European Association
of Agricultural Economists

100th Seminar of the EAAE

# DEVELOPMENT OF AGRICULTURE AND RURAL AREAS IN CENTRAL AND EASTERN EUROPE


Edited by
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Regional Chamber of Commerce Novi Sad

21st – 23rd June 2007
Novi Sad, Serbia

Serbian Association
of Agricultural Economists

# DO SOCIAL NETWORKS SUBSTITUTE FORMAL INSTITUTIONS? EVIDENCE FROM RURAL ARMENIA

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## 1. INTRODUCTION

The first step of reforms directed towards the formation of a market structure in Armenia was the privatisation of land, which started in February 1991 with the adoption of the Land Code and the Law on Peasant and Peasant Collective Household, and finished in April 1993 (Spoor, 2005). As a result of the land privatisation, almost 333 thousand peasant farms were created in contrast to the 860 Soviet-type kolkhoz/sovkhozes before (CFOA, Armenia Country Paper, 2003, Lerman and Mirzakhanian, 2001). Yet, the lack of adequate institutions, particularly financial institutions, supporting productivity increasing agricultural activities under private ownership, has remained one of the most serious deficits (Spoor, 2005). With the transition, the government rightly stopped previous costly programmes of directed agricultural credit. At the same time, Armenian commercial banks apart from the Agricultural Cooperative Bank of Armenia (ACBA), were not interested and had no experience in providing credit to small-scale private farmers (Ministry of Agriculture of Armenia, 2002).

The paper is organised as follows: The theoretical link between social capital and access to resources is discussed in Section 2. Section 3 presents the data and methodology used in the analysis. The findings are summarized in Section 4 and Section 5 concludes the paper.

## 2. SOCIAL CAPITAL AND ACCESS TO RESOURCES

Social capital definitions vary widely in literature depending on the scope of observation which ranges from the micro (among individuals), the meso (among associations) to the macro (the rule of law, the court system, etc) levels. This work will present only and focus on micro-level definition, which emphasises the role of social networks and social ties. Bourdieu (1986, p.249) defines social capital "as the sum of resources, actual and potential, that accrue to an individual or a group

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by virtue of possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition". According to Putnam (2000, p.19), social capital refers to "connections among individuals – social networks and the norms and reciprocity and trustworthiness that arise from them". Similarly, Stone (2001, p.4) sees social capital "as networks of social relations which are characterised by norms of trust and reciprocity".

Several studies (Bebbington 1999, Rose 1998) showed that, where formal institutions do not work well, social capital of societies in the form of social networks and social ties can provide an informal substitute to enhance people's access to different types of resources, markets and opportunities. Social networks are as well found to be an important element within most formal and informal programs that provide credit access to the poor (Van Bastelaer 2000). Social networks increase the flow of information between creditors and borrowers and by that, reduce the problem of adverse selection and moral hazard (Narayan and Prittchet 1997). However, as argued by Wettemberg (2004) the networks and the distribution of social ties vary among individuals and social groups, especially when taking socio-economic class into consideration. Hence, social networks are not always a substitute for economic capital to all, and the underlying social networks do not automatically open up access to resources and opportunities, such as agricultural credit. Obviously a closer look is required to see what makes the difference. However, what are the criteria and variables for such distinctions? Here the combination of the types of social ties people have may play a role. The literature on social capital distinguishes between bonding, bridging and linking social ties. Bonding social ties are defined as the relations among relatively homogenous groups. The relations between relatively heterogeneous groups of people are referred to as bridging social ties. The term 'linking social ties' describes the relations between individuals and groups in different social strata, in a hierarchy where power, social status and wealth are accessed by different groups, (Productivity Commission, 2003; Narayan, 1999; Woolckock, 1998). As found by Stone (2001, 2003) at any point of time different communities, families and even individuals have different mixes of bonding, bridging and linking social ties. Some people for example have "strong family and friendship relations (bonding social ties), whereas other people are more involved in community groups (a bridging social ties) or know many people in various organisations and institutions (linking social ties)" (Stone, 2003, p.14). This may provide different social groups with different opportunities. As social networks are non-overlapping in their nature, the groups with close-knit and intensive stock of 'bonding social ties' but with lack of diffuse and extensive 'bridging social ties' may be denied to access new opportunities in life (e.g. Woolckock, 1998; Putnam, 2000). Bonding social capital in literature often relates to 'strong ties' and bridging social capital to 'weak ties' (Gittel and Vidal 1998). Granovetter's (1973) work 'Strength of Weak Ties' points

on the importance of cross-cutting ties as means to access resources and power outside the group. Bonding social ties can act as a social support net for an individual, but bridging ties with people from different groups are necessary for gaining access to new opportunities (Stone 2003). Bridging social ties link people to institutions and help to gain leverage and resources. In other words, bonding social ties can act defence and help people of 'getting by' in life on a daily basis. Acting offence that is 'getting ahead' in contrast is facilitated through cross-cutting ties that take the form of either bridging or linking social capital, (Woolcock and Narayan, 2000).

## 3. DATA AND METHODOLOGY

This contribution is based on unique empirical research conducted among 33 private farmers (14 of which credit group members) in the Armavir province of Armenia in 2006. The so-called social network analysis focussed on the pattern of the relationships in the labour exchange, lending and family relations networks. The social network analysis of communication network looked on farmers' access to credit from agricultural micro-finance intermediaries (MFI) in relation to their social networks. Methodologically, this contribution relies on direct observations and group discussions with key persons, general information on the community and on semi-structured interviews with the main decision-makers from farm families. The research focused on the topics associated with the accessibility and use of existing social networks within rural communities as social safety nets and as providers of new opportunities.

The sample was determined by the snowball sampling method, which begins with a focal actor. In this case it was the leader of one of the credit groups in the community. The credit group leader was chosen as a focal actor based on two reasons. First, he had the reputation and the acceptance as a community leader in the village. Second, the credit project staff contacted him as an effective point to start with the project. The boundaries of the network were set based first on the idea of extending the network to include the actors that are connected to the network but whose access to credit is constrained (non-members) and second to ensure that non-member networks were also included in the complete network (studied network). Within the above mentioned boundaries, the complete network analysis was implemented. The social networks are depicted using the software Ucinet. The network analysis followed the formulations of Hanneman (2005). It first looks at densities and reachablilities of communication, labour exchange, lending and kinship networks. This is followed by an assessment of observed and expected patterns of possible relationships occurring among actors. The study is finalised with the identification of the level of homogeneity of communication network and its role in providing one's ones access to agricultural credit.

## 4. RESULTS OF THE NETWORK ANALYSIS

The results of the reachability analysis showed that there exist some path in the network connecting everyone together in relation to the flow of information, labour exchange and, with one exception for family ties, but not for the exchange of money. The max number of ties we could have in fully saturated network of size 33 is 1056. The low densities of communication, labour exchange, lending and family ties relations show that the existing numbers of ties are far low than the max. The low densities imply that it takes time for the information to defuse in the network and that the intensity of cooperation in the network is not high (see Table 1). This is a surprising result at first sight.

Table 1 Densities of communication, labour, lending, kinship and strength of relationship

| | Communication | Labour force | Lending | Kinship | Strength of the relationship |
|---|---|---|---|---|---|
| Density | 0.1468 | 0.1278 | 0.0521 | 0.1231 | 0.4498 |
| N of obs | 33 | 33 | 33 | 33 | 33 |

Source: Own data

The question asked is, if a pair of actors is connected by family ties, is it probable that they as well exchange information, work together and are involved in monitory exchange or are there other factors, which play a role. The density of the strength of relations that is the density of combined matrixes shows the presence of almost 45% of all possible tie strengths in the network. This implies that strong family ties are important for accessing help, information and resources (see Table 1). However, the calculated standard deviation of 1.0938 suggests that there are actors with many and actors with just a few strong tie connections (see Figure 1). Consequently, it can be assumed that the social capital in the network is unevenly distributed and there is a differentiation in the network in respect to the amount of help and/or access to resources and new opportunities actors have.

Thus, it can be hypothesised that the matrixes of information, labour and money exchange are positively correlated with the matrix of family relations. To test this association and to demonstrate more effectively the relationship patterns occurring among the actors, Quadratic Assignment Procedure (QAP) for each pair of matrixes, which are: communication and family ties, labour exchange and family ties, lending and family ties was applied.

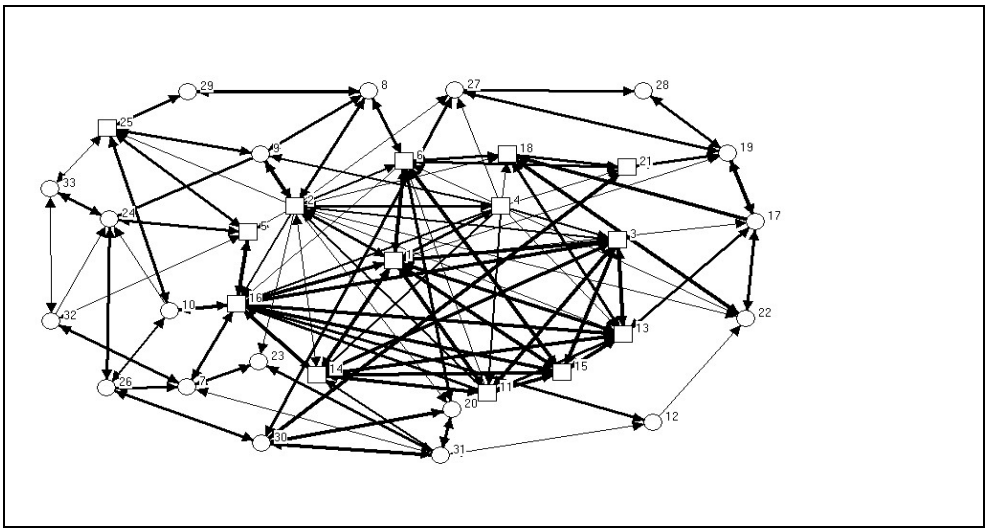

Figure 1 The strength of ties within the network

Note: The thicker the line the higher is the number of ties between a pair of actors.

The number of ties between a pair of actors is assumed to be an indicator of the tie strength.

The square bullets indicate credit group members, while round bullets indicate non-members in the network. The name of the group is known to the authors, but the group has asked to remain anonymous.

Following Table 2, family ties play an important role as the base of social networks in connection to accessing labour from outside the nucleus family. The observed simple matching of 0.969 can be interpreted as follows: when there is a tie in respect to family relations there is a 96.9% chance that the tie exists in respect to labour exchange in the network. This would seem to indicate association. But, because of the density of the two matrices, matching randomly rearranged matrices shows an average matching of 0.783. So the observed measure is much higher than the value generated by purely random process.

This indicates that labour is extensively shared among close and extended family members where the help is equally reciprocated. Shared labour is especially valuable for those with fewer economic resources as they may invest more labour in agricultural production than the others. For those whose livelihood depends mainly upon agriculture, this is an effective coping strategy (defence) in case one falls behind or becomes ill. While family relations is a base for networks, the question is, in how far, it plays a role outside of labour exchange as well, or

whether it is substituted by other principles of social organisation like friendship etc. The following table looks at lending in its relation to family ties.

Table 2 Association between labour
and family ties networks by QAP correlation

| | Value | Signif. | Average | SD |
|---|---|---|---|---|
| Simple Matching | 0.969 | 0.000 | 0.783 | 0.018 |
| Hamming Distance | 33.000 | 0.000 | 228.724 | 10.344 |

Source: Own data

Table 3 shows that network members are more likely to lend to family members than non-members. The observed simple matching is 0.914 against the value generated by purely random process of 0.841, which implies that those lending to each other are connected with a high level of trust-based family relations and with deeply rooted norms of mutual obligation. Lending money to family members is another coping strategy (defence) developed by people for individual and family survival.

Table 3 Association between lending and family ties networks by QAP correlation

| | Value | Signif. | Average | SD |
|---|---|---|---|---|
| Simple Matching | 0.914 | 0.000 | 0.841 | 0.018 |
| Hamming Distance | 91.000 | 0.000 | 167.912 | 6.956 |

Table 4 shows that the observed simple matching for family ties and communication is 0.950 against the value generated by purely random process of 0.769. The result indicates that the information about existing microfinance opportunities is communicated mainly in the family network. Outside the family, the information spreads slowly. Accordingly, the individuals in advantageous or key structural positions in the network, e.g. community elites, other key players and their kin groups, who may get such information first, may benefit the most.

Table 4 Association between communication and family ties networks by QAP correlation

| | Value | Signif. | Average | SD |
|---|---|---|---|---|
| Simple Matching | 0.950 | 0.000 | 0.769 | 0.018 |
| Hamming Distance | 53.000 | 0.000 | 243.645 | 11.010 |

The calculated values of variation for the communication network, 65 for out-degrees and 53 for in-degrees show that the network is moderately heterogeneous for communication. Thus, though all the actors in the network are technically reachable it takes a long time for information to reach those at longer distances to key informants. Consequently, they are constrained to access agricultural credit or even unaware of the possibilities. Still, it is obvious that family relations are the dominant principle for network building and especially for supportive networks in terms of labour exchange and lending money.

## 5. CONCLUSIONS

The empirical work, applying a unique social network analysis tool, Ucinet, showed that people in rural Armenia rely mainly on the support of relatives than other network members. This takes often the form of labour exchange and less frequent the form of money exchange. These private safety nets seem to be an important coping strategy as people involved in agriculture bear a grater risk of economic shocks and have limited or no access to assistance from the state. However, as the results of the information exchange network analysis have shown, the established patterns of family solidarity constrain access to new economic opportunities for those with less advantageous structural positions and with fewer or more fragile social ties to key players in the network. This is because extension and development agencies often seek community leaders as an effective point to start different programs and projects. Interpreting these data in a wider context with regards to the re-structuring of the rural economic sector in Armenia, it can be said that the old system of cooperatives obviously lost its meaning and function as a means to structure people's relations. However, the market economy has not (yet) provided for an alternative. Under such conditions of relative anomie people rely and even turn again to the most basic pattern of social relations, which are family relations.

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