

# Can Community-based Organic Farming Facilitate Creation of Social Capital?

– A Community Level Study from Bangladesh –

M. Hammadur Rahman and Masahiro Yamao  
(Graduate School of Biosphere Science, Hiroshima University)

## 1.0 Introduction

Nowadays, there is growing interest in the “social capital” concept and its ramifications for community well-being and public policy. The concept of social capital has its roots in several theoretical traditions. Its value was explicitly identified by Bourdieu [1] and later given a clear theoretical framework by Coleman [2]. Putnam defined social capital as “features of social life – networks, norms and trust – that enable participants to act together more effectively to pursue shared objectives” (Putnam [11]). Although there are many different descriptions of social capital, the major three elements are network, norm and trust (Productivity Commission, [10]).

The development of organic farming began early in the 20<sup>th</sup> century and soon it emerged as an alternative approach to high external input based conventional farming. The main aim of organic farming can be summarized as to create sustainable agricultural system (Padel [9]). A number of environmental, economical and social benefits have been attributed to organic farming (Lampkin and Padel [6]). Worldwide, cooperation and networking among producers, consumers, traders, researchers and civil society worked as the major driving forces for the successful development of organic farming. Some of the modalities of such cooperation include direct marketing, consumer-producer association, product networks, country communities, and action culture-land as documented by Garber and Hoffmann [3].

The underlying notion of organic farming does not confine it only to some particular practices; it also focuses on networking and norms of cooperation among farmers, the farming community, the consumers and other stakeholders. Therefore, involvement in the organic movement is considered to increase networks and norms of cooperation among producers and other stakeholders (Garber and Hoffmann [3]; Padel [9]); in other words it may produce at least some levels of social capital in the practicing farming community. The present paper, therefore, aims at examining the assumption that a long-term practice of organic farming by a community can facilitate creation of social capital.

In Bangladesh, a movement for organic farming was initiated in the 1980s by a number of Non-government Organizations (NGO) (Rahman [12]). UBINIG, one of the leading NGOs of the country, developed a radical and community-based approach of organic farming, which it refers as to *Nayakrishi* (literally, new agriculture). The major features of the *Nayakrishi* movement include group formation and regular meeting, awareness and motivational campaign in rural community, community-based preservation of genetic and natural resources, integrating animal husbandry and aquaculture into farming, increasing women participation in agriculture, and incorporating cultural values into farming. A unique feature of the *Nayakrishi* is that instead of an individual approach, it adopts a strategy of community-based approach; the ultimate goal is to have the change in the entire rural community [15]. According to UBINIG’s official information, the *Nayakrishi* has become a major organic movement in Bangladesh involving over 170,000 farm families (as in July 2005). The *Nayakrishi* activities which are coordinated by the UBINIG are assumed to increase networking (through organization building, cooperation with consumer groups, and working with civil society), norms of cooperation (through community-based seed and forestry resource preservation, exchange of organic inputs, regular extension sessions, cultural and folk events, coordinated marketing etc.) and trust (through group-based control and monitoring). The unique nature of community-based organic farming as organized by UBINIG prompted us to undertake the study in the context of Bangladesh.

The objective of the paper was to examine the level of social capital in two neighboring villages – one was involved in the *Nayakrishi* movement and the other was not involved in such

a movement. The research hypothesis was that the community practicing *Nayakrishi* possessed higher level of social capital than the community did not engaged in this movement. We have the underlying assumption that “any difference between the two communities as regards the levels of social capital was mainly due to farmers’ involvement in organic farming in organic village.” In the following discussion we interpret the observed differences in the level of social capital between the two communities in relation to the presence or absence of the community-based organic farming activities. However, we cannot entirely rule out the possibility that such differences may be caused by the differences in some other unobserved factors between the two communities.

## **2.0 Methodology**

### **2.1 Location of the study**

The study was conducted in two villages of Delduar sub-district (*upazila*) under Tangail district of Bangladesh. The objective behind the selection was to analyze the status of social capital in the two communities involved in organic and conventional farming. As Nallapara was one of the first few villages in Bangladesh where the organic movement began in the late 1980s and as this village was considered as an ideal organic village (about 70% farmers involved in *Nayakrishi*), we selected it as the organic village in our study. At the same time, Jalalya, a neighboring village having similarity to Nallapara on many counts except for its conventional farming practices, was selected as the conventional farming village.

### **2.2 Population, sample and data collection**

There were 718 farm households in Nallapara and 267 in Jalalya. Fifty farmers from each of the two villages were randomly selected for the purpose of data collection. However, during the sampling in the organic farming village, we excluded the households which were not involved in organic farming.

A structured and pre-tested questionnaire was used for collection of primary data from the villagers. Data were collected by conducting face-to-face interviews during 5 to 20 July, 2006. Two group discussion sessions were also conducted in the selected villages in order to obtain general information on the study areas.

### **2.3 Measurement of social capital**

Empirical studies have used a wide range of variables as measures or indicators of social capital. Social capital is also measured on different levels – individual, household, group and community. The most common types of analyses include individual, household and community level analysis, while a wide number of dimensions have been used.

Considering a number of available studies (Narayan and Cassidy [7]; Onyx and Bullen [8]; Stone and Hughes [14]) and the context of Bangladesh, we selected eight dimensions that constituted an individual’s social capital. The selected social capital dimensions were family connections, friends and fellow connections, neighborhood connections, feeling of trust and security, proactivity in the social context, reciprocity, community participation, and generalized social norms. Thus, the three key elements of social capital – networks, trust and norms – were well distributed in these eight dimensions. While the first three dimensions were related to networks of an individual, the fourth was related to trust. The rest four dimensions covered the norm related behavior of an individual. We put higher emphasis on network and norm related dimensions because these two are considered as vital among the three elements, while some authors term ‘trust’ as a “distant” element (Productivity Commission [10]) or outcome of social capital (Woolcock [16]). However, all dimensions consisted of four items and, in a similar fashion to the studies conducted by Onyx and Bullen [8] and Stone and Hughes [14], each item was provided with a 4-point Likert-type response scale ranging from 0 (*no, never, not at all etc.*) to 3 (*yes, frequently, definitely etc.*). However, for the purpose of understanding, some statements were presented as question forms and responses were quantified; so may not remain as Likert type responses anymore. The items of the scale have been presented in the in the Box 1 and the detailed scale may be seen in the original research report [13].

Box 1: Items used for eliciting social capital in eight dimensions

**(a) Family connection:** (i) In a week, how many telephone conversations do you have with your close relatives? (ii) How frequently do you lunch/dinner with all members of your family (in a week)? (iii) How frequently do you visit houses of your close relatives (in a month)? (iv) How frequently do your relatives visit to your house (e.g. in last 30 days)?

**(b) Friends and fellow connections:** (i) In the last week, how many phone conversations have you had with your friends? (ii) Over the weekend (or in a week) do you have lunch/dinner with your friends and colleagues? (iii) How frequently do you visit and invite your friends in a month? (iv) How many friends did you help in last six months?

**(c) Neighborhood connections:** (i) How many neighbors (house or/and farm) do you visit in a month? (ii) How many neighbors do you meet in a week for gossiping or talking? (iii) When you go for marketing, how frequently do you meet with neighbors and acquaintances? (iv) How frequently do you go in clubs, restaurants and other places to enjoy gossiping with neighbors?

**(d) Feeling of trust and security:** (i) Do you feel safe walking down streets of your locality after dark? (ii) Do the women and children feel safe in the street of your locality alone after dark? (iii) If you drop your purse or wallet (or something valuables) in a common place (market, restaurant, club etc.) do you expect that someone will return it to you? (iv) Does your area/village have a reputation for being a safe place?

**(e) Pro-activity:** (i) Have you ever picked up other people's rubbish in a public place or road? (ii) If you have a dispute with your neighbor are you willing to seek mediation? (iii) Do you voluntarily help your neighbors and colleagues even though it is not part of your duty? (iv) If you disagree with what everyone else agree on, would you feel free to express your opinion?

**(f) Reciprocity:** (i) In the past six months, how many neighbors and friends did you help when they were either sick and/or looking for help? (ii) Do you get help from your neighbors (while in sick or in urgency) when you need it? (iii) If you go somewhere for a visit, would you ask a neighbor to look after your house? (iv) If you were caring for a child and needed to go out for a while, would you ask a neighbor for help?

**(g) Community participation:** (i) Do you help a local group or a public function as a volunteer (for a social or community activity)? (ii) Do you participate in local events (e.g., fair, cultural event, sport, exhibition etc.)? (iii) Are you an active member of local organizations or clubs? (iv) Are you on a management committee or organizing committee for any local group or organization?

**(h) Generalized social norms and values of life:** (i) Do you feel valued by the members of your society? In other words, do the people in your locality have mutual respect among themselves? (ii) Do you agree that majority of the people in your locality look out mainly for their own welfare and they are not much concerned with the broader welfare of the society? (negative statement, reverse scoring) (iii) Do you enjoy living among people of different life styles, religion, occupations and values? (iv) Do you think majority of your neighbors are also your friends?

The obtained score by a respondent in all four items were added together to constitute the score of the concerned dimension, while a respondent's scores in all eight dimensions were added to obtain the overall social capital score. As the same response format was used to measure all eight dimensions and as they were closely related to each other, the dimension scores were added to obtain a total social capital score of an individual actor. The scale was submitted to 20 judges for commenting on suitability of its items and necessary modifications were made on the light of their comments. The scale was pre-tested with 20 respondents and data were used to compute its reliability. Cronbach's Alpha reliability coefficients of 0.92 (family connections), 0.87 (friends connections), 0.90 (neighborhood connection), 0.83 (feeling of trust and security), 0.79 (proactivity), 0.93 (reciprocity), 0.86 (community participation) and 0.83 (generalized norms) were obtained for the respective dimensions. Although the scale was prepared in the light of other available empirical studies, and considering the context of Bangladesh and its easiness to use, the authors acknowledge that there was a possibility of 'potential overestimation' of social capital in the community under changing situation while using a Likert-type scale for eliciting social capital.

### 3.0 Results and discussion

#### 3.1 Comparison of two farming communities

The two farming communities were compared regarding a number of farming and other important issues. Results of observations presented in Table 1 show that there were some differences between the two communities in a number of farming related issues, while no significant differences were observed in other socio-economic issues.

Our results are largely consistent with the possibility that the introduction of organic farming two decades ago facilitated the formation of social capital in Nallapara, although given the cross-section nature of our data, the possibility of the reverse causality (i.e., the introduction of the organic farming movement was facilitated by the high initial level of social capital two decades ago) cannot be ruled out. Differences between the two villages concerning farmer organization, NGO activity, marketing opportunity and extension support are attributed to the introduction of organic farming in Nallapara. It was learned during the group discussion sessions that before the introduction of organic farming in Nallapara, the situation was like that in the conventional village (Jalalya).

Table 1: Comparison of the two farming communities as regards a number of important issues

Issues of comparison	Organic farming community (Nallapara village)	Conventional farming community (Jalalya village)
Major occupations	Farming and weaving	Farming and weaving
Major farming practices	Organic (70%) and conventional and mixed farming (30%)	Conventional farming only
Major crops	Rice; cropping pattern highly diversified.	Mainly rice and jute, less diversity observed.
Animal husbandry	Cattle are common in the households.	Few households have cattle.
Homestead farming	Households are rich in homestead gardening.	Less homestead gardening with low diversity.
Use of fertilizers and insecticides	Comparatively low use of fertilizer and pesticides.	High use of fertilizers and pesticides
Farmer organization	Activity of the <i>Nayakrishi</i> farmer groups very common	No formal farmer group exists
NGOs and microcredit situation	UBINIG, Grameen Bank (GB) and ASA are common NGOs. Microcredit available from GB and ASA. Credit availability seemed good.	Microcredit available from GB, ASA and a local NGO. Credit availability seemed good.
Marketing opportunity	Farmers usually sell their products in local market and to retailers. Only some organic products are sold at a special price to particular retailers.	Products are sold in local market and to retailers.
Extension work	Extension support provided by government extension agents and UBINIG (for organic farming)	Extension support only from government agencies.
Educational opportunity	Good opportunity	Good opportunity
Access to health and other services	Moderate access	Moderate access
Proximity to city and commercial area	Short distance and well connected	Short distance and well connected
Communication infrastructure	Moderate condition, some roads are good.	Moderate condition.
Ethnic and religion	Bengali and Islam is major religion.	Bengali and Islam is major religion.

Source: Focus Group Discussion sessions in the villages (July, 2006)

### 3.2 Selected characteristics of farmers

Table 2 depicts the salient features of the ten selected characteristics of the farmers from the two communities. A detailed description of the measuring criteria of the variables was avoided due to scope and limitation of space. However, these may be observed in the original research report [13].

Table 2: Salient features of the respondent farmers in two communities

Characteristics	Measuring criteria	Mean and standard deviation		t-value
		Organic farmers	Conventional farmers	
Age	Years	42.56 (13.17)	47.90 (14.16)	-1.953
Personal education	Level of schooling	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 (2.545)	5.88 (2.421)	-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 (2.929)	-	-
Annual income	'000 Taka	111.28 (110.72)	95.16 (64.71)	.889
Organizational affiliation	Years	9.10 (4.19)	5.54 (7.35)	2.976*
Exposure to farm information sources	Scale score (0-30)	12.58 (2.67)	9.02 (2.48)	6.916**

Note: Figures in the parentheses indicating standard deviations.

\* and \*\* indicate statistically significance at 5% and 1% level, respectively

The table shows that, concerning the majority of the characteristics, there were no significant differences between the members of the two farming communities. Statistically significant differences were observed in the cases of organizational affiliation and exposure to farm information sources. The result can be easily explained through organic farmers' involvement in the organic movement. In fact organic farmers in the study area were the active members of *Nayakrishi* groups, a very active community-based organization with a good number of programs and events throughout the year. 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 affiliation even in a single group. Moreover, the involvement in the *Nayakrishi* movement also facilitated one's participation in more organizations. All these contributed to the organic farmers' higher scores in organizational affiliation compared to that of the conventional farmers. At the same time, organic farmers' regular meeting with the Field Workers of UBINIG and frequently interactive meetings with different stakeholders and service providers are assumed to have contributed to their higher exposure to agricultural information media. A previous study of Rahman [12] on organic farmers of Bangladesh confirms the same observation.

### 3.3 Status of social capital of the farming communities

The scenario of social capital in the two farming communities has been presented in Table 3. Possible scores in all eight dimensions of social capital could range from 0 to 12, while overall social capital scores could range from 0 to 96.

The data presented in Table 3 show that, concerning all eight dimensions, the members of the organic farming community had higher levels of social capital than those of the conventional farming community. However, no significant differences were observed between the two farming communities regarding the first four elements – all related to networks and trust. The situation regarding closed relationship and networks with family members, friends and neighbors is

plausible in rural communities, since these networks are traditionally formulated and strengthened by the social structure and norms. Same interpretation might be applicable for the trust related dimension. These closed-networks of the farmers along with the feeling of trust and security in the study area seem to be independent of whether the farmers were participating in organic farming or not. Kanak et al. [5] also reported that, regarding the level of trust in family members and neighbors, there was no significant difference between villagers who were involved in a microfinance program and those who were not. On the other hand, the table also shows that the members of the organic farming community possessed significantly higher levels of social capital than their conventional counterparts regarding proactivity, reciprocity, community participation and generalized norms. The reason for such an outcome can also be explained through the first community's involvement in the organic farming movement. The organic farmers used to work in a cooperative and congenial atmosphere in different activities such as sharing of experience, exchange of information, seed preservation, soil fertility management, group monitoring of organic practices, and seeking marketing opportunities. Moreover, as the members of the organic farming group, they regularly meet together and held discussions on various issues of farming, society and the environment. All these activities are assumed to increase their norms of cooperation. Consequently they were found more proactive, mutually helpful, and more active in social and community issues. Again, concerning the total score, the organic farming community members were found possessing significantly higher levels of overall social capital than those of the conventional farming community.

Table 3: Scenario of social capital elements in two farming communities

Dimensions of social capital	Score range (Possible: 0-12)	Mean and standard deviation <sup>1</sup>		t-value
		Organic	Conventional	
Family connections	3-12	7.36 (1.336)	7.18 (1.438)	.648
Friends connections	3-8	5.92 (1.198)	5.68 (.913)	1.307
Neighborhood connections	5-11	8.12 (1.239)	7.68 (1.634)	1.517
Feeling of trust and security	2-12	8.16 (1.867)	7.32 (2.470)	1.919
Proactivity in the social context	1-12	7.98 (2.495)	6.96 (2.330)	2.113*
Reciprocity	1-11	8.96 (1.784)	7.54 (3.025)	2.859*
Community participation	0-11	5.38 (2.211)	3.70 (2.894)	3.223**
Generalized norms	2-12	9.50 (1.930)	8.64 (2.078)	2.144*
Overall social capital	28-79	61.28 (9.243)	54.70 (10.491)	3.328**

<sup>1</sup>Figures in parentheses indicate concerning standard deviations

\* and \*\* indicate statistical significance at 5% and 1% level, respectively

A question may arise why there was no significant difference between the two communities regarding status of social capital in dimensions related to network and trust, while the differences were significant in norms related dimensions. Considering the fact that for all the eight dimensions organic farming community had higher social capital than the conventional farming community, we can interpret the situation as a part of a gradual development. It was possible that the difference was prominent in norms related dimensions while the process was a bit slower for the network and trust related dimensions. As norm is an important influent for changing elements like networks and trust (and vice versa), we can assume that such change in norms related dimensions may influence future changes in network and trust related dimensions. As we discussed earlier that network and trust related behaviors are traditionally formulated and strengthened by social structure and norms, it might take longer time to observe significant differences between the two communities regarding the status of the social capital dimensions related to networks and trust. Considering observations and findings presented in Tables 1 and 2, we can conclude that unless there was no influence of one or more unobserved factors (we assume that the possibility was minimum), the difference

between the status of social capital in the two communities might be attributed to organic farming community's long-term involvement in the community based organic farming movement.

### 3.4 Farmers' characteristics and their level of overall social capital

In order to determine the relationship between farmers' selected characteristics and their overall social capital score, Pearson's Product Moment Correlation Coefficients ( $r$ ) were computed. The results of correlation tests have been presented in Table 4. It should be mentioned that there was no possibility to explore any relationship between conventional farmers' experience in organic farming and their social capital score.

Table 4: Relationship between farmers' characteristics and overall level of social capital

Farmer characteristics	'r'-value with social capital score (with 48 d.f.)	
	Organic farmers	Conventional farmers
Age	-.088	-.208
Personal education	.771**	.516**
Local orientation	.150	.070
Family size	.108	.064
Farm size	.192	.179
Farming experience	-.168	-.251
Experience in organic farming	.463**	-
Annual income	.131	.067
Organizational affiliation	.751**	.548**
Exposure to farm information sources	.619**	.488**

\* and \*\* indicate statistically significant at 5% and 1% level, respectively.

Table 4 shows that, for both organic and conventional farmers in the study area, farmers' possession of social capital significantly and positively correlated to their personal education, organizational affiliation and exposure to farm information sources. As education is always considered to be positively correlated to one's status of social capital (Onyx and Bullen [8], Stone and Hughes [14]), the outcome was quite plausible. Organizational affiliation is also a major factor of one's networking in society and it rationally increases one's level of social capital possession. In fact it is a widely used measure of social capital in many studies [10]. Exposure to farm information sources increases one's level of communication, in other words, networking. That's why farmers having a higher level of information source exposure possessed a higher level of social capital. Moreover, a strongly positive correlation between farmers' experience in organic farming and their level of social capital could be an indication that, in same socio-economic condition and unless other unobserved factors involved, communities having involvement in the community-based organic farming movement might possess higher levels of social capital comparing to the communities who have not involved in such a movement.

### 4.0 Conclusions

The results and discussions presented in the earlier sections lead us to draw a number of conclusions. Firstly, concerning all of the eight dimensions of social capital and overall social capital scores, members of the organic farming community were found having higher levels of social capital compared to the members of the conventional farming community. It could be concluded that if there is a community-based organic farming practice in a locality for a long time, as initiated by UBINIG in the study area, it might facilitate an increase of the social capital level among the members of the community. Secondly, comparison between the major

features of the two communities reveals that there were no basic differences between the two communities concerning important socio-economic and cultural issues. Moreover, no significant differences were established while comparing the selected socio-economic and demographic characteristics of the members of the two communities. The observed differences in two characteristics were due to the introduction of organic farming in the organic farming village. These observations lead us to the conclusion that the observed differences between the two communities regarding the levels of social capital, which was in favor of the organic farming community, might be due to the involvement of the organic farming community in the community-based organic farming approach (*Nayakrishi*) for a long time. Thirdly, four out of the ten selected characteristics of farmers had significant and positive relationships with overall social capital score. Apart from education, the organic farmers' significantly higher scores in the three remaining characteristics (experience in organic farming, organizational affiliation and exposure to farm information sources) were mainly attributed to their involvement in *Nayakrishi*. These observations lead us to conclude that, in the study area, individual level social capital may be increased with one's increased involvement in organic movement.

Finally, the study framework and the kind of data used in this paper may not allow the authors to draw a definitive conclusion about causal relationships between social capital and the practice of organic farming. Nevertheless, the findings may give an indication that a community-level practice of organic farming may, at least, facilitate creation of social capital to some extent in the practicing community.

## References

- [1] Bourdieu, P. "The forms of capital," In: J. Richardson (ed.). *Handbook of Theory and Research of for the Sociology of Education*, Greenwood Press, Westport CT, 1986.
- [2] Coleman, J.S. "Social capital in the creation of human capital," *The American Journal of Sociology*, 94, 1988, pp. 95-120.
- [3] Gerber, A. and V. Hoffmann, "The diffusion of eco-farming in Germany," In: Röling, N.G. and M. Wagemakers (eds.), *Facilitating Sustainable Agriculture*. Cambridge University Press, Cambridge, 1998. pp. 134-152.
- [4] Knack, P. and S. Keefer, "Does social capital have an economic payoff? A cross-country investigation," *The Quarterly Journal of Economics*, 112(4), 1997, pp. 1251-1288.
- [5] Kanak, S., Y. Morooka, and Y. Iiguni, "Role of Microfinance in building trust as a social capital in rural Bangladesh," Paper presented in the annual conference of the Association for Regional Agricultural and Forestry Economics, St. Andrew University, Osaka, October 27-29, 2006.
- [6] Lampkin, N. and S. Padel (eds.), *The Economics of Organic Farming – An International Perspective*, Wallingford, CAB International, 1994.
- [7] Narayan, D. and M. F. Cassidy, "A dimensional approach to measuring social capital: Development and validation of a social capital inventory," *Current Sociology*, 49(2), 2001, pp. 59-102.
- [8] Onyx, J. and P. Bullen, "Measuring social capital in five communities," *The Journal of Applied Behavioral Science*, 36(1), March 2000, pp. 23-42.
- [9] Padel, S. "Conversion of organic farming: Typical example of diffusion of an innovation?" *Sociologia Ruralis*, 41(1), 2001, pp. 40-61.
- [10] Productivity Commission, *Social Capital: Reviewing the Concept and its Policy Implications*, Research Paper, Canberra, 2003.
- [11] Putnam, R. "Bowling alone: America's declining social capital," *Journey of Democracy*, 6(1), 1995, pp. 65-78.
- [12] Rahman, M.H. *The Influence of Extension on the Introduction of Organic Farming in Bangladesh*. Lit Verlag, Muenster, 2001.
- [13] Rahman, M.H. "Contemporary Issues of social capital, resource management and community empowerment: Empirical studies in Bangladesh", Post-doctoral Research Report, Graduate School of Biosphere Science, Hiroshima University, October, 2007.
- [14] Stone, W. and J. Hughes. "Social capital – Empirical meaning and measurement validity," Research paper no. 27, Australian Institute of Family Studies, Melbourne, July 2002.
- [15] UBINIG, *Nayakrishi Andolon*, a booklet published by UBINIG, 5/3 Barabo Mahanpur, Ringl Road, Shaymoli, Dhaka – 1207. 2003.
- [16] Woolcock, M. "The place of social capital in understanding social and economic outcomes," *Isuma – Canadian Journal of Policy Research*, 2(1), 2001, pp.11-17.