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AGRICULTURAL INVOLVEMENT IN SOUTHERN DISTRICT CFDA

by

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I. Introduction

In 1981 Southern District designated the corridor from Pitsane to Phitshane-Molopo as its Communal First Development Area (CFDA). The CFDA includes the Barolong Farms and some adjoining Ngwaketse villages. Designation of this area as the CFDA means focussing of District development efforts there. The thrust of these efforts is to increase both agricultural and non-agricultural production.

Rural Industries Innovation Centre (RIIC) based in Kanya, undertook a series of surveys in 1981 focussing on rural entrepreneurship. This included a detailed household socio-economic inventory to provide information on the context within which rural production could be considered. Since the primary activity in the rural areas is agricultural, information on various aspects of agricultural activity was

gathered to study the relationship between agricultural and other non-agricultural production efforts.

Four villages were selected for study in the CFDA. They were Phitshane-Molopo, Mokgomane, Metlojane, and Dinatshana. The former two lie in the Ngwaketse communal area while the latter two are part of the Barolong Farms. There are approximately 250 households in Phitshane-Molopo, 80 in Mokgomane, and 50 each in Metlojane and Dinatshana. An attempt was made to interview between 45 to 50 households in each of these villages. Every fifth household was included in Phitshane-Molopo while every other household was included in Mokgomane. In the two smaller villages of Metlojane and Dinatshana an attempt was made to include every household. However, some households could not be included because they were found unoccupied during repeated visits. The breakdown of the sample by village was as follows: Phitshane-Molopo, 50; Mokgomane, 45; Metlojane, 43; and Dinatshana, 45.

The Barolong Farms have often been called the 'granary of Botswana'. One would expect villages in the Barolong Farms then to be different from the adjoining Ngwaketse villages in the degree of agricultural involvement and productivity. The present paper examines this issue. Are the Rolong villages different from adjoining Ngwaketse villages in their agricultural involvement and if so in what way? What factors are associated with these differences? Are the factors associated with varying agricultural involvement village-specific or Barolong-specific or can a set of factors be isolated that can be seen to operate similarly across the sample villages? The paper addresses the above questions using data summarised from the 1981 surveys.

II. Socio-Economic Characteristics

Access to Land

Obviously it is impossible for households not owning or having access to land to plough. A majority of the households, 85 percent (155), either owned land or had access to land. However, there were statistically significant differences across the villages. Overall fewer households in the villages of Metlojane and Dinatshana owned or had access to land compared to households from the two Ngwaketse villages (Table 1).

TABLE 1

Access to Land by Village

ACCESS TO LAND	PHITSHANE- MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
Yes	43 (86%)	45 (100%)	34 (79%)	33 (73%)	155 (85%)
No	7 (14%)	0 (0%)	9 (21%)	12 (27%)	28 (15%)
Total	50 (100%)	45 (100%)	43 (100%)	45 (100%)	183 (100%)

On the other hand, overall Barolong households had a greater number of fields than households in the Ngwaketse villages. The mean number of fields in each village was as follows: Phitshane-Molopo, 1.3; Mokgomane, 1.0; Metlojane, 2.0; and Dinatshana, 1.5. Overall 71 percent of the land holding households had one field each while the remaining 29 percent had between two and five fields each.

A majority of the households (76 percent) from all the villages except Phitshane-Molopo had their lands within 3 km of their homes (Table 2). The difference among villages was significant. The Barolong Farms are characterised by relative lack of separation of the village, lands, and cattlepost. This pattern is apparent in the proximity of the lands to the village home. Thus the mean distance to the lands in Metlojane was 2.0 km; in Dinatshana, 2.8; in Mokgomane, 3.4; while in Phitshane-Molopo it was 9.8 km. Phitshane-Molopo is a larger village compared to the others and is bordered by the Barolong Farms on one side and South Africa on the other. Hence families have probably been forced to go increasing distances to plough land.

TABLE 2

Distance to Lands by Village

DISTANCE (in km)	PHITSHANE- MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
0-3	9 (21%)	31 (88%)	20 (69%)	23 (72%)	83 (60%)
4-10	15 (36%)	2 (6%)	9 (31%)	9 (28%)	35 (25%)
11+	18 (43%)	2 (6%)	0 (0%)	0 (0%)	20 (15%)
Total	42 (100%)	35 (100%)	29 (100%)	32 (100%)	138 (100%)
Mean (\bar{X})	9.8	3.4	2.0	2.8	5.0

Ploughing Activity in 1980

Only 58 percent of all households had ploughed their lands in the previous year, i.e. 1980 (Table 3). A majority of households from

Mokgomane (82 percent) and Metlojane (64 percent) and almost half of the households from Dinatshana (49 percent) had ploughed in 1980. However, a majority (62 percent) from Phitshane-Molopo had not ploughed that year. Again the difference among villages was statistically significant. Thus agricultural involvement in the largest village seems to be the smallest.

TABLE 3

Ploughing Activity in 1980

DID YOU PLOUGH IN 1980	PHITSHANE- MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
Yes	19 (38%)	37 (82%)	27 (64%)	22 (49%)	105 (58%)
No	31 (62%)	8 (18%)	15 (36%)	23 (51%)	77 (42%)
Total	50 (100%)	45 (100%)	42 (100%)	44 (100%)	182 (100%)

TABLE 4

Amount of Grain Produced by Village
(households ploughing 1980)

AMOUNT OF GRAIN	PHITSHANE- MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
Not enough for household	19 (100%)	19 (53%)	19 (70%)	17 (77%)	74 (71%)
Enough for household	0 (0%)	7 (18%)	0 (0%)	1 (5%)	8 (7%)
More than enough for household	0 (0%)	11 (29%)	8 (30%)	4 (18%)	23 (22%)
Total	19 (100%)	37 (100%)	27 (100%)	22 (100%)	105 (100%)

It is difficult to measure exact yields in the context of what appears to be subsistence farming for the majority in the CFDA. However, some idea of yields can be obtained from the following data. Overall across the four villages, 71 percent reported that the amount of grain they produced was not enough to feed the family, 7 percent produced just enough to feed themselves, while 22 percent reported producing a surplus. Again the differences across villages were dramatic (Table 4). All the households in Phitshane-Molopo reported not having produced enough to feed the household.

Obviously a few farmers are producing and selling surpluses while a majority are involved in production for household consumption.

TABLE 5

Most Important Source of Cash

SOURCE OF CASH	PHITSHANE- MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
Crops	1 (2%)	3 (7%)	18 (42%)	6 (14%)	28 (16%)
Livestock, cat- tle, smallstock	10 (20%)	5 (11%)	1 (2%)	0 (0%)	16 (9%)
Cash from chil- dren/others	16 (32%)	14 (30%)	4 (9%)	4 (9%)	38 (20%)
Cash from husbands and earlier savings	7 (14%)	6 (14%)	2 (5%)	11 (25%)	26 (14%)
Salaried job in the village	2 (4%)	4 (9%)	9 (21%)	13 (27%)	28 (15%)
Informal sector	14 (28%)	12 (27%)	6 (14%)	9 (20%)	41 (23%)
No means	0 (0%)	1 (2%)	3 (7%)	2 (5%)	6 (3%)
Total	50 (100%)	45 (100%)	43 (100%)	45 (100%)	183 (100%)

Cash Income Sources and Wealth

The contribution and importance of agriculture in the household economy can be further gauged from a question that asked respondents for their most important source of cash. The breakdown by village is reported in Table 5.

Overall cash from crops was the most important source of cash for only 16 percent of the households. However, it was the single most important source for the largest proportion of households from Metlojane (42 percent). In addition, it was more important in Dinatshana (14 percent) than in the two Ngwaketse villages of Phitshane-Molopo (2 percent) and Mokgomane (7 percent). These findings are consistent with findings reported on grain production.

Conversely, cash obtained from sale of livestock was a much more important source of cash in the two Ngwaketse villages (Phitshane-Molopo, 20 percent; Mokgomane, 11 percent) than in the Rolong villages (Metlojane, 2 percent; Dinatshana, 0 percent). As can be seen from Table 5, sources other than agriculture such as salaried employment, remittances, and the informal sector were the most important sources of cash for large numbers of the households.

These findings of the relative lack of importance of agricultural involvement for a majority of the households are further supported by statistics on employment patterns. A majority of the men, 53 percent (262 of 494 men), between the ages of 11 and 75 years were working for cash in the formal or informal sector both within the village and outside the village. The breakdown by village was as follows: Phitshane-Molopo, 45 percent; Mokgomane, 50 percent; Metlojane, 54 percent; and Dinatshana,

TABLE 6
Herd Size (Cattle)

VILLAGE	NUMBER OF CATTLE				MEAN	S.D.
	0	1-10	11-19	20-100		
Phitshane-Molopo	15 (31%)	16 (33%)	7 (14%)	11 (22%)	11.0	13.2
Mokgomane	14 (31%)	22 (49%)	2 (4%)	7 (16%)	9.0	15.7
Metlojane	13 (31%)	15 (35%)	7 (17%)	7 (17%)	11.4	20.1
Dinatshana	23 (51%)	17 (38%)	4 (9%)	1 (2%)	3.8	5.1
Total	65 (36%)	70 (39%)	20 (11%)	26 (14%)	8.5	

69 percent. These statistics do not include those who worked on their own farms. Among women, overall 26.4 percent reported employment in the formal or informal sector. The breakdown by village was:

Phitshane-Molopo, 23.4 percent; Mokgomane, 30.6 percent; Metlojane, 31.0 percent; and Dinatshana, 19.0 percent.

Both as measured by number of cattle owned and the Guttman index of wealth, Phitshane-Molopo--the village with the least agricultural involvement--seems to have the highest proportion of wealthy households (Tables 6 and 7).

Thus it appears that the two villages in the Barolong Farms are not strikingly different from the Ngwaketse villages in the sample. However, involvement in agriculture seems to be a somewhat more important economic activity in the Barolong Farms than in the Ngwaketse villages.

TABLE 7

Guttman Index of Wealth

INDEX OF WEALTH	PHITSHANE-MOLOPO	MOKGOMANE	METLOJANE	DINATSHANA	TOTAL
Low (0-3)	8 (16%)	16 (37%)	25 (60%)	36 (82%)	85 (47%)
Medium (4-7)	27 (54%)	25 (58%)	11 (26%)	3 (7%)	66 (37%)
High (8-11)	15 (30%)	2 (5%)	6 (14%)	5 (11%)	28 (16%)
X	5.3	3.5	3.2	2.5	3.7
S.D.	2.27	2.34	3.2	2.5	2.76

Summary

Overall more households in the Ngwaketse villages owned or had access to land than in the two smaller Rolong villages. However, households in the Rolong villages on the average owned a greater number of fields and had land that was closer to their village homes. Phitshane-Molopo stands out as distinctive both from Mokgomane and the Rolong villages of Dinatshana and Metlojane.

Although between 49 and 82 percent ploughed in 1980 in three of the villages, in Phitshane-Molopo only 38 percent did so. Less than one third of the households in Mokgomane, Metlojane, and Dinatshana produced a surplus. Not surprisingly, except for Metlojane, sale of crops was not an important source of cash for most households although it was more important in Rolong than in the Ngwaketse villages.

These findings point to the fact that in the granary of Botswana, small numbers of farmers are producing the surpluses while for a majority, involvement in agriculture is not a major cash earning enterprise. However, this does not imply that households are not interested in agriculture or do not consider it important; only that for a majority, involvement in agriculture is not a source of wealth.

III. Factors Affecting Agricultural Involvement

What factors influence the degree of involvement in agriculture or ploughing activity? Do these factors operate similarly across the Rolong and Ngwaketse villages? The answers to these questions have important policy implications. If the underlying factors affecting ploughing are village specific, then it implies the need to have village-specific data for planning purposes. If the factors for Barolong Farms and non-Barolong Farms are different, then data from these areas cannot be justifiably pooled. However, if the underlying factors operate in the same way, then pooling of data is justified. To answer the questions, data will be examined for the four villages pooled together and separately.

Availability of Labour

Subsistence crop farming is a labour-intensive activity. Hence the availability of family labour during the agricultural season should be an important factor influencing the decision to plough.

Respondents were asked to state the most important reasons for not growing more crops. Unfortunately, some enumerators did not ask the question if the household had not ploughed for several years.

For those who had ploughed in 1980, three major constraints emerged to increasing production. They were lack of labour (21 percent), lack of draught animals and implements (22 percent), and lack of rain (25 percent). Among those who had not ploughed, lack of labour appeared as the dominant reason for not ploughing (52 percent), followed by lack of draught animals and implements (20 percent). Other reasons mentioned by small numbers in both groups were limited to no land, lack of seed, lack of fence, and poor soil. Thus, although limited labour is a constraint facing both groups, it was the major problem mentioned by more than half of the group that did not plough.

Data are presented by village in Table 8.

As can be seen from Table 8, the single most important constraint among those who did not plough across all four villages was lack of labour. Overall it appears to be less of a constraint in the Rolong villages than in the Ngwaketse villages. However, the small numbers of those who did not plough, especially in Metlojane and Dinatshana, should be kept in mind.

Family Composition

What is the influence of family composition on ploughing activity? Some research indicates that presence of men in the household is important in determining ploughing activity. For analytic purposes both men and women were divided into three age groups. There were: younger, 19-40 years; older, 41-65 years; and very old, 65+ years. Two additional categories were created: the total number of men or women in the family irrespective of residence, and those who were resident in the household.

TABLE 8

Constraints to Ploughing by Village

VARIABLE/ CONSTRAINT	PHITSHANE-MOLOPO		MOKGOMANE		METLOJANE		DINATSHANA	
	Ploughed in 1980	Did Not Plough						
Labour	7 (41%)	14 (59%)	3 (9%)	5 (71%)	4 (19%)	2 (40%)	5 (24%)	3 (30%)
Animals/implements	3 (18%)	6 (25%)	13 (38%)	1 (14%)	35 (14%)	0 (0%)	3 (14%)	2 (20%)
No rain	5 (29%)	2 (8%)	8 (23%)	0 (0%)	3 (15%)	0 (0%)	7 (35%)	2 (20%)
Land	0 (0%)	0 (0%)	7 (21%)	1 (14%)	1 (5%)	1 (20%)	1 (5%)	1 (10%)
Seed	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (24%)	2 (40%)	3 (14%)	1 (10%)
Other--soil, fence, prices, too late	2 (12%)	2 (8%)	3 (9%)	0 (0%)	5 (23%)	0 (0%)	2 (10%)	1 (10%)
Total	17 (100%)	24 (100%)	34 (100%)	7 (100%)	21 (100%)	5 (100%)	21 (100%)	10 (100%)

TABLE 9

Presence of Men by Ploughing Activity

VARIABLE	PLOUGHED IN 1980	DID NOT PLOUGH
Total younger men (19-40 yrs)		
0	25 (24%)	22 (29%)
1	56 (53%)	45 (58%)
2-4	24 (24%)	10 (13%)
Total	105 (100%)	77 (100%)
Resident younger men (19-40 yrs)		
0	64 (61%)	48 (62%)
1-4	41 (39%)	29 (38%)
Total	105 (100%)	77 (100%)
Total older men (41-65 yrs)		
0	54 (51%)	51 (66%)
1-3	51 (49%)	26 (34%)
Total	105 (100%)	77 (100%)
Resident older men (41-65 yrs)		
0	70 (67%)	63 (82%)
1-2	35 (33%)	14 (18%)
Total	105 (100%)	77 (100%)

Neither the total number of younger men (19-40 years) in the household nor the number of younger men resident in the household seemed significantly to be affecting ploughing activity (Table 9). However, there was an overall trend for households that did not plough to have fewer younger men.

In contrast to younger men the presence of older men (41-65 years) seemed to make a statistically significant difference in ploughing activity. Thus while 51 percent of those that ploughed had no older male

members, 66 percent of those that did not plough had no older male members. This difference persists in the distribution of resident older men in the two types of households. A larger percentage (82 percent) of non-ploughing households did not have resident older men between the ages of 41-65 years, while 67 percent of those that ploughed did not have such men present.

There were no significant differences in the total number of young men in the family and the total resident young men between households that ploughed and that did not plough. This was true across all four villages. Thus the overall relationship of lack of association between total number of young men, total resident young men, and ploughing activity was true for each of the four villages.

The distribution of older men across households in the four villages was also examined. There was a strong relationship between presence of older men in the household and ploughing activity in Phitshane-Molopo and Metlojane. Although the relationship was not significant in the other two villages, it is in the expected direction--i.e. a greater proportion of households that ploughed in Mokgomane and Dinatshana had resident older men than households that did not plough.

Thus the relationship between ploughing activity and family composition relative to adult men for individual villages is similar to the relationship of the pooled data. Again there are no distinct differences between Ngwaketse and Rolong villages. Overall however, it could be said that labour constraints may be less important in the Barolong Farms than outside.

Overall there were fewer households in the four villages which had no adult women. This is in contrast to the skewed distribution of adult men in households across the villages. The presence of adult women in households did not have a significant impact on ploughing. Thus most households, both that ploughed and that did not plough, included younger and older women. Again the trend was towards fewer women in households that did not plough. Overall there appears to be little relationship between total number of younger women in the family and ploughing activity.

In terms of relationship between number of resident younger women and ploughing activity, more ploughing households in three of the villages surveyed have resident younger women than non-ploughing households. This relationship is not statistically significant except for Dinatshana. Interestingly, there is a strong negative relationship between resident younger women and ploughing activity in Phitshane-Molopo. Thus while a majority of ploughing households, 68 percent, did not have resident younger women, a majority of households that did not plough, 77 percent, had resident younger women.

The data by village on the relationship between older women and ploughing support the conclusions drawn from the pooled data, i.e. the presence of older women does not have a significant bearing on the ploughing activity of households. As before however, the trend is towards ploughing households to have more older women than non-ploughing households.

In an agricultural economy children start playing an important economic role at an early age. Hence there is reason to expect a

positive association between agricultural activity and presence of children. For analytic purposes, children were divided into two age categories: 0-10 years, and 11-17 years. Households that ploughed were characterised by greater numbers of children between the ages of 0-10 years. However, there were no differences in the two groups in the presence of girls and boys.

Interestingly for older children, 11-17 years, the difference between the two groups was not statistically significant, although again there was a trend towards more children in the ploughing group.

Overall, a large household size seems to encourage agricultural involvement. On an average, households that ploughed had 8.99 members while households that did not plough had 7.51 members. The difference between these means was significant at the .05 level.

Does the sex of the household head serve as an indicator of agricultural involvement? Overall it was found that households headed by males were much more involved in ploughing than households headed by females. Thus although 66 percent of the male-headed households had ploughed, only 49 percent of the female-headed households had done so. Within female-headed households, females de jure were more likely to plough than females de facto.

Why are female-headed households less likely to plough? Further analyses of the data revealed no striking differences in wealth as measured by the Guttman index or in cattle ownership. It is the presence of older men that seems to have a strong impact on the agricultural activity of the household.

Do these relationships hold out for Rolong and non-Rolong villages in the same way? In all the villages there were more female-headed households that did not plough. However, the differences were not statistically significant in Mokgomane and Dinatshana.

In other words, there was a strong relationship between sex of head of household and ploughing activity in Phitshane-Molopo and Metlojane. It is interesting to note that there was a significant relationship between resident older men and ploughing activity only in these two villages. Again the Barolong Farms do not stand out as distinctive from the Ngwaketse villages.

Land Ownership

Obviously those who do not own land or have access to land cannot be involved in ploughing for themselves. Not surprisingly all those who had ploughed also reported land ownership. However, 65 percent of those that did not plough had land while 35 percent did not own or have access to land. Thus although access of land is the outer limiting factor, other factors influence ploughing activity.

Amount of land as measured by number of fields reported did not have any bearing on ploughing. Thus 71 percent of both those who ploughed and those who did not plough owned one field while the remaining 29 percent owned between two and five fields.

However, distance to the lands seems to be a strong influencing factor on ploughing behaviour. Overall those who had land close by were much more likely to have ploughed than those with lands far away (Table 10). Thus while a majority, 68 percent, of those that ploughed had

TABLE 10
Distance to Fields by Ploughing Activity

DISTANCE (in km)	PLOUGHED IN 1980	DID NOT PLOUGH
0-3	64 (68%)	19 (43%)
4-10	22 (23%)	13 (30%)
11-65	8 (9%)	12 (27%)
Total	94 (100%)	44 (100%)
Mean	3.81 km	7.40 km

fields within 3 km, a majority, 57 percent, of those that did not plough had fields at distances greater than 3 km.

The strong positive relationship between access to or ownership of land and ploughing is borne out across all four villages. There was no relationship between number of fields owned and ploughing activity in any of the four villages.

The relationship between ploughing and distance to fields was in the positive direction although the strength of the relationship varied across villages (Table 11). The relationship appears stronger in the Ngwaketse villages than in the Barolong Farms. It is important here to keep in mind that the variance or the spread of people's fields from their homes is far greater in the Ngwaketse villages than in the Barolong Farms. Thus in the Rolong villages of Metlojane and Dinatshana most people have their lands close by and hence distance to the lands is not an important variable. In Phitshane-Molopo and Mokgomane, fields are

TABLE 11

Distance to Fields by Ploughing Activity by Village

DISTANCE TO FIELDS (in km)	PHITSHANE-MOLOPO		MOKGOMANE		METLOJANE		DINATSHANA	
	Ploughed in 1980	Did Not Plough						
0-3	6 (32%)	3 (13%)	27 (90%)	4 (80%)	16 (67%)	4 (80%)	15 (71%)	8 (73%)
4-10	6 (31%)	9 (39%)	2 (7%)	0 (0%)	8 (33%)	1 (20%)	6 (29%)	3 (27%)
11-63	7 (37%)	11 (48%)	1 (3%)	1 (20%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	19 (100%)	23 (100%)	30 (100%)	5 (100%)	24 (100%)	5 (100%)	21 (100%)	11 (100%)

more spread out and hence distance to the fields becomes a more important factor influencing ploughing activity.

Cattle Ownership

As is well known in Botswana, cattle not only serve as draught power but are usually an important indicator of wealth. In the rural areas, cattle ownership, like other indicators of wealth, is skewed.

There were statistically significant differences in cattle ownership between households that ploughed and those that did not plough. Thus although 73 percent of those that ploughed owned cattle, only 53 percent of those that did not plough reported owning cattle.

Differences were also significant in the number of cattle owned in the two groups. Thus while 33 percent of those that ploughed owned more than 10 head of cattle, only 14 percent of those that did not plough did so (Table 12).

TABLE 12

Number of Cattle Owned by Ploughing Activity

NO. OF CATTLE OWNED	PLOUGHED IN 1980	DID NOT PLOUGH
0	28 (27%)	36 (48%)
1-10	42 (40%)	28 (38%)
11-19	13 (12%)	7 (9%)
20-100	22 (21%)	4 (5%)
Total	105 (100%)	75 (100%)
Mean	11.78	4.68

Smallstock Ownership

Thus overall, those who ploughed tended to be different from those that did not plough in cattle and smallstock ownership. Those that ploughed tended to have larger numbers of cattle compared to those that did not plough. There were in addition no systematic differences between villages in the Barolong Farms and those outside.

Guttman Index of Wealth

Is overall wealth as measured by the Guttman index related to ploughing activity?

There was no significant relationship between wealth and ploughing activity. However, a greater percentage (53 percent) of those that did not plough come from the poorest category (Table 13) compared to 43 percent among those that did plough.

TABLE 13

Guttman Index of Wealth by Ploughing

WEALTH	PLOUGHED IN 1980	DID NOT PLOUGH
Poor (0-3)	44 (43%)	40 (53%)
Middle (4-7)	43 (42%)	23 (31%)
Rich (8-11)	16 (15%)	12 (16%)
Total	103 (100%)	77 (100%)

It can be concluded that despite a positive correlation between cattle ownership and overall wealth, cattle ownership seems to be associated with ploughing activity whereas overall wealth seems not to be or less so. It is possible that the positive relationship between cattle ownership and ploughing is due to the fact that cattle ownership is more clearly indicative of availability of draught power than overall wealth.

Extension Contact

Agricultural Demonstrators (AD's) are the field staff of the Ministry of Agriculture (MOA) working and living in the villages. Their job is to work with farmers in all aspects of agriculture. Does contact with AD's make a difference in ploughing activity?

There were no statistically significant differences in the two groups in extension contact. A majority, 69 percent of those that ploughed and 77 percent of those that did not plough, claimed to know their AD. Respondents in addition reported frequency of contact with AD's. Again there were no significant differences between those that ploughed and those that did not plough. This lack of relationship between ploughing activity and contact with AD's held across all four villages.

It is interesting to note that almost a quarter of those that had ploughed had never seen the AD.

In the total sample only 18 households belonged to Farmers Associations. Farmers Associations are often actively supported by AD's. Although the total number is very small, all but one household that belonged to Farmers Associations had ploughed.

IV. Conclusion

Even though agriculture appears to be a more important economic activity in the Barolong Farms, the two Rolong villages studied do not seem to be strikingly different from the two Ngwaketse villages. Within the Barolong Farms, small numbers of farmers are producing the surpluses while the majority seem to be involved in subsistence or close to subsistence level farming.

Many factors seem to be influencing the decision or ability to plough. Overall these factors operate similarly both within and outside the Barolong Farms. In the CFDA, presence of older men between the ages of 41 and 65 years seems to be playing an important role in affecting ploughing activity. This is presumably more true for the smaller farmers than for the larger, wealthier farmers who can either afford to hire labour or engage in tractor ploughing. Other factors related to agricultural involvement were sex of head of household, presence of younger children, distance to lands, cattle and smallstock ownership. Contact with extension agents as measured in this study did not seem to have any discernible impact on agricultural involvement.

Overall labour constraints and distance to lands were less important in the Barolong Farms than in the villages outside the Barolong Farms.