



Investigating Social Capital Levels Among Small Holder Maize Farmers in the Kwahu North District, Ghana

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Abstract

The process of community development has often been linked with social capital, in recent times. Using a household-level survey data, this study investigates social capital levels among small-holder maize farmers in the Kwahu North district of the Eastern region of Ghana. The results of the study show that there exists a low level of social contacts among farmers in the study area. However, there are moderate levels of information flow, access to resources and attendance to community activities among the sampled farmers. The level of social capital was found to be relatively high, as a majority of the respondents were at the moderate level and beyond. The study recommends that there is the need for behavioural change among farmers, particularly with their social contacts, as this could help further enhance their social capital and hence their livelihoods.

Keywords: Social capital, small-holder maize farmers, information flow, Kwahu North, Ghana

Introduction

Social capital has often been linked with development. This makes it very important to scholars in rural development activities. According to Hawe and Shiell (2000), social capital has found applications in already existing initiatives that strengthen rural networks, build capacity and empowerment of community members. Social capital is conceptualised as a new way of looking at social relationships as they have the potential to reform thinking

about society with either positive or negative outcomes (Mort *et al.*, 2003).

An element in the concept of social capital is the structure of the social relationships that expedite action. While economic capital is in the bank accounts of individuals and human capital is in their minds (Adler and Kwon, 2002), social capital occurs when a person relates with others (Bowles & Gintins, 2002). It will exist only when it is shared and embedded in the social structure (Narayan and Pritchett, 1999). It has also been found that these features of social organisation can facilitate co-ordinated actions, advance the efficiency of society and involve horizontal and vertical social structures that link local

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organisations to broader social groups (Ardichvili *et al.*, 2003).

According to Dekker and Uslaner (2001), social capital is about the value of social networks, bonding similar people and bridging between diverse people with norms of reciprocity. The core intuition guiding social capital research is that the goodwill that others are a valuable resource. As such, social capital is defined as, "*the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence and solidarity it makes available to the actor*" (Adler and Kwon 2002, p. 23).

Individuals engage in interactions in order to produce profits; the social ties that are located in certain strategic locations can provide an individual with useful information about opportunities and choices otherwise not available. These ties can also alert an organization and its agents about the availability and interest of an unrecognized individual. It may exert influence on the agents who play a critical role in decisions involving the actor. Some social ties, due to their strategic locations and positions, also carry more valued resources and exercise greater power in organizational agents' decision making (Adam and Roncevic, 2003).

The rationale behind social capital is that, investment in social relations comes with expected returns (Erickson, 1995; Portes, 1998). Narayan and Cassidy (2001) made it clear that social capital is of importance in societal wellbeing. Collier (1998) also maintains that people living in poverty situations may choose to depend on more social capital than the wealthy people in society because they have a lower cost of opportunity and less human and financial capital than wealthy people.

The sustainability of technological innovations in rural settings often depends

on the socio-environmental interactions among and between the relevant local stakeholders. This makes the building of social capital an essential goal in many development programmes, including community-driven development and self-empowerment. Social capital is also being considered as a means of slowing the stream of perceived community decline and pervasive distrust associated with it.

With this development, the increasingly central role that social capital plays in Ghana and for that matter rural farming communities has fuelled demand for empirical understandings of it. Yet, demand for empirical measures of social capital exceeds what is currently known on the subject. Because social capital may have wide ranging implications, it is important to know how it can be influenced. In principle, the concept of social capital makes it possible for relationships and networks to be quantitatively and qualitatively measured. The aim of this study is to quantify the perceptions of small-holder maize farmers on qualitative characteristics of community social relations among them.

Research questions

Specifically, the study seeks to; determine the level of social contacts among farmers; assess the level of information flow among farmers' social contacts; assess farmers' level of access to resources among their social contacts; assess farmers' level of participation in community social activities and determine the level of social capital among small holder maize farmers.

Theoretical framework

According to Liu and Besser (2003). The abstract nature of measuring social capital and its varying definitions has resulted in the inconsistent measures in different studies. Cavaye (2004) posited that there are no best indicators, rather some key characteristics that guide the choice of

indicators such as: ease of measurement, reliability and rigor, specificity targeted to the variable to be measured, comprehensiveness - measures of a range of social characteristics and continuity ability to translate across situations and be consistent in local state or national frameworks.

Many early studies have had to rely on uneven proxies for social capital which are somewhat experimental. Examples include; trust (Cox and Caldwell, 2000); membership (Baum and Ziersch, 2003; Wollebaek and Selle, 2003); membership and trust (Veenstra, 2002); membership, trust and norms of reciprocity (Staveren, 2003); network resources (Zhao, 2002; Kilpatrick, 2000); rules and norms governing social action (Collier, 1998); types of social interaction (Snijders, 1999) and informal social ties, formal social ties, trust and norms of collective action (Liu and Besser, 2003).

Putnam (2000) identified the following indicators: measures of community or organisational life, measures of informal sociability, measure of engagement in public affairs, measures of community volunteerism and measures of social trust. Stone (2001) posits structure of social relations and quality of social relations and Aldridge *et al.* (2002) also suggested that the main determinants of social capital include history and culture, the family, education, the built environment, residential mobility, economic inequalities, social class, the strength and characteristics of civil society, patterns of individual consumption and personal values. Pantoja (1999) identified a different set which included family and kinship connections, networks, political society, formal rules and norms that regulate public life, social norms and values.

Methodology

Research design and sampling

The research design that was adopted for the study was largely quantitative which

employed a survey method. According to Kazerooni (2001), the study population is the group of individuals to which the study can legitimately apply its conclusions. Therefore, the population of respondents used for this study was primarily made up of all maize farmers within the Kwahu North District in the Eastern Region of Ghana. The sample size that was used for the study was 280 respondents.

With a confidence interval of 90% and study population of about 10,000, the minimum sample size according to Bartlett *et al.* (2001) was 264 but the sample size was adjusted for 280. A multi-stage sampling technique was used: Purposive, cluster and simple random sampling technique. The purposive sampling technique was used at the first stage to select the district in which to conduct the study.

This was because among the entire maize growing districts in the country, Kwahu North is the highest producing with the highest number of maize farmers. The cluster sampling was used at the second stage by grouping the communities into geographical clusters. This has already been done by the District MoFA office or the statistics office? There are four zones: Donkorkrom zone, Tease zone, Maame Krobo zone and Abotanso zone. Three out of the four zones were selected using the simple random sampling technique. The balloting system was used where the names of the four zones were written on a paper, folded and placed into a box. The researcher was blindfolded in order to pick three out of the four zones. The three zones that were selected were Donkorkrom, Tease and Abotanso. Next to this, communities were selected from the three different zones using the same process that was used for selecting the zones. Five communities from the Abotanso zone were selected; Koranteng, Fodoa No. 1, Kubease, Seibia and Abosomafreho.

Four communities in the Tease zone were selected; Samanhyia, Forifor, Tease and

Odumase. Three communities in the Donkorkrom zone were selected; Avatime, Adukrom and Donkorkrom. Finally, the individual farmers were also selected using the simple random sampling technique. A list was obtained by the Agricultural Extension Agents (AEA's) assigned to the selected zones. The respondents were selected using the list and they were contacted to answer the questionnaires. Some of the selected respondents were not available as at the time of data collection, so replacements were found for them using the list.

Data analysis

Before the data analysis was conducted, a reliability test was performed on the variables that were used to measure the farmers' level of social capital. The cronbach's alpha obtained was 0.638 (63.8%). This gives credence to the variables that were used for the measurement. The data were first coded and analysed using SPSS 16. The data were summarised descriptively using frequency, percentages, means, standard deviations, variances and correlation analysis.

Analytical methods

The level of social capital among maize farmer is explained in terms of their social relationships among themselves and other actors, the resources they use, flow of information, norms of trust and social participation (actual or virtual) that accrue to them. This study takes the second approach elucidated by Stone and Hughes (2002) which aimed at producing an overall measure of social capital.

The characteristics (number of social contacts, strength of contact, level of norms of trust, number of information, receipt of information, usefulness of information, number of resources, frequency of receipt of resources, usefulness of resources and social participation) of the various variables on social capital [social contacts (Lin, 1999; Paldam & Svendsen, 2000), information flow (Lin, 2001, Black and

Hughes, 2000), access to resources (Lin, 2001) and social participation Baum *et al.*, (2000)] were collated and a grading was given. The measurement was done with the use of the likert scale where statements were put forward and respondents were allowed to rank their responses. A categorical data was produced for the coalition of all the responses gained. Hence the categorization was created: low level, moderate level and high level. The study conceptualised the grades for social capital as follows; low level: 1 to 60; moderate level: 61 to 120; high level: 121 to 180.

Social contacts

Three different indicators were used to measure the social contacts of farmers; number of social contacts, strength of contacts and level of norms of trust. The number of contacts was measured by asking farmers to mention the different person(s) or contact(s) they interact with concerning their farming activities. The number of person(s) or contact(s) mentioned by the farmers (Family/relative, colleague farmer, extension agent, farmer organisation, input supplier, friend/neighbour, traders, processors, labourers, financial institutions, transport officers, chiefs, researchers etc.) was added and the number or score was recorded. The strength of the contacts was measured by asking farmers to rank on a scale of 1 to 5, the strength of their relationship with each of the contact (s) mentioned. These ranks were added and transformed into a single score to represent the strength of farmers' contacts. An explanation of the ranks is as follows: Very weak = 1, Weak = 2, Moderate = 3, Strong = 4 and Very Strong = 5. The norms of trust were measured by asking farmers to rank on a scale of 1 to 5, the level of trust they hold for each of the contact(s) mentioned. These were added and transformed into a single score to represent the level of norms of trust for the farmers. An explanation of the ranks is as follows: Very low = 1, Low = 2, Moderate = 3, High = 4 and Very High = 5.

Information flow

Three different indicators were used to measure information flow among farmers and other actors; type of information, frequency of receipt of information and usefulness of information received. A list of the different types of possible information available to farmers through their contact(s) was provided in the questionnaire: seed preparation, land clearing, land preparation, planting, watering, fertilising, disease control, pest control, irrigation, sorting, processing, packaging, transportation and marketing. Farmers were then asked to mention the various types of information they have access to through their contact(s). The number of types of information mentioned by the farmers was added and the score was recorded. The frequency of receipt of information was measured by asking farmers to rank on a scale of 1 to 5, the frequency with which they received information from each of their contact(s). These ranks were added and transformed into a single score to represent the frequency of receipt of information. An explanation of the ranks is as follows: Very low = 1, Low = 2, Moderate = 3, High = 4 and Very High = 5. The usefulness of the information received was measured by asking farmers to rank on a scale of 1 to 5, the usefulness of the information they receive from each of their contact(s). These were added and transformed into a single score to represent the usefulness of the information farmers receive from their contact(s). An explanation of the ranks is as follows: Not at all useful = 1, Not useful = 2, Neutral = 3, Useful = 4 and Very useful = 5.

Access to resources

Three different indicators were used to measure the access of farmers to resources; type of resources, frequency of receipt of resources and usefulness of resources received. A list of the different types of possible resources available to farmers through their contact(s) was listed in the questionnaire: credit, social resources, land,

labour, professional/advisory resource, commercial, insurance, farm implements, farm inputs, markets, organisations. Farmers were then asked to mention the various types of resources they have access to through each of their contact(s).

The different types of resources mentioned by the farmers were added and the score was recorded. The frequency of receipt of resources was measured by asking farmers to rank on a scale of 1 to 5, the frequency with which they received resources from each of their contact(s). These ranks were added and transformed into a single score to represent the frequency of receipt of resources. An explanation of the ranks is as follows: Very low = 1, Low = 2, Moderate = 3, High = 4 and Very High = 5. The usefulness of the resources received was measured by asking farmers to rank on a scale of 1 to 5, the usefulness of the resources they receive from each of their contact(s). These were added and transformed into a single score to represent the usefulness of the resources farmers receive from their contact(s). An explanation of the ranks is as follows: Not at all useful = 1, Not useful = 2, Neutral = 3, Useful = 4 and Very useful = 5.

Social participation

In order to measure level of social participation, farmers were asked to rank on a scale of 1 to 5, their level of attendance to social activities in and outside their communities. The social activities included funerals, naming ceremonies, political meetings, communal labour, durbar, sports festivals, visit to friends and neighbours, cinema/theatre and party. These ranks were added and transformed into a single score to represent farmers' level of social participation. An explanation of the ranks is as follows: Very low=1, Low=2, Moderate=3, High=4 and Very High=5 (Baum *et al.*, 2000).

Results and discussion

Farmer social contacts

From the Table 1, it can be observed that a majority of the farmers (92.9%) link up with one to six person(s) concerning their farming activities. About 7% link up with between seven and twelve people. The mean number of contacts that farmers have was 3.6 person(s). The maximum number of contacts that the farmers had was 12 while the minimum was 1. Comparing the mean number of contacts of 3.6 with a maximum of 12 contacts means that the number of contact of farmers is relatively small. Linking up with an average of about 4 persons means that farmers would be limited in terms of the number of people they interact with concerning their farming activities. This can also influence the level of knowledge and useful techniques they can gain through their contacts. Benin *et al.* (2007) in a similar study noted that farmers gain a lot by forming contacts with other actors within their activities and this helps to enhance their livelihood. Hill *et al.* (2005) also showed the relevance of contacts and noted that a large proportion of households (84%) in which the head of the household or another member of the household died, received help from friends or family. This could arise out of linking with other farmers.

The respondents were asked to indicate the strength of all the various contacts they had on a scale of 1 to 5. About 43% of the farmers indicated a level of strength of between one and six. This was followed by seven (7) to 12 (42.9%), 13 to 18 (12.9%)

and 19 to 24 (1.4%). The mean strength of the contacts that farmers have was 7.9. The maximum strength attributed to the contacts was 24 while the minimum was 2 contacts. Comparing the mean strength of the contacts of 7.9 with a possible level of 24 contacts indicates that the strength of contact of farmers is relatively weak.

The respondents were also asked to indicate the level of trust they hold for their contacts on a scale of 1 to 5. Most of the respondents (40.7%) attributed a level of trust of between one and six. This was followed by 7 to 12 (37.1%), 13 to 18 (18.2%) and 19 to 24 (3.9%). The mean level of trust that farmers indicated for their contacts was 8.5. The maximum strength attributed to the contacts was 23 while the minimum was 2. Comparing the mean level of trust of 8.5 with a possible level of 24, this means that the level of trust that farmers hold for their contacts is low. This low level of trust can adversely influence farmers' engagement in group activities within the community. In Uganda, low levels of trust and lack of liquidity are mentioned by people working with farmer groups as explaining some of the restraint to become involved in collective marketing. Experimental studies have also shown that expectations of trustworthiness of an individual affect the behaviour of those trusting that individual. However, it is difficult to determine a causal relationship between trust and group formation given that levels of trust are likely to be influenced by the nature and frequency of social interactions (Weinberger & Jutting, 2001).

Table 1: Farmer social contacts

Responses	Number of Contacts		Strength of the Contacts		Level of Trust for Contacts	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-6	260	92.9	120	42.9	114	40.7
7-12	20	7.1	120	42.9	104	37.1
13-18	0	0.0	36	12.9	51	18.2
19-24	0	0.0	4	1.4	11	3.9
Total	280	100.0	280	100.0	280	100.0

Source: Field data, 2012

Level of farmer contacts

The level of social contacts of farmers could be said to be low (1-18) as indicated by about 52% of the farmers. A moderate level (19-36) was indicated by 43% of the

farmers while about 5% of the farmers indicated a high level of contact. The mean level of contact of farmers was also found to be 20.02.

Table 2: Level of farmer contacts

Level	Frequency	Percent
Low Level (1-18)	146	52.2
Moderate Level (19-36)	119	42.5
High Level (37-52)	15	5.3
Total	280	100.0

Source: Field data, 2012

Information flow

The responses show that majority of the farmers (85%) are able to have access to between one (1) and six (6) different types of information. The respondents who have access to between seven and different types of information represented 15%. The mean number of different types of information that farmers are able to assess through their contacts was 4.7. The maximum number of different types of information was 11 while the minimum was 1. From the study, it could be deduced that there is a relatively low level of number of information that farmers have access to. The type of information that farmers assess can have some form of influence on their activities on and off the farm. These various forms of information that farmers have access to through their contact(s) will go a long way to enhance the work of the small holder farmer (Clark, 2002).

The frequency of receipt of information was measured by asking farmers to rank on a scale of 1 to 5, the frequency with which they received information from their contact(s). Majority of the farmers (45.0%) have attributed a frequency of between 7 and 12 on the information they receive. This was followed by 1 to 6 (33.9%), 13 to 18 (15.4%), 19 to 24 (5.0%) and 31 to 36 (0.7%). The mean level of frequency of receipt of information that farmers have access to was 9.7. The maximum level of frequency of receipt of information was 36 while the minimum was 2. From the study,

it could be said that the frequency of receipt of information is relatively low. This could mean that farmers do not receive information frequently from their contacts.

The usefulness of the information received was measured by asking farmers to rank on a scale of 1 to 5, the usefulness of the information they receive from their contact(s). Majority of the respondents (50.7%) attributed a level of usefulness of information between seven (7) and 12. This was followed by 1 to 6 (24.3%), 13 to 18 (20.0%), 19 to 24 (4.3%) and 25 to 30 (0.7%). The mean level of usefulness of information that farmers receive through their contacts was 10.1. The maximum level of usefulness of information received was 35 while the minimum was 3. From the study, it could be said that the usefulness that farmers ascribe to the information they receive from their contacts is relatively low. This could mean that farmers do not consider the information they receive to be relevant.

In support of this result, Barr (2000) asserted that by virtue of being involved in social activities, a farmer can benefit from information spill over that extends beyond social activities to other spheres like production and marketing of their farm produce. Further, a study by Chávez and Hartwich (2011) showed that the connectivity of farmers in social networks allows for the exchange of information on

improved practices and innovations in peach production and marketing.

Table 3: Information flow

Responses	Number of Type of Information		Extent of Receipt of Information		Level of Trust for Contacts	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-6	238	85.0	95	33.9	68	24.3
7-12	42	15.0	126	45.0	142	50.7
13-18	0	0.0	43	15.4	56	20.0
19-24	0	0.0	14	5.0	12	4.3
25-30	0	0.0	0	0.0	2	0.7
31-36	0	0.0	2	0.7	0	0.0
Total	280	100.0	280	100.0	280	100.0

Source: Field data, 2012

Level of Information Flow

The level of information flow could be said to be moderate (19-36) as indicated by about 52% of the farmers. A low level (1-18) was indicated by 35% of the farmers

while about 13% of the farmers indicated a high level of access to information. The mean level of information flow among farmers and their social contacts was also found to be 24.47.

Table 4: Level of information flow

Level	Frequency	Percent
Low Level (1-18)	98	35.0
Moderate Level (19-36)	145	51.8
High Level (37-54)	37	13.2
Total	280	100.0

Source: field data, 2012

Access to resources

The responses show that majority of the farmers (95.0%) are able to have access to between 1 and 6 different types of resources. Respondents who have access to between 7 and 12 different types of resources represented 5.0%. The mean number of different types of resources that farmers are able to assess through their contacts was 4.0. The maximum number of different types of resources was 9 while the minimum was 1. A mean of 4 out of a possible maximum of 12 could be considered low. This means that farmers' access to resources through their contacts is relatively low. In support of this result, Monge and Poole (2008) and De Herdt and Deneulin (2007) asserted that farmers are social agents and so are embedded in a variety of networks and contacts from and through which they have access to a set of

different resources and opportunities. This implies that farmers' access to resources is dependent on the various contacts and networks they have created.

The responses on the frequency of receipt of resources show that, most of the farmers (56.1%) have attributed a frequency of between 7 and 12. This was followed by 1 to 6 (31.8%), 13 to 18 (11.4%) and 19 to 24 (0.7%). The mean level of frequency of receipt of resources that farmers have access to was 7.9 resources. The maximum frequency of receipt of resources was 24 while the minimum was 1. From the study, it could be said that the frequency of receipt of resources is relatively low. This could mean that farmers do not receive resources frequently from their contacts.

Most of the respondents (45.7%) attributed a level of usefulness of resources between 7 and 12. This was followed by 1 to 6 (30.4%), 13 to 18 (19.6%), 19 to 24 (1.8%) and 25 to 30 (2.5%). The mean level of usefulness of resources that farmers receive through their contacts was 9.4. The maximum level of usefulness was 28 while the minimum was 1. From the study, it could be said that farmers attribute a relatively low level of usefulness to the resources that they have access to. This could mean that farmers do not consider the resources that they receive to be so useful. Shaw *et al.* (2006) have also showed that although social contacts are not created specifically for economic gains, they serve as important platforms where farmers get feedback on their farming

activities since members informally and openly discuss their activities. Such social associations are also places where social conventions and trust are inculcated in the members. Therefore, farmers could harness these benefits or resources if they have contacts.

Level of access to resources

The level of access to resources could be said to be moderate (19-36) as indicated by about 49% of the farmers. A low level (1-18) was indicated by 46% of the farmers while about 5% of the farmers indicated a high level of access to resources. The mean level of information flow among farmers and their social contacts was also found to be 21.32.

Table 6: Level of access to resources

Level	Frequency	Percent
Low Level (1-18)	130	46.4
Moderate Level (19-36)	137	48.9
High Level (37-54)	13	4.7
Total	280	100.0

Source: Field data, 2012

Social participation

From the results obtained, it can be deduced that funeral is the most important social activity that farmers attend. This was attested by a mean of 4.18 out of 5. This was followed by naming ceremonies (3.50), political meetings (3.39), communal labour (3.16), durbar (3.09), sports festivals (2.94), visiting of friends and neighbours (2.80), cinema or theatre (2.58) and party (2.35).

A study has shown that social activities like sports have been shown to be places where potential workers and business associates could be matched. It is also most likely that bonding and team building between members of a farming enterprise can be easily accomplished which can then be carried over to the farmers' activities. In addition, by actively partaking in social activities, entrepreneurs become visible to members of the community who are also the market for their products (Anderson & Jack, 2002).

Table 7: Social participation

Social Activities	Very Low		Low		Moderate		High		Very High		Mean
	Freq	Per't	Freq	Per't	Freq	Per't	Freq	Per't	Freq	Per't	
Funerals	13	4.6	22	7.9	34	12.1	43	15.4	168	60.0	4.18
Naming Ceremonies	29	10.4	41	14.6	67	23.9	47	16.8	96	34.3	3.50
Political Meetings	37	13.2	50	17.9	55	19.6	42	15.0	96	34.3	3.39

Communal Labour	25	8.9	70	25.0	77	27.5	50	17.9	58	20.7	3.16
Durbar	22	7.9	78	27.9	83	29.6	48	17.1	49	17.5	3.09
Sports Festivals Visited	44	15.7	68	24.3	80	28.6	38	13.6	50	17.9	2.94
Friends and Neighbours	45	16.1	87	31.1	70	25.0	34	12.1	44	15.7	2.80
Cinema or Theatre	49	17.5	84	30.0	93	33.2	43	15.4	11	3.9	2.58
Party	82	29.3	76	27.1	77	27.5	33	11.8	12	4.3	2.35

Source: Field data, 2012

Level of participation in community social activities

Farmers were asked to indicate their level of attendance to the following community activities on a scale of 1: very low to 5: very high on each community activity. A sum of the scores was taken to produce the table above. Results from the Table shows that majority of the farmers (85.7%) have attributed a moderate level of attendance to

community activities (19 to 36). This was followed by a high level (8.9%) and low level (5.4%). The mean is 27.99, the minimum was 9 while the maximum was 43. It could be deduced from this study that farmers' attendance to community activities is relatively encouraging since over 90% of the farmers had a level of attendance to community activities either at or more than the moderate level.

Table 8: Level of participation in community activities

Level of Attendance to Community Activities	Frequency	Percent
Low Level (1-18)	15	5.4
Moderate Level (19-36)	240	85.7
High Level (37-54)	25	8.9
Total	280	100.0

Source: Field data, 2012

Level of social capital

The scores for the characteristics (number of contacts, strength of contacts, level of norms of trust, number of information, receipt of information, usefulness of information, number of resources, frequency of receipt of resources, usefulness of resources and social participation) of the various variables on social capital (contacts, information flow, access to resources and social participation) were added. A categorical data was produced for the coalition of all the responses gained. The grade for low level was a figure of 1 to 60, moderate was 61 to 120 and high was a response figure of between 121 and 180.

The results show that majority of the farmers (89.6%) have a moderate level (61-120) of social capital, 7.1% have a high level (121-180) of social capital while 3.3% have a low level (1-60) of social capital. The mean level of social capital of the farmers was 93.2. The minimum level of social capital was 45 while the maximum level was 158. From the study, over 90% of the respondents are at the moderate level and beyond. It could be deduced therefore from this study that farmers have a relatively higher level of social capital.

Table 9: Level of social capital of farmers

Levels	Frequency	Percent
1-60	9	3.3
61-120	251	89.6
121- 180	20	7.1
Total	280	100.0

Source: Field data, 2012

Correlation matrix of measures of social capital

Table 10 results show some relationships between individual items measuring dimensions of social capital. From the results obtained above, it could be said that there are positively strong correlation between social capital and access to information and access to resources. This implies that high levels of access to information and access to resources tend to be paired with relatively high levels of social capital and vice versa. So, if a farmer

has higher access to information or access to resources, it can be predicted that the person could experience a high level of social capital and vice versa.

There are also positive and weak correlation between social capital and level of social contact and attendance to community activities. This implies that although weak, high levels of contacts and attendance to community activities tend to be paired with relatively high levels of social capital.

Table 10: Correlation statistics for measures of social capital

Pearson Correlation of Social Capital Variables	Social Capital	Contact	Access To Information	Access to Resources	Attendance to Community Activities
Social Capital	1.000	0.475	0.687	0.652	0.108
Contact	0.475	1.000	-0.012	0.104	-0.091
Access To Information	0.687	-0.012	1.000	0.303	-0.219
Access to Resources	0.652	0.104	0.303	1.000	-0.119
Attendance to Community Activities	0.108	-0.091	-0.219	-0.119	1.000

Source: Field data, 2012

Conclusion and recommendations

This study investigates social capital levels among small-holder maize farmers in the Kwahu North district of the Eastern Region of Ghana. The study found that the level of contacts among farmers is low (1-18) as indicated by about 52% of the farmers. A moderate level (19-36) was indicated by 43% of the farmers while about 5% of the farmers indicated a high level of contact. The mean level of contact of farmers was also found to be 20.02. The level of information flow could be said to be

moderate (19-36) as indicated by about 52% of the farmers. A low level (1-18) was indicated by 35% of the farmers while about 13% of the farmers indicated a high level of access to information. The mean level of information flow among farmers and their social contacts was also found to be 24.47. The level of access to resources could be said to be moderate (19-36) as indicated by about 49% of the farmers. A low level (1-18) was indicated by 46% of the farmers while about 5% of the farmers indicated a high level of access to resources. The mean level of information

flow among farmers and their social contacts was also found to be 21.32. The results from the shows that majority of the farmers (85.7%) have attributed a moderate level of attendance to community activities (19 to 36). This was followed by a high level (8.9%) and low level (5.4%). The mean is 27.99, the minimum was 9 while the maximum was 43. It could be deduced from this study that farmers' attendance to community activities is relatively encouraging since over 90% of the farmers had a level of attendance to community activities either at or more than the moderate level.

The results show that majority of the farmers (89.6%) have a moderate level (61-120) of social capital, 7.1% have a high level (121-180) of social capital while 3.3% have a low level (1-60) of social capital. The mean level of social capital of the farmers was 93.2. The minimum level of social capital was 45 while the maximum level was 158. From the study, over 90% of the respondents are at the moderate level and beyond. It could be deduced therefore from this study that farmers have a relatively higher level of social capital.

It could be said that there are positively strong correlation between social capital and access to information and access to resources. This implies that high levels of access to information and access to resources tend to be paired with relatively high levels of social capital and vice versa. So, if a farmer has high on access to information or access to resources, it can be predicted that the person could experience a high level of social capital and vice versa. There are also positive and weak correlation between social capital and level of contact and attendance to community activities. This implies that although weak, high levels of contacts and attendance to community activities tend to be paired with relatively high levels of social capital.

Behavioural change could be induced in farmers through the creation of awareness in research extension policies and the value of social capital to livelihood enhancement. This could also be facilitated through access to market and competition such that farmers will appreciate the value of building social capital to enhance their activities. Support must be massively granted to innovations that are forwarded by farmers. The focus has always been on technology adoption and these have gained lots of support from government agencies. A shift in that focus to innovations produced by farmers will go a long way to reduce poverty among most farmers. The support could also be given through research activities into farmers' innovation and its potential to influence the livelihoods of community members. Infrastructural support in terms of logistics could also be given to boost farmers' activities towards innovations.

MoFA, the FAO and other NGO's should encourage farmers to be innovative through their interactions and activities among farmers. Care must be taken to avoid constraining innovative capacity among the farmers. Skills in information technology, financial management, natural resource management, marketing and risk management and in the use of increasingly sophisticated machinery are of growing importance in farming activities. These could be the focus since the study found that education and training engenders an increased capacity, confidence and willingness to change, to seek and introduce innovative activities.

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