

Community Based Organic Farming and Social Capital in Different Network Structures: Studies in Two Farming Communities in Bangladesh

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Abstract: The main purpose of this study was to assess the status of social capital in different networks of two farming communities (organic and conventional farming) in Tangail district of Bangladesh. Social trust and reciprocity existed in the community were measured in informal, generalized and institutional networks of these two communities. The study was conducted by administering questionnaire survey among the farmers of the two communities. A total of 100 farmers, 50 from each of the organic and conventional farming communities, constituted the sample of the study. To measure social trust and reciprocity in different networks in a community, a self-designed questionnaire was developed to gather needed data. The finding indicated that, there was a statistically significant difference between organic and conventional farmers in regards to trust and reciprocity in generalized and institutional realms of social networks of the both communities. On the other hand, no significant difference was established between the communities in regards to trust and reciprocity in their informal network structure.

Keywords: Social capital, network structure, organic farming, conventional farming, Bangladesh

INTRODUCTION

There is growing interest in the “social capital” concepts and its ramifications for community well-being and public policy. The term captures the idea that social bonds and social norms are an important part of basis for livelihoods. Its value was identified by Jacobs^[4] and Bourdieu^[1], later given a clear theoretical framework by Coleman^[2], and brought to wide attention by Putnam^[13]. The most common definition of social capital regards it as “features of social organization, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit”^[13]. Although there are many different descriptions of social capital, the major three central elements are social network, norm and trust^[12]. Another fundamental distinction is often made between the components of its concept, which include the “bonding,” “bridging,” and “linking” social capital^[19]. Some authors^[18] provided a point of consensus among various perspectives by emphasizing on a concept of “networks of quality relations” which operate as a resource to collective action on different scales (individual, communities, and nations).

By definition, social capital is not restricted to particular social networks of one type or another. The literature identifies social capital in local and other

community networks^[13], at the level of nation states^[6] and, albeit less commonly, within families and other networks of families^[2]. Stone and Hughes^[17] proposed a conceptual framework for understanding social capital measurement which distinguished between social capital within different sorts of networks existing at different social scales. These range from household and family level ties, to community based and “societal” relations people have with people they do not know personally, to the ties individuals and families have with institutions. These three sets of social relations have been described as belonging to the “informal realm,” “generalized realm” and “institutional realm,” respectively.

The development of organic farming began early of 20th century on the basis of a range of idea about farming and soon it emerged as an alternative approach to high external input based conventional farming system. The main aim of organic farming can be summarized as to create sustainable agricultural production system^[9]. In scientific references, a number of environmental, economical and social benefits have been attributed to organic farming^[7, 14, 15]. Worldwide, cooperation and networking between producers, consumers, traders, scientists and civil society worked as the major driving forces for the successful development of organic farming. Some of the

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modalities of such cooperation include direct marketing, consumer-producer association, product networks, country communities, and *Aktion Kulturland* as documented by Garber and Hoffmann^[3].

The underlying notion of organic farming does not confine it only in some particular practices; it also focuses on networking and cooperation among farmers, their farms and households, the farming community, the consumers and other stakeholders. Therefore, organic farming is considered to generate trust, cooperation and network among producers and other stakeholders; in other words it may produce some levels of social capital in the practicing farming community. Thus, the paper aims at examining whether a long-term practice of community based organic farming can facilitate creation of social capital in the practicing farming communities.

In Bangladesh, movement for organic farming started in the early 1990s. Unlike in the countries of the North where organic movement was initiated by the farming communities and supported by consumer groups, in Bangladesh a number of Non-government Organizations (NGO) played the pioneer role in the beginning stage^[14]. These NGOs organize interested farmers, provide training, technical advice and financial support, and help in marketing organic products. The organic farmers form groups and co-operate each other towards a sustainable farming system. Regular group meeting, environmental awareness campaign among farming community, folk and cultural activities in important events, exchange of farm inputs, sharing knowledge and experience, community level preservation of seeds and genetic resources are the important activities of organic farmers in Bangladesh. These types of activities which are coordinated by the sponsoring NGOs may be considered as facilitating factors of social capital creation. Thus, the unique nature of farmers' cooperation prompted us to undertake the study in the context of Bangladesh. The main purpose of this study was to see, concerning status of social capital, whether there existed difference between communities practicing organic farming and conventional farming. The more specific objectives included: 1) to determine selected characteristics of farmers practicing organic and conventional farming, and 2) to assess stocks of social capital elements in different network structures of these two communities.

MATERIALS AND METHODS

This was a survey based study in which members of two Bangladeshi farming communities were interviewed by using a self-designed questionnaire.

Measurement of social capital: The gulf between theoretical understandings of social capital and the ways social capital has been measured in much empirical work to date has led to a host of problems^[10, 11, 16]. Stone and Hughes^[17] described some principles for avoiding these problems which included (i) need for 'theoretically informed' measurement and practice of social capital, (ii) understanding social capital as a resource to collective action, (iii) recognizing social capital as a multidimensional concept in empirical works, and (iv) recognizing social capital as it will vary by network type and social scale. The measurement of social capital in the present study was partially based on the measurement framework used by Stone and Hughes^[17]. The framework conceptualizes social capital as a multidimensional concept comprising network, trust and reciprocity. Key measures of social capital included social trust and reciprocity as a social norm in three network types such as informal, generalized and institutional networks.

Both social trust and reciprocity were measured by developing appropriate scales. The scales were developed by following questions used in 'World Values Survey'^[6], while 16 items were selected following the recommended social capital measurement tool proposed and used by Narayan and Cassidy^[8]. The all 16 items were taken from informal, generalized and institutional realms of social network. The four informal network items included family members, close relatives, peers and friends, and close neighbors, while the six generalized network items were: fellow farmers, farmer-group members, buyers and consumers, business partners, local and village leaders, and religious leaders. The institutional network items included development workers (extension workers), politicians, local government bodies, common public service providers (electricity, water, gas etc.), legal and judiciary system, and law enforcers (police and others). All items in the questionnaire were based on a five-point Likert type scale with responses ranging from 0 ('no' or 'not at all') to 4 ('high' or 'full'). Thus the obtained scores from a respondent's answers on concerning items of a social network were added together to conceive total scores of the very social realm regarding trust and reciprocity.

Study location: One central district (Tangail) of Bangladesh was purposively selected for the study, whilst the survey was conducted in Delduar sub-district (*upazila*), one of the total 13 sub-districts of the district. The selected area had a reputation for having a history of community based organic farming. Organic farming took its root in Delduar sub-district following the

devastating flood in 1988, when *Ubinig* - a non-government organization, engaged in action research on alternative development issues, started encouraging farmers to reduce their dependency on off-farm inputs, particularly chemical fertilizers and pesticides. Many farmers, who were also participating in the NGO's action research programs that time, quickly responded to the initiative. Farmers' enthusiasm on environmentally friendly and self-dependent agriculture encouraged the NGO to launch a particular form of organic farming - *Nayakrishi Andolon*, literally the new agricultural movement. Within a decade, the *Nayakrishi* became popular among the farmers of many villages in the area. According to Ubinig's official information, the *Nayakrishi* is by now has become a major organic farming movement in Bangladesh involving over 170,000 farm families (as in July 2005). During our on-field observation, we were informed that in some villages in the study area, as many as 70% farmers transformed their conventional farming practices into *Nayakrishi*. As *Nayakrishi* is being practiced by the farming community in these villages for more than a decade, we considered these villages as ideal locale for investigating social capital issues in the context of organic farming. Two villages of the sub-district were purposively selected for the study. Nallapara village was selected as a village for organic farming community, while Jalalya, a neighboring village, as for conventional farming community.

Nallapara is one of the villages in Delduar sub-district where the activities of *Nayakrishi* got started in the late 1980s. It is a large village with approximately 1,400 farming households and well communicated with the nearby city, the sub-district head quarter. Jalalya, the conventional farming village situated approximately 12 km north-western to the organic farming village, is also a village featured with good communication to nearby city and markets. This is smaller in size having approximately 260 farm households. We carefully selected these two villages for the present study considering the fact that farming was the dominant occupation and there are many similarities between the villages regarding geographical location, farming practices, occupation, communication and social infrastructure.

Population and sample: The farming households of the two selected villages constituted the population of the study. The numbers of such households were 809 and 261 in the organic and conventional villages respectively. Fifty farmers from each of the villages were randomly selected for the purpose of data collection; therefore the total sample size was 100.

However, for the sampling in organic farming village, we excluded the farming households which were not involved in organic farming and the number amounted to approximately 25% of the households.

Research instrument and data collection: A structured questionnaire was developed to gather needed data for the study. Closed-type questions were used for getting information on most of the variables. Content validity of the instrument was established by a panel of experts in the area of social sciences and extension education. The questionnaire was pre-tested with 20 farmers and data were used to compute the reliability of the instrument. A Cronbach's Alpha reliability coefficients of 0.91, 0.86 and 0.90 were obtained respectively for 'social trust' variable in informal, generalized and institutional realms. Similarly, a Cronbach's Alpha reliability coefficients of 0.81, 0.93 and 0.79 were obtained respectively for 'reciprocity' variable in informal, generalized and institutional realms.

Face to face interviews were conducted to collect data from the selected farmers during 5 to 20 July, 2006.

RESULTS AND DISCUSSION

Farmers' characteristics: Table 1 shows the salient features of the nine selected characteristics of the respondent farmers. The results of t-test for the difference of means have also been presented in the table.

The table 1 shows that, for most of the characteristics, there was no significant difference between the members of the two communities. Statistically significant difference was observed only in the case of organizational affiliation, where organic farmers showed higher scores than their conventional counterparts. The result can be seen in the light of organic farmers' involvement in organic movement. In fact, organic farmers in the study area identified themselves as active members of *Nayakrishi* group, which had been a very active organization. While all respondents of the organic village were found to be member of at least one organization or group, many farmers of the conventional farming village were found having no membership even in a single organization. Moreover, the involvement in the *Nayakrishi* movement might also facilitate one's participation in more organizations. All these contributed the organic farmers' higher level of organizational affiliation scores.

Table 1: Salient features of the respondent farmers in two communities

Characteristics	Measures	Organic farmers		Conventional farmers		t-statistic
		Mean	Std. dev.	Mean	Std. dev.	
Age	Years	42.56	13.17	47.90	14.16	-1.953
Education	Level	3.80	4.30	3.84	3.69	-.050
Local orientation	Years	41.56	14.22	42.88	18.06	-.406
Family size	Numbers	5.12	2.54	5.88	2.42	-1.530
Farm size	Hectare	.482	.37	.618	.59	-1.387
Farming experience	Years	29.56	13.12	32.96	14.57	-1.226
Experience in organic farming	Years	9.10	2.93	-	-	-
Annual income	'000 Taka	111.28	110.72	95.16	64.71	.889
Organizational affiliation	Years	10.10	4.19	5.54	7.35	2.976*

*t-statistics significant at 0.05 level of probability

Table 2: Status of social trust among the members of two farming communities

Elements of social networks	Organic farmers		Conventional farmers		t-value	P-value
	Mean	S.D.	Mean	Std.dev.		
Informal networks						
Family members	3.94	.240	3.92	.274	.388	.699
Close relatives	3.86	.351	3.74	.443	1.502	.136
Friends	3.58	.642	3.38	.725	1.460	.147
Neighbors	3.38	.697	3.24	.716	.991	.324
<i>Informal realm total</i>	<i>14.76</i>	<i>1.408</i>	<i>14.28</i>	<i>1.715</i>	<i>1.530</i>	<i>.129</i>
Generalized networks						
Fellow farmers	3.52	.505	3.12	.746	3.140	.002
Group members	3.74	.487	2.78	1.360	4.700	.000
Direct buyers	3.34	.497	3.02	.979	2.076	.040
Business partners	3.48	.505	3.06	.867	2.961	.004
Community leaders	2.70	.678	2.86	.934	-.971	.334
Religious leaders	2.82	.720	2.52	.814	1.952	.054
<i>Generalized realm total</i>	<i>19.66</i>	<i>1.624</i>	<i>17.68</i>	<i>3.656</i>	<i>3.500</i>	<i>.001</i>
Institutional networks						
Development workers	3.54	.613	2.96	.699	4.412	.000
Politicians	2.48	.614	2.40	.990	.486	.628
Local government	1.90	.886	2.34	.961	-2.380	.019
Public services	1.84	.650	1.62	1.176	1.158	.250
Legal system	1.86	.701	1.92	1.104	-.325	.746
Police & law enforcers	1.68	.587	1.32	1.039	2.133	.035
<i>Institutional realm total</i>	<i>13.30</i>	<i>2.673</i>	<i>12.56</i>	<i>3.667</i>	<i>1.240</i>	<i>.218</i>
Total social trust	47.72	2.711	44.52	6.935	3.039	.003

From observing the Table 1 it could be concluded that as there was no significant difference between the two farming communities regarding their age, education, local orientation, family size, farm size, farming experience and annual income, any difference between the two communities concerning their status of social capital elements may not be due to these characteristics.

Social capital in the farming communities: Findings regarding social trust and reciprocity in different network structures have been described in this section.

Social trust: The study focused on measuring level of social trust in two different farming communities. As mentioned before, social trust was measured by examining level of one's trust in sixteen network elements. Results regarding the measured social trust in the two villages have been presented in form of the three social capital dimensions as shown in Table 2.

The data presented in Table 2 clearly indicate that there was no significant difference between the two farming communities in regards to social trust existed

in their elements of informal networks. The situation regarding high level of trust in family members, friends and neighbors is plausible in rural communities, since these networks are traditionally formulated and strengthened by the social structure and norms. Trust among the elements of these closed-networks in the study area seems to be independent of whether the farmers were participating in organic farming or not. Kanak et al. ^[5] also reported that, regarding level of trust on family members and neighbors, there was no significant difference between villagers who were involved in microfinance program and who were not involved. On the other hand, the table indicates that concerning the generalized realm, there existed comparatively higher level of social trust in the organic farming community than the conventional farming community. Among the six elements, organic farmers had significantly higher trust than the conventional farmers in their fellow farmers, group members, direct buyers and business partners. Although conventional farmers showed higher level of trust in their community leaders, the difference was not statistically significant. The close interaction between organic farmers and their solidarity with each other to continue organic farming might be considered as an important reason for having higher level of trust in their community. In many counts, organic farmers have to rely on themselves for their farming practices, which increase their interaction in on and off farm activities including sharing knowledge and experiences, sharing information, problem solving, cooperation in sharing farm inputs, and optimizing maximum profitability by accessing marketing channels. Usually, these are not possible without having a substantial level of mutual trust because they operate organic farming in an adverse and unfriendly environment where, since the inception of organic movement, they faced conflicts and constraints by the greater tradition of conventional farming in the society. Therefore the higher level of trust among the organic farming community in their generalized realms is a logical reflection of their long-term involvement in organic farming.

It is evident from table 2 that, although the difference was not significant in statistical point of view, organic farmers had higher level overall trust in the elements of institutional network. However, conventional farmers had higher level of trust in two elements, whilst one was statistically significant. On the other hand, organic farmers had higher level of trust in four elements, while the differences were statistically significant in cases of two elements. Comparing to conventional farmers, organic farmers had clearly higher level trust development workers which included

NGO workers and government extension agencies. As they regularly meet with the NGO workers and work in close collaboration with them, it was not difficult to understand the reason for such an outcome.

Reciprocity: In the present study, we understand reciprocity as a common social and traditional norm in a society. It should be mentioned here that 'civic cooperation' was used as an indicator of social capital in cross country analysis of 'World Value Survey' ^[6]. Like in the case of social trust, the analysis was done considering the three social networks. The finding regarding reciprocity among different elements of societies in two villages is presented in Table 3.

Data presented in the Table 3 show that, like in the case of social trust, overall reciprocity among the members of organic farming community was significantly higher than those in the conventional farming community. Considering the elements of informal networks, there was no significant difference between the two communities in regards to reciprocity in the society. The results were more or less same in cases of the elements of institutional networks except from the case of development workers. As organic farmers work in maintaining close relationship with the field agents of the NGO (here, *Ubinig*), it is quite rationale that their reciprocity with the development workers was found higher. Reciprocity between farmers and public sector extension agency was lower because of irregular communication between the two sides. This is, however, common situation in Bangladesh as reported in a number of empirical studies. It is perhaps due to cumulative effect of the element scores that total reciprocity score of the organic farmers in the institutional networks was found significantly higher than that of conventional farmers. On the other hand, for most of the cases, organic farming community was found to have higher level of reciprocity in regards to different elements of generalized network. This was evident from the organic farmers' significantly higher mean value of total reciprocity score in generalized realm. It is assumed that community-based practice of organic farming generates norms of mutual cooperation in different situations. These cooperating situations include exchange of seed-stocks, building community seed bank, exchange of skills and other inputs, collective marketing effort, controlling organic production by group monitoring and surveillance

Table 3: Status of reciprocity among the farmers in two farming communities

Items of reciprocity	Organic farmers		Conventional farmers		t-value	P-value
	Mean	Std. dev.	Mean	Std. dev.		
Informal networks						
Family members	3.904	.303	3.84	.370	.887	.377
Close relatives	3.78	.418	3.68	.471	1.122	.265
Friends	3.52	.544	3.44	.577	.714	.477
Neighbors	3.40	.571	3.26	.723	1.074	.285
<i>Informal realm total</i>	<i>14.60</i>	<i>1.443</i>	<i>14.22</i>	<i>1.645</i>	<i>1.228</i>	<i>.222</i>
Generalized networks						
Fellow farmers	3.58	.449	3.18	.629	3.524	.001
Group members	3.74	.474	2.72	1.356	5.006	.000
Direct buyers	3.36	.478	3.00	.990	2.187	.031
Business partners	3.46	.615	2.98	.915	3.385	.001
Community leaders	3.12	.480	2.88	.799	1.841	.072
Religious leaders	2.50	.707	2.26	.604	1.830	.070
<i>Generalized realm total</i>	<i>19.66</i>	<i>1.624</i>	<i>17.68</i>	<i>3.656</i>	<i>3.500</i>	<i>.001</i>
Institutional networks						
Development workers	3.36	.631	2.98	.553	3.202	.002
Politicians	2.18	.962	2.20	1.050	-.099	.921
Local government	1.88	.895	2.12	1.003	-1.262	.210
Public services	1.40	.948	1.48	1.129	-.384	.702
Legal system	2.08	.566	2.12	.435	-.396	.693
Police & law enforcers	1.02	.969	1.22	.996	-1.120	.266
<i>Institutional realm total</i>	<i>11.90</i>	<i>2.460</i>	<i>12.12</i>	<i>3.127</i>	<i>-.391</i>	<i>.697</i>
Total reciprocity	46.26	3.036	43.36	6.521	2.851	.004

CONCLUSIONS

The following conclusions were drawn based on the findings and interpretations of the results of the study:

1. The findings concerning selected characteristics of the farmers showed that there was no significant difference between the two communities in regards to these characteristics. The only difference observed in case of organizational affiliation where organic farmers showed higher level of participation in different social and formal organizations than the conventional farmers. As the difference between the two communities regarding organizational affiliation can be explained by the organic farmers' involvement in the promoting NGO, it might be concluded that any possible difference in the two communities regarding their possession of social capital might be due to their involvement in organic farming.
2. In general, status of social capital in the farming community practicing organic farming was higher than that in the conventional farming community. While organic farming community had

significantly higher levels of social capital in the 'generalized' and 'institutional' network structures, no such conclusion could be made for the elements of 'informal' network. This implies that long time practicing of organic farming increase general trust and reciprocity among the practitioners in their different social network structures. However, practicing organic farming may not affect their stock of social capital in closely related informal social networks.

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