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Research Report

Making rural households' livelihoods more resilient: The importance of social capital and the underlying social networks

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**Studies on the Agricultural and Food Sector
in Central and Eastern Europe**

Making rural households' livelihoods more resilient
The importance of social capital and the underlying social networks

Edited by
Gertrud Buchenrieder and Thomas Dufhues



26th International Conference of Agricultural Economists (IAAE)
Brisbane/Queensland, Australia, August 12-18, 2006

“Contributions of Agricultural Economics to Critical Policy Issues”

IAAE-Symposium

“Making rural households’ livelihoods more resilient –
The importance of social capital and the underlying social networks”

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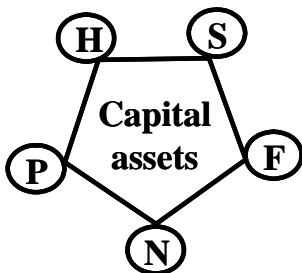
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PREFACE

Although interest in the structure and relational features of social capital and its underlying networks has grown since the early 1990s, the terms do not embody any ideas that are really new to sociologists, but are indeed rather new to economists. Until the 1950s, land, labour, and financial capital (i.e., levels of investment) were seen as being relevant for economic growth. Then technology (physical capital) was added to the list. In the early 1960s, convincing empirical evidence showed that labour without know-how and entrepreneurial skills (human capital) limit the potential of the other production factors. Today, labour and skills are usually simultaneously addressed when talking of human capital. In development economics, and more recently in main-stream and transition economics, social capital is more and more considered an important capital asset for the welfare of individuals and communities. Already in the early 1990s, development economics postulated the so-called capital asset pentagon that comprises the mainstream economic production factors, as well as social capital (see figure below). The potential of compensating the lack of one capital asset with the existence of another was seen as important for maintaining a sustainable livelihood. It is also important to note that human capital resides in individuals and social capital in relationships (WOOLCOCK, 2001). As literate and informed people are better able to organize, evaluate and transform information, human and social capital assets are complements. In addition, social capital can supplement meagre levels of other capital assets.

Capital asset pentagon of the sustainable livelihood framework



Source: CHAMBERS and CONWAY (1992).

- Notes:
- S Social capital.
 - F Financial capital.
 - N Natural resources, i.e., land and water.
 - P Physical capital, including technical innovations.
 - H Human capital.

During the transformation process of transition countries in the 1990s, the tremendous institutional changes and breakdowns in the public and private

sectors further accelerated interest in social capital. Public service institutions such as kindergartens or farm extension services were closed and rural communities with social capital could compensate for this by collective actions. The emergence of a relatively flourishing microfinance sector in urban and rural areas is proof of the power of tapping social networks when public and private banks refrain from servicing the poorer segments of the population.

This edited volume tries to bring together academics in Germany who have an outspoken interest in conducting research on social capital and the underlying network in a rural context. The volume starts out with two conceptual and methodological contributions, one by BUCHENRIEDER and DUFHUES and another by BUCHENRIEDER, which pave the way for a better understanding of the empirical contributions. The contributions by DUFHUES and BUCHENRIEDER and WOLZ, FRITZSCH and REINSBERG discuss methodological issues to operationalise social capital as a parameter in econometric analyses. While DUFHUES and BUCHENRIEDER address the issue based on interpersonal relationships and propose methods to model networks, WOLZ, FRITZSCH and REINSBERG construct a factor from the observance of structured social capital in rural areas of the Czech Republic. They find that some forms of structured social capital contribute to total farm output. In this sense, social capital drives total factor productivity, which is in line with what DASGUPTA (2002) claimed, and can be considered a new production factor. KASARJYAN and KORFF use a network-centred approach to assess the effects of strong and weak ties on having access to rural microcredit in Armenia in a situation where the formal financial market fails. Interestingly, it is mostly bonding social capital that determines access. Clearly, as the rural financial market develops in Armenia, access to rural credit has to go beyond family and friendship ties. Finally, BEUCHELT and FISCHER describe how rural households in Vietnam manage risk based on their five capital assets. Normally, financial, physical and natural capital assets are already stretched to their limits and it is the social capital that has to be called upon when an income shock hits. However, social capital is more developed in the better-off households than in the very poor households.

Therefore, it can be concluded from the empirical contributions in this volume that access to social capital is not a panacea for rural economic development under difficult societal, economic and political conditions. Nevertheless, interpersonal networks of social capital can help to ease socio-economic hardship when the state and market fail to do their share.

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I am particularly indebted to the contributors of this volume:

- TINA BEUCHELT and ISABEL FISCHER (both of the University of Hohenheim, Department of Rural Development Economics and Policy),
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- AXEL WOLZ, JANA FRITZSCH, and KLAUS REINSBERG (Leibniz Institute for Agricultural Development in Central and Eastern Europe, Department of External Environment for Agriculture and Policy Analysis).

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Halle (Saale)

July 31, 2006

Gertrud Buchenrieder & Tom Dufhues

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LIST OF ABBREVIATIONS

ACBA	Agricultural Cooperative Bank of Armenia
CamCCUL	Cameroonian Cooperative Credit Union League
DFID	Department for International Development of the British Government
EFU	Eiselen Foundation Ulm
FINKA	Finance for International Community Assistance
IMF	International Monetary Fund
IOM/UNDP	International Organization for Migration/United Nations Development Program
MFI	Microfinance institution
PRA	Participatory Rural Appraisal
SAP	Structural adjustment program
UMCOR-Aregak	Aregak is United Methodist Committee of Relief's Micro-credit Program for Women
USDA-Credit Clubs	United States Department of Agriculture's micro-credit program
WIDER	World Institute for Development Economics Research

PART 1

THEORETICAL AND METHODOLOGICAL ISSUES IN SOCIAL CAPITAL RESEARCH

ISSUES AND EVIDENCE OF SOCIAL NETWORKS IN BOOSTING RURAL HOUSEHOLDS' WELFARE

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ABSTRACT

Each and every person networks. Therefore, the interest of social science and policy in this issue is not really surprising. Development and transition economics discovered in the 1990s that a symbiosis of concepts from New Institution Economics and the science of social networks contribute to a more profound analysis of puzzling development and restructuring phenomena related to institutional transformation.

Therefore, this contribution will provide a brief review of social capital and the underlying networks in a socio-economic, and, wherever possible, in a rural context, as the latter is often neglected. It also provides an introduction to the recent theoretical and empirical literature on social capital-cum-networks, as it pertains to economic outcomes. Social networks are one of the ways in which people cope with uncertainty, extend personal benefits and achieve outcomes that could not be achieved individually. The contribution will serve as a conceptual basis for better understanding the subsequent contributions of this edited volume.

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- 1 Introduction
- 2 Definitions and specifications of social capital and the underlying networks
 - 2.1 Bonding, bridging, and linking social capital
 - 2.2 Structural and cognitive social capital
- 3 Social capital and economic outcomes
 - 3.1 Social capital – A new production factor?
 - 3.2 Empirical evidence for socio-economic outcomes of social capital in the form of networks
 - 3.3 Management of shocks and social networks
 - 3.4 Costs of social capital-cum-network strategies
- 4 Conclusions and recommendations

1 INTRODUCTION

Each and every person networks. Therefore, the interest of science and policy in this issue is not surprising. The science of networks is “the science of the real world – the world of people, friendships, rumours, disease, fads, firms, and financial crises” (WATTS, 2003: 13). Sociologists, psychologists, and anthropologists have all thought more deeply and carefully about the functioning and role of networks in society than anyone else in the past half century. However, their methodological and empirical work was, until recently, stalled by the lack of mathematical and computational tools (WATTS, 2003). Two other disciplines, development and transition economics, have not long ago embraced social networks. In the early 1990s, mainstream economics benefited from the inclusion of concepts from New Institution Economics (NIE) to better explain puzzling development and restructuring phenomena related to institutional transformation¹. A decade later, the symbiosis of NIE and the science of social

¹ NIE defines an ‘institution’ as a commonly-accepted set of formal constraints (e.g. rules, laws, constitutions) and informal constraints (e.g., norms of behaviour, conventions, self-imposed codes of conduct) that determine co-ordination among individuals and structure their incentives towards a joint goal (NORTH, 1994). DASGUPTA (2002) states that institutions emerge from networks, that networks themselves are not the institutions. Moreover, trust (or the lack of it) is based on the beliefs that people have about one another. Institutions are associated with the beliefs that sustain them. In other words, institutions are formed and held together by the beliefs that people have about one another and the world. As such, DASGUPTA (2002) emphasises that beliefs are the link between social capital and institutions.

networks have further accelerated the analysis of policies, institutions, and economic performance. Interestingly, the rural dimension of social networks is often neglected.²

Therefore, this contribution will briefly review social capital and the underlying social networks in a socio-economic and, wherever possible, in a rural context. Social capital is one of the five so-called capital assets of a livelihood³: Physical, human, financial, natural, and social capital assets.⁴ Livelihood strategies, i.e., the sum of all different activities that people do in the context of their livelihood, are based on the access to and combination of these five forms of capital assets. When people embark on livelihood strategies, these are the resources which they can use and combine in order to achieve certain outcomes, for instance an increase in income and well-being (KORF, 2002). One prevalent strategy is the formation, maintenance and use of social capital, particularly the underlying social networks.

The next section briefly discusses definitions and specifications of social capital and its underlying networks: Bonding, bridging, and linking social capital, as well as structured and cognitive social capital. This is followed by a review of the economic outcome that can be attributed – both good and bad – to social capital. The contribution closes with short conclusions and recommendations.

2 DEFINITIONS AND SPECIFICATIONS OF SOCIAL CAPITAL AND ITS UNDERLYING NETWORKS

According to WOOLCOCK (2001) and SCHECHLER (2002), there is still no uniform conception of what is meant by social capital. Nevertheless, there is an

² A commendable exception is the structured web page of the World Bank and the Institutional Reform and the Informal Sector (IRIS) Center at the University of Maryland on Social capital, agriculture and rural development: <<http://www.irisprojects.umd.edu/docat/topics/ard.htm>>. The edited volume of GROOTAERT and VAN BASTELAER (2002a) also deals with rural issues in developing countries. Little can be found with regard to rural social capital in transition countries; the social capital group at IAMO has tried to fill the gap over the past years.

³ CHAMBERS and CONWAY (1992) were among the first to offer a scholarly definition of livelihood. They define livelihood as comprising “the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base” (CHAMBERS and CONWAY, 1992: 7-8).

⁴ See the BEUCHELT and FISCHER contribution in this volume for a detailed description of the livelihood framework in a vulnerability context.

emerging consensus concerning a definition, which is relatively narrow and can be summarised as follows:⁵

Social capital refers to the norms and networks that facilitate collective action, and to its resources.⁶

The latter specification in the definition is crucial when focussing on what social capital is, and not on what it does. PORTES (1998: 5) emphasises that “defining social capital as equivalent with the resources thus obtained is tantamount to saying that the successful succeed”. This definition also eliminates an entity of ‘trust’. There is no doubt that trust is important, but should be more accurately understood as an outcome of social capital not a source (WOOLCOCK, 2001; DASGUPTA, 2002).

Figure 1 depicts a pure branching and a realistic social network to better illustrate the power behind networks.⁷ The theory of social networks provides evidence to the hypothesis that the world, when viewed as an enormous network of social ties, is in a certain sense ‘small’. That is, any one person in the world could be reached through a network of friends in a few steps. This is known as the ‘small-world problem’. Consider the pure branching network in Figure 1.a. In three degrees, ego can reach 105 people when originally having ties to only five persons. Imagine that a person has 100 friends, each one of which has 100 friends. By three degrees, that person is up to almost one million people in the network. So maybe it is obvious that the world is small. The flaw in this reasoning is that chances are that one’s own best friends and those of one’s friends tend to be the same people to some degree. This feature relates to clustering, which is really just to say that most people’s friends are also to some extent friends of each other. Thus, real social networks look more like Figure 1.b. It could be even said that people do not tend to have friends, but rather groups of friends, each of which is like a little cluster based on shared experience, location,

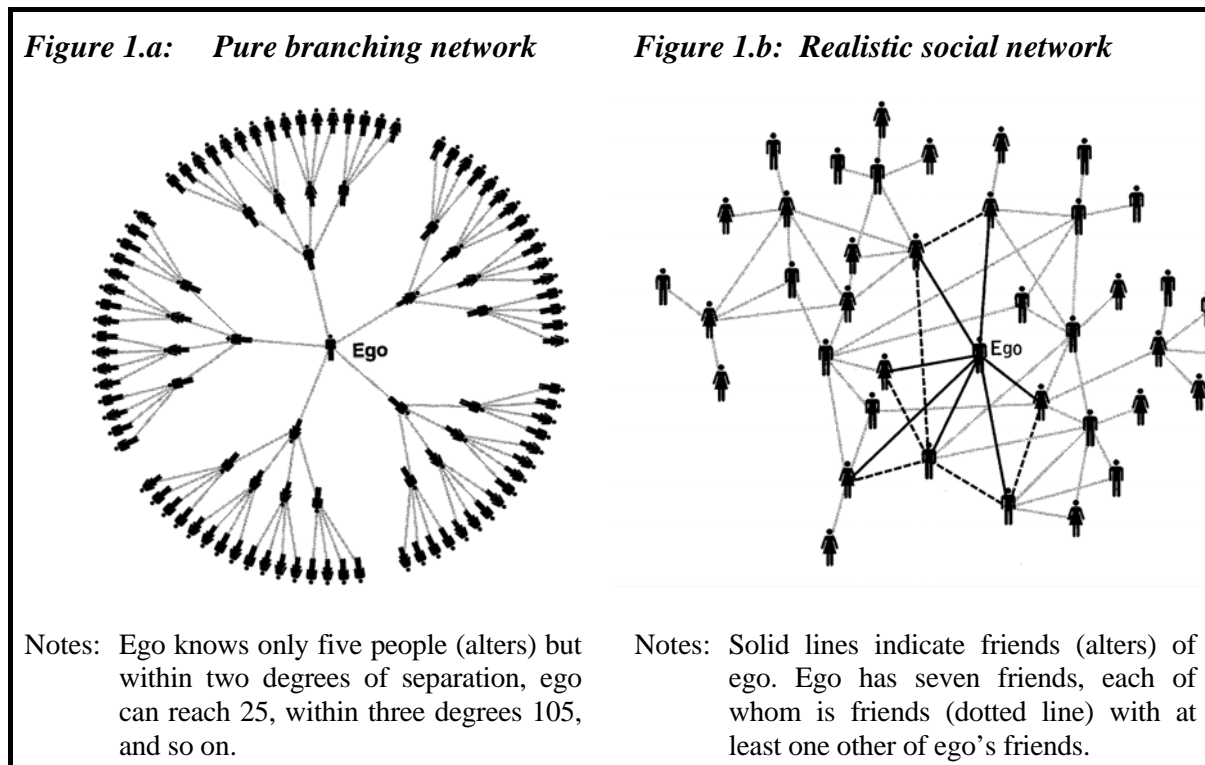
⁵ This definition comes close to the first systematic definitions of social capital put forth by BOURDIEU (1980 and 1985, as cited in PORTES, 1998). BOURDIEU (1985: 248) defined social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition”. Contrary to COLEMAN’s (1988) earlier definition, PORTES’ (1998) definition makes an explicit distinction between the resources and the ability to obtain them by virtue of membership in social networks.

⁶ See DUFHUES and BUCHENRIEDER in this volume for a more detailed discussion of definitions related to social capital and its underlying networks.

⁷ The usual terminology of social network analysis will be followed here: The individual whose social capital or social network is under consideration is referred to as ‘ego’, the relevant relationships of this individual to other persons are called ‘ties’, and the persons to whom ego is related are the ‘alters’.

or interests, joined to each other by the overlaps created when individuals in one group also belong to other groups. Therefore, clustering breeds redundancy (WATTS, 2003). The problem of redundancy is aggravated in sparsely populated regions (sometimes rural regions) and infrastructurally cut off from private and public institutions, as well as other regions (often rural regions).

Figure 1: Examples of social networks



Source: WATTS, 2003: 39f.

While this relatively narrow definition of social capital centres on networks within, between and beyond communities, the institutional framework and environment⁸ within which these networks are embedded is crucial for their functioning and outcomes. WOOLCOCK (2001) states the vibrancy or paucity of social capital can not be understood independently of its broader institutional environment; especially when considering the role of government. Weak, hostile or indifferent governments have a profoundly different effect on community life

⁸ A frequently-used definition of institutions comes from NORTH (1990: 23): “Institutions are the rules of the game of a society. They are humanly devised constraints that structure human interaction.” DAVIS and NORTH (1971) distinguish between ‘institutional arrangement’ and ‘institutional environment’. The earlier term describes an arrangement between socio-economic units that govern the ways in which these units can cooperate and/or compete. As such, it comes very close to the popular use of the term “institution”. The latter term refers to the set of fundamental political, social and legal ground rules. These establish the basis for production, exchange and distribution. Examples are rules that govern elections, property rights, and the right of contract.

than governments which respect civil liberties, create functioning formal state institutions and public goods, uphold the rule of law, and resist corruption.

2.1 Bonding, bridging, and linking social capital

To accommodate the range of outcomes associated with social capital, it is helpful to distinguish the multi-dimensional nature of its sources. The most common and popular distinction is between ‘bonding’ and ‘bridging’ social capital (SCHUURMAN, 2003), both of which are essentially horizontal metaphors. The third dimension of social capital is vertical and is known as ‘linking’ social capital. The different combinations of bonding, bridging, and linking social capital and the actions of the underlying networks are responsible for the range of socio-economic outcomes. This implies that the optimal combinations and properties of the network structure can change over time, depending on what has happened previously (WOOLCOCK, 2001; WATTS, 2003).

Bonding and bridging social capital

Bonding social capital refers to an intimate social circle such as family members, close friends and neighbours. Relations to more distant friends, associates and colleagues with whom we share more infrequent interactions fall under the term bridging social capital (GITTEL and VIDAL, 1998; Lin 1982). Bonding and bridging are essentially horizontal metaphors, implying connections between people who share broadly the similar demographic characteristics. WOOLCOCK and NARAYAN (2000) thus relate ‘strong ties’ to bonding and ‘weak ties’ to bridging social capital.

Linking social capital

HELLER (1996) and FOX (1996) have stressed that social capital also has a vertical dimension, summarised in the term ‘linkages’. An important strategy of not only ‘reaching out’ to family and friends but also ‘scaling up’ ones connections, is forging alliances with sympathetic individuals in positions of power. WOOLCOCK (2001) states that it is wisdom born of experience that gaining membership to exclusive associations requires inside contacts and that close competitions for jobs are usually won by those with ‘friends in high places’. Ambitious professionals have long recognised that getting ahead in a new venture typically requires an active commitment to networking, i.e., to create the social connections they may currently lack.⁹

⁹ Interestingly, one of the leading German weekly magazines, Focus, which deals with political and economic topics of general interest, recently devoted a lead article (July 17, 2006) to networks and why they are becoming more and more important for professional success, friendship and power (see ROHLER and HIRZEL, 2006).

2.2 Structural and cognitive social capital

Social capital can also be differentiated according to its ties (bonding, bridging, and linking social capital) and its visibility; so-called structural social capital is visible, sometimes tangible and cognitive social capital is invisible (KRISHNA and UPHOFF, 2002; UPHOFF, 1999).

Structural capital refers to established formal and informal social networks that serve as platforms for information sharing, collective action and decision-making (DFID, 1999; GROOTAERT and VAN BASTELAER, 2002b). It may bond individuals in groups to each other, bridge divides between ethnic and societal groups or vertically integrate groups with different levels of power and influence in a society, which may lead to social inclusion. Since this type of social capital is a relatively objective and externally observable construct, it can be assessed through counting, for instance, the number of established social networks, their membership, and the frequency of meetings. Obviously, the quality of membership engagement also plays a crucial role in the efficacy of structural social capital. Indeed, it makes a great difference whether a member has an active or passive role and whether the contact is indirect or face-to-face for the outcome of membership (PUTNAM, 2000). KRISHNA and UPHOFF (2002: 100) rightly state that “it is not the networks per se that are important but the meanings these networks hold for their members and the possibilities for collective action and personal benefit that they open up”.¹⁰ For example, it has been shown that changing the structure and composition of school boards can significantly enhance the level of parental involvement in school-related activities and in turn help build social capital. Others present similar conclusions about the design of irrigation projects (OSTROM, 1994; WAI, 1996; PUTNAM, 2000). Many people would argue that it is possible to create social capital, although the process is incremental. Furthermore, they would argue that social capital can be eroded faster and more easily than it can be created. Especially in developing and transition countries, when the institutional framework and environment¹¹ are

¹⁰ See WOLZ, FRITZSCH, and REINSBERG in this volume for an econometric analysis of the impact of structural social capital on farm outcomes.

¹¹ COLLIER (1998) differentiates between government social capital (e.g. enforceability of societal contracts, rule of law, and the extent of civil liberties) and civil social capital (e.g. common values, shared traditions, norms, informal networks and associational membership). This differentiation is not discussed here, as the terms ‘institutional framework and environment’ subsume this concept. However, one can rightly point out that in societies where the formal constraints (institutions) and organisations set by the government are limited or non-functioning, a large proportion of socio-economic interaction may depend on social capital of an informal nature. KNACK (2002) reviewed governmental characteristics that fall under the term social capital in a broader sense and found, by-and-large, positive

weak or restructured (due to economic or political shocks) and formal networks are just facades or breaking up, structural capital in the form of informal networks become important. This is particularly true for rural areas, where structural social capital of a formal nature is scarce anyway.

Compared to structural social capital, cognitive social capital is more difficult to observe. Several scholars (COLLETTA and CULLEN, 2000; UPHOFF, 2000; GROOTAERT and VAN BASTELAER, 2002b; GROOTAERT et al., 2004) state that it consists of shared norms, values, attitudes, perceptions of trustworthiness of other people, solidarity, and beliefs. These factors predispose people toward mutually-beneficial collective action. Already in the late 1980s, COLEMAN (1988) gave several examples of the outcome of cognitive social capital. One example is “Effective norms that inhibit crime make it possible to walk freely outside at night in a city and enable old persons to leave their houses without fear for their safety,” COLEMAN (1988: 104). KRISHNA and UPHOFF (2002) empirically tested whether cognitive aspects of social capital explain differences in the measured manifestations of mutually-beneficial collective action of watershed management networks in rural Rajasthan. Nevertheless, their results are not definitive. What they rightly conclude is that the factors which facilitate mutually-beneficial action are not the same as those that predispose people toward such activity, but that they clearly interact.

In summary, structural social capital involves various forms of organisation, including roles, rules, precedents and procedures, as well as a variety of networks that contribute to cooperation. Cognitive social capital includes norms, values, attitudes and beliefs. In contrast to structural capital, which could be classified as external since it can be more or less directly observed, cognitive social capital is internal since it resides within people’s heads. Structural and cognitive social capital can be complimentary, but are not necessarily so. Cooperation between neighbours can be based on a personal cognitive bond that is usually not reflected in an informal or formal structural arrangement. Similarly, the existence of a community association does not necessarily testify to personal ties among its members (GROOTAERT and VAN BASTELAER, 2002b). Nevertheless, particularly in the formal sector, structures help translate norms and beliefs into well co-ordinated goal-oriented behaviour (UPHOFF, 1999).

relationships. ROSE (1999) in a social capital study in Russia, found that individuals invoke networks that involve informal co-operation to compensate for formal organisations’ failure.

3 SOCIAL CAPITAL AND ECONOMIC OUTCOMES

Many disciplines have discovered the importance of social capital and the underlying networks for their theory building and policy advice as it concerns institutions in policy and economics. This section provides a brief introduction to the recent theoretical and empirical literature on social capital-cum-networks as it pertains to economic outcomes. It should be pointed out, however, that social capital is not a panacea, and more of it is not necessarily better. Emphasis was put on examples from rural areas.

3.1 Social capital – A new production factor?¹²

Recently, social capital has entered debates about economic performance with its ambitious claim of constituting an independent – and hitherto under-appreciated – production factor.¹³ Classical economists identified land, labour, and financial capital (i.e., levels of investment) as the three basic factors shaping economic growth. In the 1950s, Robert Solow¹⁴ introduced the importance of technology (physical capital). Neo-classical economists such as Jacob Mincer¹⁵, Theodore Schultz¹⁶ and Gary Becker¹⁷ introduced, in the late 1950s and early 1960s, human capital as another factor of production. They argued that a society's endowment of educated, trained and healthy workers determines how productively the orthodox factors could be utilised. WOOLCOCK (2001) points out that the latest equipment and most innovative ideas in the hand of fit persons, however, will amount to little unless these persons also have access to others to inform, correct, assist with and disseminate their work. In essence, where human capital resides in individuals, social capital rests in relationships (WOOLCOCK, 2001). As literate and informed people are better able to organise, evaluate and transform information, human and social capital are complementary.

Some critics challenge the notion of talking of social relations, of which networks in essence constitute 'capital'. WOOLCOCK (2001) rightly states, however, that it simply reflects the reality of social relationships. Following the notion of DASGUPTA (2002), positive network externalities contribute to 'total factor productivity', and thus drive economic performance. They are one of the

¹² This section draws on WOOLCOCK (2001).

¹³ See the contribution of WOLZ, FRITZSCH and REINSBERG in this issue for an econometric example of social capital that constitutes an independent production factor.

¹⁴ See the original work of SOLOW (1956 and 1957).

¹⁵ See the work of MINCER (1958).

¹⁶ See the work of SCHULTZ (1961).

¹⁷ See the work of BECKER (1962).

ways in which people cope with uncertainty¹⁸, extend personal benefits¹⁹ and achieve outcomes that could not be achieved individually²⁰.

3.2 Empirical evidence for socio-economic outcomes of social capital in the form of networks

Compelling empirical evidence comes from micro-studies in support of the thesis that social capital in the form of networks contributes to socio-economic welfare.²¹ Already, BORDIEU (1985) – and we follow this notion – divided social capital into two elements: (1) the social relationship itself that allows members of networks to claim access to resources possessed by other network members and (2) the amount and quality of those resources. Through networking, people can gain direct access to economic resources such as loans, investment tips, protected markets, insurance services (PORTES, 1998). At the micro-level, evidence indicates that those who are well connected (also beyond their immediate family bonds) are more likely to be socio-economically successful. Specifically, they are more likely to be promoted faster, receive higher salaries, be favourably evaluated by peers, miss fewer days at work, live longer, and be more efficient in completing assigned tasks (WOOLCOCK, 2001). GRANOVETTER (1974) coined the term ‘strength of weak ties’ to refer to the power of bridging and linking social capital in accessing network-mediated benefits beyond the capacity of the immediate family. “Whatever is to be diffused can reach a larger number of people, and traverse greater social distance, when passed through weak ties rather than strong. If one tells a rumour to all his close friends, and they do likewise, many will hear the rumour a second and third time, since those linked by strong ties tend to share friends’ (GRANOVETTER, 1973: 1366). This idea was brought up again in BURT’s (1992) concept of ‘structural holes’, which highlights that the relative paucity of network ties may facilitate access to crucial resources for individual benefits. Nevertheless, strong ties in the form of bonding social capital have also been found to be instrumental for rural-urban or ethnic migrants to find housing or set up businesses (KORFF, 2003) and for accessing

¹⁸ For example, those who returned to their rural families when they lost their town-based jobs during the Structural Adjustment Programs (SAP) of the World Bank and International Monetary Fund (IMF) in the 1980s and the Asian Crisis starting in mid-1997.

¹⁹ For example, use networks to secure a good job or buy an under-priced used car.

²⁰ Organising a regional agricultural fair could be such an example.

²¹ This section does not aim to be an exhaustive review of topical literature, but rather to document compelling evidence for socio-economic outcomes of social networks at the micro-, community, and macro-level. Not all of this evidence may always be of a positive nature – as the discussion below of closed communities indicates.

credit.²² THIEPOH and REIMER (2004) and NARAYAN and PRITCHETT (1999) found strong econometric evidence that social capital in the form of communitarian engagements positively influence household income in both rural Canada and Tanzania. Other studies suggest a strong association between social capital and adequate management of local common property resources and access to common pool resources (KÄHKÖNEN, 1999; GROOTAERT and NARAYAN, 2001; KRISHNA and UPHOFF, 2002).

Communities with a functioning stock of social capital, be it structured and/or cognitive, bonding, bridging, and/or linking social capital, are more likely to be informed, adopt innovations, and prosper (WOODHOUSE, 2006). Figure 2 represents a conceptual framework of how the stock of social capital affects communities and thus their members. While WOODHOUSE (2006) relates only bridging and bonding capital to their effects on the status of communities, linking social capital is added to bridging capital here. The two forms of social capital complement each other well regarding their effect on communities. Bridging capital relates to reaching out to others of similar social standing on a horizontal level and linking capital to scaling up social relationships on a vertical level, both of which go beyond the immediate social bonds. Figure 2 depicts what WOODHOUSE (2006) calls a disengaged community, where both bonding and bridging social capital are low. This statement is equally true if linking capital is also low. In such communities there are few strong ties and members lack cooperative activities at the same and at a higher social level. If bridging and linking capital are low but there are strong bonding ties within networks, the community can be called a 'blinker community'. Keeping in mind the definition set out in this contribution, namely that social capital refers to the networks that facilitate collective action and to their resources, then it becomes clear that a 'blinker community' will remain relatively stagnant in terms of socio-economic development. These communities can draw only on the resources of their strong ties, which may be relatively homogenous and low, particularly in rural areas. Urban ethnic immigrant enclaves, such as Chinatown in New York or Little Havana in Miami are also vivid examples of such blinker communities. The benefits of such ethnic networks include access to housing, start-up capital, tips about business opportunities, and a disciplined labour force (PORTES, 1998). Opportunities are almost completely network-driven, making it sometimes difficult for members of these ethnic enclaves to leave the housing area and business sectors reserved for them, and difficult for non-members to enter these sectors (SASSEN, 1995). In this context, COLEMAN (1988) introduced the term

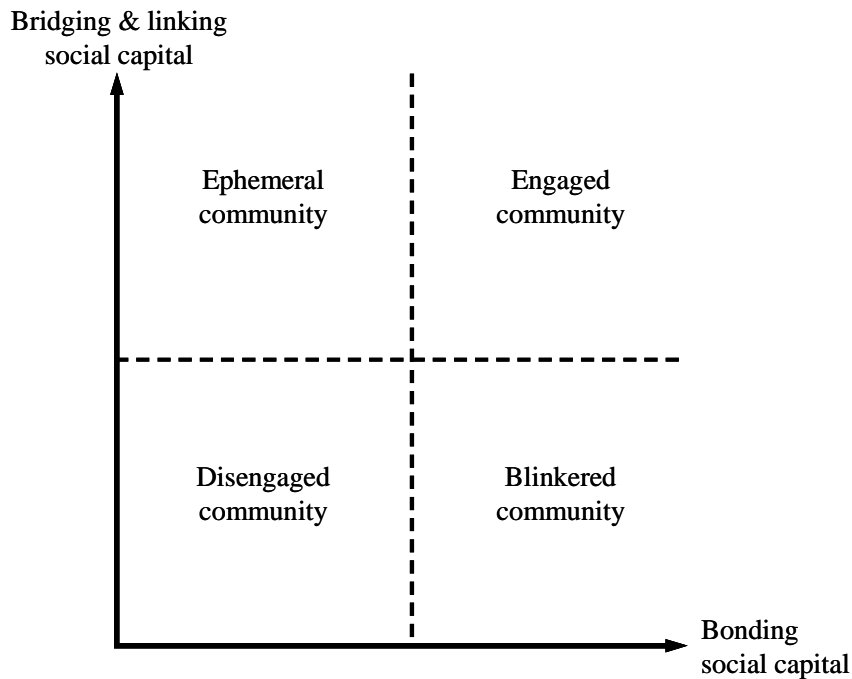
²² For more information on rural micro-finance in Armenia, see the contribution from KASARJYAN and KORFF in this volume.

‘closure’ to describe the existence of sufficient ties between a number of community members to guarantee the observance of norms. A good example of a community that voluntarily chose to withdraw from outside information, access to knowledge, technological innovations, and political participation, is the Amish in the United States and Canada.²³ When there exists a noticeable degree of cooperation with groups outside a community but no internal solidarity, one can call this an ‘ephemeral community’ (left-hand, top quadrant in Figure 2). In an ephemeral community, so-called ‘structural holes’ – that is, the relative absence of strong ties, according to BURT (1992) – may facilitate individual social mobility. This is because networks based on bonding social capital tend to convey redundant information, while weaker ties can be sources of new knowledge and resources.

Clearly, the most desired sort of community is one that is engaged, with high bonding, bridging, and linking social capital. If this social capital is structured, cooperation may be even more facilitated. Rural case studies from developing and transition countries²⁴ show that at an earlier stage of economic integration and development, bonding social capital may be satisfactory; at later stages, however, bridging and linking social capital become crucial. In any case, one could argue that social capital is a useful concept for better explaining individual and community welfare.

²³ For instance, the Amish meet several times a week with family members and neighbours; thus they develop strong bonding social networks. However, Amish children do not attend formal schooling past the eighth grade. Amish parents provide training from an early age through young adults, teaching them the skills necessary to be farmers, or other skills, i.e., carpenters. Many of the conveniences in Amish houses were used in America’s 19th century or earlier. By choice, the Amish refrain from using electricity and telephone lines in their houses. Nevertheless, the community may allow the use of, for instance, milking machines, when this is a manner of maintain a livelihood, and if electricity is available.

²⁴ In developing countries, and Cameroon is a very good case country, informal financial self-help groups are a good example. These financial self-help groups normally embrace family, friends and neighbours. Loans can be extended based on the group’s savings, but not beyond that, which significantly limits investments for those who want to take a debt-financed investment risk. To scale up the loans and supply more people with funding, cooperation with the regional Cameroonian Cooperative Credit Union League (CamCCUL) was chosen by a great number of self-help groups (SCHRIEDER, 1989). GRAMZOW and PETRICK (2006) describe an agricultural marketing cooperative that was founded by local government members (linking social capital) and entrepreneurs (bridging social capital) in Dolina Strugu, Poland. They stepped in when the farmers (bonding social capital) themselves failed to establish sustainable cooperatives because the resource endowment was too meagre.

Figure 2: Community status as a function of social capital stock

Source: Adapted from WOODHOUSE, 2006: 93.

Recently, empirical findings have been piling up, implying that social capital is contributing to macroeconomic growth if the institutional environment is favourable (WOOLCOCK, 2001). RODRIK (1999) and EASTERLY (2000) were early in providing econometric evidence in support of the idea that economic growth in general, and the ability to manage shocks in particular, is the twin product of coherent public institutions and societies that are united along ethnic and economic lines (in WOOLCOCK, 2001). ISHAM et al. (2002) edited a volume summarising experimental and empirical evidence of social capital promoting economic development. SABATINI (2005) finds a positive role for social capital, especially weak ties as it concerns labour productivity and consequently economic performance in Italy.

The efficacy of social capital must be understood, however, in its institutional context. This implies that individuals, communities, and countries manage both opportunities and shocks depending on the quality of the surrounding institutional framework and environment. Thus, social and political forces that divide societies are harmful for growth because meagre stocks of bridging social capital make it more difficult for ideas, information, and resources to circulate and produce outcomes.

3.3 Management of shocks and social networks

Poor and vulnerable households have a fragile and very finely balanced livelihood system. Shocks can destabilise the households for many years and have an effect on the welfare and livelihood strategies of the household members. To buffer these shocks, people develop various risk-management and risk-coping strategies²⁵, using their five forms of capital assets, i.e., natural, physical, human, social and financial assets.

The social capital perspective looks at structural and relational features of social capital (and the surrounding institutional framework and environment) to assess different response strategies to shocks. Particularly in rural areas of developing, but also transition countries, social networks are very important, as risk-sharing arrangements as formal (public or private) safety nets are incomplete or non-existent. In those cases, the social networks, especially family and friends (bonding social capital) and also associates and community members (bridging social capital) often serve as informal risk-sharing networks (WOOLCOCK, 2001; BEUCHELT, 2004).²⁶ In this sense, even the poor have something left to lose, namely each other (DORDICK, 1997; DERCON, 2002).

Not all risks are insured in informal risk-sharing networks. Normally, only a number of idiosyncratic, but not covariate, risks are covered to some degree (GOLDSTEIN et al., 2002 for Ghana).²⁷ COATE and RAVALLION (1993) found that the main income shocks covered by social networks are accidents and illnesses of productive farm household members, loss of livestock, certain forms of crop damage (e.g. due to wild animals) and income fluctuations from low fishing yields. Covariate risks such as famine cannot be adequately addressed by informal social networks. This is because the individual self-interest of survival is stronger than altruistic feelings (PLATTEAU, 1991; COATE and RAVALLION, 1993). Although social networks have the potential to lift the poor over times of crises

²⁵ Risk-management or adaptive strategies try to affect, in advance (ex ante), a potential income shock. Hence, they aim to reduce the impact of a shock and to smooth income e.g. through income diversification or the establishment and maintenance of informal social networks. Risk-coping strategies deal with the consequences (ex post) of a shock and try to adjust consumption. Typical coping strategies are taking children out of school to reduce expenses, but also not saving, selling assets and making use of social networks (DERCON, 2002; KORF, 2002; EZEMENARI et al., 2002).

²⁶ For more information on social networks and risk management in rural Vietnam, see the contribution in this issue by BEUCHELT and FISCHER.

²⁷ Idiosyncratic risks refer to risks that affect just one person or family, for instance the death of a main labourer, ill-health, and loss of livestock due to disease. Covariate risks refer, for instance, to harvest loss due to droughts, floods, pests or livestock loss due to epidemic diseases. The latter cannot be insured through informal social safety-nets.

if the shock is limited, often the very poor benefit the least. Poorer households, especially women-headed households, have smaller networks normally based on strong ties, thus are very homogenous in their shock absorbing performance (DE WEERDT, 2002 for Tanzania; BEUCHELT et al., 2006 for Vietnam). Typically, these households rely not on better-off but on other poor households. To conclude, while social networks can contribute to mitigating the negative effects of income shocks, they are not sufficient, and especially the very poor benefit the least from this function.

3.4 Costs of social capital-cum-network strategies

An early criticism of the social capital and network literature was that it failed to appreciate the forms and consequences of costs associated to social ties. BOURDIEU (1980 and 1985) realised that – apart maybe from familial social networks – social networks are not a natural given, but must be constructed and maintained through investment strategies oriented to the institutionalisation of network ties. Maintaining social networks requires investments like staying in touch (opportunity cost of time) and ritual or reciprocal gift arrangements, which are often somewhat unspecified and occur within uncertain time horizons (CONWAY and TURK, 2001). These ties are then the path to other resources.

Apart from the costs of constructing and maintaining social networks, there exist outright blights: (1) exclusion of network outsiders from opportunities, (2) excess claims on group members, (3) restriction on individual freedoms of group members, and (4) downward-levelling norms (PORTES, 1998).

Although this phenomena is better documented in urban rather than in rural settings, the same strong ties that bring benefits to members of networks commonly enable the network to bar others from access. Consider the tight control of the descendants of Irish and Polish immigrants over the fire and police unions of New York (WALDINGER, 1995 in PORTES, 1998). Many organisations have nepotism laws, in explicit recognition that personal connections can be used to unfairly discriminate, distort and corrupt.

Highly solidarity communities can give rise to gigantic free-riding problems, as less diligent network members force upon the more successful all manner of support mechanisms. The social pressure to share resources with family and friends may effectively prevent any sustained accumulation or entrepreneurial investment by individual network members. FERNÁNDEZ-KELLY (1995) finds that those wishing to pursue an economic accumulation trajectory may have to distance themselves from their former network members. WOOLCOCK (2001) reports that some successful members of immigrant communities in the US have Anglicised their names in order to divest themselves of their family-support obligations.

Indeed, family bonds in much of sub-Saharan Africa make it difficult for the economically-successful to enjoy the fruits of their efforts without sharing a substantial part with their needy, less lucky relatives. In rural Cameroon, for instance, it is enough for a relative to mention that she/he likes something (e.g. a table cloth) and custom demands the owner to offer the table cloth to the visiting relative. Needless to say, showing-off one's possessions is not widespread.

Some networks may demand their members have a high degree of conformity to local norms, especially when people are linked together by multiplex networks²⁸; individual privacy and autonomy is reduced accordingly (PORTES, 1998). The earlier-mentioned Amish can again serve as an example of such community norms. In the extreme, group loyalties (for instance sects, cults, youth gangs, Mafia organisations, etc.) can be so binding that attempts to leave may result in death.

There are also situations in which group solidarity is cemented by a common experience of adversity and opposition to mainstream society. If this is the case, individual success stories can undermine group cohesion. The result is downward levelling norms that operate to keep network members of a so-called downtrodden group in place. Empirical evidence suggests that the emergence of such downward levelling norms is often preceded by lengthy periods of socio-economic immobility, often caused by extra-group discrimination. In this context, PORTES (1998) states that these norms have the effect of helping perpetuate the very situation that they decry.

4 CONCLUSIONS AND RECOMMENDATIONS

Each and every person networks. Therefore, the interest of social science and policy in this issue is not really surprising. Development and transition economics discovered in the 1990s that a symbiosis of NIE concepts and the science of social networks contribute to a more profound analysis of puzzling development and restructuring phenomena related to institutional transformation. In development economics, social capital early on became part of the so-called sustainable livelihood framework, which explicitly comprises the mainstream economic production factors, as well as social capital (CHAMBERS and CONWAY, 1992). The potential of compensating the lack of one capital asset with the existence of another was seen as important for maintaining a sustainable livelihood. It is also important to note that human capital resides in individuals, and social capital in relationships (WOOLCOCK, 2001). Since literate

²⁸ Multiplexity refers to overlapping social networks where the same people are linked together in various ways. Some individuals may be simultaneously kin, neighbours, and co-workers, thus intensifying the capacity for mutual monitoring of their ties (BOISSEVAIN, 1974).

and informed people are better able to organise, evaluate and transform information, human and social capital assets are complementary. In addition, social capital can supplement meagre levels of other capital assets. Thus, the socio-economic analysis of social capital and the underlying networks is no doubt rewarding, especially in situations when access to traditional production factors is difficult. This is normally the case in regions that undergo tremendous restructuring processes. These are often identical to regions with lacking or incomplete factor markets (for instance, as it concerns finance or extension services) such as rural areas. From this discussion it becomes clear that social capital research can produce new insights for rural regions, especially if they suffer from income poverty due to the abovementioned situation. Yet until recently, relatively little social capital research was devoted to rural areas, particularly not in transition countries. This is a rather new development. In this context, WOOLCOCK (2001) reminds us that social capital cannot be understood independent of its broader institutional environment, especially the role of the government. Weak, hostile or indifferent governments have a profoundly different effect on the creation and maintenance of social capital than do governments that respect civil liberties, create functioning formal state institutions and public goods, uphold the rule of law, and resist corruption.

One difficulty of social capital research is that the literature on social capital is full of more or less ad-hoc, often fuzzy or even contradictory definitions. Recently, some sort of consensus emerged, defining social capital as the norms and networks that facilitate collective action and its resources. This definition implies an explicit distinction between resources and the ability to obtain them by virtue of membership in social networks. This definition also eliminates an entity of 'trust'. Trust is no doubt important, but is more accurately understood as an outcome of social capital, not a source of it (PORTES, 1998; WOOLCOCK, 2001; DASGUPTA, 2002). Combining this concise definition with the different forms of social capital, namely bonding, bridging, and linking social capital as well as structured and cognitive social capital, provides a well-defined conceptual basis for analysis. Especially in disciplines other than sociology, this will facilitate meaningful research tremendously.

The review of empirical evidence in this contribution supports the thesis that social capital in the form of networks – under certain conditions – contributes to socio-economic welfare. Nevertheless, social capital in the form of networks does not come free of costs – they must be constructed and maintained. Apart from the costs of constructing and maintaining social networks, there exist outright blights, which must be considered when anticipating the use of social capital in order to compensate for other missing capital assets. Thus, it can be concluded from the

empirical contributions in this volume that access to social capital is not a panacea for rural economic development under difficult societal, economic and political conditions. Nevertheless, interpersonal social capital networks can help to ease socio-economic hardship when the state and market fail to do their share.

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OPEN ISSUES AND IMPLICATIONS FOR MEASURING INDIVIDUAL SOCIAL CAPITAL IN DEVELOPING COUNTRIES

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ABSTRACT

The holistic nature of rural development has drawn together very diverse disciplines. Consequently, the field has no common, clearly applicable theoretical approach. However, social capital has recently come to be seen as a conceptual framework that can bridge the divide between academic disciplines. Yet despite its potential, social capital remains an elusive construct. Moreover, since the concept of social capital is still in an early stage of development, no uniform definition is yet generally accepted. Furthermore, many earlier empirical studies on social capital created a single index for its measurement. However, social capital is not a homogeneous entity, and utilizing a single index ignores this. While social networks have been recognized in various approaches as being an important element of social capital, their measurement has been accorded little attention to date. The objective of this contribution is to bring more structure into the conceptual framework of social capital and to contribute to the discussion on its definition and parametric measurement in the area of rural development in developing countries. Methodologically, the results are based on an in-depth literature review of the current state of social capital research.

Based on the literature review, this work proposes a straightforward definition of individual social capital: Individual social capital is considered to be networks plus resources. Furthermore, the separation into so-called bonding and bridging capital is appealing. We therefore propose an operationalization of bonding social capital as a function of strong ties (plus resources) and of bridging social capital

as a function of an agent's weak and indirect ties (plus resources). Relational data in the form of network data would be best for measuring these different forms of social capital. Thus, a so-called ego-centered network study is required for the data collection. Three instruments for measuring social capital based on ego-centered networks are presented and discussed: The name, position and resource generator.

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1 INTRODUCTION

The holistic nature of development has drawn together disciplines as diverse as sociology, economics, urban and regional planning and social work. Consequently, there is no common theoretical approach that has clear application in the field. However, social capital has recently gained importance as a bridge across academic disciplines in rural development and agency theory (CORDES et al., 2003; WOOLCOCK and NARAYAN, 2000). Unfortunately, social capital remains an elusive construct despite its potential. Many definitions are in use and no definition is yet generally accepted (UPHOFF, 1999). PAXTON (1999) e.g. states that for the United States there is a large theoretical gap between the concept of social capital and its measurement. Previous studies provided little rationale for how measures of social capital are connected to the theoretical definition of social capital. This problem is compounded by the lack of consensus on the meaning of the term. Furthermore, the measurement of social capital is still in its infancy. Hence, any parametric measure of social capital should be interpreted with considerable caution (ADAM and RONCEVIC, 2003).

Many earlier studies on social capital, for instance by NARAYAN and PRITCHETT (1999), created a single index for social capital. This approach assumes that a single numerical index is sufficient for representing social capital. However, as stated by some researchers, e.g. PAXTON (1999), ROSE (1999), or WOOLCOCK and NARAYAN (2000), it is probably impossible to sum all forms of social capital into a single index. Social capital is assumed to be not a homogeneous entity and a single index ignores this possibility (FLAP, 1999; WINTERS et al., 2002).

While social networks have been recognized in various approaches as being an important element of social capital, their measurement has been accorded little attention to date (FRANKE, 2005). For instance, VAN STAVEREN (2003) points out that in the analysis and measurement of social capital concerning poverty, social structures like hierarchies or exclusion have usually been denied. Moreover, it is generally assumed that all households that are members of a certain group, such as a village, will form a single network. This assumption is quite unlikely, as there are many other factors that influence network formation (DE WEERDT, 2002). Thus, social capital in the form of social networks is an exceedingly important, but thus far largely missing dimension of income and poverty analysis (NARAYAN and PRITCHETT, 1999).

The objective of this contribution is to bring more structure into the conceptual framework of social capital and to contribute to the discussion on its definition and parametric measurement. To achieve this, we present three social capital

measurement instruments that are already widely used in the field of sociology, the 'name generator', the 'position generator' and the 'resource generator', and assess their potential for measuring social capital in developing countries. These issues will be systematically discussed and presented in this contribution in order to make the concept of social capital more tangible for empirical research in the area of rural development. Methodologically, the results are based on an in-depth literature review, and as such, this article presents an account of the current state of social capital research.

1.1 Definition of social capital¹

The range of different definitions and the inclusive character of many of them have led to severe critique of the concept of social capital. For instance, CASTLE (1998) points out that unless the social capital concept is used with some degree of precision and in a comparable manner, it will come to have little value as an analytical concept. Indeed, some scholars such as ARROW (1999) suggest discarding the term social capital all together. However, as ROBISON et al. (2002: 8) point out: "ARROW's (1999) recommendation that the term social capital be abandoned comes too late." The term social capital is now firmly entrenched in the language of social scientists and economists.

Based on the critique on the broad definition of social capital, the term social capital has recently come to refer more specifically to associational life or social networks rather than to social norms (FOLEY and EDWARDS, 1999). For instance, DASGUPTA (2005), PALDAM (2000), SOBEL (2002), and STIGLITZ (1999) state that social capital may be thought of as a collection of social networks. Some networks are coming free of cost, e.g. we are born into certain networks. But others have to be entered and maintained by a costly process (DASGUPTA, 2005). Networks thus clearly require investment (of time, money, information, and prestige) to yield a benefit flow (of employment, income, sociability, knowledge and other payoffs) (UPHOFF, 1999). However, it has also become clear that social capital must include the resources accessed in social networks (BURT, 1997; LIN, 1999b; PORTES, 1998). These resources can then be used for the good of the individual or the collective (DAKHLI and DE CLERCQ, 2004).

In line with the arguments above we define social capital more narrowly and more closely to its roots of origin (see BOURDIEU, 1983) namely by interpersonal networks according to the definition of FOLEY and EDWARDS (1999). They

¹ In this contribution we focus on individual social capital for instrumental action. Instrumental actions are actions that are taken to achieve a goal for the benefit of the individual who takes the action (LIN, 1982). Social capital in the form of social support is not the focus of this literature review.

propose that social capital is conceived as access (networks) plus resources. As pointed out by JANS (2003), too, social structures are not independent from their context. Not every social structure will result in social capital. It is the resource which turns the social structure into social capital. This definition is in line with the network based utilitarian approach of LIN (1999a) and FOLEY and EDWARDS (1999).

1.2 Different forms of social capital

SCHUURMAN (2003) emphasizes in his critical review on social capital the importance to distinguish between bonding and bridging capital. WOOLCOCK and NARAYAN (2000) relate ‘strong ties’ to bonding social capital and ‘weak ties’ to bridging social capital.² Thus, bonding and bridging social capital is basically distinguished by the strength of the tie between two network members. Strong ties characterize the intimate social circle of individuals with similar characteristics and weak ties characterize the infrequent interactions and peripheral relationships among dissimilar individuals (LIN, 1982). Thus, bonding (exclusive) social capital refers to relations amongst relatively homogenous groups such as family members and close friends (FRANKE, 2005). One of the key characteristics of bonding capital is that its potential power is positively related to the size of the group (IYER et al., 2005). However as pointed out by O'BRIEN et al. (2005), it is usually formed in small groups.³

It is assumed that information or resources accessed through different strong ties are redundant, i.e., everybody in the core network of strong ties has the same resources available. Thus, the first strength of bridging social capital lies in its access to resources through its connection to other networks outside one's core network. By breaking out of one's own intimate social circle through weak ties, one can access resources not otherwise available (LIN, 1982). The second strength of bridging social capital might lie in its accessing social positions vertically higher in the social hierarchy.⁴ Thus, the higher the rank of the person

² The usual terminology of social network analysis will be followed here: The individual whose social capital or social network is being considered is referred to as ‘ego’, the relevant relationships of this individual to other persons are called ‘ties’, and the persons to whom ego is related are the ‘alters’.

³ OGILVIE (2005) showed in a historical analysis of guilds that the ‘closure’ of bonding social capital, means that many network activities are open to abuse. For instance guilds punished beneficial as well as harmful deviations from their norms and suppressed innovations that could have benefited the wider society. Thus, exclusively bonding social capital has the potential to facilitate detrimental effects on society or economic development.

⁴ A third conceptual classification, linking social capital, has been suggested. This dimension refers to one's ties to people in positions of authority, such as representatives of public (e.g. police) and private (e.g. banks) institutions. In this classification, bridging social capital

with whom the ties are formed, the more useful they become. One can surely draw on more resources if one has rich and influential friends than if one has poor friends far from the seats of power (LIN, 1999b). However, BIAN and ANG (1997) state, for instance, that for the Confucianist Chinese society, bonding capital is much more important and channels similar resources e.g. help to find a new job, as bridging capital does in western cultures (GRANOVETTER, 1973).⁵ Thus, the use of bonding and bridging capital is obviously also dependent on the society. In contrast, WOLZ and TRI (2004) use this dichotomic social capital approach to analyze the competitiveness of peasants in Vietnam and conclude that in the Confucian-influenced Vietnamese society as well, bridging social capital is particularly important for the further economic development of peasant farms. Thus, there are still numerous open research questions.

As pointed out above, bridging social capital is important to gain access to resources and opportunities. But closure and strong ties (which is prominent in bonding capital) can be crucial for realizing these opportunities (BURT, 2001; GRANOVETTER, 2005). Moreover, bonding capital provides individuals with information that helps preserve one's interest even when the individual has not actively searched for this information. As stated above, bridging capital provides diverse and useful information, but this information must normally be actively searched for (LAI and WONG, 2002). Furthermore, WELLMAN and WORTLEY (1990) state that people get most of their social support through a small number

is horizontal, that is, it connects people with similar social standing through weak ties (e.g. a farmer to another farmer); it is also vertical in that it connects people to key political players and across power differentials (e.g. a farmer to credit officer) (GROOTAERT et al., 2003; WORLD BANK, 2000). Linking social capital seems to be of special importance in countries still in transition. For instance, WARREN et al. (2004) states that managers in China would favor one tie with a government official over many ties with non-governmental employees simply because the actions of the government official may allow the organization to avoid fines or receive permits. MUTZ and SCHMIDT (2002) used the threefold social capital classification in research done on Northern Vietnam, albeit in an urban research setting. They propose that linking social capital will weaken once an independent law system and efficient institutions are working. Some classification issues also need further consideration, e.g. when measuring linking social capital, different hierarchical levels must be defined to distinguish between the different positions, e.g. the ties between a village headmen and a credit officer to linking social capital or to bridging social capital. However, it is assumed that in particular, bonding social capital plays an important role in farming activities in developing countries, e.g. through sharing labor during peak working periods. Thus, it is assumed that in the rural setting of developing countries, linking social capital is negligible, as networks are usually dense. Nevertheless, this assumption needs further proof and a future research project by the authors will, among other issues, address this question. Thus, in our definition of bridging social capital, both horizontal and vertical connections are included.

of strong ties. Thus, strong ties are important for coping with and mitigating idiosyncratic shocks, though bonding capital may be less useful in times of covariate shocks. As DEVEREUX (2001) points out, the horizontal redistributive practices in particular (transfers between people of similar economic and social status) are highly vulnerable to covariant risk, as it is likely that the core network is affected as a whole. For instance, HURLBERT et al. (2000) discovered that after a hurricane disaster, most informal help was received from outside of the core network. This seems to be particularly severe for poor people, as the poor often own an intensive stock of bonding social capital that they can leverage to 'get by' (HOLZMANN and JORGENSEN, 1999), but they lack the more diffuse and extensive bridging social capital deployed by the non-poor to 'get ahead' (NARAYAN, 1999). Thus, having both bonding and bridging capital enhances network extensity. The more extensive the networks, the better it is to access and mobilize social resources (LIN, 1999b).

2 OPERATIONALIZATION OF SOCIAL CAPITAL AND ITS UNDERLYING NETWORKS

As mentioned before, social networks have been recognized as an important part of social capital by almost all social capital researchers. Thus, including network components into the measurement of social capital is wide spread. However, most studies consider only formal or semiformal social networks, such as clubs or associations and count the membership status. High civic group membership is often used as a measure for rich social capital from individual to higher levels. Nevertheless, as pointed out by SCHULLER et al. (2000) simply grossing up the number of people who belong to organizations indicates little about the strength of social capital if it is not accompanied by information on what people do as members. Furthermore, such an approach is often not appropriate in the context of developing or transition countries. For instance, in a country like Vietnam, it may create biased results. As pointed out by (DALTON and ONG, 2005), Vietnamese people belong, on average, to more groups than e.g. Japanese or Philippine people. However, these patterns of group membership reflect the government's efforts to actively engage the public in social groups that are initiated and directed by the government, e.g. the Vietnamese Women's Association or the Vietnamese Farmers Association. In a democratic system, many civil society groups will reflect the norms of the regime in their internal

⁵ However, LIN et al. (2001) found out that in Taiwan, social ties beyond the family are useful channels for reaching better resources. Nevertheless, they also point out that kin vs. non-kin ties cannot be equated with strong vs. weak ties.

organization and practices, thus participation in these groups may generate democratic norms and skills. But in a non-democratic system, social groups are less likely to fulfill the civil society criteria of autonomy from the state, and also be less likely to espouse practices and norms that inculcate democratic values. In a transitional society such as Vietnam, social group membership can therefore not be simply equated with the development of social capital. Furthermore, such a perspective completely ignores the importance of informal networks such as friendship or school class networks. As pointed out by KRISHNA (2003), in the developing country context, mostly richer and better connected residents are members of formal or semi-formal organizations, which results in biased measures. The interpretation of group membership, be they formal or informal, is also not always straightforward. VAN STAVEREN (2003) criticizes, in a World Bank study on social capital in Tanzania, which also included informal group membership, the statement: "The higher the group memberships, the higher the income." However, such a linear relationship between group membership and income levels is very unlikely. It is quite obvious that there must be at some stage a turning point where the opportunity costs of time outrun the gains from such memberships. In this sense, WOOLCOCK (1998) pointed out that social capital and particularly the different types of social capital (see above) are resources to be optimized, not maximized.

According to our definition of social capital, we support the measurement proposed by LIN (2001), who states that social capital is rooted in social networks and social relations, and thus must be measured relative to its roots. WOOLCOCK (2001) emphasizes that in contrast to e.g. human capital, which rests in individuals, social capital resides in relationships. Thus, HERRMANN-PILLATH and LIES (2001) suggest using relational data in the form of network data to measure social capital. As social capital consists of resources embedded and accessed, as well as networks, it is advisable in any given study to incorporate measures for both network locations and embedded resources.⁶ BOURDIEU and WACQUANT (1992) state that social capital would be best operationalized as the sum of resources attainable through a network of more or less institutionalized relations. However, the extent to which an individual has access to resources depends on the person's connections (who they know, but also connections through common group membership), the strength of these connections, and the resources available to

⁶ FOLEY and EDWARDS (1999) state that to avoid tautological statements, the distinction between mobilizable resources and the resources actually used needs to be maintained. In this sense, VAN DER GAAG and SNIJDERS (2004) propose measures based on mobilizable resources or, as HOFFERTH et al. (1999) call it, 'perceived access to social capital'.

their connections (SOBEL, 2002). For instance, BURT (1997) has demonstrated the strategic advantage of certain network locations to access these resources⁷.

Measuring the social capital of an individual or a group does not mean attributing a value to all resources that the members of a network can access. The emphasis is rather on those resources that are useful in a particular situation and that can be mobilized at a given time. Indirectly, then, the focus is on the utility of specific resources and their potential accessibility (FRANKE, 2005). In certain situations, the fact that several members of the same network possess the same resource does not increase the social capital value of a member who needs this resource, since a single network member is often able to respond to this need. In other situations, however, diverse sources reduce pressure on one source if the need is long-term (e.g., in the case of social support, varied sources of assistance are vital). In other words, in some circumstances, the variety of resources is valuable, while in other situations, the variety of sources is more important. The utility of resources and their potential accessibility are the main criteria used in developing most social capital indicators. Thus, network resources can be measured by: 1) the range of resources among ties, 2) the best possible resources in the networks among ties, 3) the variety or heterogeneity of resources in the network, and 4) the composition of resources. This implies that when constructing a measurement instrument for the amount of social capital, a variety of resource items must be considered, and the social capital measure has to aggregate over these resource items as well as over network members. The data collection thus requires an ego-centered network study (VAN DER GAAG and SNIJDERS, 2004).

3 NETWORK GENERATORS FOR MEASURING SOCIAL CAPITAL

Name, position, and resource generators are methods of measuring the social capital of individuals. These three instruments were all developed in the field of sociology and have thus far rarely been used in agricultural economics or rural development.

3.1 Name generator

The name generator is a common technique for revealing ego-centered networks, has been described extensively in the literature, and involves the use of two tools, the name generator and the name interpreter. The first tool is used to identify

⁷ BORGATTI et al. (1998) provide a good overview on location measures of social capital. They propose that several measures are available for different kinds of social capital in the standard network analytic toolkit (such as size, degree, closeness, density etc.), albeit most of these measurements require complete network data.

contacts of ego by employing various selection criteria, e.g. work-related networks or social support networks. Thus, a list of contacts (also called alters) ranging from three to five, or as many as volunteered by ego, is generated.⁸ The second tool, the name interpreter, then generates from the name lists the relationships between ego and contacts, and among contacts, as well as contacts' characteristics. Social capital measures can then be constructed to reflect the contacts' diversity and range in resources (education, occupation) as well as characteristics (gender, race, age) (CAMPBELL and LEE, 1991; FRANKE, 2005; LIN, 1999b). Thus, the name generator/interpreter approach maps the ego-centered social network as a starting point for a subsequent social resource inventory, which can result in very detailed and informative social capital descriptions (VAN DER GAAG and SNIJDERS, 2003). According to VAN DER GAAG et al. (2006), the extensive social network inventory performed with the name generator/interpreter is one of oldest methods of measuring social capital, and has been applied by many researchers.

However, a number of problems are associated with the use of name generators; the main critique is that the name generator emphasizes neither resources as such, nor peripheral relationships which often create social capital. Cognitively, names that initially come to mind tend to be social ties with which ego is more intimate, more intensive in relations, more frequently interactive with, or more reciprocal in exchanges (LIN, 2001). Thus, the name generator mainly reflects stronger ties, stronger role relations, or ties in close geographic limits. Furthermore, the name generator demands considerable survey time, especially, when larger networks are found (CAMPBELL and LEE, 1991; LIN, 1999b). However, in developing countries, networks are often small. For instance, research work by BEUCHELT and FISCHER (2006) on informal safety networks in Northern Vietnam concluded that these networks are rather small. As stated by THORP et al. (2005) destitution leaves little space for networking. Furthermore, the weakness of the name generator in creating mainly strong ties might not be such a weakness in certain cultural settings e.g. in a Confucianism-shaped society like Vietnam or China. As mentioned above, strong ties in China fulfill similar tasks to what weak ties do in western cultures.

To overcome the bias on strong ties and the lack of emphasis on resources, researchers tend to combine several research generator questions. However, MARSDEN (2003) points out that the availability of time should not be forgotten. Multiple-generator instruments that elicit many alters can be quite time-consuming. This again leads to the original problem, as multiple-generator

⁸ Often the numbers of alters are limited by questionnaire design in order to reduce interview time. MARSDEN (1993) points out that reliable measures of network density and composition are often available from data on only three to five alters.

instruments can lead to excessive survey time demands. In summary, for social capital research, the name generator/interpreter can provide detailed social network and thus social capital information, but its costs may be high.⁹

3.2 Position generator

The position generator, first proposed by LIN and DUMIN (1986), uses a sample of ordered structural positions salient in a society (mostly occupations) and asks respondents to indicate contacts in each of the positions. From these responses it becomes possible to construct measures of accessibility to different hierarchical positions in the society: 1) range (e.g. distance between the highest and the lowest accessible position), 2) extensity or heterogeneity (e.g. number of accessible positions) and 3) upper reachability (e.g. prestige or status of the highest accessible position). The position generator utilizes e.g. a person's occupation as an indicator of the resources available to that person. The selection of professions (usually from 15 to 30) is established based on a scale of prestige that reflects the potential accessibility of various resources. Further, relationships (either direct or indirect) between ego and the contact for each position can be identified (LIN et al., 2001). Because the position generator does not in general ask about individual alters, it requires less interview time than do many name generators (MARSDEN, 2003). Furthermore, the position generator avoids the extreme bias of the name generator towards strong ties. The position generator also includes an emphasis on the construction of 'access' type measures that indicate potentially available, positive social resources embedded in personal social networks, but that do not consider their actual use or application in individual actions. Such a separation between studying access and use avoids confounding social capital measurements with individual needs and other contextual variables (VAN DER GAAG and SNIJDERS, 2004). The administration of this instrument is easy and quick, and its questionnaire can be systematically adjusted for different populations by using appropriate job prestige hierarchies (see e.g. LIN et al., 2001 or LIN and DUMIN, 1986). Thus, it is possible to develop a position generator for every society in which occupations, occupational prestige and/or job-related socioeconomic indices have been catalogued. These characteristics make the instrument very appealing for comparisons of returns to social capital between populations (VAN DER GAAG et al., 2006). However, in most developing countries such data are not available.

⁹ Another critique e.g. by VAN DER GAAG and SNIJDERS (2004) is that the name generator may produce, for many research questions, much superfluous data, because often the name generator retrieves many alters that provide access to the same resource. However, we believe that in the developing country context the variety of sources is important to households as a form of 'social capital insurance'.

3.3 Resource generator

The resource generator was developed to measure general social capital within a population, including resources useful for both instrumental and expressive actions (VAN DER GAAG and SNIJDERS, 2003). Thus, a resource generator tries to combine the positive effects of the position generator (economy) and the name generator (detailed resource information) through clearer referral to specific resources and by omitting name identification questions. The resource generator asks about access to a fixed list of resources, each representing a vivid, concrete sub-collection of social capital.¹⁰ The availability of each of these resources is checked by measuring the tie strength through which the resources are accessed. The list of specific resource items to be included may vary across populations. The composition of the resource generator should therefore result in systematic, theoretical considerations about which social resources represent social capital. The challenge is to develop the tool in such a way as to ensure that the most useful resources are included in the list (VAN DER GAAG and SNIJDERS, 2005).

Since social interaction and social network formation are culturally dependent, the composition of the resource generator requires quite some theoretical guidance. Within each population under study, the social resources, which comprise social capital, must be newly defined (VAN DER GAAG and SNIJDERS, 2004). While its data are concrete and the administration of the resource generator is quick, its construction proves to be challenging and bound to a specific population. In addition, it is hard to come up with questionnaire items that tap distinct, useful social resources that are not accessed by a large majority in a population and thus do not show large variations in possible scores (SNIJDERS, 1999; VAN DER GAAG and SNIJDERS, 2003; VAN DER GAAG and SNIJDERS, 2005).

4 CONCLUSIONS

After reviewing the literature, this work proposes a straightforward definition of individual social capital: Individual social capital is considered to be networks plus resources, (e.g. credit, information). As social capital is rooted in social networks, it should be measured relative to its roots. Moreover, social capital is assumed to not be a homogeneous entity. Hence, it is necessary to distinguish different forms of social capital. In the case of rural areas in developing countries,

¹⁰ It is important to point out that the resource generator can also be enhanced by adding questions about resources received under specific circumstances. The difference between anticipated resources and resources received helps to diagnose the problems related to resource mobilization (CHARBONNEAU and TURCOTTE, 2002, in FRANKE, 2005).

the separation into so-called bonding and bridging capital seems to be most appealing. Thus, this contribution proposes the measurement of social capital according to LIN (2001) (see above) but extends this approach to the rural context, where the differentiation in bonding and bridging capital is crucial because both phenotypes of social capital play an important role in household resilience. We therefore propose the operationalization of these two forms of social capital as a function of an agent's so-called strong ties (e.g. close relatives, plus resources) and so-called weak ties (e.g. acquaintances plus resources). Furthermore, due to the closing gap between rural and urban settings, future empirical research is needed regarding whether the binary classification of bonding and bridging social capital is sufficient or whether further differentiation into a third category such as linking social capital is appropriate.

As pointed out above, relational data in the form of network data would be best for measuring social capital. Furthermore, our definition of social capital requires, for the data collection, an ego-centered network study. Three instruments for measuring social capital based on ego-centered networks are presented above: The name, position and resource generator. The name generator has a bias towards strong ties and can be quite time-consuming, and thus expensive. Although in the context of developing and transition countries, those critical points are often attenuated because networks are rather small and strong ties are often used similarly to weak ties in the developed world. The resource and the position generator can partly overcome those shortcomings, however, as FU (2005) points out, one should keep in mind that when concerning the bias towards strong ties, all network generators create this bias, as it lies in the nature of these methods. The resource generator has recently been developed in the context of certain developed countries. Thus, it cannot be easily applied in a developing country context without major preparatory work (VAN DER GAAG and SNIJDERS, 2005). The position generator as applied e.g. in LIN et al. (2001), which is another enhancement of the name generator, is also often not applicable because national occupations, occupational prestige and/or job-related socioeconomic indices are missing in most developing countries. However, one could easily see how the name generator can be varied by including parts of the position or resource generators. For instance, the name generator could be employed as a 'position generator instrument' in which individuals are asked about their relationships with persons who satisfy a 'positional' criterion. Although it comes at the cost of e.g. comparability, in most developing countries this seems at the moment to be the only way.

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PART 2

EMPIRICAL EVIDENCE OF SOCIAL CAPITAL AND SOCIO-ECONOMIC OUTCOMES

What do Vietnamese farmers do when a crisis occurs? Covering lack of resources through social networks

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ABSTRACT

In northern Vietnam, ethnic minorities tend to be left behind relative to the socio-economic development of the rest of the country. In particular, poor and vulnerable households maintain a very finely-balanced livelihood. Households that face a crisis have to find their own ways of managing production and livelihood risks, for example through the formation and use of social networks.

In 2004-05, gender-sensitive field research was conducted among five different ethnic groups in two provinces in northern Vietnam. Seven social networks were selected to investigate the relationships and help-flows between network members during a crisis. Quantitative network data were obtained through a semi-structured questionnaire, and qualitative research investigated gender-specific roles, decision-making processes and risk management strategies.

Kinship relations and the level of wealth are important factors of network composition. As mutuality of help is crucial, poor households with more limited resources reach their network threshold earlier than richer households. Information and knowledge channelled through networks can be important to prevent crises. Social networks help to increase access to lacking resources in times of need but are insufficient to entirely buffer a crisis in a poor or vulnerable household. Policy interventions thus become necessary.

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1 INTRODUCTION¹

Although rapid economical development takes place in Vietnam's urban areas, the mountainous, rural areas in the north are predominately inhabited by ethnic minorities that still live mainly on subsistence farming. In 2002, the poverty rate, measured as a percentage of the population, was still 68 % in the north-west of Vietnam (WORLD BANK, 2003), the highest rate among the country's various regions. Rapid population growth leads to a shortening of fallow periods, erosion, and loss of soil fertility, which consequently results in decreased agricultural productivity and degraded environmental quality; this accelerates the destruction of natural resources, food insecurity, and rural poverty.

Poor and vulnerable rural households, whether they are headed by a female or male, are highly affected by shocks and crises such as illness or death of a family member, animal epidemics or harvest failures. The consequences of such emergencies can influence the welfare and livelihood strategies of the household members and may increase poverty. To buffer those shocks, people have developed various risk management strategies, relying on the resources they have. One important strategy is the utilization of their social networks.

In developing countries, little is known about the use of social networks as a means of risk management in rural areas, neither about their structure nor about their functioning and efficiency. Additionally, research focus is seldom directed

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to the similarities or differences between female and male risk management strategies, since gender-specific aspects about e.g. ethnic minorities' labor allocation, power structures or possession of assets in Vietnam or other Asian countries have so far been neglected.

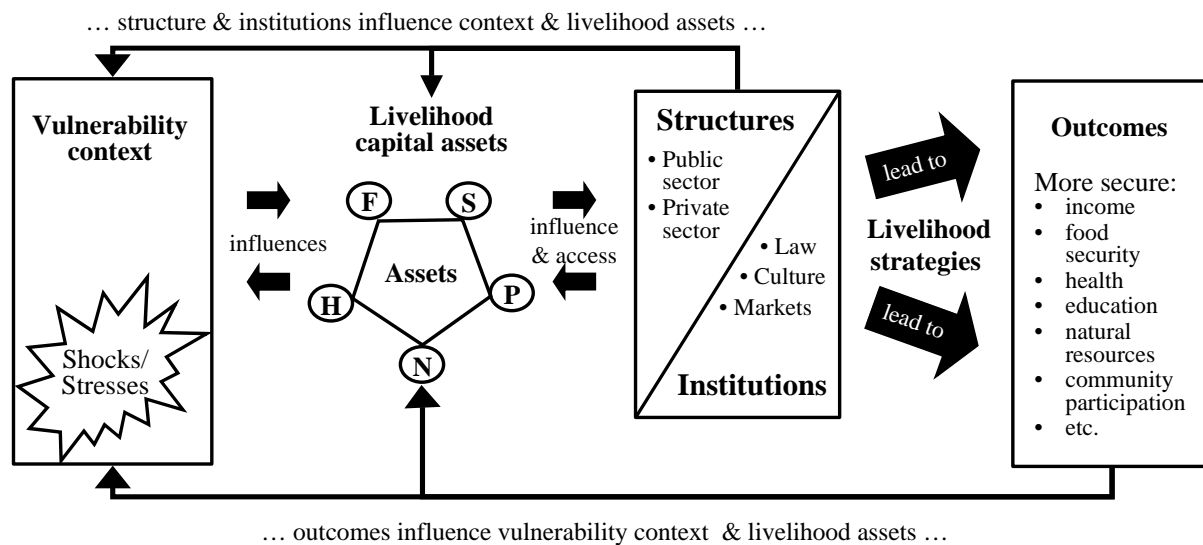
2 METHODOLOGY AND DATA BASIS

Based on a data pool of more than 200 previously conducted household interviews, as well as the application of various Participatory Rural Appraisal (PRA) tools, e.g. transect walks, seasonal calendars, livelihood profiles and biographies, suitable households were identified as starting cases for a network analysis. Possible target households were selected according to the type of experienced crisis and wealth. The subsequent network interviews were conducted using a semi-structured, gender-sensitive network questionnaire. The information obtained was used to select the other households by applying the snowball sampling method.

The network questionnaire was based on the livelihood approach of the Department for International Development (DFID) of the British Government (DFID, 1999) (see Figure 1). Data were collected on demographic issues and the availability/accessibility of different capital assets, including human, natural, physical, financial and social capital assets. The data collection's focus was on social capital, and assessed the membership in unions, kinship relations, friendships, social networks and the connectivity of the household. The collected quantitative network data were analyzed using the UCINET software.

In addition, key informant interviews provided information on the current livelihood situation of rural women and men from different ethnic groups. Gender-sensitive group-discussions were conducted on issues of livelihood strategies, risk management and social networks, including labor division, power structures, possession of assets and decision-making processes.

Data collection took place from 2004-2005 and the research area comprised seven villages, with respondents from five ethnic minorities (Kho-Mu, Black Thai, Hmong, Tay and Nung) in the Yen Chau district, Son La province as well as the Ba Be and Pac Nam districts in Bac Kan Province. In total, 33 farmers were interviewed using the network questionnaire and 80 female and male respondents were interviewed regarding gender-specific aspects of their current livelihood situation. Own findings were supplemented by secondary data, including observations from micro-credit projects in the region.

Figure 1: Sustainable livelihood framework and vulnerability context

Source: BUCHENRIEDER, HEIDHUES and DUNG, 2003: 675.

Notes: 'H' represents human capital, i.e., skills, knowledge, ability to work and health.

'N' represents natural resources.

'P' represents physical capital, i.e., basic infrastructure (e.g. transport, shelter, energy).

'S' represents social capital, i.e., social resources (e.g. social networks, membership of groups, relationships of trust, access to wider institutions of society such as political associations).

'F' represents financial capital, like savings for self-insurance, supplies of credit, access to insurance.

3 SOCIAL NETWORKS, RISK MANAGEMENT AND ACCESS TO RESOURCES

According to the Ministry of Labor, Invalids and Social Affairs (MOLISA) of Vietnam, vulnerable groups comprise women, ethnic minorities, those with low education or illiterates, the disabled and the ill, families with many children, especially when they do not have enough labor, and more generally the poor and hungry, as well as those above but near the poverty line (CONWAY and TURK, 2001). Members of the various minorities mostly live in mountainous, marginal areas that are not as well equipped with hard and soft infrastructure or natural resources as are the lowlands. Access to markets and non-farm activities is limited, so farming activities are the main income source (LUIBRAND, 2002). Poor and vulnerable households in that region lack access to knowledge, credit and insurance, and therefore social networks are crucial as a source of information, money and other mutual support.

Clearly, the livelihood systems of vulnerable households are often very fragile and finely-balanced and even small misfortunes are able to destabilize them for

many years (WORLD BANK, 1999). Crises and shocks that require immediate outlays of cash and/or which diminish already low and irregular income have long-term effects on livelihood strategies and people's welfare.

Own research results (see Table 1) confirm existing data on major risks or livelihood difficulties in rural northern Vietnam. As anticipated, death of livestock and sickness of household members (working and non-working) are among the top four livelihood risks.

Table 1: Main difficulties occurring over the course of last year, and the last five years, respectively (in percent of households)

Risks /Difficulties (Expenditures)	Last year	Last five years
Death of livestock	19	2
Sickness among household members	14	8
Production factor risks	12	8
Sickness of working household members	8	4
Rebuilding house and repairing damages	7	9
Expenditures for unplanned ceremonies	4	2
Replacement of dead livestock	3	9
Crop loss	2	2

Source: Own research data, FISCHER in ZELLER and HEIDHUES, 2006:16.

Note: Multiple answers were possible; therefore the percentage may not sum up to 100. Risks that occurred in the last year were not included in the analysis of risks that were mentioned for the last five years, therefore the percentage in the past year might be higher than in the last five years

In general, rural households have developed sophisticated risk management strategies. Less vulnerable households often have access to so-called (ex-ante) adaptive strategies, which maintain the level of vulnerability constant despite shocks, and may even reduce it. More vulnerable households have to rely mainly or exclusively on (ex-post) risk-coping strategies, which normally increase the vulnerability level after a shock and thus limit the poor's long-term prospects of escaping poverty (KANBUR and SQUIRE, 2001). MEKONG ECONOMICS LTD. (2003) adds that poor women, who lack adequate financial and non-financial assets more than men, are particularly vulnerable to risk. Poor women still mainly rely on informal services such as borrowing from friends/relatives or moneylenders, and it is still very difficult for many rural women to set aside savings for future use. Financial assets and natural resources are usually limited. Consequently, they need to be utilized efficiently and sustainably. According to WINKELS and ADGER (2000), social capital can be important for accessing lacking resources through its function of channeling resources, as well as information.

Social networks, whose maintenance is an important risk management strategy,

are part of the social capital asset base. A social network consists of individuals who exchange, on a reciprocal and voluntary basis, information, goods or other things with the aim of maximizing their personal utility (STAHR, 2001). In order to understand vulnerability and risk management, as well as to design policy interventions to address this problem, information is required about the networks that households can fall back upon (DERCON, 2002). Through their informal credit and insurance functions, social networks can help to cope with highly variable incomes and hence, the formation and maintenance of social networks can be an important means of risk management (DFID, 1999). The main risks covered by these informal risk-sharing agreements or social networks are accidents or illnesses of family members or livestock, certain forms of crop damage, e.g. due to fire, and other non-covariate income fluctuations such as low yields (COATE and RAVALLION, 1993). Other investments in social capital like ritual or reciprocal gift giving can also serve as a type of insurance (CONWAY and TURK, 2001).

4 RESULTS

Among the five ethnic groups surveyed here, men are the formal owners of most assets like livestock, crops and the land use certificates. Land use certificates are usually issued in the name of the husband, although it is possible that both husband and wife are registered as owners. In the case of the husband's death, it is a long-lasting and difficult procedure to change the name on the land use certificate. Since formal credits are only issued to those who can pledge land as collateral, this makes it difficult for women to obtain credit. Even though the power structures and decision-making processes are in favour of men, women, who are often the cash managers, are involved in the decision-making process as assets are shared within the household. The group discussions indicated that a couple usually makes decisions jointly. This applies for family issues as well as for financial and farm issues like crop and livestock production. Nevertheless, in case of disagreement, the final decision-maker is still the man.

Decision-making is linked to risk management and it became clear during the interviews that women and men use more or less the same risk management strategies. In case of emergency, both husband and wife apply the strategies as an entity and thus also refer to the same network. The wife becomes integrated into the husband's network after marriage, which becomes the network she is supposed to rely on, especially when it comes to income shocks. Traditionally, the husband's immediate kin help first and provide most of the help in case of a shock. Nevertheless, the wife's family may also help, especially if they do not live far away. Kinship relations are therefore a major factor for the composition

of networks. The closer the kin relationship is, for example siblings or parents, the more it is likely to have them as members in the network.

These results are in line with a study for the whole of Vietnam (DALTON et al., 2002) which shows that the family plays a vital role within social networks as well as in daily social life. Immediate and extended kin provide a social safety net by meeting material and financial needs during difficult times as well as providing inexpensive labour. Similar results are presented in a study of rural women in Nepal (SIMKHADA et al., 2000) but different results are shown in a study of Ghana (GOLDSTEIN et al., 2002). Therefore, the cultural and traditional differences between ethnicities matter and it is important to identify them before general conclusions are drawn about livelihood strategies, risk management via networks, and necessary social security policies.

It is usually assumed that all households who are members of a certain group such as a village or an extended family will form a single network. DE WEERDT (2002) considers this unlikely, as there are many factors that influence the formation of insurance networks, like smooth information flows, norms, trust, the ability to punish, group size and the potential gains from co-operation. This study shows that the risk-sharing networks neither include all village inhabitants, even if the villages are small, nor do they include all members of the extended family. Hence, the risk-sharing networks are comparatively small.

The level of household wealth is also an important and influencing factor, not only for the formation but also for the size of networks. Poorer households have even smaller networks than richer households and help is exchanged practically only with immediate kin. Richer households also have help-flows to extended kin and occasionally also to friends or neighbours. Social networks are predominately based within village boundaries and there is not much contact to kin outside the village, and hardly any to non-family members beyond village environs. The network size and composition of the poor's networks can be explained by their low availability of resources and thus their limited capacities for mutual help. Depending on the type of crisis, different resources are lacking, such as money, labour, food. Hence, help flows within the risk-sharing networks are specific and can vary from informal credits, borrowing draft animals or providing labour, to food items. Research shows that when facing a severe crisis, at least the low- to medium-income households rely heavily on their social network connections in order to receive help. Hence, using social networks is their most important means of risk coping. Below, Figure 2 depicts two social networks that differ according to wealth, and thus along their network composition, in terms of kin and size.

Figure 2 shows the risk-sharing network of the poor female-headed household of He Thi Giang² (highlighted), a Black Thai widow. Her Kho-Mu husband had died the previous year, after having been sick for three years.

Different sizes of social networks according to wealth

Figure 2a: A poor household

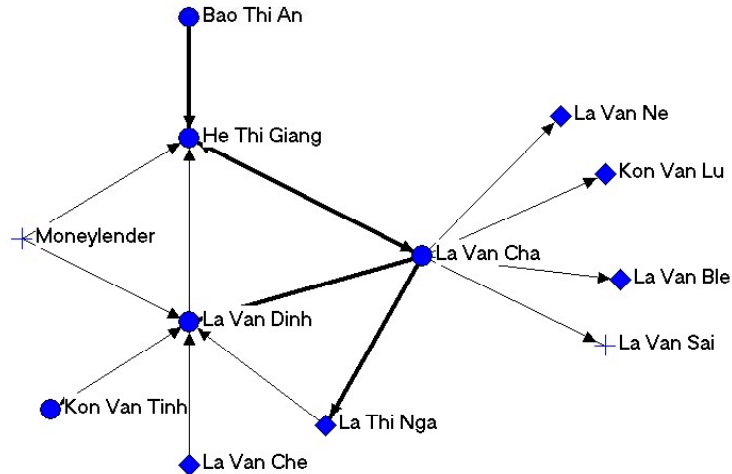
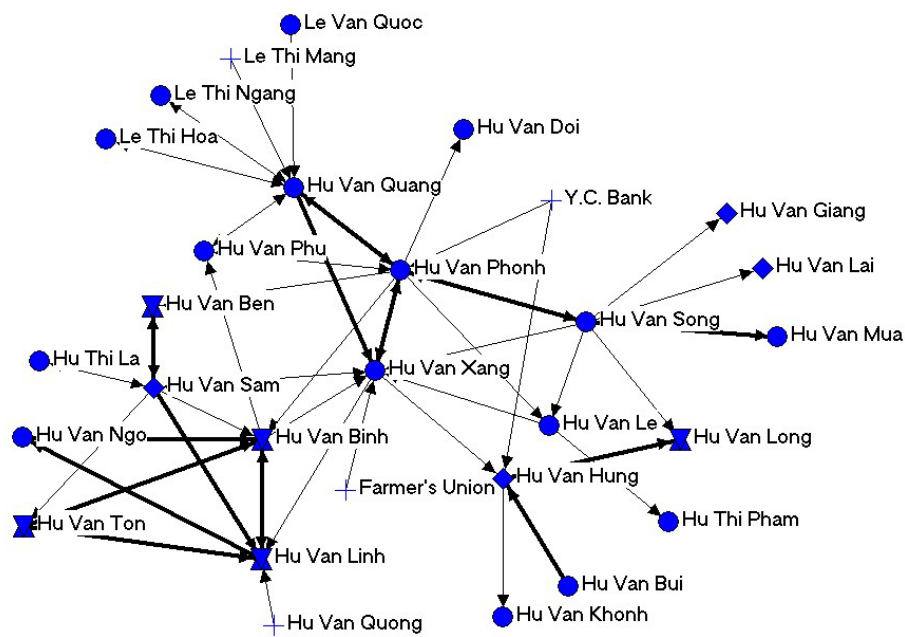


Figure 2b: A better-off household



Source: Own data.

Notes: ◆ Extended kin of ego network. ● Immediate kin of ego network.

▲ Extended or immediate kin, belonging to two networks.

+ Friend or organization.

² Names changed by authors.

Total costs for treatment of illness and the funeral for He Thi Giang's husband were much higher than her yearly income. Now she has to sustain herself and her four children and is only linked directly to four other people, three of them immediate kin. Interestingly, the fourth is a moneylender, because her family refused to provide credit for fear of repayment failure. Clearly, loans from moneylenders are much more costly than family-credit. Therefore, the woman was worse-off after having repaid the moneylender loan than if she would have obtained a credit from family members.

In contrast, Hu Van Xang (Figure 2b) is the male head of an average income Black Thai household. Hu Van Xang's household had to carry a great cost burden in order to finance treatments of illness and a funeral for Hu Van Xang's father, who suffered from an illness for many years and was operated on several times before passing away within the previous twelve months. Hu Van Xang's mother was also sick and hospitalised during the previous year. Hu Van Xang received help from eight persons or households, five immediate kin and three extended kin, respectively. In addition, he received help from the Farmers Union. He is consequently much better 'insured' via his social network than He Thi Giang was, and was thus better able to cope with the crisis.

Although it was found that social networks of poor households are, on average, smaller than those of richer households, their social networks can also encompass people of higher income groups. This can be of advantage for the poor since they then have network members who are capable of supporting them. A poor household may also profit if the richer household does not insist on a complete return of the provided help. When done like this, income could be partly redistributed, which is important, as it contributes to poverty reduction. Nevertheless, altruistic feelings are not the main reason for support, but rather self-interest, which restricts the redistribution effect and the provided help. Mutuality is of utmost significance and when not guaranteed or anticipated, support is very limited. However, in times of crises, the networks usually guarantee minimum access to the lacking resources, be it food, labour or an informal credit. Support is always sufficient to fulfil the most basic food requirements. Additional requirements may be only partly fulfilled, especially when the households are poor. Requests for help may be denied, but often a household does not request the full amount of support needed in order to cope with a crisis. The fear of over-stressing relationships is a common feature in social networks, so a household carefully considers if it will be able to return the provided help one day.

Apart from buffering crises, social network connections can also be used to access new knowledge and share information. Common conversational topics

include farming issues, such as appropriate planting dates or new varieties. Men spend more time socialising with other people than women due to the larger burden of work that women have. Daily timetables, which were developed in different villages and compared with those presented in secondary literature (e.g. WORLD BANK, 1999), showed that the hours of field work only are similar for both women and men, averaging around seven to eight hours per day. But women have to accomplish household and reproductive tasks, which leads to a working day of around fourteen hours for a woman.

Observations from the micro credit project ‘Support to Freshwater Aquaculture’ (SUFA), which is implemented by Vietnam’s Ministry of Fisheries and works with different ethnic minorities in northern Vietnam, complemented own research results. The project encouraged women to participate in agricultural training and to obtain credit for investments in aquaculture. According to THOMSON (2004), increasing the female farmers’ technical knowledge had a clear gender impact, as most of the families increased joint decision-making in aquaculture and agriculture. Women and men spend less time relaxing than before and meet more people from outside their households. Women especially increased the number of times per week they socialise with other people, although on average, men still go out more than women. Interestingly, female farmers use their social network to discuss aquaculture, agriculture and finances more often than the male farmers do.

Yet the additional contacts men and women cultivate by socialising with peers are not very important for coping with crises, since the family is obliged to help when a crisis occurs. The PRA-sessions showed that these contacts can become important to prevent a crisis because information can be exchanged and additional knowledge gained. Hence, maintaining or extending these contacts can serve as an adaptive risk management strategy. Through learning from other farmers e.g. about improved aquaculture, which leads to higher incomes, a household is able to improve its standard of living. Poorer households socialise less and join meetings at a lower frequency as they often have a higher work burden. This reduces their ability to access new and valuable information. One could say that socialising less than other households increases their vulnerability.

5 CONCLUSION AND RECOMMENDATIONS

Empirical research revealed that most assets are formally owned by men. Thus, decision-making processes and power structures are in favour of men, but women are involved in the decision-making process. The risk management strategies hardly vary between married men and women. In case of a crisis, it is the household as a whole which makes use of the available resources and the existing social network, not individual household members. Since a couple has

to rely on the husband's network, women are usually worse off than men when the spouse dies.

If women's access to certain assets, especially knowledge and credit, is increased, their social position improves and their involvement in the decision-making process of the household increases. Since women have begun to socialise more and are increasingly exchanging specifically farming knowledge, this has the potential to improve the women's, and in the long-run, the whole household's capabilities of using scarce natural resources more efficiently. This is an efficient risk management strategy which has the potential to decrease the vulnerability of a household in the long-term. Therefore, it would be recommended to not only encourage women to participate in training, but to combine it with a women's credit program.

The ways information is spread within a social network requires further investigation, but it is assumed that it can also be used to introduce agricultural innovations when the social network structure is such that information is also channelled to poor and vulnerable households.

The formation, maintenance and use of social networks are very important means of risk management, especially when a public safety net does not or just barely exists. Social networks are able to provide basic access to lacking resources but are insufficient to entirely buffer a crisis of a poor or vulnerable household. Therefore, policy interventions like the introduction of a formal safety net become necessary. In the mountainous area of northern Vietnam, safety nets are not needed to improve food security, because even very poor people are able to either borrow food or money for buying food items. Policy measures should rather target the only partly existent credit, savings and insurance system. Health services and insurance, especially on a household level, would be important factors for securing livelihoods, as the investigated cases had problems with the high cost of illness treatment.

When anticipating the design of policy interventions, it is important to be aware of the fact that improving an individual's position in society, e.g. through measures which increase income, may provide incentives to leave the informal risk-sharing arrangement if she/he feels that staying in the arrangement may no longer be in their best interest. As long as policy interventions cannot provide sufficiently high coverage for certain livelihood emergencies, they must be adapted to the given societal structures to avoid the destruction or undermining of functioning networks, but also to meet the requirements of those people most in need, the poorest households. It is also necessary to follow a gender-specific approach and incorporate gender-specific aspects in policy suggestions, for example changing the way land use certificates are issued.

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STRUCTURAL SOCIAL CAPITAL AND AGRICULTURAL INCOME AMONG CORPORATE FARMERS IN THE CZECH REPUBLIC

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ABSTRACT

As in other countries in Central and Eastern Europe, corporate farms play a vital role in agricultural production in the Czech Republic. However, not all of these farms have been equally successful economically. In general, a varying adoption rate of production factors, i.e., land, labor and capital, is identified as influential. Whether their ability to collaborate with other farms is an additional factor, as has been discussed under the concept of social capital, will be analyzed in this paper. Based on the econometric analysis of survey data from 166 corporate farms, it can be shown that social capital is indeed a significant factor determining the level of agricultural income.

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1 INTRODUCTION

The changing of political regimes in Central and Eastern Europe (CEE) led to the abolition of collective and state farms. Although new governments across the region promoted the transformation of state farms into private or family farms like in Western Europe, this transformation has not always been successful, e.g. in the Czech Republic. There, agricultural production is currently dominated by corporate farms. However, some of them have been economically more successful than others. This is generally explained in economics by varying production factor endowments. However, it has been observed that similar production factor endowments do not necessarily lead to similar economic results (SLANGEN et al., 2004). Therefore, the research question has been raised whether an additional, so far under-rated, production factor might be of significance. This factor is called social capital. Whether it can be identified as an independent production factor leading to higher agricultural income will be the focus of this analysis.

The socio-economic transformation of the agricultural sector in CEE has not been as successful as originally anticipated. Many factors seem to be of influence: Underdeveloped rural financial systems and the complicated mode of farm restructuring led to limited access to loans due to lack of profitability, collateral problems, risks and uncertainty. Similarly, the farm sector was characterised by; a weak human capital structure for managing private farms; fragmented land ownership; rapid changes in agricultural policies; and an incomplete legal framework (ROZELLE and SWINNEN, 2004; BEZEMER, 2002). In addition, it has been argued that the poor results of the agricultural transformation process have been due to a low level of social capital (e.g. PALDAM and SVENDSEN, 2000; CHLOUPKOVÁ and BJORNSKOV, 2002). However, so far only few studies on the role of social capital for rural development in general and agricultural development in specific have been executed in transition economies. A very comprehensive overview about research on social capital in CEE has been presented by MIHAYLOVA (2004), but overall, it can be concluded that little is still known regarding the economic effects of social capital with respect to agricultural producers in transition economies. The academic debate in agricultural economics and the empirical analysis concerning this issue has just started. We wish to help fill this gap by analyzing survey data from managers of corporate farms in the Czech Republic.

2 MODEL

Conventionally, economic theory suggests that growth and development are based on the efficient adoption of production factors, i.e., land, labor and capital and, since its recognition in economics during the 1960s, human capital. Together these factors determine the income and wealth of enterprises and nations (GROOTAERT, 1998). In addition, we suggest that social capital constitutes an additional factor contributing to economic growth in the sense that the collective gains, net costs, will be positive (KNACK, 2002). We test the hypothesis that social capital forms, besides land, labor, capital, human capital and the production structure, an additional independent factor of production that positively influences agricultural income. Our model is as follows:

$$AI=f(la, lb, ca, hc, sc, ps)$$

where AI = agricultural income, la = land, lb = labor, ca = capital, hc = human capital, sc = social capital, and ps = production structure.

However, there has been a lot of criticism about the vagueness of the concept due to the difficulties of operationalizing social capital regressors. A consensus about a commonly acknowledged meaning of social capital is still missing. Therefore, some economists are very skeptical about applying this concept (e.g. MANSKI, 2000) whereas others urge carrying on with the debate (e.g. DURLAUF, 2002).

In light of the large range of adopted definitions, which makes it almost impossible to operationalize them for any empirical tests or even for comparison, a more tightly focused definition of social capital has been sought (WOOLCOCK, 2002). In line with other authors (e.g. SOBEL, 2002) we use a quite pragmatic definition in our analysis. We refer to ROSE (2000: 1), who states that “Social capital consists of informal social networks and formal organizations used by individuals and households to produce goods and services for their own consumption, exchange or sale”. Keeping in line with a more focused micro-definition of social capital, the number of relevant indicators should be reduced. Therefore, in our approach we concentrate on the membership in formal organizations, i.e., both passive and active membership. While passive membership just means membership as such, i.e., paying membership fees and participating in meetings, active membership involves the election to and service of the respective members in the self-governing bodies of an organization.

We apply production structure in our model as an additional independent variable which can be understood as a rough proxy of the farming system. It thus reflects the most important farm activities and to a large extent determines agricultural

income. This approach is used to analyze the decisions of agricultural producers and to examine their linkages to other rural stakeholders (DOPPLER, 2000).

3 METHODOLOGY

This section contains two parts: The first provides an overview of the primary data, while the second describes both statistical methods that we use in the econometric analysis. Because multiple regression analysis is an often-used methodology, we keep its description short and focus more on factor analysis.

3.1 Data base

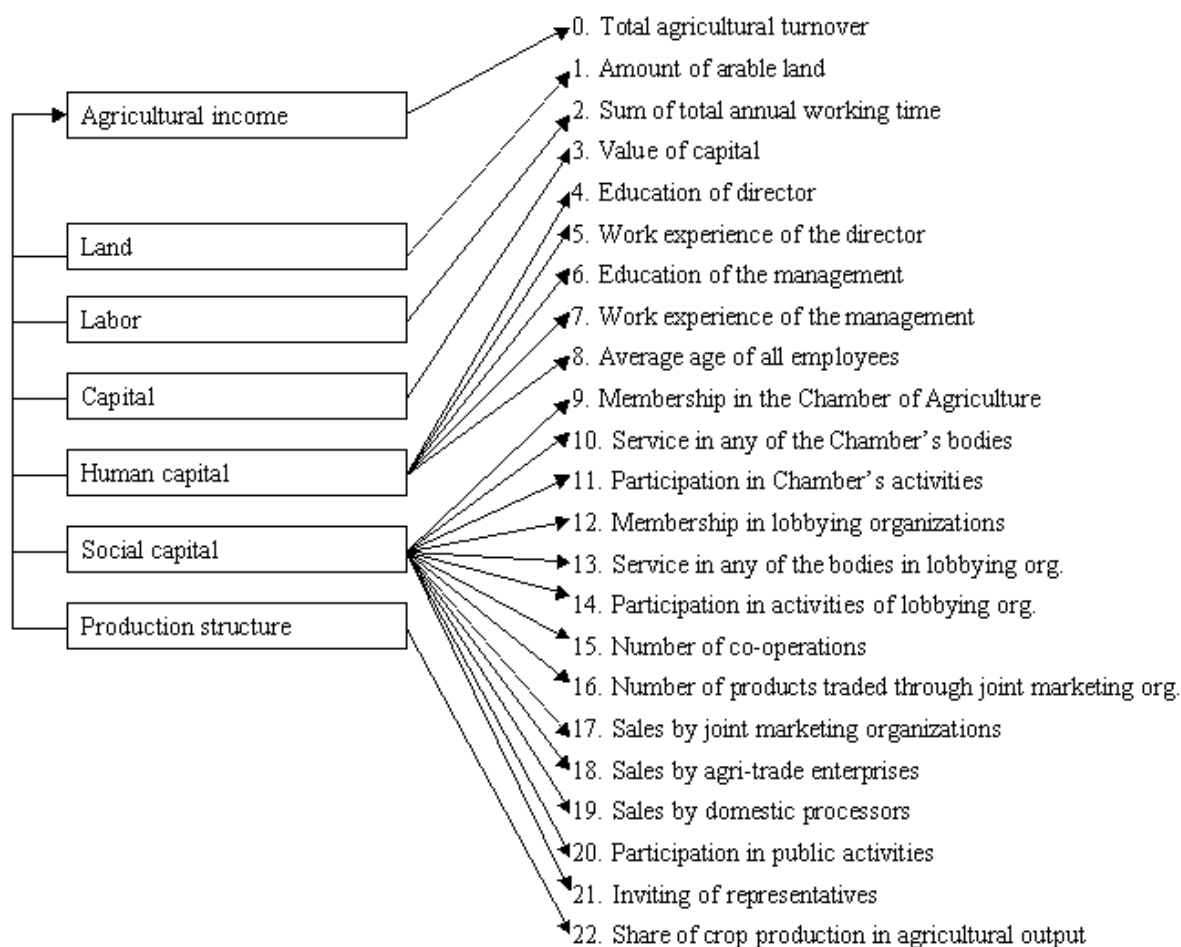
We test our model by analyzing primary data from a Czech farm survey jointly planned by IAMO and VUZE (Research Institute of Agricultural Economics, Prague) and conducted by a private company in 2004. In total, 166 directors and chief economists of corporate, large-scale farms were interviewed. Based on key informant interviews and statistical data, it had been assured that the sample is representative of corporate farms of the Czech Republic. As stated above, the focus is on the structural form of social capital. The cognitive side of social capital, i.e., trust, values, norms and attitudes, will not be analyzed in this paper due to data limitations. Twenty-two explanatory variables were used for the analysis and divided into six categories (i.e., labor, land, capital, production structure, human capital and social capital, see Figure 1). The dependent variable ‘total annual agricultural turnover in 2003’ has been selected as an instrumental proxy for gross agricultural income.

Land, labor, capital and production structure could easily be measured by one variable in each case. For land we use arable land area; for labor the sum of total annual working hours for all employees and workers; for capital the sum of four separate indicators, i.e., book value of buildings, machines and equipment, animals and perennial crops. The production structure was measured in categories according to the significance of crop and animal production to the gross agricultural income.

Two independent variables in our model, i.e., human and social capital, are not directly measurable and have to be determined by various proxy indicators. Figure 1 shows how we measure them. For human capital we use five variables, i.e., the educational level and work experience of the director and the managerial staff, as well as the average age of all employees and workers. The focus of this contribution is on social capital; therefore the major part of our variables deals with different facets of it. In total, there were 13 different variables referring to social capital. Among the formal organizations, the Chamber of Agriculture plays a

distinguished role and was separately listed in the questionnaire. We are convinced that it is not passive membership that counts, but rather active participation in organizational life. We measure the level of participation by asking whether an employee of the farm is elected to any of the self-governing bodies of the Chamber and how often someone takes part in its activities. The same questions were asked for five other lobbying organizations which mainly represent corporate farms in the political process, of which the Agricultural Association is by far the most important one.

Figure 1: Model (left side) and used variables (right side)



Source: Own figure.

Notes: Units for variables: 0: Czech Koruna (CZK); 1: hectare; 2: hours; 3: CZK; 4: categories (1=apprenticeship, 2=secondary school and apprenticeship, 3=university); 5: years; 6: categories (see No. 4); 7: years; 8: years; 9 and 10: dummy (0=no, 1=yes); 11: categories (0=never, 1=1, 2=2-5, 3=6-10, 4=>10); 12: counted memberships (up to five); 13= dummy (see No. 9); 14: categories (see No. 11); 15: counted co-operations; 16: counted products; 17, 18 and 19: percentage of total agricultural sales done by the respective sales channel; 20: categories (0=never, 1=1-2, 2=3-4, 3=>4); 21: dummy (see No. 9); 22: categories (1=animal production only, 2=more than 75 and less than 100 per cent animal production, 3=mixed farming system, 4=more than 75 and less than 100 per cent crop production, 5=crop production only).

The employed marketing channels are a good proxy-indicator for the ability of managers to build up networks that promote their economic situation. We concentrate on three major marketing channels mentioned by the farm managers, i.e., joint marketing through marketing co-operatives based on voluntary membership, as well as sales to agri-trade enterprises and domestic processors, respectively. Marketing co-operatives have been operating since 1990, however, quite a number of them failed. Therefore, their image is not that good among farm managers. Agri-trade enterprises are the privatized successor companies of the former state-owned marketing enterprises and specialize in input supply and farm product sales. Domestic processor companies are those which purchase agricultural raw material and process it directly into food or fiber, etc., e.g. milk or sugar beets. While marketing through joint marketing organizations requires building-up social capital with other farms, the other two marketing channels do not require this type of capital. Farm directors and managers were asked about their marketing channels and the respective share of total annual agricultural sales in 2003. With respect to joint marketing, the number of products was also queried.

Another important part of social capital is the ability to co-operate with other farm enterprises. The directors were asked whether they co-operate, formally or informally, in providing, among other things, farm services, joint purchasing of technology or inputs, joint leasing of technology, establishing and operating co-operative savings banks, refining and warehousing. When in fact these cooperations did exist, most of them were informal. We use the total number of co-operations per farm as an indicator of the ability to co-operate and the density of the co-operation networks.

Finally, we use two variables to test the linkages to public authorities, which might have an influence on the total annual agricultural turnover. Firstly, the directors were asked how often the representatives of the farm took part in public activities. Secondly, directors were asked whether they invited representatives of the municipality to farm events.

3.2 Statistical methods

In the first analytical step, we separate social capital as an independent production factor not correlated with the classical production factors and human capital. We use factor analysis in this step (as e.g. WOODHOUSE, 2006). The factor analysis is a multivariate statistical procedure that extracts independent factors from a set of correlated variables. These factors are linear combinations of the original variables (BACKHAUS et al., 2003; HAIR et al., 2006; STEVENS, 2002). Factor analysis starts with a matrix of paired correlation coefficients. In our

empirical investigation we use Kendall's τ (tau) as correlation coefficient. One precondition for the factor analysis is that the correlation matrix is suitable for the procedure, i.e., that the paired correlations are high. We assess the suitability of our correlation matrix by using the Kaiser-Meyer-Olkin criterion (MSA: measure of sampling adequacy) and consider our matrix as not suitable if $MSA < 0.5$ (BACKHAUS et al., 2003).

In the next step, we extract the factors by using the principal component analysis (PCA) and rotate the factors orthogonally (varimax rotation with Kaiser normalization). Only factors with an eigenvalue greater than 1 are considered in further calculations because a factor should at least explain as much variability as one standardized variable cause (Kaiser criterion; STEVENS, 2002). In a factor analysis with a suitable correlation matrix, the number of factors should be much smaller than the number of original variables, but these factors should represent most of the variability in the original data set. HAIR et al. (2006) recommend a proportion of explained variability of 0.6 (or 60 %) as the lowest limit. The most important step in factor analysis comprises the interpretation of factors. According to the factor loadings (correlations between the original variables with the factors) we can conclude which factor represents which variable or set of variables. In fact, each variable is correlated with each factor, but the higher the factor loading of one variable with one factor, the more this factor represents the respective variable; or, in other words, the factor can replace the variable in further calculations. We focus on absolute values of factor loadings higher than 0.6 for our interpretation of the factors.

There are many rules of thumb for factor analysis in literature, but in practice it is an explanatory procedure and each researcher should examine the results in light of interpretability and fit to the problem. If the extracted factors can be interpreted in a meaningful way with respect to the analyzed problem, and if they represent a major part of the variability in the original data set, then it is permissible to calculate the factor scores (values for the factors) and use them instead of the original values in further calculations (HAIR et al., 2006). Factor scores are linear combinations of the standardized original variable's values. Variables that have high factor loadings determine the scores of their respective factor while the influence of variables with unimportant factor loadings is negligible.

If factor analysis results in at least one factor that describes social capital, then we may conclude that social capital is an additional independent production factor. By replacing the original values on the right side of our model with the factor scores, we test the second aspect of our hypothesis, namely that social capital positively influences agricultural income. We test this by using a

multiple linear regression model. The factors are by default orthogonal, so multicollinearity is not a problem. The regression coefficients are calculated by ordinary least squares method and tested for significance. Non-significant factors are stepwise excluded from the model. A factor is considered to be non-significant if its significant level is higher than 0.05. In every step only one factor is excluded, beginning with the factor with the lowest significance level, and then the model is calculated again. This process stops when only significant factors remain.

4 EMPIRICAL RESULTS

This section presents the empirical results, starting with the factor analysis and continuing with the multiple regression analysis.

4.1 Factor analysis

We use factor analysis to identify social capital as an independent factor of production not correlated with any other production variable, e.g. farm size or the educational level of the managerial staff. As discussed above, a matrix of correlation coefficients (Kendall's τ) was used as input data. The Kaiser-Meyer-Olkin criterion came to 0.65, proving the matrix as standard mediocre and therefore suitable for factor analysis (BACKHAUS et al., 2003). Through PCA with varimax rotation and Kaiser normalisation, nine factors could be extracted from the set of 22 variables, explaining 66.6 % of the total variance in the variables included. The share of explained variance is greater than 60 % (HAIR et al., 2006) and therefore considered to be sufficient for interpretation and further calculations.

Table 1 summarizes the results of the calculations by showing all the relevant factor loadings on the nine factors for the 22 variables. Those loadings greater than 0.6 or less than -0.6 are shown in normal size, and those greater than 0.45 or less than -0.45 appear in italics.

Table 1: Factor loadings greater than 0.45 or less than –0.45 for 22 variables on nine factors

Variable	Factor								
	1	2	3	4	5	6	7	8	9
Value of capital	0.81								
Sum of total annual working time	0.80								
Amount of arable land	0.77								
Share of crop production in agricultural production									0.87
Education level of the director						0.63			
Work experience of the director							0.69		
Education level of the management						0.77			
Work experience of the management							0.72		
Average age of all employees									
Membership in the Chamber of Agriculture				0.79					
Service in any of the Chamber's bodies				0.69					
Participation in Chamber's activities				0.80					
Membership in lobbying organizations		0.79							
Service in any of the bodies of lobbying organizations		0.67							
Participation in activities of lobbying organizations		0.85							
Number of co-operations					0.68				
Number of products traded through joint marketing organizations			0.75						
Percentage of total agricultural sales by joint marketing organizations			0.86						
Percentage of total agricultural sales by agri-trade enterprises								0.86	
Percentage of total agricultural sales by domestic processors				-0.65					-0.47
Participation in public activities					0.58				
Inviting of representatives of the municipality to farm events					0.74				
Eigenvalue	2.19	2.09	1.98	1.92	1.55	1.30	1.25	1.23	1.15

Source: Own calculation with data from the IAMO/VUZE farm survey, 2004.

Notes: PCA, varimax rotation with Kaiser normalization.

Relevant factor loadings greater than 0.6 or less than –0.6 are in standard letters.

Those greater than 0.45 or less than -0.45 are in italics.

In the next step we label the nine factors according to the variables that have factor loadings greater than 0.6 or less than –0.6. Factor 1 summarizes the three variables that describe the classical production factors of land, labor and capital. Two factors indicate different characteristics of human capital, i.e., education of the directors and the management staff (factor 6) and their work experience (factor 7). The variable ‘average age of all employees’ did not show any high loadings on any of the various factors. In addition, it did not form an independent factor itself. This is caused by small correlations with all other 21 variables. The

production structure is quantified by factor 9. The four mentioned factors represent, by and large, the traditional production factors. Five other factors stand for partial aspects of social capital; we named them membership and active participation in lobbying organizations (factor 2), membership and active participation in the Chamber of Agriculture (factor 4), marketing through joint marketing organizations (factor 3) and public relations and cooperation (factor 5). Factor 8 is labeled marketing through agri-trade enterprises and stands for a marketing channel that needs contacts to these companies, but no cooperation with fellow farm enterprises. Hence, we understand this factor to represent a form of marketing which actually requires no social capital.

At this stage we can conclude that the results of the factor analysis show that the factors indicating social capital can be clearly separated from the classical production factors. Membership and active participation in a lobbying organization, as well as in the Chamber of Agriculture, the use of different marketing channels and also public relations and co-operations are independent from farm size or the volume of its physical capital. Or, in other words, it is shown that in our sample, farm size *per se* is not related to membership in formal organizations, and hence to a higher level of social capital.

In a final step, the scores for the nine independent factors were computed to replace the 22 correlated variables in a multiple regression model and to test whether the five social capital factors would have a significant effect on gross agricultural income.

4.2 Multiple regression analysis

In order to test the hypothesis of whether social capital enhances the level of gross agricultural income, we calculated the following linear multiple regression model:

$$Z_GAI = \sum_{i=1}^9 b(i) * factor(i), \text{ where}$$

Z_GAI: standardized gross agricultural income,

b(i) : coefficient for the i^{th} factor, $i=1..9$,

factor(i) : scores for the i^{th} factor, $i=1..9$.

The total number of farms in the analysis is 102. This is due to missing values and three outliers in the sample. Table 2 summarizes the results of the regression analysis, i.e., on the left side for the complete model and on the right side for the reduced model with significant factors only. The impact of five of the nine factors was not significant in the first model. Only the factors (1) land, labor and

capital, (2) membership and active participation in lobbying organizations, (6) farm managers' education and (9) production structure were significant. In the following, the model was reduced in a stepwise manner to a model comprising only significant factors. Both models in Table 2 are highly significant and explain about 60 % of gross agricultural income.

Table 2: Results of the multiple regression analysis (N = 102)

Factor(i)	Model with all factors		Model with significant factors only	
	b(i)	Level of significance*	b(i)	Level of significance*
Land, labor and capital	0.887	0.000	0.880	0.000
Membership and active participation in lobbying organizations	0.160	0.018	0.142	0.039
Marketing through joint marketing organizations	0.071	0.231		
Membership and active participation in the Chamber of Agriculture	-0.101	0.095		
Public relations and co-operations	0.048	0.454		
Farm management's education	0.195	0.002	0.204	0.001
Farm management's work experience	-0.052	0.424		
Marketing through agri-trade enterprises	-0.060	0.335		
Production structure	0.140	0.023		
Corrected R²		0.61		0.59

Source: Own calculation with data from the IAMO/VUZE farm survey 2004.

Notes: * A significance level lower than 0.05 stands for a significant effect of the factor on gross agricultural income.

In the final model, three factors remain that have a significant impact on gross agricultural income: (1) land, labor and capital, (2) membership and active participation in lobbying organizations and (6) farm managers' education. The coefficients of these three factors are positive, indicating that an increasing endowment of land, labor, capital, human capital, and social capital increases gross agricultural incomes of corporate farms in the Czech Republic. The absolute values of the coefficients demonstrate that land, labor and capital have the strongest effect on gross agricultural income, followed by the educational level of the farm's management staff, as a facet of human capital. This result is concordant with the theories of neoclassical economics. Social capital in the form of membership and active participation in lobbying organizations has a less intensive but nevertheless significant positive impact. It is surprising that membership and active participation in the Chamber of Agriculture, which was set up in 1993, is not significantly related to gross agricultural income. When the chamber was founded, membership was obligatory. By far the majority of corporate farms are still members (85 % of the sample) so it is almost impossible to measure any impact from membership.

The mode of marketing agricultural products, i.e., whether it is pursued in a more social capital-oriented way (i.e., marketing through joint marketing organizations) or in a less social capital-oriented manner (i.e., marketing through agri-trade enterprises) seems to have no significant repercussions on the level of gross agricultural income. This finding is surprising, as we assumed that marketing through joint organizations reflects a type of social capital. It is suggested that more in-depth research with respect to marketing channels will be needed to draw the appropriate conclusions. Interestingly, good public relations and the ability to co-operate with other farms were also without significant influence.

5 CONCLUSIONS

In this paper we discussed the impact of social capital on gross agricultural income by drawing on a summer of 2004 survey among directors and chief economists of 166 Czech corporate farms. In line with the adopted, more pragmatic definition of social capital, emphasis has been laid on membership in formal organizations and cooperation with other farms.

As expected by neoclassical theory, gross agricultural income is significantly determined by the traditional production factors, i.e., land, labor, capital and human capital. In addition, as stated in our hypothesis, it could be shown that social capital does have a significant influence on the level of gross agricultural income. Keeping membership in lobbying organizations, serving in their self-governing bodies and participating in organized activities is positively correlated with gross agricultural income. By far the most important formal organization for corporate farms in the Czech Republic is the Agricultural Association, which underwent quite a metamorphosis in various steps, from a socialist mass organization to an organization based on voluntary membership and devoted to the support of its members. In that respect, it seems to be successful.

It can be concluded that social capital does have a significant positive influence on the level of agricultural income among corporate farms in the Czech Republic. Our hypothesis has been approved by the analysis. Therefore, a first recommendation can be drawn: Corporate farms can improve their gross agricultural income if they join and work actively in formal organizations, particularly lobbying organizations like the Association of Agriculture. But we admit that we are just at the beginning of analyzing and quantifying the concept. While we covered the structural side of social capital with respect to formal organizations, we could only cover some dimensions of informal networks, but not the cognitive side. Similarly, we cannot say anything about the costs in building social capital. This calls for further research and analysis.

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IMPROVING THE FUNCTIONING OF ARMENIAN RURAL FINANCIAL MARKETS: A SOCIAL CAPITAL PERSPECTIVE

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ABSTRACT

Agriculture is one of the Armenian economic sectors that have been undergoing transition towards a market economy. Land was fully privatised in 1991-1992, and 70 % of the arable land was transferred to family farms. Soviet-style collectives were disbanded and ownership structure changed.

Yet efficiency in the newly-created private agricultural sector is strongly constrained by the lack of adequate institutions, particularly financial institutions, which support agricultural activities under private ownership. Due to both traditional and transition-related problems, small-scale farmers, particularly poor rural households, are practically excluded from access to credit

and saving services. The specific problems related to agricultural credit are low enterprise profitability, risk and uncertainty, and collateral problems.

In the absence of well-functioning financial markets in the country, social capital is gaining importance in accessing financial resources.

The analysis of social capital, with social capital understood here as a network of social relations, requires an assessment in the form of network analysis. Understanding social networks can be an effective means of identifying and developing opportunities for rural sector improvement.

The objective of this contribution is to demonstrate how the current credit situation in rural Armenia is embedded in society. Moreover, taking into consideration the dynamic institutional relations (economic, political, agro-economical and socio-cultural environment), this contribution will identify how farmers use existing social networks to increase access to productive resources such as credit.

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1 INTRODUCTION

The transformation from a socialist economy towards a market economy is not only a change in terms of the organisation of exchange, but also entails a far-reaching modification of socio-economic institutions. In Armenia, the transformation following independence from the Soviet Union implied the decline of industries that were formerly the basis of the economy. With the decline of industry, the agricultural sector gained in importance in terms of value-added as well as in employment for the people (BEZEMER and DAVIS, 2003).

Formerly, agriculture, along with the rest of the economy, was a centrally-planned system. With political changes, it was privatised and bureaucratic control was supposed to be substituted with market regulation. However, markets as “self-regulating systems” did not emerge automatically, as they had no institutional basis. Institutions do not emerge automatically, nor can they be established by decree or be set up through policies. Institutions are based on meaning (*Sinn*), which can, as (LUHMANN, 1979) mentions, not be produced. A functioning market requires the existence of certain institutions, like the acceptance of private property and trust in contracts and legality, especially with regard to savings and credit. In Armenia, like in all other transitional and developing countries, these institutions¹ were lacking. In fact, we would define “transformation” with regards to the rise of such institutions as the “institutionalization of a market economy”. As a result, the bureaucratic regulations of the economy were substituted not primarily by those required for a working market, but by other forms of extra economic regulations of markets, for example violence or the threat of it, coercion, or political power. Thus, the new institutions linked to the market economy, like banks, etc., were themselves embedded in extra-economic relations. Consequently, the interactions between financial institutions and farmers were less defined by legality, upon which it is possible to base economic calculations, than mutual distrust. As a result, these financial institutions were neither used by farmers for savings, nor did they trust the farmers to pay back credits. Not surprisingly, this led to difficulties for financing agricultural activities through common financial means (SWINNEN and GOW, 1997).

At present, access to financial services is, for the majority of peasant farms in Armenia (and in many other transition countries) quite problematic (SPOOR, 2004). The government stopped previous programmes of directed agricultural credit because the government does not have sufficient funds, and the farmers perceive

¹ Institutions regulate action based on meaning. The meaning of institutions is based on everyday life, i.e., shared objectives that individuals attach to their respective actions.

the credit provided by the government as their legitimate due, without need for repayment. At the same time, Armenian commercial banks do not have sufficient funds to lend (due to their narrow capital bases and a limited volume of mobilised deposits) in order to finance the agricultural sector. Moreover, the commercial banks, apart from the Agricultural Cooperative Bank of Armenia (ACBA), are not interested in and have no experience providing credit to small-scale private farmers (MINISTRY OF AGRICULTURE OF ARMENIA, 2002). In addition, farmers do not trust banks and have virtually no desire to deal with them. Savings, if one has any, are kept at home and in cash.

If the established financial institutions do not work due to missing trust between the main actors (banks and farmers) microfinance can be an intermediate solution. In Armenia, numerous microfinance² intermediaries (MFI): UMCOR-Aregak, FINCA, IOM/UNDP, USDA-Credit Clubs³ have emerged. These MFI have several peculiarities: (1) by law, they are not allowed to collect savings, (2) their loan funds are fed by international donor organisations, (3) they do not require conventional loan collateral, but rely on social bonds (credit groups) to enforce repayment (MINISTRY OF AGRICULTURE OF ARMENIA, 2002). In other words, MFI rely on non-market institutions like donor support, state control and social control among credit receivers. Nevertheless, the objective of MFI is to further the institutionalisation of the market economy. Accordingly, they are the intermediates in transitional processes towards a market economy. Thereby we assume that a market economy is a result of the combination of social, political and economic processes. MFI now make use of social processes to enhance economic development towards markets.

In contrast to most financial institutions, MFI do usually not work with individuals, but focus on credit groups. The idea is that individuals who belong to the target group of the typical MFI are poor and thus cannot provide physical collateral such as land. Furthermore, it is believed that this size of transaction is not profitable for commercial banks. Following the perspective that persons who are poor with regard to their monetary means might be in a better position with regard to their “social capital – networks of connected individuals”, i.e., their

² Microfinance is defined by the relative size of financial transactions with regard to per capita income. Normally, a micro-credit ranges from 50-200 % of per capita income, depending on the economic development stage of the country.

³ UMCOR-Aregak = Aregak is United Methodist Committee of Relief’s micro-credit program for women, IOM/UNDP = International Organization for Migration/United Nations Development Program, FINKA = Finance for International Community Assistance, USDA-Credit Clubs = United States Department of Agriculture’s micro-credit program.

social relations and forms of social organisation, MFI attempt to mobilise social capital to improve monetary possibilities.

The connection between institutions, social networks and social capital

Social capital as networks of connected individuals is acknowledged in many definitions of the term. BOURDIEU (1986: 243, 248) suggested that social capital is the value of social obligations or contacts formed through a network. Based on CÔTÉ (2001), “while human capital is embodied in individuals, social capital is embodied in relationships.” According to PUTNAM (2000: 19), “social capital refers to connections among individuals – social networks and the norms and reciprocity and trustworthiness that arise from them.” Similarly, STONE (2001: 4) sees social capital “as networks of social relations which are characterized by norms of trust and reciprocity.” We base our work on this micro-level definition of social capital, which emphasises the role of social networks and social ties as being the most relevant to microcredit programs.

The regulations applied in the everyday life of social units or social networks, be it families, communities or societies, we understand as institutions. Institutions are rules internalised and enforced by social control, not necessarily by external control. Institutions in this sense are connected to consciousness and self-evident action. Thereby, institutions reduce the need for external control.

While financial organisations can enforce their demands and contracts through legal means, if these exist. MFI in contrast, heavily depend on institutions, i.e., the willingness of people to pay back the credit, which is enforced by social control of a social unit or group, usually through peer-pressure, because other means do not work.

Our argument is that due to the transitory situation in Armenia, where the old socialist institutions no longer work, i.e., have lost their meaning and the new financial institutions are not really institutionalised, i.e., trust is lacking, farmers depend on basic institutions to govern social relations and act within these. The most basic of such institutionalised social relations are kinship and friendship, i.e., person-to-person relations, as these are controlled by direct interaction and information spreads rapidly through such webs of social relations. This, then, allows social control within a network.

Here we find an interesting ambivalence. GRANOVETTER (1973) shows the importance of what he defines as “weak ties” for gaining information and potential support. Weak ties are indirect, loose social relations compared to strong ties of reciprocity. Weak ties might enable access to information, but possibilities for social control are limited. Consequently, while such weak ties

are relevant for gaining information about opportunities for MFI, strong ties are needed to enforce the credit group.

The paper is organised as follows: Section 2 provides some background information on the land reform process, as this is crucial for not only understanding the emergence of private property, which could be used as potential collateral in agriculture, but also the social and institutional base for MFI. Section 3 presents the data and methodology used in the analysis and continues with the findings in Section 4. Section 5 concludes the paper.

2 THE LAND REFORM PROCESS

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 privatisation of the land, 332,608 peasant farms were created in contrast to the Soviet-type kolkhoz/sovkhozes (CFOA ARMENIA COUNTRY PAPER, 2003). The allocation of land to members of eligible families depended on the available land in the community and the population density at the time. This system resulted in regional differences in the land ownership per family (SPOOR, 2005).

The distribution of land was not free. The beneficiaries paid the Government a nominal price, set at 70 % of an estimated two-year net profit. However, the price calculated according to Soviet accounting practices was very low, and it was often referred to as symbolic price by officials involved in the process (LERMAN, 1996).

In the interests of equity, small and scattered plots of land were distributed. Land was first assessed and divided into different categories based on its productivity (e.g. irrigated and non-irrigated, dry soils), location (relative proximity to the village), type (pasture, arable, meadows, and mountainous land), and other factors. In order to ensure fair distribution, the plots were allocated to the families through a lottery. A family of three received one parcel of land. Thus, household size determined total land allocation per family (GRIGORYAN and VARDANYAN, 2004).

In contrast to many other transition countries, this process has so far not led to larger scale farms in Armenia. Because land reform is still incomplete and the sale and rental markets are still underdeveloped, a notable land reallocation process has not yet occurred. Land allocation in turn constrains rural financial sector development, since farmers are not able to use their main productive asset

as collateral. Banks still insist on highly liquid collateral and on residential property in urban areas.

Completing the registration of a land title may lead to land sales/purchases and to land being concentrated in the hands of more dynamic farmers (SPOOR, 2004). The ready marketability of land will support the elimination of collateral constraints for agricultural producers.

3 DATA AND METHODOLOGY

This contribution is based on field research among 33 private farmers (14 of which were credit group members) in the Armavir province of Armenia in 2006. The so-called social network analysis focussed on farmers' access to agricultural MFI credit in relation to their social networks.

The network analysis documents farmers' information flow, labour sharing, lending activities, and kinship relations in order to obtain an idea of the strength and role that networks play in determining access to group-based microcredit. Since networks are defined by their actors and the connections among them, each person in the survey was asked to state who they trust, with whom they communicate, work with, lend money or other resources with, and the ties or relations they have as close or extended family members. The number and kinds of ties that actors have are keys to determining how much their embeddedness in the network constrains their behaviour, and the range of opportunities, influence, and power that they have (HANNEMAN, 2005).

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 value, accessibility and use of existing social networks within rural communities. Moreover, the role of the networks in gaining individual access to productive resources, especially to agricultural credit, was identified. Furthermore, the factors hindering mutual monitoring and loan repayment in group-based projects were also studied.

The sample was determined by the snowball sampling method, which begins with a focal actor, namely with the leader of one of the credit groups in the community. The credit 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 project staff first 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 abovementioned boundaries, the complete network analysis was implemented. All the actors in the network who had no credit from microfinance projects were taken as credit constrained. This is based on the fact that all non-members in the studied network would like to be included in the project but did not have chance to do so. The software Ucinet was used to depict the social networks.

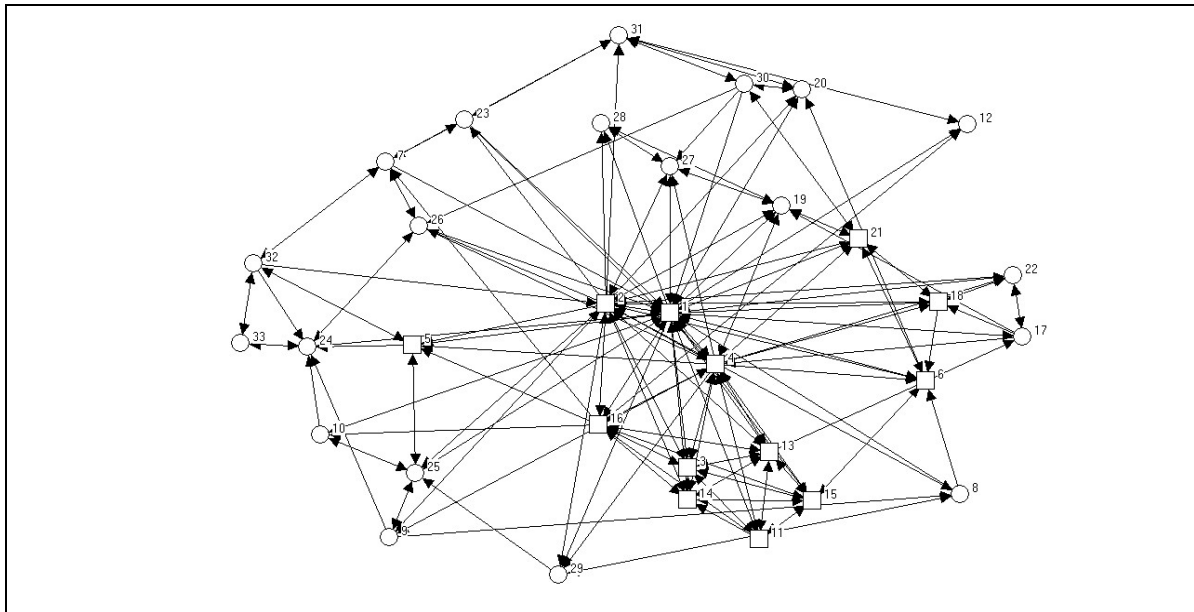
The network analysis first looks at information exchange and communication patterns in relation to agricultural credit opportunities. This is followed by an assessment of labour exchange, assuming trust-based relationships support one's inclusion in group-based lending projects. Following that is the study of lending behaviour, which is expected to find that deep-rooted trust-and obligation-based relationships are important for enforcing joint liability contracts. The study is finalised with the analysis of kinship relations as an essential source in providing one's access to a given network. It is assumed that different resource exchange networks are differently connected, meaning that not all actors are able to reach all other actors in all four resource exchange networks. A high level of correlation between kinship, labour exchange, lending and communication is expected. Such a division is assumed to lead to the exclusion of individuals not only from a certain resource exchange network, but also from group-based lending projects.

4 NETWORK ANALYSIS RESULTS

The results of the information exchange network analysis indicate that the whole network is fully connected, as all the actors were communicating directly with at least one other actor (Figures 1 and 2). However, the concentration of the information exchange is higher in the core network. This implies that even though the accessibility of information is 100 % and it can eventually reach all actors in the network, the speed varies. Accordingly, the individuals in the core network who get the information faster benefit the most. Within a network, strong ties are obviously better for information exchange than are weak ties.

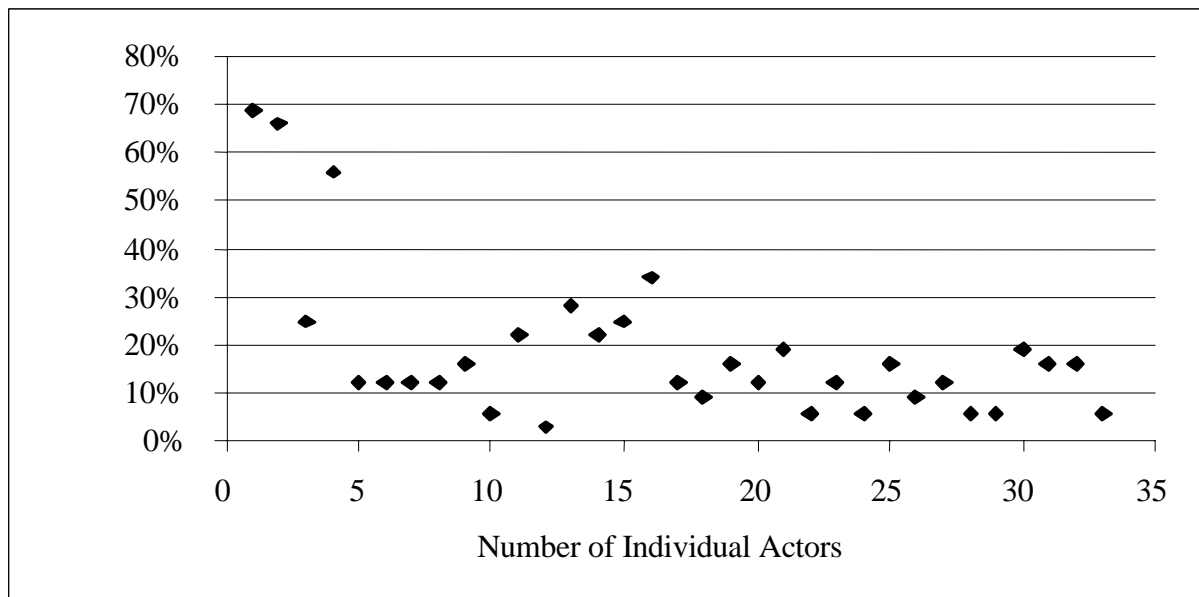
The ego and two other influential individuals (actors 2 and 4) appeared to be central for the diffusion of information within the network. All were members of the existing agricultural cooperative in the village and had the reputation of being knowledgeable about agriculture and about various formal and informal programs.

Figure 1: Information exchange within the network



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

Figure 2: Pattern of communication within the network



Note: Vertical axes show the percentage of actors to whom credit opportunities were communicated, while horizontal axes present individual actors in the network.

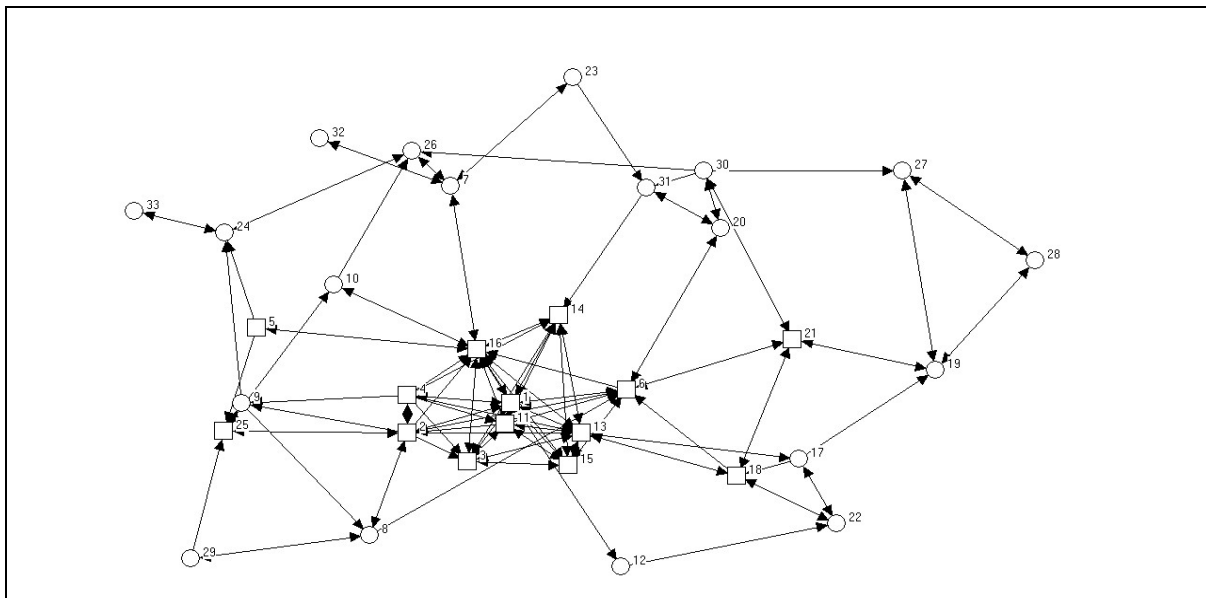
The labour network analysis (Figures 3, 4, 8 and 9) revealed, not surprisingly, that labour is more extensively shared among close and extended family members. Outside family units, labour is mainly shared by the actors who possess the same socio-economic status, as this may increase the probability of equal reciprocation. The results of the density analysis show that only 13 % of all possible relationships between people in the network were established.

Members of the credit group showed higher cooperation among themselves than with non-members. This indicates that trust is established, which allows better pooling of some resources such as labour power and cooperation. Also interesting is the indicated importance of kinship, which has two specific features:

First, one is born into kinship relations that usually clearly define basic rights and obligations. Second, kinship relations are flexible. They can be extended to include faraway relatives, or even be reduced. That kinship includes close or strong ties as well as weak ties within an institutional setting is widely understood.⁴

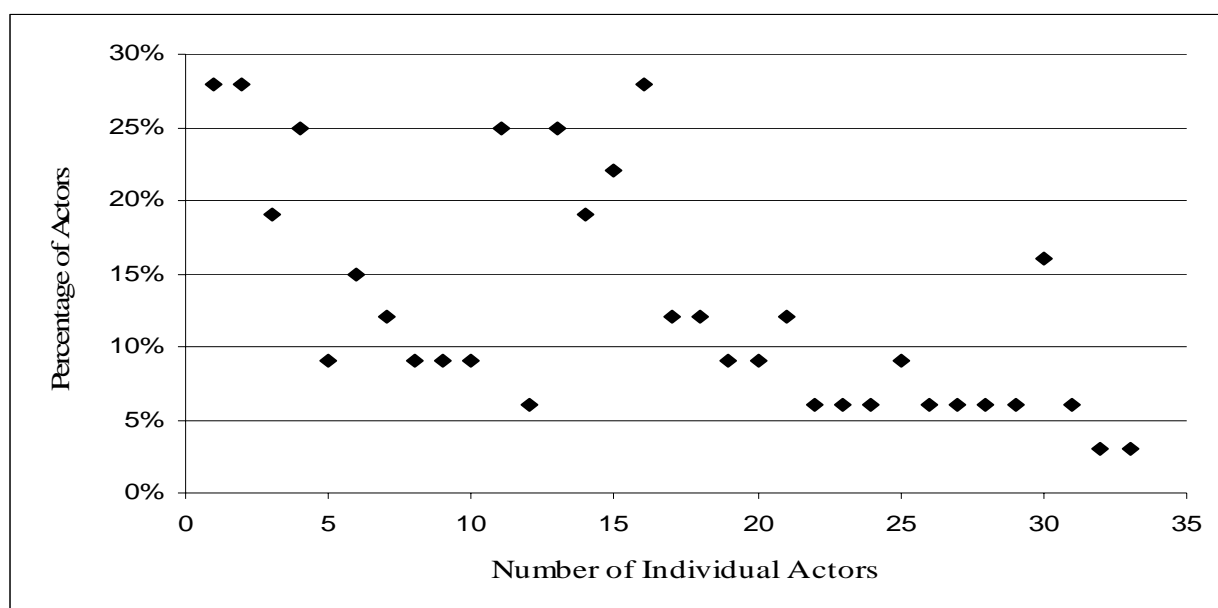
However, it should be mentioned that in the case of severe need, such as illness, the existence of generalised reciprocity and solidarity within the whole network is practised.

Figure 3: Labour exchange within the network



Note: Square bullets indicate credit group members, round bullets indicate non-members in the network.

⁴ Every member of a society has kinship relations. Marriage, for example, is only possible if an understanding of these relations exist.

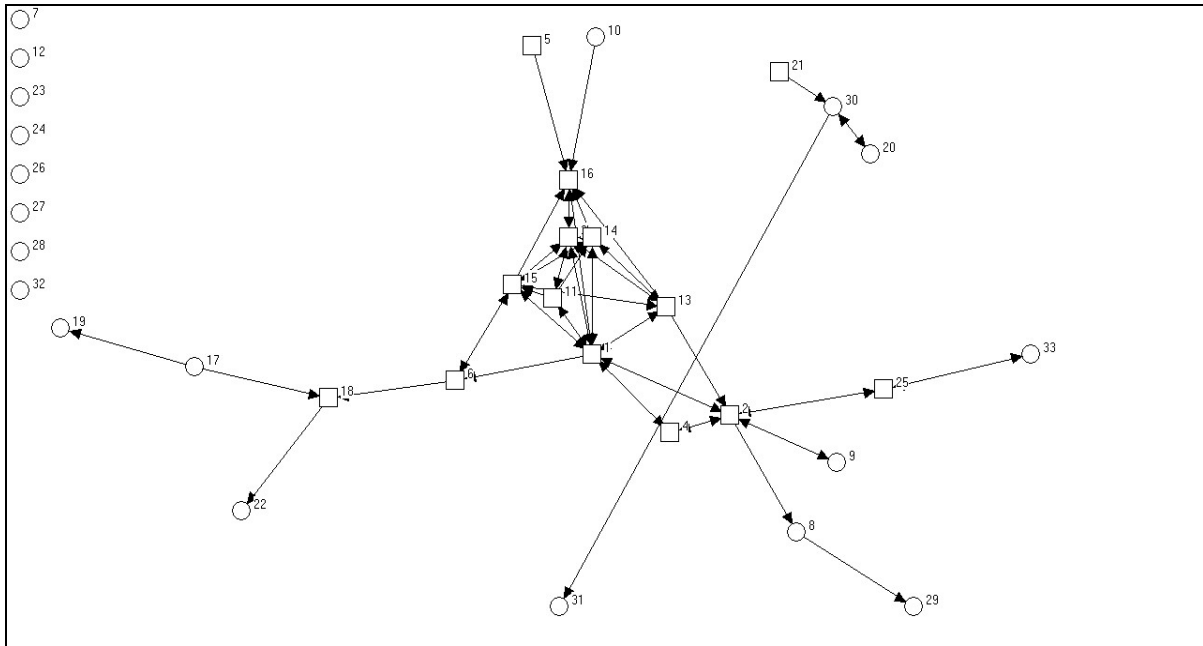
Figure 4: Pattern of labour-sharing within the network

Note: Vertical axes show the percentage of actors whom labour was shared with, while horizontal axes present the individual actors in the network.

The analyses of lending within the network (Figures 5 and 6) have shown only 5 % of presence of all possible ties. The ego (the credit group leader) showed the highest centrality in the network and the highest out-degree relations. The lending was typically practiced among family members and close friends. The cost and risk of lending is very high, thus, those lending to each other were connected not only with a high level of trust-based relationships, but also with deep-rooted norms of mutual obligation. Not surprisingly, the frequency of lending behaviour among credit group members was higher. This has an important implication for the success of groups in a mutual liability lending project.

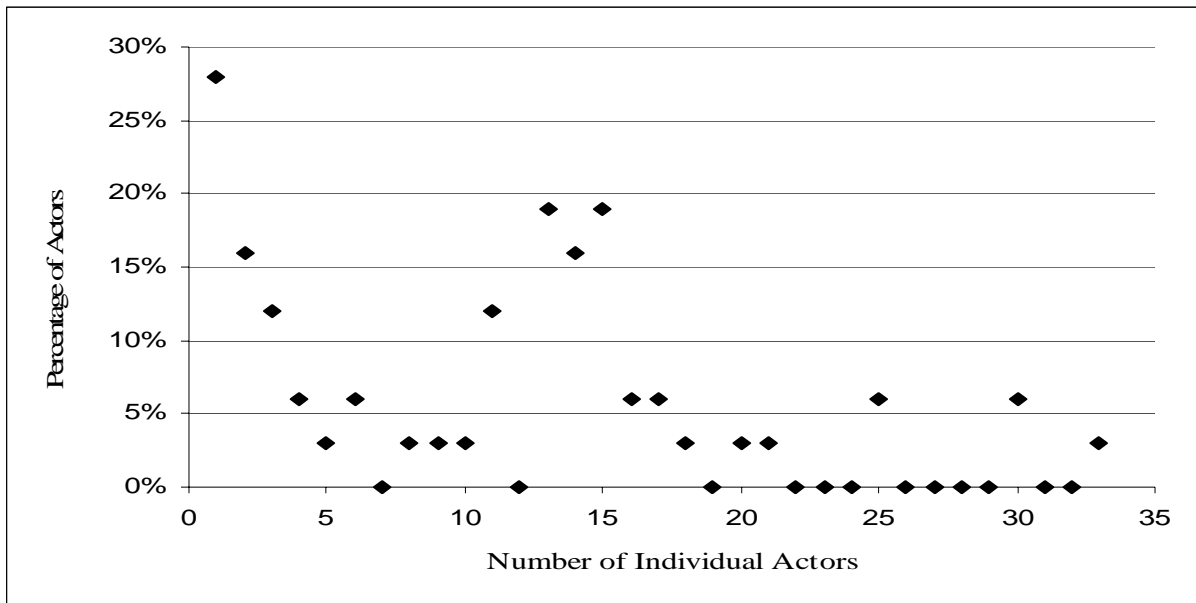
Interestingly, while tools and consumer goods are lent out more easily, lending money is limited to a small proportion of close relations within the network. Here, two factors are obviously combined. Firstly there is trust, as these people have known each other for a long time and can thereby anticipate the actions of others. And secondly, the rule of norms can be socially enforced. Who does not act according to the rules will be isolated and lose possibilities for future help and support.

Figure 5: Lending behaviour within the network



Note: Square bullets indicate credit group members, while round bullets indicate non-members in the network.

Figure 6: Pattern of lending behaviour within the network



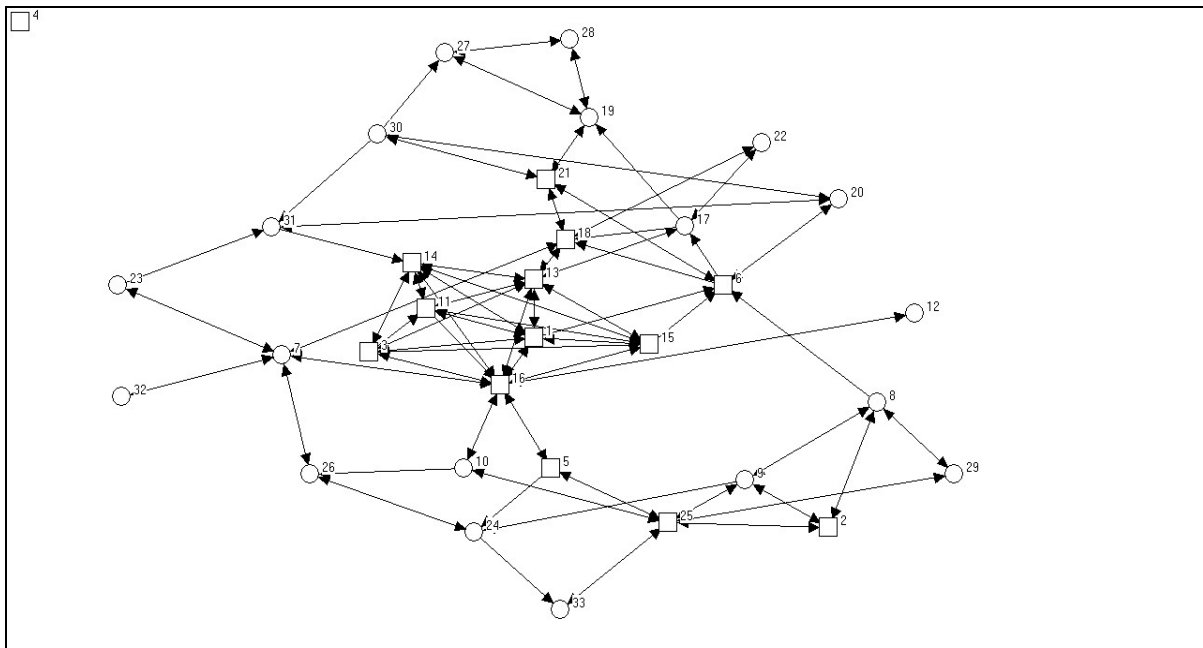
Note: Vertical axes present the percentage of actors to whom lending is recorded, while horizontal axes present the individual actors in the network.

The kinship relations (Figures 7 and 8) were identified because it was observed that family ties are essential in providing access to a given network. Because of the strong ties and high level of trust, family relations appear to tremendously reduce risks in networks with lending activities. Consequently, the credit group members were connected with a high density of family ties. Six out of fourteen members were connected with the ego (the credit group leader) and five of them

with extended family relations. Only two actors in the group did not have any family relationship to the ego (the credit group leader).

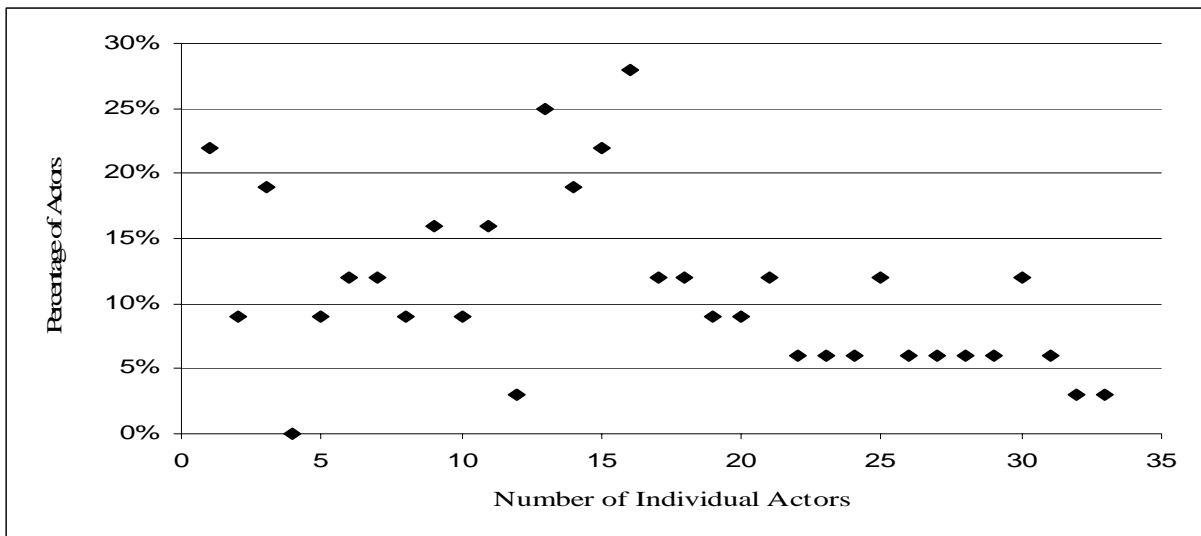
The density of the whole network is only 11 %, but the network is almost fully connected by family ties. Thus, the reachability of the network is almost 100 % as only one person reported to have zero family ties in the network. By definition, an actor is “reachable” by another if there exists any set of connections by which we can trace from the source to the target actor, regardless of how many others fall between them (HANNEMAN, 2005).

Figure 7: Kinship relations within the network



Note: Square bullets indicate credit group members, while round bullets indicate non-members in the network.

Figure 8: Kinship intensity within the network



Note: Vertical axes present the percentage of actors to whom kinship relations were recorded, horizontal axes present the individual actors in the network.

5 CONCLUSIONS

It is concluded that in the study area, people are more likely to favour family members when it comes to interesting projects and other opportunities. This may be explained by the existence of a higher level of trust and norms of mutual obligation and reciprocity in a kin group. In the case of group-based lending projects, strong social relationships and family ties seem to play an important role in increasing one's access to credit. Not surprisingly, the credit group consisted of close and extended family representatives of the ego (credit group leader) and a few close friends who had experienced years of working together, lending money or other resources to each other.

It becomes obvious that the members of the community solve the problem of collective action through kinship relations. Consequently, the most basic and traditional sets of relations play an important role at this stage of transition in rural Armenia, when the market economy and the financial sector are only loosely institutionalised and trust to formal institutions is still lacking.

It appears that existing conditions are such that community leaders and their families benefit from group-based lending projects the most. This is because extension and development agencies often seek community leaders as an effective point to start different programs and projects. Thus, households who have no kinship links to such key players may be access constrained. Hence, group loans are not a panacea for solving problems of access for everybody. As the paper has shown, credit groups are mainly created within kinship networks. This increases the probability of people who have only small or no kinship networks being access constrained. Those persons would probably profit most from individual loans offered by MFI. However, the non-existing land market is an obstacle for providing individual loans.

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