three-fifths of all households reporting erosion on their fields indicated that they were doing something to abate the effects of erosion while half of those 'sharecropping in' with soil erosion problems indicated that they were doing something about erosion. The results are summarised in Table 11 below.

Table 11: Erosion Control Measures (Households Reporting Erosion Only)

Measure	No. of Households (own fields)	%	No. of Households (other fields)	%
Diversion furrow	38	64.4	3	33.3
Planted trees/Aloes	8	13.6	4	44.4
Used stone to stop gulley	6	10.1	1	11.1
Grassed Waterway	4	6.8	1	11.1
Re-established contour banks	3	5.1	-	-
TOTAL	59		9	99.9

Measures on own fields predominantly involved the digging of diversion furrows to transport erosive water away from cropland. This was followed by aloe/tree planting often to stabilize furrow

embankments. For those 'sharecropping in' tree/aloe planting and diversion furrows were common measures. It can, therefore, be concluded that very rudimentary measures were being undertaken to combat the effects of accelerated erosion.

For those not undertaking any erosion control measures, reasons for not doing so were sought. Table 12 below provides a summary of the responses received from both field owners and those 'sharecropping in.'

Table 12: Reasons for Absence of Erosion Control Measures

Reason	No. of households (own fields)	%	No. of households (other fields)	%
Too old/sick	8	25.8	-	-
Don't know what to do	10	32.3	3	33.3
Erosion beyond control	5	16.1	3	33.3
No reason	8	25.8	3	33.3
TOTAL	31	100.0	9	99.9

From tables 11 and 12 above, it can be concluded that similar to what Rickson et al. (1987) indicated, the incidence of erosion may induce fatalism, indifference and inertia. These concepts seem to be appropriate in relating to the results presented above. Besides the old/too sick, there appears no valid reason why people are not protecting their arable land against accelerated erosion. In addition, there appears to linger amongst respondents, a perception that the problem was essentially not theirs or was too widespread to be of

concern to an individual household.

As indicated, soil erosion and land degradation may result as much from factors or activities on-site as from those essentially off-site. Observations during the fieldwork were that with exceptional cases in the lowlands, generally the location of village settlements and rangeland is such that they are uphill from cropland/fields. This is a common rural settlement morphology or configuration in the entire country resulting largely from the traditional principle that land should in the first instance be used for cultivation and pasture (Leduka, 1987). Although a sound principle in economic terms, this has had serious ecological impacts. Often within village settlements the vegetation cover has been completely destroyed and grazing areas heavily degraded hence run-off during heavy rains becomes excessive. The consequence of this is gully formation on the cropland downhill or the valley floors. This problem is so pervasive that it could probably explain why many respondents felt that erosion was out of control or did not know what to do about it.

Under customary tenure, failure to protect arable land was one other condition that could lead to the land being revoked by the chief and reallocated to some other household willing to protect such land. Here again respondents who were not doing anything to control erosion were asked as to whether they thought they did not risk losing their land through revocation as provided for under customary law. Nearly all of them (90%) indicated in no uncertain terms that such revocations would never happen, with only 10 percent indicating that they were not too sure it could happen.

Clearly, therefore, as indicated in previous sections and the paragraphs above, tenure under customary practices was (and still is) undoubtedly secure from the point of view of the land users. Security of tenure or lack of it cannot therefore, be used without reservations to explain why farmers ignore soil erosion as well as conservation measures. It is instead argued that lack of interest in controlling accelerated erosion and conservation has to be explained in terms other than security of tenure. May be it is in fact true as many have suggested before that Basotho were not farmers in the

true sense of the word since they had other alternative and more rewarding income sources; that Basotho 'farmers' were keeping their land solely for what it was able to produce and as a minimum form of social security in case all else failed.

6.2 Land Disputes

Cantor (1987) indicated that there was a rather high incidence of land disputes in rural areas with 22 percent of the landusers she interviewed having been involved in land disputes and with 11 percent of them having actually lost land through such disputes. Cantor, therefore, concluded that disputes could constitute another source of insecurity strong enough to discourage people from effecting substantial capital investment on their land (including conservation).

Land disputes in this particular study were found to be relatively small, with less than 4 percent (3.4%) of the respondents or about 6 percent of all households with fields claiming to have been involved in some form of land dispute. Seven of the disputes involved a relative; three were with the chief and one with another villager. Three dispute cases (1 with the chief and two with relatives) had been won by the respondents; two by the chief and five were yet to be decided. Over 90 percent of respondents who had or were still involved in disputes indicated that they would not be deterred by such disputes from improving or conserving their land. Clearly, therefore, there is a very weak link between land disputes and farmer inclinations towards improved farming or soil conservation.

VII. GRAZING OR RANGELAND

Addressing the above issue, enquiries were directed at grazing methods by the individual households with livestock as well as their perceptions regarding conditions of range or grazing land. As would be expected, the majority of livestock owners (87%) relied solely on communal rangeland with 8% reporting stall feeding and a combination of communal grazing with stall feeding. Only one percent of the respondents reported grazing association rangeland. Clearly communal rangeland as would be expected, was the most important in terms of livestock feeding.

Close to seventy percent of the respondents were able to express their perceptions regarding the condition of rangelands. A majority of such respondents (56%) indicated that rangelands were poor, 41 percent that rangelands were good and 3 percent that grazing land was in fair condition. Those who indicated that rangeland conditions were either fair or poor were further asked to indicate the factors they thought were responsible for the stated conditions. The results are summarized in Table 13.

More than half of the respondents, therefore, believed that veld fires, drought and soil erosion were the most pervasive and perilous factors followed by the transformation of previously grazing land into arable land or land for housing; a clear indication of people's implicit acknowledgement of increasing human populations and their adverse effects. Other factors as indicated in the table above relate to overstocking as well as failure to set aside areas for the propagation of grass (leboella) or no respect for such areas by livestock owners. As indicated earlier, responses here clearly indicate that both natural and to a greater extent human actions are responsible for degraded rangelands.

Table 13: Factors Leading to Fair/Poor Rangeland

Factors	No. of Respondents	%
Fire/Drought/soil erosion	67	50 4
Rangeland being cultivated/built on	28	21.0
Too many animals	11	8.3
Too many people	6	4.5
No leboella/No respect for Leboella	12	9.0
Not sure	9	6.8
TOTAL	133	100 0

Only 25 percent of those who responded indicated that communities were doing something to protect/improve rangeland while 70 percent indicated that nothing was being done. Measures for improving rangeland suggested by the majority of respondents ranged from the setting aside of 'leboella' (23%), stall feeding and reduction of stock numbers (7%), tree planting to curb erosion (3%). Other responses were from those feeling nothing could be done (38%) and those who did not know or were not sure as to what could be done (29%).

VIII. OTHER ISSUES RELATING TO LAND DEGRADATION AND SOIL EROSION

Many of the issues discussed here concern some of the major recommendations by the Land Policy Review Commission (1987) which are considered to relate to this study, namely, destocking through the culling of undesirable livestock, revocation of fallow land and the introduction of grazing fees. Opinions relating to sub-leasing/rental, revocation of fallow fields, introduction of grazing fees and culling of undesirable livestock are summarised in Tables 14, 15 and 16.

Clearly revocation of fallow fields was undesirable for the reasons shown in Table 14 below, with those objecting largely pointing to people's poverty and lack of choice and to the need to offer assistance rather than punishment. The general feeling was that people would still farm when resources permitted or possibilities arose in the future for sharecropping or rental and that whoever implements such revocation there was no guarantee that they would be fair or do so selflessly. Many of those in favour of revocation were household heads without arable land (60%).

The introduction of grazing fees was equally not favoured. Here too it was indicated that due to poverty, many people would not afford the grazing levies and would thereby have no where to graze their livestock. Some strongly argued that rangeland was a communal property for which no one should pay. Again those accepting the introduction of fees were largely households without livestock.

Table 14: Opinions on Revocation/Reallocation of Fallow Fields

Opinion	No. of respondents	%
Accepted	95	28.8
Not accepted, many people poor and have no money	105	31.8
Not accepted, will still farm when resources permit	47	14.2
Not accepted, may have children, relative or sharecrop or rent	22	6.7
Not accepted, unfair and would be misused	35	10.6
Not accepted, part of family estate and chief has no right	4	1.2
Not sure/no opinion	19	5.8
Not applicable	3	.9
TOTAL	330	100.0

Table 15: Opinions on the Introduction of Grazing Fees

Opinion	No. of Respondents	%
Accepted	32	9.7
Not accepted, no money/people poor	173	52.4
Not accepted, grass there naturally	12	3.6
Not accepted, no rangeland to pay for	18	5.5
Not accepted, rangeland communal property	46	13.9
Not accepted, Government does nothing to improve range	9	2.7
Not accepted, against Basotho culture	28	8.5
Not sure/no opinion	12	3.6
TOTAL	330	100.0

In relation to livestock culling, hereagain clearly the majority of people for various reasons indicated in Table 16 below, were against it. Interestingly a fairly respectable proportion of respondents indicated that the so-called inferior stock was important for ritual purposes and also provided superior meat. An additional 11 percent argued that such animals were a gift from God. Here too it is noted that many of those invariably in favour of culling were household heads without livestock

Table 16: Opinions on the Culling of Undesirable Livestock

Opinion	No. of Respondents	%
Accepted	87	26.4
Not accepted: used for ritual purposes, meat, etc	143	43.3
Not accepted because even improved ones breed undesirable stock	18	5.5
Not accepted, they are God's Gift	37	11.2
Not accepted, should be personal choice	1	.3
Not accepted, they are animals like any other and useful to owners	18	5.5
Not accepted, pure injustice to those who have nothing else	6	1.8
Not sure/no opinion	20	6.1
TOTAL	330	100.0

The issues presented in this section are all important if effective conservation and the restoration of heavily degraded land are to be achieved and the Land Policy Review Commission (1987) was well aware of these. Clearly many people have very strong objections to these issues since they obviously touch at the very core of what Basotho perceive as their basic right to their land and livestock.

These issues are equally important from the point of view of land as both a natural and economic resource that needs to be used sustainably. To address these issues effectively, therefore, some degree of political self-interest will have to be surrendered as well as accepting that some will obviously gain and others lose in the process.

IX. CONCLUDING COMMENTS

The report has attempted to directly address the main objectives of the study and this section attempts to bring together the main findings in the light of these objectives. The main objectives of the study were stated as:

(i) to examine the nature of traditional land transactions and farming practices.

(ii) to examine changes over time in traditional farming practices and the major factors that might account for such changes.

(ii) to examine whether or not these transactions and practices have any bearing on people's inclination towards soil conservation.

Land transactions occurring under traditional farming practices as per the study were sharecropping and rental/leasing. Other arrangements found elsewhere have also been indicated and acknowledged. The majority of household heads were involved in sharecropping (27%) while others were involved in rental farming or leasing (8%). Clearly, therefore, sharecropping was the most prominent form of farming arrangement. It is, however, noted that other transactions newly emerging and seemingly on the increase were renting/leasing.

In terms of sharecropping, two categories of households have been identified; households sharecropping out and those sharecropping in. The former were found to have older heads, more than one field and very limited input resources to farm their land independently while the latter were headed by younger people, had no or very limited land but had access to input resources required in farming. It was possible, therefore, for this latter group to extend their arable land far in excess of what they would normally have.

Renting/leasing occurred amongst those farmers that were largely emerging as commercial farmers (Lawry, 1987) who seemed to prefer this type of arrangement to conventional sharecropping. Many

respondents were in favour of these new transactions (including outright purchase of Form C rights) as well as their formalization although some were feeling that such formalization would result in unnecessary costs and bureaucratic red-tape. However, in line with the Land Policy Review Commission, it is submitted here that formalization could and should be left at the local authority level with Form C rights considered adequate in ensuring tenurial security as many farmers currently feel.

The report also considers the point that tenure under customary arrangements was insecure and hence detracted from conservation rather weakly supported by the findings. An overwhelming majority of respondents felt that tenure under customary practices was secure with the exception of sharecropping where tenure had to be revalidated on an annual basis. It is, therefore, a considered opinion in this report that security of tenure or lack of it cannot alone explain why people fail to conserve land, rather this failure can be explained, to borrow Rickson's et al terminology, in terms of "fatalism, indifference and inertia". This is borne out by that neither field owners nor sharecropping partners individually or collectively made any substantial effort at combating soil erosion or adopting conserving farming practices on the land they farmed.

Many arguments have pointed to the inability of customary tenure to permit or even facilitate the transfer of land to people who could use it effectively. This study and that by Lawry (1987) for example, indicate that customary tenure is capable of adjusting to new demands and needs for land hence the natural emergence of renting/leasing and outright sale of customary rights to land. A pertinent issue appears to be whether customary tenure fails to respond to changing trends in terms of land requirements or whether modern tenure systems and their institutions recognise and accommodate the realities, opportunities as well as constraints inherent in traditional land transactions and farming practices.

If land is to be transferred to farmers who might feel the need to farm sustainably, then renting/leasing appear to be the most attractive alternatives. These transactions unlike outright purchase of

customary use rights, ensure that the household remains at all times the ultimate holder of use rights whilst the land is being used productively by others. This would guarantee the household a steady income by way of rent from land which would probably be under utilized at best or left fallow at worst. Moreover, renting/leasing would safeguard the pride attached to land ownership by most Basotho.

Land disputes and the traditional principle of allocating discrete pieces of land have also been labelled as other factors discouraging the development and adoption of improved farming methods. While the latter factor may be true in purely technical terms, it has, together with land disputes, been very weakly supported by the results of this study.

The last and probably the most disturbing aspect of degradation relates to rangeland as a communal property. Here households feel it is their collective right to access such rangeland but such collective rights of access are not accompanied by collective responsibility for conservation. Measures such as those suggested by the Land Policy Review Commission seem to be the most appropriate even though some will likely gain and others lose in the implementation of those measures; the costs of inaction may be too high. Three issues emerge from this study as requiring further investigation:

(i) the commercial farming sector for which Lawry (1987) has already provided an interesting groundwork; the constraints they encounter in consolidating land and whether they in fact are farming sustainably with conservation as an integral part of their efforts. Together with this should be an investigation of the impacts of commercial farming on the households which have transacted in the various forms preferred by this emerging sector of farmers.

(ii) the rural-urban interface and the transactions involved therein since here land or Form C rights are being parcelled out for sale for purposes that are largely non-agricultural. Implications of this on the agricultural sector and food security require urgent attention.

(iii) the spatial transfer of the problem of rural landlessness as a result of migration from one place to another, the category which this study has labelled 'remover households'. This is provoked by that although many of such households were landless some had in fact managed to obtain land. Pertinent questions would seem to relate to their ability to acquire arable land in their resettlement villages and whether there could be a relationship between their time of resettlement/removal and their acquisition of such land.

ENDNOTES

1. Term used to refer to people/households who have moved from their original village of birth to other villages permanently.

2. Row intercropping refers to intercropping instances where component crops are grown in rows.

3. Mixed intercropping relates to instances of intercropping where there are no discernible rows between component crops.

4. Component crops are two or more crops grown together in an intercropping arrangement.

5. For a detailed discussion of the advantages and disadvantage of intercropping see for example, Govinden, N., Canadian Journal of Development Studies Vol.V, No.2, 1984.

6. "Sharecropping out" refers to households who were engaged in sharecropping arrangements on their own fields.

7. 'Sharecropping in' refers to households who were sharecropping on other peoples fields

8. This excludes people who purchase farmland on the urban peripheries for residential and other non-agricultural purposes.

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