

CHAPTER 8

DESCRIPTIVE STATISTICS ON BANANA MANAGEMENT AND SOCIAL CAPITAL

This chapter provides a summary of the descriptive information on social capital and banana management. Sample statistics on the rate and extent of banana management are compared across geographical locations and economic strata. The purpose is to summarize the data that are of economic relevance to this research in quantitative and qualitative terms.

8.1. Banana management

Farmers use a wide range of organic fertilizers and sanitation practices to manage their banana plantations. About 18 management practices were reported as being currently used by farmers. Among the management practices involving natural resources (also referred to as soil fertility management practices), mulching and manure application were widely used across farms. Nearly a third of farmers (about 30%) used soil and water conservation bands¹ (Table 18). Of those who used soil and water conservation bands, the majority did not follow the recommended procedures (i.e. the use of an A-frame while constructing the bands to ensure that they run along a counter line). In such a case, their soil and water conservation bands may not have been effective.

Spatial differences in the use of soil fertility management practices were observed. On average, mulching, animal manure and soil and water conservation (SWC) bands are more frequently used in high elevation areas (which are the south-western region) than in low elevation areas (Central and Eastern regions). This could be attributed to the high erosion potential coupled with high population pressure in high elevation areas as compared to low elevation areas.

¹ Other soil conservation structures (i.e. grass strips, hedgerows and drainage channels) were very rare and hence not considered for this analysis.

Table 18. Percentage of farmers using selected banana management practices, by elevation and exposure

Management practices	Elevation		Exposure		Aggregate sample
	Low	High	Exposed	Not Exposed	
Natural resource management					
Mulching	66.49**	91.92**	73.47*	59.38*	75.09
Animal manure	35.56**	64.64**	37.75	33.33	45.39
Composting	17.01	15.15	26.53**	7.29**	16.38
SWC contour bands	9.79	15.15	16.33**	3.12**	11.60
SWC other bands	12.37**	30.30**	19.39**	5.21**	18.43
Mat management (sanitation)					
Corm paring	18.88	14.29	32.96**	6.06**	17.34
De-suckering	73.46**	92.86**	79.38^	67.68^	79.93
De-trashing	95.41*	98.98*	97.94^	92.93^	95.62
Post-harvest pseudo-stem management	76.20**	97.89**	80.75	82.76	76.23
Corm removal	50.00	80.61	56.98**	34.34**	60.20
Weevil trapping	31.63	24.49	37.11	26.26	29.25

** , * , and ^ denote statistical significance at the 1%, 5%, 10% levels, respectively, in the difference of means or distributions across elevation and exposure.

Usage rates for the most common mat management practices (i.e. de-suckering, de-trashing and stumping, and post-harvest pseudo-stem management) were also significantly higher in high elevation areas than in low elevation areas. Farmers in higher elevation areas have a greater incentive to manage their banana plants well, partly due to the favourable production potential of the crop. Notably, low rates of use were observed for weevil trapping (29%) and corm paring (17%), i.e. the pest management practices, in both production areas (Table 18).

Statistical differences in the use of specific management practices are also evident according to exposure, although not for all practices. The rates of use for mulching, composting, and soil and water conservation (SWC) bands, corm paring, de-trashing, de-suckering and corm removal) were higher in exposed areas than in non-exposed areas. The rates of use of SWC contour bands and post-harvest pseudo-stem management in low elevation areas were observed to be slightly higher among relatively small landholders (<2 Ha), while there were no significant differences based on size for other practices (Table 19). Also, higher use rates for most of the management practices were found near to paved roads (Table 19), suggesting that improved access to markets and information may increase the diffusion of management practices.

Table 19. Percentage of farmers using selected management practices by landholding size and infrastructure development

Practice	Aggregate sample (N=294)	Landholding		Distance from paved roads	
		<2Ha (N=140)	≥ 2 Ha (N=53)	<10km (N=137)	≥ 10km (N=157)
Natural resource management					
Mulching	75.09	75.12	67.00	90.51**	61.54**
Animal manure	45.39	43.78	37.93	56.20**	35.9**
Composting	16.38	22.58	17.24	14.60	17.95
SWC contour bands	11.60	15.67*	8.04*	17.52**	6.41**
SWC other bands	18.43	15.67	10.34	32.12**	6.41**
Mat management					
Corm paring	17.34	20.71	13.21	11.68*	22.29*
De-suckering	79.93	74.29	73.58	92.70**	68.78**
De-trashing	95.62	97.14	94.33	99.27**	92.5**
Post-harvest pseudo-stem management					
Corm removal	60.20	51.43	47.17	83.94**	39.49**
Weevil trapping	29.25	33.57	28.30	47.45**	13.38**

** , * and ^ denote statistical significance at the 1%, 5%, 10% levels, respectively, in the difference of means or distributions across elevation and exposure.

While many farmers report the use of soil fertility management practices, the average extent of use per grove (the average ratio of area in which the practices are applied to the total area of the grove) among the adopters is below 0.3 for soil fertility management practices. In absolute terms, households in high elevation areas grow more banana mats (about 60) under mulch but the share of the plantation under the two organic fertilizers (mulch and manure) was larger in low elevation areas than in higher elevation areas. These summary statistics imply a more binding constraint regarding access to organic fertilizers for farmers in high elevation areas who are also comparatively large-scale banana producers. There are no meaningful differences in soil fertility management practices by exposure, which suggests that elevation is a more important underlying parameter.

The extent of the use of mat management practices (stumping and pseudo-stem splitting or chopping) was significantly higher in high elevation areas compared to low elevation areas, but no statistical differences were observed according to exposure. In high elevation areas, an average proportion of about 0.56 of the total number of pseudo-

stems were managed by stumping, splitting or chopping within a few days after harvest, compared to 0.27 in low elevation areas (Table 20).

Table 20. Share of banana mats managed with recommended practices among users

Management practices	Elevation		Exposure		All
	Low	High	Exposed	Not Exposed	
Natural resource management					
Share of plantation under mulch	0.35**	0.12**	0.38 [^]	0.29 [^]	0.26
Share of plantation under manure	0.30**	0.12**	0.33	0.24	0.22
Mat management					
Proportion of pseudo-stems managed by either stumping, splitting/chopping	0.27**	0.56**	0.32	0.36	0.32

** , * and [^] denote statistical significance at the 1%, 5%, 10% levels, respectively, in the difference of means or distributions across elevation and exposure.

Given the high percentage of farmers using the practices (Table 18 and 19) but low extent of use per farmer (Table 20), one would wonder whether knowledge about these techniques is indeed an explanatory variable in the use of banana management practices. In the case of some techniques, it is hardly possible to attribute the rate of use to awareness, but for others it is definitely important. The package of improved banana management practices includes new and hence less well-known techniques.

Table 21 presents information on farmers' knowledge and use of each management practice. There is a large discrepancy between awareness and the actual use of some techniques, such as soil and water conservation bunds, weevil trapping and the application of compost and animal manure. The main reason mentioned for not applying animal manure was that farmers lack access to it (i.e. do not have livestock), while others cited the problem of lack of farm implements, such as a wheelbarrow to carry the manure to the plot or assist in composting. Another reason given for not applying the techniques was that farmers had just heard about the technique and were still learning about it.

The least known practices are either relatively new² (such as chopping pseudo-stem, mulching away from the base of the plant and corm paring before planting) or comparatively complex (for example, contour bands). The method of mulching about one foot away from the base of the plant is a new component of mulching practice that is intended to deter pests from infesting the plant (Tushemereirwe et al., 2003). The method has not been significantly diffused into the community and only 20 per cent of the surveyed farmers were aware of it, while only 2.5 per cent of farmers had adopted the method. Similarly, less than half of the farmers knew about the recommended method of chopping the residues into tiny pieces to enhance pest control and rapid decay for the recycling of soil nutrients (Table 21).

Table 21. Percentage of farmers who know about and use the recommended banana management practices

Management technique	Knows	Uses
Soil fertility management		
Grass/crop residue mulch	92.49	75.09
Animal manure	87.03	45.39
Composting	69.97	16.38
SWC contour bands	46.42	11.60
SWC other bands	60.41	18.43
Mat management		
Corm paring	33.33	17.34
De-suckering	94.21	79.93
De-trashing	99.00	95.62
Stumping	85.71	75.85
Splitting/chopping pseudo-stems	88.44	75.85
Corm removal	76.53	60.20
Weevil trapping	62.22	29.25
Methods of implementation		
Complete peeling of the corm	37.20	22.90
Chopping the stem into tiny pieces	47.80	21.80
Chopping the stem into medium-sized pieces	51.80	16.00
Peeling off the sheath	78.80	43.40
Chopping corms after uprooting	73.10	27.70
Mulching/manure application about 1 ft a way from the mat	21.00	2.50

² With the increased incidence of biotic and abiotic factors, researchers have developed new methods of implementing mulching, manure application and residue management practices to help farmers cope with these problems.

8.2. Household and village social capital

The significance of farmer-to-farmer exchange in disseminating information about banana technology is illustrated in Chapter 2 and underscores the role of village social capital in determining the use of banana technologies. Therefore, the purpose of this section is to present and discuss some of the descriptive statistics on the nature and extent of social interactions among agricultural households that may facilitate the diffusion of technologies in the selected banana producing areas. The emphasis is on the local associations and private social networks to which the households belong. The choice of descriptors is guided by the definition of social capital presented in Chapter 4.

To analyse the distribution of local associations in the rural communities of Uganda, data was stratified using three variables: altitude, region and distance from paved roads. Elevation was used as a stratifying variable in the sampling design because of the effect it may have on the agro-climatic conditions and hence on production behaviour. In this particular analysis, elevation represents differences in physical and climatic conditions that may be accompanied by differences in vulnerability and hence the need for interdependencies among households. Regions represent dominant cultural backgrounds (i.e. the Kinyankole, Kiganda and Kisoga cultures). Different cultures would have different norms and informal institutions that constrain human interaction. Distance from paved roads influences communication costs and therefore the cost of social interactions. Distance may also capture the effect of market integration, which could serve to reduce interdependence between rural households.

8.2.1. Local associations

Most of the villages in the banana producing areas foster active social organizations. Over 250 associations were identified, broadly categorized in Table 22 in terms of: (1) burial societies; (2) economic associations (formal and informal credit, agricultural and non-agricultural); (3) religious; and (4) culture-oriented associations. Burial societies and economic associations were more popular and widely attended across villages, implying that social interactions in rural Uganda are economically driven. Associations with purely social motives (cultural, religious, sports or choirs) were rare and where

they existed membership was limited to a few households. Membership in local associations is summarized in Table 22.

Table 22. Percentage of households belonging to associations by elevation and infrastructure development

	Low elevation	High elevation	< 10km from paved road	≥ 10km from paved road	Aggregate sample
At least one association	70.63**	93.68**	68.40**	87.10**	76.38
Economic associations					
Informal credit	12.94**	48.42**	28.80**	12.90**	21.78
Formal credit	16.44**	4.21**	12.10	16.90	13.36
Non-agricultural	3.15	4.21	2.70	3.90	3.41
Agricultural	20.63	13.68	19.11	19.01	18.90
Burial societies	47.55**	92.63**	50.22**	69.70**	58.79
Religious	6.64**	23.16**	12.62	7.90	10.76
Cultural	2.80	4.21	2.33	3.92	3.15

Note: ** differences are significant at 1%.

Economically oriented associations appear to be popular both at village level and across the survey domain. A total of 180 economic associations were found in 20 villages, with an average of 8.25 associations per village. The number in a village ranges from a minimum of four associations to a maximum of 14. Associations oriented towards agriculture, credit associations and those engaged in non-farm activities were common among the households who participated in economic associations. Overlap of membership was also noted, implying that households derive different kinds of utility from different economic associations.

Burial societies are essentially a means of pooling resources to organize and pay for unexpected expenses such as funerals. There is in general only one burial society in a village, where rich and poor are both members of the same group. While there are no entry fees, every member is expected to contribute money and other resources towards funerals.

Religious and culture-based associations are formed to promote spiritual beliefs, though some were engaged in economic activities like training in development activities, provision of credit and saving for their members. Household participation in these

associations was relatively low, with only 10% of the households reporting membership in religious associations and about 3% in culture-based associations (Table 22).

Statistical differences in the membership in economic associations and burial societies were evident according to elevation and infrastructure development. Membership in informal credit associations (also known as revolving saving and credit associations) was higher in high elevation areas and in villages with better access to paved roads (Table 22). Areas with more informal credit associations had fewer formal credit associations, suggesting substitution effects. No significant differences existed in the membership of other economic associations according to elevation and infrastructure development. In high elevation areas participation in informal credit associations was about 48 per cent, which is a relatively high rate of participation compared with 13 per cent in low elevation areas. Similar patterns were observed according to infrastructure development, while the reverse is true for membership in burial societies. There were also significant differences in household membership in burial societies though there is no meaningful relationship, but this is probably due to the fact that elevation is correlated with another variable important for participation in burial societies.

Analysis by region (cultural background) provides evidence that membership in burial societies is relatively low (rated at 22%) in the Central region compared to the Eastern (98%) and south-western (94%) regions, suggesting that the Kisoga and Kinyankole cultures encourage cooperation to provide social insurance, while the Kiganda culture appears indifferent (Table 23). This is also reflected in the mechanisms used to encourage cooperation. In the Eastern and south-western regions, over 80 per cent of the respondents reported that defaulters would face penalties, which could take the form of gossiping to expose the individual or social sanctions if the individual failed to cooperate, compared to only 40 per cent in the Central region. This poor capacity to cooperate could have negative implications for group-based approaches to rural development in the Central region.

In the Central and Eastern regions household participation in formal and informal credit associations was not statistically different, with membership in formal credit but not informal credit associations higher in these regions than in the south-western region. More households in the south-western region participated in religious associations than

in other regions, though membership in these types of associations was generally low. There were no statistical differences between membership in agricultural, non-farming economic and cultural associations across regions (Table 23).

Table 23. Household membership in associations by region (%)

	Central (N=195)	Eastern (N=99)	South-Western (N=95)
At least one association	56.92 ^b	100.00 ^a	93.68 ^a
Economic associations			
Informal credit	12.80 ^b	12.10 ^b	48.42 ^a
Formal credit	16.90 ^a	20.00 ^a	4.21 ^b
Non-agricultural	3.60	2.00	4.21
Agricultural	21.00	20.20	13.68
Burial societies	22.60 ^b	98.00 ^a	92.63 ^a
Religious	7.70 ^b	4.00 ^c	23.16 ^a
Cultural	3.60	10.00	4.21

“a” is significantly higher than “b” and b is significantly higher than “c”.

Among all the households surveyed, 76 per cent belonged to at least one association (Table 24). The maximum number of association memberships for a household was eight. On average, households belonged to two associations, with the highest “intensity” (number of memberships per household) observed in high elevation areas (Table 24).

Table 24. Distribution of households by intensity of membership in associations (%)

Number of memberships	Low elevation	High elevation	10km	≥ 10km	Aggregate sample
			from paved road (N=215)	from paved road (N=178)	
0	29.72	6.32	31.78	12.92	23.88
1	36.71	27.37	26.64	45.51	34.38
2	15.73	35.79	19.63	21.35	20.73
3	12.94	16.84	13.08	15.17	13.91
4	2.80	8.42	3.74	3.37	4.20
5	0.35	4.21	3.74	0.00	1.31
6	0.70	0.00	0.47	1.12	0.52
7	0.70	1.05	0.47	0.56	0.79
8	0.35	0.00	0.47	0.00	0.26
Average number of memberships per household					
# Memberships	1.32**	2.12**	1.58	1.49	1.52

** Significant at 1%.

The results of a Kolmogorov-Smirnov test are consistent with the hypothesis that the underlying distributions of membership that generate the sample data are distinguishable by stratum (p-value= 0.00 with a two-tailed test). The difference of means is also statistically significant. No significant differences in the number of memberships per household appear to exist according to infrastructure development.

Rural households join associations with different orientations for various reasons. Most people joined associations with an economic orientation to improve their livelihoods. The majority of the respondents explained that economic associations improved their livelihood through access to credit, training and other income-generating activities (Table 25). However, only 46 per cent of the households surveyed were members of economic associations, compared to 60 per cent of households having membership in burial societies, which raises important questions about the determinants of participation. Burial societies offer social insurance against deaths for most people (82%) by meeting funeral expenses, but a few people join them to conform to community expectations. Religious and cultural associations help people to develop their beliefs but others join for economic reasons.

Table 25. Percentage of households giving the major reasons for joining informal associations*

Reason	Burial society	Revolving credit	Agriculture-based associations	Religious associations	Cultural associations
Improve livelihood	3.25	86.48	86.74	10.26	0.00
Social insurance	82.13	8.11	4.81	7.69	0.00
Benefits the community	1.63	1.80	1.20	2.56	30.00
Enjoyment/leisure	0.00	0.00	0.00	0.00	20.00
Spiritual beliefs	0.81	0.90	0.00	64.10	10.00
Conform with community norms	12.62	0.90	2.41	10.26	20.00
Friends/relatives joined	1.22	3.60	4.82	5.13	10.00
Employment	0.00	0.00	1.20	0.00	0.00
Meet other people	0.00	0.00	0.00	0.00	10.00

* More than one reason was given in some cases and hence column totals may exceed 100%.

8.2.2. Characteristics of associations

Types of associations differ in size and intensity at village level, probably due to differences in transaction costs. The economic (such as credit or income-generating) associations tend to be smaller in size (between 10 and 25 members) and there are relatively more of them at the village level, whereas in most cases there is only one burial society per village. The horizontal nature of economic associations and the high coordination costs involved in the larger associations where the incentive to renege is high motivates members to limit the size of such organizations. Meinzen-Dick et al. (2004) remarked that the number of groups in a community might reflect preferences regarding the structure of social interactions, though this is sometimes used as a measure of social capital (Narayan, 1997). Comparatively speaking, burial societies (which are found mainly in the Eastern and south-western regions) are large in size and more inclusive in relation to economic associations.

Overall, there were more economic associations per village in high elevation areas, although agriculture-based and formal credit associations were numerous in the low elevation areas (Table 26). The larger number of informal credit associations in high elevation areas could be associated with the land constraints in these areas. Lack of land to use as collateral in applying for loans from formal institutions could generate a demand for informal credit associations. Also, associations dealing in agriculture are more prevalent in the lowlands due to the relatively high level of recent interventions in agriculture by NGOs and NARO, especially in the Central region. Most of the agricultural associations were initiated by an external influence. Statistical differences in the number of informal credit associations were also found between strata defined by distance from paved roads, but it is interesting that this was not the case for the number of formal credit associations.

Table 26. Average number of associations in a village by elevation and infrastructure development

	Low elevation	High elevation	10km from paved road (N=215)	≥ 10km from paved road (N=178)	Aggregate sample
Density of associations					
Number of associations per village	11.27**	15.19**	2.94**	11.40**	13.06
Economic associations					
Informal credit	2.04**	5.99**	4.22**	1.79**	3.56
Formal credit	1.87**	0.43**	1.27**	1.77**	1.44
Agricultural	3.95**	2.23**	2.93**	4.06**	3.46
Non-agricultural	0.34**	0.80**	0.45	0.44	0.52
Culture-based	0.34**	0.60**	0.35	0.45	0.45
Religious	1.46*	3.79*	2.51**	1.66**	2.69
Burial societies	1.94**	1.39**	1.81	1.79	1.88

** Significant at 1%; * significant at 5%.

Most associations drew their membership from within the village's geographical boundaries, though religion and ethnic grouping are the most important sources of homogeneity for associations based on religion (Table 27). The social composition of other associations (burial societies and economic associations) reflected that of the village, both in terms of tribe and religion, suggesting that social heterogeneity may not be a serious barrier to social interaction in the villages selected for this analysis. Credit associations are more likely to cut across ethnic groups. Also, associations are not homogeneous with respect to gender.

The economic associations have relatively more wealth homogeneity than do burial societies and religious associations, but less than clan-based associations. Nonetheless, 47 per cent of the respondents reported that informal credit groups contained both poorer and wealthier households, and 29 per cent reported the same for formal credit groups (Table 27). The rich also join burial societies to conform to village expectations and for the sake of social approval. The mechanism to ensure cooperation is social sanctions against renegeing. This increases the incentive to join burial societies for many village members and hence reduces the cost of participation per member.

In most cases, the leaders of the associations were of the same income status and educational level as most members (Table 27). Most respondents rated the trust in leadership highly, though this could have been biased by the fear that the enumerator,

who came from the same village, might reveal negative information to the leaders. By far the greatest number of respondents reported that decision-making processes in associations were participatory as compared to dictatorial, implying that the participatory methods of development have been well absorbed by grass-roots people.

Table 27. Percentage of households belonging to village informal associations by socio-economic characteristics

Characteristic	Economic associations							
	All groups	Burial societies	Informal credit	Formal credit	Agricultural	Non-agricultural	Religious	Culture-based
Social heterogeneity								
Same village	71.35	77.80	77.48	55.56	62.92	72.73	48.57	70.00
Same clan	2.16	1.21	2.73	0.00	3.33	0.00	0.00	30.00
Same gender	21.64	15.32	34.55	24.44	34.44	18.18	28.57	30.00
Same religion	17.38	11.34	23.42	10.00	16.16	18.18	85.29	20.00
Same ethnic group	54.85	48.99	69.64	44.44	53.33	45.45	77.14	10.00
Income diversity								
Only middle-income	23.92	21.18	21.37	31.25	30.85	18.18	26.32	18.18
Excludes poorer	17.73	6.27	24.79	25.00	26.50	63.64	18.45	45.45
Excludes richer	8.43	7.84	6.84	14.58	8.51	0.00	7.89	18.18
Mixed income	49.91	64.71	47.01	29.17	34.04	18.18	47.34	18.18
Group decision-making process								
Participatory	82.24	92.08	87.50	57.45	69.88	83.33	67.57	70.00
Other	17.75	7.50	12.15	42.55	30.12	16.67	32.40	30.00

Overall, most associations required their members to either pay an entry fee or contribute resources or both. The specific mechanism of sanctioning adopted in most cases depended on the type of association. In burial societies where the membership is large and the costs of monitoring are high, defaulters would face a penalty. Penalties can take the form of spreading gossip to expose the individual or interest charged. Also, in most of the credit associations, failure to pay in time attracts an interest charge or the individual may be expelled from the group (Table 28). On the other hand, religious associations in most cases allowed free entry, and even where contributions were expected, no sanctions were imposed on individuals who failed to pay. For all associations, the rate of participation in the group meetings was rated high (Table 28).

8.2.3. Household private social networks

To analyse this structural form of social capital, a list of social networks elicited personally from farmers was first categorized according to the nature of the relationship with the household and then by occupation (or major source of livelihood). Using the nature of the relationship, the social network was categorized into “given” if the relationship was defined by blood (i.e. relatives) and “acquired” if the relationship was defined by friendship. Occupation was used as a proxy for the valued resources available in the household social network. It is assumed that the major source of household livelihood reflects the wealth status of the household (Lin, 1999).

Table 28. Households belonging to informal village associations by group functioning (%)

	Economic associations						
	Burial society	Informal credit	Formal credit	Agricultural	Non-agricultural	Religious	Culture-based
<i>What are the requirements for joining the group?</i>							
Pay a fee/contribute resources	76.23	90.65	85.71	63.09	83.33	50.00	60.00
Free entry	23.77	8.41	10.20	36.90	16.67	50.00	40.00
<i>What happens if a member does not pay or contribute resources?</i>							
Expelled	29.29	37.62	45.83	47.95	33.33	21.21	44.44
Faces penalty	56.90	42.57	41.67	15.07	8.33	15.15	11.11
Delay accepted	8.37	13.86	8.33	15.07	41.67	15.15	11.11
Nothing happens	5.44	5.94	4.17	21.92	16.67	48.48	33.33
Number of group meetings held last year	7.40	11.96	16.15	10.36	8.10	13.24	9.50
<i>Rate the participation of members in group meetings</i>							
Low	14.85	14.29	9.09	13.75	33.33	16.22	0.00
Average	10.07	10.20	11.36	8.75	16.67	27.03	40.00
High	75.10	75.50	79.55	77.50	50.00	56.76	60.00
<i>What is the income status of group leaders?</i>							
Higher than most members	17.50	17.31	41.67	23.81	8.33	13.16	10.00
Same as most members	80.42	82.69	56.25	75.00	91.67	86.84	90.00
Lower than most members	2.08	0.00	2.08	1.19	0.00	0.00	0.00
<i>What is the educational level of the group leaders?</i>							
Higher than most members	23.85	32.35	61.70	43.53	16.70	35.14	20.80
Same as most members	65.69	60.78	31.91	54.12	75.00	59.46	80.00
Lower than most members	6.29	4.90		1.18	0.00	2.70	0.00
Do not know	4.18	1.96	6.38	1.18	8.33	2.70	0.00
<i>Rate the trust in the group leadership</i>							
High	90.21	94.23	82.61	83.75	83.33	86.44	100.00
Neither low nor high	8.94	4.81	10.87	10.00	8.33	13.51	0.00
Low	0.81	0.96	6.52	6.25	8.33	0.00	0.00

In a decreasing order of importance, the social network in each category was classified as follows: (a) opinion leader, if the individual was involved in teaching, political or religious leadership³; (b) trader, if the individual was involved in agricultural or non-agricultural trade as their main activity; (c) livestock owner, if the individual was involved in crop farming or cattle keeping and (d) farming, if the individual was involved purely in farming, without cattle.

On average, each household was closely connected to 15 friends and 10 relatives, thus implying a larger “acquired” than “given” social network (Table 29). Households in high elevation areas appeared to be connected to more relatives than households in low elevation areas, though when analysed by region, the south-western and Eastern regions showed no significant differences. Interestingly, the network of relatives in the central region was smaller than in other regions (Table 30).

Table 29. Size of the entire social network by relationship and occupation by elevation

Type social network	Low elevation (N=291)	High elevation (N=98)	Aggregate sample
Total friends (“acquired” social networks)	14.92	15.11	14.93
Friends in farming	5.38*	7.28*	5.84
Friends in trade	4.30	3.65	4.13
Friends in teaching, political and religious leadership	4.81**	3.07**	4.36
Total relatives (“given” social networks)	7.93**	13.97**	9.51
Relatives in farming	4.05**	8.89**	5.26
Relatives in trade	1.90^	2.67^	2.09
Relatives in teaching, political and religious leadership	1.84^	2.71^	2.06

Most of the household friends in high elevation areas appeared to be involved in farming, while the distribution was almost even in low elevation areas, implying a more horizontal “acquired” social network in high elevation areas than in low elevation areas. Analysis by region provides further evidence that the number of

³ The lowest qualification for this category was political leadership or religious leadership at LC11. Teachers at primary schools and above were included.

friends in teaching, political and religious leadership is higher in the Eastern and Central regions, i.e. the low elevation areas, than in the south-western region, i.e. the high elevation areas (Table 30).

Table 30. Size of the entire social network by region

Type social network	Central region (N=195)	Eastern region (N=97)	South-western region (N=98)
Total friends (“acquired” social networks)	15.10	14.40	15.11
Friends in farming	5.52	5.50	7.28
Friends in trade	4.63	3.60	3.65
Friends in teaching, political and religious leadership	4.83 ^a	4.70 ^a	3.07 ^b
Total relatives (“given” social networks)	4.85	14.03	13.97
Relatives in farming	2.34 ^b	7.45 ^a	8.89 ^a
Relatives in trade	1.37 ^b	2.94 ^a	2.67 ^a
Relatives in teaching, political and religious leadership	1.05 ^b	3.41 ^a	2.71 ^a

“a” is significantly higher than “b” and b is significantly higher than “c”.

Generally speaking, households try to bridge across different economic and social groups. However, the proportion seems to decline as one goes up in economic status, reflecting the limited number of such people present in the rural areas. Social homogeneity in this form of social capital was measured along the ethnic and religious dimensions. Overall, about 29.5 per cent of the friends that closely interacted with the household members were from different ethnic groups, while 34.1 per cent were from different religious affiliations from that of the household head. When village homogeneity is controlled for, the proportion of friends from a different religious affiliation remains low in a religiously heterogeneous village (≥ 50), estimated at only 36 per cent. The proportion of friends from different ethnic groups appears to increase (estimated at about 54 per cent) in highly ethnically heterogeneous villages (≥ 50). This result suggests that relationships embedded in the private social networks of rural households in Uganda tend to be more homogeneous along the dimension of religious affiliations. Bridging across religions still appears to be low, despite the government’s efforts to discourage religious polarization. Therefore,

households in villages that are more homogeneous in their religious affiliations are likely to have higher levels of community social capital.

Most of the interactions take place within the village where the household and its social networks reside. A household is able to meet most representatives of its social network within a period of one month. As elsewhere, network links in rural Uganda act as conduits for information and transfers. In the next section, bilateral transfers within the household social network are described.

8.2.4. Bilateral transfers

Exchange of gifts is a common practice in Ugandan rural areas. Gifts come in the form of food or assistance in kind, such as free labour, as well as durable consumer goods and cash. Zero-interest loans are another form of transfer that is common within social networks (Fafchamps and Lund, 2003), but these were less common in the Ugandan sample. The overwhelming majority (about 70 per cent) of transfers come as remittances from close relatives or from friends, in the form of gifts in cash or in kind, such as free labour, durable consumer goods or food (Table 31). Contributions towards expenditure after a shock (e.g. a burial or celebration) incurred by the household constitute 25 per cent of the transfers to the household (Table 31).

Table 31. Major purpose of transfers accruing to the household from its social network

Purpose	Share of the percentage inflow transfer
Celebrations	11.32
Burials	14.32
Gifts/remittances	73.83

The rate of participation in bilateral transfers was very high. About 95 per cent of the households interviewed reported having transferred part of their income to their social networks while 72 per cent of the households had received income from their social network (Table 32). Food in kind is the most common commodity used in bilateral transfers, followed by cash. Surprisingly, few households participate in labour

exchange. This finding is contrary to prior expectations that imperfections in the labour market would motivate households to use informal means to transact in the labour market.

Table 32. Household participation in bilateral transfers (%)

Form	Inflow	Outflow
At least one form of transfer	71.62	95.75
Cash	28.12	79.84
Food	53.32	81.96
Labour	16.18	29.71
Durable consumer goods	18.83	37.14

On average, the resource out-flow to the social network exceeded the resource in-flow from the social networks. This could be due to the usual bias associated with a low willingness to report income compared to expenditure. Descriptive statistics are summarized in Table 33. No meaningful differences seem to exist regarding bilateral transfers according to elevation or region. In case of a problem, each household has nearly three people it can rely on for food, about two people it can turn to in financial difficulties, but only 1.6 people it can rely on for labour (Table 33).

Table 33. Average net transfers and the size of ex ante insurance social networks by elevation

Form of bilateral transfer	Aggregate sample (N=384)	High elevation areas (N=94)	Low elevation areas (N=259)
Net cash	-18 577.14	-55 442.55	-5 345.17
Net food	-9 861.46	-8 392.03	-10 302.90
Net labour	-3 263.15	-1 234.04	-3 426.44
Net other durable consumer goods	-3 740.37	-6 748.94	-3 691.89
Ex-ante insurance network			
Food	2.78	3.16	2.76
Financial problems	2.26	1.97	2.14
Labour	1.63	3.50	1.15

8.3. Summary

Few meaningful differences regarding the use of banana management practices according to elevation and exposure are evident. Use rates for recommended management practices appear to be much higher in high elevation, exposed areas and areas with better infrastructure development. Another interesting finding in this chapter is that social capital is not uniform throughout the study area. There is more household participation in associations in high elevation areas and, taken by region, the Central region demonstrates a low social participation. Results also show that most of the associations are oriented towards economic objectives, though a significant proportion of households are either constrained from participation or prefer not to participate in economic associations. Most of the associations are heterogeneous, with homogeneity along the economic dimension being common in economic associations. Private social networks are more homogeneous in terms of religious affiliation but not according to ethnicity. Finally, bilateral transfers are a common source of cash and labour income to the households but the amounts of net transfers are small.