

DELIVERABLE 6.1

"Methodological approaches to analyse cooperation among Polish farmers"

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Abstract

The Deliverable 6.1 (D6.1) of the SCARLED project provides the methodological approach used to analyse cooperation among Polish farmers. The goal of the research within WP 6 in Poland is to examine the role of social capital and cooperation in commercialisation of subsistence and semi-subsistence farms in rural areas.

The Deliverable presents theoretical discussion on the nature of social capital and its role in facilitating cooperative behaviour. In addition, a diagnosis of quality of social capital in rural areas in Poland is carried out.

The second part of the Deliverable discusses methodological approach to analyse economic effects of cooperation among Polish farmers including: description of the methods, characteristics of variables, design of the survey instrument (questionnaire on cooperation in Poland), the method of selection of regions and sampling frame for rural/farm households, as well as the basic descriptive analysis of surveyed households.

Executive Summary

The farm structure in Poland is characterised by a large number of small-scale farms, which in the majority are subsistence or semi-subsistence farms. It is often argued that subsistence farming can constitute an impediment to rural economic growth. Therefore, commercialisation of subsistence agriculture can influence structural changes in rural areas. The research reveals that one of the crucial factors affecting market access and integration in the market supply is cooperation between farmers.

Social capital defined as norms and networks plays a key role in enabling people to act together. Trustworthiness is as much important: culture of trust determines favourable environment for cooperation. Collective nature of social capital is very important for development of rural areas, and especially for understanding intangible factors that decide about cooperation among farmers. This is especially an important issue for small-scale producers, who decide whether produce for the market or for the consumption. Market participation is possible only if production surplus exists, and this is achievable only when specific resources can be accessed. Social capital facilitates such access by promoting formal and informal cooperation.

Research in this field seems crucial to verify if social capital is one of the important determinants of cooperative behaviour among subsistence and semi-subsistence farmers. Subsequently, identification and understanding of other factors' impact on cooperation is in area of the great interest. Formal and informal cooperation is particularly important for small-scale farms which face the barriers to the market, and more precisely to rapidly restructuring supply chains.

Despite large possible gains the level of cooperation in rural areas in Poland is relatively low. Compared to other professional groups, Polish farmers and rural inhabitants cooperate formally in conducting business with non-relatives only to a small extent. According to several analyses, lack of cooperation between farmers is mainly a result of low level of social capital and the attitude of the lack of trust still dominates in Polish rural areas. The major weakness of social capital in rural areas in Poland is the relative lack of engagement of rural people in such forms of activities as NGOs but also a very low propensity to cooperate in conducting economic activity.

The objective of the research is to analyse the role of social capital in promoting cooperative behaviour among small-scale farmers in Poland. To achieve presented goal, based on the broad literature review, social capital is defined as the norms and networks that enable people to act collectively. In addition, an important role of trust as collective asset which promotes the relations and networks, and enhance the utility of embedded resources (or vice versa) is emphasised. Thus, to conduct a comprehensive examination of the subject the following components are chosen as proxies for social capital: different dimensions of trust, participation in formal organizations (producer organizations as well as non-agricultural organizations), involvement in informal cooperation, willingness to cooperate, attitude to help others, and civil engagement.

Within the research the following hypothesis will be verified: social capital facilitates formal and informal cooperation among small-scale farmers, however, scarcity of production factors decides about their engagement in cooperative action. Moreover, formal and informal cooperation helps farms to overcome impediments to commercialisation.

As the statistical method of analysis factor and cluster analysis are chosen. For the purpose of analysis the following variables are specified: factors of production; social capital and cooperation; head of household's characteristics; market characteristics; and level of commercialisation.

Due to a lack of available micro data including information on social capital and cooperation in rural areas in Poland the specific survey has been designed and implemented within the SCARLED project. The questionnaire on social capital and cooperation included questions on: formal and informal cooperation in agricultural activity as well as on trust, networks and sociability.

For the purpose of the SCARLED project the survey was carried out in 2007/2008 by Institute of Agricultural and Food Economics - National Research Institute (IERGiŻ). For the survey sample 3 regions at NUTS-3 level villages were selected according to their degree of economic development. In every of 9 villages 30 households were randomly chosen by interviewer. Within the Polish component of the SCARLED project 270 households were surveyed. 245 of them conducted agricultural activity in 2006 and 260 in 2003. During the period 2003-2006, 25 households exited from agriculture and 11 started agricultural activity. The descriptive analysis of basic characteristics of the surveyed households included: household head's age, household head's education level, household head's main occupation, size of the household, household's income, formal and informal cooperation, as well as opinions on generalised trust.

SCARLED Consortium

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LIST OF ABBREVIATIONS

AKI	Research Institute for Agricultural Economics
CUB	Corvinus University Budapest, Dept. of Agricultural Economics and Rural Development
EU	European Union
GDP	Gross domestic product
IAMO	Leibniz Institute of Agricultural Development in Central and Eastern Europe
IERiGŻ	Instytut Ekonomiki Rolnictwa i Gospodarki Żywnościowej (Institute of Agricultural and Food Economics)
K.U. Leuven	Catholic University Leuven, Centre for Transition Economics
NGO	Non-governmental Organisation
NMS	New Member States
NUTS	Nomenclature des Unités Territoriales Statistiques, i.e. Nomenclature of Territorial Units for Statistics
SCARLED	Structural change in agriculture and rural livelihoods
UL	University of Ljubljana
UNEW	University of Newcastle upon Tyne, Centre for Rural Economy
UNIKENT	The University of Kent, Kent Business School
UNWE	University of National and World Economy
USAMVB	Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara
WP	Workpackage
WUDES	Warsaw University, Dept. of Economic Sciences

1 INTRODUCTION

The farm structure in Poland is characterised by a large number of small-scale farms, which in the majority are subsistence or semi-subsistence farms. According to the Central Statistical Office, in 2002 there were over 443 thousand subsistence farms (ca. 15% of total farms' number) and over 790 thousand semi-subsistence farms (ca. 30%). Subsistence farms utilized about 5% of total agricultural area and semi-subsistence farms utilized over 10% (GUS 2003).

It is often argued that subsistence farming can constitute an impediment to rural economic growth. Therefore, commercialisation of subsistence agriculture can influence structural changes in rural areas. The research reveals that the crucial factors affecting market access and integration in the market supply chain are: ability and willingness to adopt new technologies, transactions costs, cooperative membership, contracts and possible supply channels (e.g. Balint and Wobst, 2006, Ferto and Szabo, 2002, Holloway *et al.*, 1996, Guo *et al.*, 2007, Key *et al.* 2000).

Cooperation among farmers can increase the possibilities to access the market since it increases the total pay-off to a potential group over what they could do individually (Schmid 2004). This is especially important for small-scale farmers in Poland confronting growing power of processing and retail sectors (resulting from, among others, intensive foreign direct investment inflow in food industry and retail sector during transition period, integration with the European Union and globalisation process). A growing body of literature on agricultural sector restructuring and its implications for rural areas (especially for small-scale producers) emphasize issues like common action problems and the importance of effective activity of producers' organizations, etc. (Wilkin 2003). There have been also growing concerns related to potential negative impact that supply chain modernisation may have on small farmers' access to the market (Milczarek *et al.*, 2007).

Despite large possible gains the level of cooperation in rural areas in Poland is relatively low. Compared to other professional groups, Polish farmers and rural inhabitants cooperate formally in conducting business with non-relatives to a small extent (CBOS, 2008). An example of this negative attitude to cooperate is a small number of producer organizations in Poland.

According to several analyses lack of cooperation between farmers is mainly a result of low level of social capital and the attitude of the lack of trust still dominates in Polish rural areas. On the one hand, empirical evidence shows that the level of generalised trust in rural areas is very low and has even diminished during the transition process. On the other hand, the propensity to cooperate and participate in social organizations has improved and is larger in comparison with urban areas (Rural Poland, 2006).

Social capital is often defined as informal norm that promotes cooperation (Fukuyama 1999). Research shows that the level of social capital may influence higher personal income (Narayan and Princhett 1997) or agricultural performance (Wolz *et al.* 2006). Nevertheless, several studies stress that not all forms of social capital may have a positive impact (e.g. Portes, 1998, Knack and Keefer, 1997).

Therefore, in order to analyse possibilities for commercialisation of subsistence and semi-subsistence farms in Poland, it seems crucial to analyse farmers' cooperation (both formal and informal) under the wider framework of social capital.

Available studies on social capital and cooperation among farmers in Poland have been mostly concentrated on propensity to cooperate in formal institutions. There is a lack of

in-depth studies on different aspects of social capital and their role in facilitating formal and informal cooperation, especially among small-scale farmers. The issue of cooperation considered as a strategy allowing farms to remain in agriculture and achieve sufficient incomes is very important for sustainable development of rural areas. Therefore, there is a strong need for comprehensive studies allowing to understand how different - tangible and intangible - factors influence small-scale producers' economic decisions.

The main goal of the research within WP 6 in Poland is to examine the role of social capital and cooperation in commercialisation of subsistence and semi-subsistence farms in rural areas.

In addition, useful lessons for the other NMS regarding co-operation between small-scale farms will be drawn. This will enrich results of the research conducted within the WP6, which is devoted to socioeconomic functions of (semi-)subsistence farming and cooperation among farmers.

Section 2 presents theoretical discussion on the nature of social capital and its role in facilitating cooperative behaviour. Moreover, in this section a diagnosis of quality of social capital in rural areas in Poland is carried out.

Section 3 describes methodological approach to analyse economic effects of cooperation among Polish farmers including: description of the methods, characteristics of variables, design of the survey instrument (a questionnaire on cooperation in Poland), the method of selection of regions and sampling frame for rural/farm households, and the basic descriptive analysis of surveyed households.

2 SOCIAL CAPITAL AND COOPERATION - LITERATURE REVIEW

2.1 Concepts and theories on social capital and cooperation

The concept of social capital has drawn together different disciplines as sociology, economics, political sciences, anthropology, urban and regional planning, and social work. Despite the immense amount of research, it still remains an elusive construct. The broad range of different definitions are in use but no general one has been yet accepted. Consequently, there is no common theoretical approach that has a clear implication in the field (Dufhues, Buchenrieder, Fischer, 2006). Durlauf and Fafchamps (2004) state that "...social capital is not a concept but *praxis*, a code word used to federate disparate but interrelated research interests and to facilitate the cross-fertilization of ideas across disciplinary boundaries" (p. 3). The same authors assert that the success of social capital results from its resistance to attempts of different researchers to impose a definition of the term which is specific to their disciplines. Multiplicity of applications of social capital, to some extent, exemplify "the fashion" for using this concept within the various social disciplines. Woolcock (2001) points out that "the downside of successful marketing" is that people try to procure credibility for their work by "calling what they do social capital research" even if they have very little knowledge of how this term is understood by others (p. 14). Author writes that social capital can "appear to be all things to all people". As Paldam (2000) states, popularity of usage of the term social capital would not be a threat to its further development if "the social capital dream"- social capital as a robust concept - was true. If different definitions are based on the same, autonomous question and all researches deal with the aspects of the same "story", robustness of social capital can be assumed. In this situation, the choice of definition is a question of convenience only (Paldam, 2000).

In this section the emphasis is put on introducing the most common definitions of social capital. Then some of the main effects of social capital are described.

2.1.1 Definition of social capital

The term "social capital" was introduced into social sciences by Loury (1977) but Coleman's (1990) and Putnam's (1993) prominent publications has attracted academic and journalistic attention. Coleman defines social capital as:

"...social organization constitute social capital, facilitating the achievements of goals that could not be achieved in its absence or could be achieved only at a higher cost" (p. 304)

Coleman (1990, p. 300-301) writes that "authority relations, relations of trust, and consensual allocations of rights which establish norms" are resources for individuals.

A very similar characterization is provided by Putnam (1993):

"...social capital...refers to features of social organization, such as trust, norms, and networks that can improve the efficiency of society..." (p. 167)

Both Coleman and Putnam refer to trust and norms as the aspect of social structures, which facilitate certain action of individuals within the structure. According to definitions of these two researches, social capital can be considered as a type of positive group externality (Durlauf and Fafchamps, 2004). Coleman points out social organizations as the

main source of externalities while Putnam's definition stresses the role of informal forms of social organizations such as trust, norms and networks.

Fukuyama (2000) argues that only certain norms and values constitutes social capital:

“...they must lead to cooperation in groups and therefore are related to traditional virtues like honesty, the keeping of commitments, reliable performance of duties, reciprocity, and the like” (p. 3)

Moreover, Fukuyama presents the opinion that “...social capital is instantiated informal norm that promotes cooperation between two or more individuals”(p. 1). These norms can vary from a norm of reciprocity between friends, up to complex doctrines like Christianity or Confucianism.

In the World Bank (2000) social capital is characterized as:

“...”organizations and associations (including public, private, and non-profit) as well as to norms and relationships (such as laws, traditions, and personal networks) (p. 90)

In this approach, social capital is compared to the glue that holds societies together and facilitates doing business and increases productivity by promoting trust, coordination, and cooperation at all levels (World Bank, p. 91).

In Putnam's later research (2000) definition of social capital evolves into approach based on the relations or interdependences between individuals. He defines social capital as:

“...”connections among individuals - social networks and the norms of reciprocity and trustworthiness that arise from them” (p. 19)

These definitions can be distinguished in respect to the importance of relationships and networks from one side and norms from the other side. Putnam emphasizes the significance of social networks in comparison to norms which do not create social capital by themselves. In Coleman's definition social capital is embodied mainly in social networks, however, norms constitute the form of social capital as well. Fukuyama presents norms as a central aspect of social capital but it is required that these norms are instantiated in specific relations between individuals. According to The World Bank's definition, organizations and associations as well as norms and relationships are placed at the same level in the hierarchy.

In authors' opinion, definitions presented above have influenced the most significantly various studies on social capital and its effects, and become a central point of reference for other researches. Some prominent scholars have defined social capital similarly or even more inclusively: “Social capital generally refers to trust, concern for one's associates, a willingness to live by norms of one's community and to punish those who do not.” (Bowles and Gintis, 2002, p. 2). Simultaneously, other researchers have referred their studies more specifically to associational life and social networks rather than to social norms. For instance, Dasgupta (2005) claims that he “...takes social capital to mean interpersonal networks, nothing more” (p. 12), Sobel (2002) states that “social capital describes circumstances in which individuals can use membership in groups and networks to secure benefits” (p. 139), Lin (2001) defines social capital as the “resources embedded in social networks accessed and used by actors for actions” (p. 25), Paldam (2000) states that

“social capital deals with cooperation in groups and networks within groups of people” (p.3), and according to Woolcock and Narayan (2000) “social capital refers to the norms and networks that enable people to act collectively” (p.3). Recently the definition of social capital conceived as networks plus resources has raised to prominence and become dominant².

Among many researches dealing with social capital one can find enthusiasts inspired with still unexplored nature of the concepts, nevertheless the number of different definitions and conceptual vagueness have led to severe critique of social capital. Criticism of the vagueness and inconsistency of various definitions of social capital can be found in Dasgupta, Durlauf, Manski and Portes (Durlauf, Fafchamps, 2004, p. 3). For instance, Dasgupta (2002) points out that idea of social capital is awkward in economic theories. Even though, intuitively it seems to be a very attractive and promising concept but it is extremely difficult to measure. The reason of that is not the paucity of data, but simply vagueness of what should be measuring - there are various components of social capital, in many instances, intangible. Beside the disputes on social capital definition a number of scholars have raised the issue of incorrectness of the term social capital arguing that the term “capital” is misleading. Usually capital is identified with tangible, durable and alienable objects e.g. buildings and machines, which can be accumulated and valued (Dasgupta, 2002). Two Nobel Prize-winning economists, Kenneth Arrow and Robert Solow, argue that “...social capital is a poorly chosen name for the concept” (Sobel, 2002, p. 144). Arrow goes even so far that he suggests that the term social capital should be abandoned (Durlauf, Fafchamps, 2004). As Robinson points out, Arrow’s recommendation comes too late because the term social capital is strongly entrenched in the language of social scientists and economists (Dufhues, Buchenrieder, Fischer, 2006). Moreover Dufhues, Buchenrieder and Fischer (2006) propose using the term “networks and access to resources” or more precisely “informal access to resources” instead of social capital. It is worth stressing that critics of social capital do not depreciate its value as a scientific phenomenon. The objections are to the accuracy of the term social capital and the methods of defining, however, it is commonly agreed that research in this field is necessary.

For the purpose of our analysis, based on the broad literature review, we define social capital as the norms and networks that enable people to act collectively, which is in line with the definition of Woolcock and Narayan (2000). However, we emphasize an important role of trust as collective asset which promotes the relations and networks and enhance the utility of embedded resources, or vice versa (Dufhues *et al.*, 2006). As proxies for social capital the following elements are chosen: different dimensions of trust, active and passive membership in formal organizations (producer organizations as well as non-agricultural organizations), involvement in informal cooperation, willingness to cooperate, attitude to help others, and civil engagement.

² Definition of social capital conceived as networks plus resources, has been adopted by Dufhues, Buchenrieder and Fischer (2006). Authors base on the definitions of many scholars: Bourdieu (1983), Foley, Edwards (1999), Jans (2003) and Lin (1999).

2.1.2 Collective nature of social capital

At the local level, Narayan and Pritchett (1999) indicate social capital as potential factor leading to better outcomes. The mechanism through which social capital contribute to e.g. better incomes, is by facilitating greater cooperation. Putnam's (1993) analysis of regional governments in Italy suggests that regions in which people have greater degrees of horizontal connections have more efficacious governments. Ostrom suggests that cooperative behaviour within local groups plays a large role in avoiding the negative consequences of the excessive exploitation or under maintenance of assets. From Rogers's studies arise that diffusion of innovations may be facilitated by greater linkages among individuals (Narayan, Pritchett, 1999, p. 3-5). "More specifically, the social capital question concerns the benefits and costs of cooperation. The basic hypothesis concerning social capital's impact assumes that the welfare within the group generally will be enhanced, in the sense that the collective gains net of costs to group members will be positive" (Wolz, Fritzs, Pencakova, 2006, p. 9).³

Moreover Coleman claims that "...a group whose members manifest trustworthiness and place extensive trust in one another will able to accomplish much more than a comparable group lacking that trustworthiness and trust". According to Arrow every commercial transaction has within itself an element of trust, of course under assumption that this transaction is conducted over a period of time: "It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence" (Dasgupta, 2002, p. 8). If we assume like many scholars prove that social capital refers to norms and networks where should we place trust, which is also considered by others as a key component of the concept? Mostly social capital definitions focus on its sources rather than consequences - what social capital is rather than what it does. Such approach eliminates trust from the definition of social capital, and in this situation trust can be treated as an outcome (Woolcock, 2001). Lin points out that some scientists confound trust and norms and social capital. He also argues that social capital, as a relational asset, must be distinguished from collective assets and goods, such as culture, norms, trust, etc. Casual proposition is formulated by Dufhues, Buchenrieder and Fischer (2006, p. 9): "...collective assets, such as trust, promote the relations and networks and enhance the utility of embedded resources, or vice versa". The level of trust of a person is strongly influenced by the person's past interactions (Dufhues, Buchenrieder, Fischer, 2006) what can be compared to iterated prisoner's dilemma game - payoffs to two cooperating criminals are higher than if they both defect - where at first both prisoners betray but along with another interactions occurring, they start trusting each other and cooperate. Glaeser (2000) argues that trust reflects altruism, risk tolerance and also beliefs about others which are formed by past experiences. According to such understanding of trust, social interaction is prior to trust and trust is obviously an outcome of this social interaction. Furthermore, social capital based on associative relations supports among others building trust, and maybe thought of as a proxy (Dufhues, Buchenrieder, Fischer, 2006, p.10). Thus, trust can be considered as a measure of social capital.

³ Mancur Olson's study *The Logic of Collective Action: Public Goods and the Theory of Groups* published in 1965 can be seen as the basic work of research about organisational development. In his book incentives, costs and expected profits are discussed as the central issue that motivate people to act together.

2.1.3 Economic effects of social capital

In the political science, sociology and anthropology social capital is considered as a set of norms, networks and organizations which facilitates the access to power and resources that affect decision making and policy formulation. Economists, in general, are concerned with contribution of social capital to economic growth. "At the microeconomic level this is seen primarily through the ways social capital improves the functioning of markets. At the macroeconomic level institutions, legal frameworks, and the government's role in the organization of production are seen as affecting macroeconomic performance" (Grootaert, 1998, p. 2). Fukuyama (1999) states that the reduction of transaction costs associated with contracts, hierarchies, bureaucratic rules, and alike (which constitute the forms of formal coordination mechanisms), is the economic outcome of social capital. Of course, it is possible to achieve coordinated action among a group without social capital, but this could entail additional transaction costs of monitoring, negotiating, litigating, and enforcing formal agreements (Fukuyama, 1999). Impact of social capital on economic development is mainly recognized as facilitating transactions among individuals, households and groups in society. According to Wolz, Fritzsche, Pencakova (2006) this facilitating function can be introduced as follows: 1) Individuals participate in social networks what results in greater availability of information and lowers its cost. The information sharing role of social capital is of key importance for poverty alleviation (Grootaert, 1998, p. 4). 2) Implementation of collective action can be much easier for any group whose members participate in local networks and represent attitudes of mutual trust. 3) Opportunistic behaviour of group members can be reduced through networks and attitudes. Under social pressure and risk of exclusion it is more likely that members of certain group behave in beneficial ways.

Independently of the lack of consensus on the question if trust is or not social capital or its outcome, some authors point out that trust can affect economic performance. Knack and Keefer (1997) identify advantages which individuals, societies and governments can gain from higher-trust environment. Individuals in higher-trust societies spend less to protect themselves from being exploited in economic transactions. Societies characterized by high level of trust are also less dependent on formal institutions to enforce agreements. Trusting societies have stronger incentives to innovate and to accumulate physical capital and are also likely to have higher returns to accumulation of human capital. Government officials in societies with higher trust may be perceived as more trustworthy, and their policy pronouncements as thus being more credible. In low-trust societies hiring decisions will be influenced more by trustworthy personal attributes of applicants, such as blood ties or personal knowledge, and less by educational credentials (Knack, Keefer, 1997, p. 1252-1254).

If we assume and accept that social capital contributes to economic performance one claim should be verified, namely that social capital constitutes an independent factor of production. To do so, authors must look back into history of how new production factors were including. The classical economists identified land, labour and financial capital (i.e. level of investments) as the basic factors being relevant for economic growth. In 1950 Solow added technology (physical capital) to the list, and in 1960s Schultz and Becker introduced the notion of human capital (know-how and entrepreneurial skills). Nowadays, labour and skills are incorporated in human capital which as Woolcock (2001) states, resides in individuals. "The latest equipment and most innovative ideas in the hands or mind of the brightest, fittest person, however, will amount to little unless that person also has access to others to inform, correct, assist with and disseminate their work" (Woolcock, 2001, p. 12) In this sentence author stresses the importance of social capital which resides

in relationships. In development economics, mainstream and transition economics, social capital is more often considered as an important capital asset for the welfare of individuals and communities. In the 1990s the so-called capital asset pentagon was introduced as joint set of the mainstream economic production factors as well as social capital (Buchenrieder, 2007).

2.1.4 The role of social capital in the economy of rural areas

Different aspect of social capital in rural areas are considered accordingly to the following dimensions: its scope (i.e. micro, meso and macro levels), its forms (i.e. structural and cognitive), its channels (i.e. information sharing, collective action and decision making) and its type of relationships through which it affects development (i.e. intra- or inter-group relationships) (Wolz, Fritzs, Pencakova, 2006). These four dimensions are interdependent and overlapping which results in difficulties with capturing and attributing the effects social capital. Due to conceptual vagueness of social capital, a definite answer to how social capital contribute to rural households welfare has not been found yet. Even though, many studies allow us for better understanding of economic effects of social capital and indicate its positive influence on development of rural economies, and in particular on agricultural sector.

In general, economic effects of social capital in rural economies do not differ from these specified for the entire economy. Depending on definition of social capital trust, norms and networks in different configurations are considered. Social capital theory provides a conceptual framework, and empirical studies provide evidences of economic function of social capital which refers to reduction of the transaction costs associated with coordination mechanism like contracts, hierarchies, bureaucratic rules, and the like (Fukuyama, 1999). However, there is growing empirical evidence suggesting that social capital is of key importance for poverty alleviation (e.g. studies of The World Bank in developing countries). Social capital can help households to overcome deficiencies of other forms of capital and in many cases is called “the capital of the poor”. This should be understood literally, e.g. in many developing countries some aspect of social capital have crucial importance for rural household’s welfare, as well as a metaphor of rural areas lagging behind (in economic and social sense) urban regions. For instance, the case of Grameen Bank⁴ in Bangladesh illustrates how trust between members of certain groups (debtor groups) enables access to micro-credit market. Each member invests in the other members of the group (borrowing circles) what is taken as collateral for formal bank loans. The borrowers, only poor village women, use their reputation as social collateral for the bank replacing traditional physical, which helps them start or expand a small business, and thereby improve their families’ welfare (Woolcock, Narayan, 2000). An interesting conclusion follows from research in Vietnam (Ha, Kant, Maclaren, 2004) where results show that social capital in the village as a whole contribute to poor household’s income greater than to rich household’s income, and thus eventually reduce income gaps. Research from Burkina Faso by Grootaert (2002) shows similar results, that social capital reduces probability of being or remaining poor and that social capital investments achieve higher returns for the poor than for the population at large (Dufhues, Buchenrieder, Fischer,

⁴ Muhammad Yanus, who founded Grameen Bank in 1976, was awarded by The Nobel Peace Prize in 2006 “for their efforts to create economic and social development from below” (<http://nobelprize.org>).

2006). Moser (1998) states that even poor are managers of complex asset portfolio and that social capital (classified as intangible asset) is one of the important components of this portfolio. However, the composition of this portfolio can differ with respect to location and also specificity of social, gender, and ethnic groups.

An important feature of social capital is its potential for information sharing between the actors of the certain network. Information is very important because facilitates decision-making process, thus is a basis for action. Acquisition of information costs at least attention and time, which are always in scarce supply (Dufhues, Buchenrieder, Fischer, 2006). Information sharing role of social capital influences household incomes by reducing transaction costs and avoiding opportunistic behaviour which occurs as the effect of imperfect information (Grootaert, 1998). Grameen Bank's case one more time can be an example: social capital leads to better flow of information between creditors and borrowers (village women) and hence less adverse selection and moral hazard in the market for credit.

The network component of social capital is crucial to access resources by rural households, either directly embedded in the network and these accessible through collective action. The first step is engaging in relationships with other actors, the latter is to getting access to resources. As Bebbington (1999) states "Indeed access to other actors is conceptually prior to access to material resources in the determination of livelihood strategies" (p. 6). Sometimes membership in certain groups is necessary to access, e.g. research from Vietnam shows that use of resources is intimately linked to social networks as access to land and other resources is often dependent on membership in descent groups, local farming communities and other networks. Moreover, greater linkages among individuals may facilitate diffusion of innovations and help in their adaptation. Social relationships have a positive role in transfer of knowledge and are directly linked to the sustainable use of resources (Narayan, Pritchett, 1999; Winkels, Adger, 2002, Dufhues, Buchenrieder, Fischer, 2006). Group activities and networks can be central for successful rural environmental management what is closely connected to the concept of bioregionalism which signifies the principle that natural resource management is best organized with reference to natural territorial units rather than in relation to administrative boundaries (Thayer, 2003 in Dwyer, Findeis, 2008). Such transboundary approach is applied to protection of water resources or migratory species, more often by groups of landholders whose local knowledge and engagement can be invaluable. Research in the UK prove that social capital can facilitate individuals finding employment and overcoming social exclusion, promotes collective learning and responsible behaviour (i.e. less crime or fewer "free riders" in respect of resource management and use), and network component of social capital creates economic dynamism (Dwyer, Findeis, 2008).

The fact that people act collectively can be either result of social interactions or their manifestation, however, independently of its roots, cooperation is one of the most appreciated components of social capital. Formal and informal cooperation is in particular important for small-scale farms which face the barriers to the market, and more precisely to rapidly restructuring supply chains. Cooperation between small farmers which, like Christensen (1983) describes, is "...one of the crucial means by which small farmers manage to survive" (Chloupkova, 2002, p. 5). Cooperatives are the natural farmer's response to development of large companies which are selling inputs to farmers and buying produce from them. Farmers are forced to protect themselves from being eliminated one by one, and generally exploited. They set up cooperatives or they cooperate informally in order to pool their buying power to attract lower prices from suppliers and pool their selling power so at the market one farmer cannot be played off against the other

(Christensen, 1983, Chloupkova, 2002). In other words cooperation facilitates access to production factors and credits, strengthen farmers' bargaining power over suppliers and buyers and let them overcome barriers from the supply chain, thereby small farmers are able to start selling or sell more for the market, and achieve better incomes for their households.

2.1.5 The "dark side" of social capital

Across literature social capital is mostly associated with positive effects. The most of the definitions of social capital assume that the concept is normative and related to wide range of positive development goals (Dufhues, Buchenrieder, Fischer, 2006). However, many scholars, independently of the definition they use for capturing the sense of social capital, notice its negative aspects. Accordingly to multidimensional nature of its sources, Putnam (2000) has introduced the most common and popular distinction between "bonding" and "bridging" social capital. "Bonding" refers to relations among family members, close friends and neighbours, and "bridging" to more distant friends and colleagues. The former kind of social capital can bring negative effects due to "closure" of integrated group on the relations with individuals or groups from outside. Putnam (2000) writes: "...ties that bond can blind" what may result in restraining from adaptation of innovations and performance. The latter is considered as more valuable and desirable for societies. "Bridging" social capital contributes to cooperation between social groups, helps in elimination of inequalities and is conducive to arising of tolerant attitudes. Foregoing distinction has been extended by adding the vertical dimension to social capital, called "linking". "Linkages" are related to connections (networks) to distant acquaintances who belong to different levels in the hierarchy, in the face of unequal access to resources. "The capacity to leverage resources, ideas and information from formal institutions beyond the community is a key function of linking social capital" (Woolcock, 2001, p. 13). Svendsen and Svendsen (2004) have adopted Putnam's classification assuming that building social capital concerns creating "bridging" social capital only, and corrosion of it, denotes transforming "bridging" into "bonding" social capital. Thus, "bonding" is considered by many researches as "the second best" form of social capital.

In social capital literature there are numerous examples of negative effects of "bonding" social capital. The most characteristic cases are referred to extended kinship groups, lobbying organisations, and such hierarchical relationships as those associated with patronage (e.g., the Hindu jajmani system and the Sicilian Mafia) (Dasgupta, 2002). For instance, the Mafia or gangs use social capital as the foundation for their organisational structure, cartels also develop social capital in their effort to keep control over an industry (Dasgupta, Serageldin, 1999). Negative effects of social capital can also be exemplified by the exclusion of some groups from the access to important information. This is when certain groups are marginalized within networks or they have insufficient access to social networks. This can present an important barrier for accessing productive resources e.g. credit, insurance or agricultural extension (Dufhues, Buchenrieder, Fischer, 2006).

2.1.6 Measurement of social capital

One of the greatest weaknesses of social capital concept is the absence of consensus on the methodology of measurement. For quite long time, two broad approaches to how measure social capital have been taken: in the first, groups and memberships in a given society are surveyed, and in the second data on levels of trust and civil engagement are used (Fukuyama, 1999). Recently definition of social capital including network components into the measurement of social capital has raised to prominence⁵.

At the outset it should be stressed that obtaining a single measure of social capital is probably impossible. There are at least few reasons for this: (1) As we have seen, even the most inclusive definitions of social capital are multidimensional, incorporating different levels and units of analysis. (2) The nature and forms of social capital are changeable over time, as the balance shifts between informal organizations and formal institutions. (3) There is a lack of long-standing cross-country surveys initially designed to measure social capital. Researchers are forced to compile indexes from a range of approximate items, e.g. measures of trust, confidence in government, voting trends, social mobility, modern outlook, hours spent volunteering, etc. (Woolcock, Narayan, 2000). However, Narayan and Pritchett (1999) created a single index for social capital whose dimension included group functioning, contribution to groups, participation in decision making and heterogeneity of membership. A number of measures on interpersonal trust and changes over time were also constructed.

The World Bank launched many studies at the local level considering measurement of social capital. The questionnaire implemented as the survey instrument in Indonesia, Bolivia and Burkina Faso captures different dimensions of social capital at the household and community level. The results show that certain dimensions of social capital contribute significantly to household welfare, and social capital is the capital for the poor. Among many different variables density of associations, heterogeneity of membership in associations, and active participation in them, are the most important (Woolcock, Narayan, 2000).

Another approach to measuring social capital includes norms and values in which trust is a key component used as a proxy for social capital. For instance, Knack and Keefer (1997) used data on the level of trust from World Values Survey⁶ for 29 countries to show the positive relationship between trust and the levels of investment in the country.

According to definition introduced by Lin (2001) social capital is embedded in social networks and social relations, thus must be measured relatively to its roots. However many studies on social capital concentrate only on formal and semiformal social networks, such as clubs and associations. Measurement of associational life is considered as an important due to conviction that associations generate social networks and expand the range of weak ties among individuals. Nevertheless, the manner of measurement based on summing the

⁵ Grootaert and Bastelaer (2002) distinguish structural and cognitive forms of social capital. Such approach constitutes an attempt to incorporate norms and networks in the one method of measurement of social capital.

⁶ The World Values Survey includes questions on generalized trust (e.g. "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?").

number of people who belong to organizations indicates little about the strength of social capital. Such approach should be completed by information of what people do as members, moreover, the entire informal networks should be taken under consideration. Bourdieu and Wacquant suggest that the best solution for operationalisation of social capital is to sum the resources attainable through a network of more or less institutionalised relations (Dufhues, Buchenrieder, Fischer, 2006). The access to the resources depends on: the person's connections (the aphorism "It's not what you know, it's who you know" should be also extended on connections through common group membership), the strength of these connections, and the resources available to their connections (Woolcock, 2001, Sobel, 2002).

2.2 Social capital and cooperation in rural areas in Poland

Initially, the concept of social capital has not gained prominence in studies on the process of economic transition. Only recently, many authors studying the transition period in Poland have started to refer to a category of social capital as the important determinant of success or failure of different social groups. In particular, the importance of social capital has been recognized for the transition process in rural areas in Poland, with reference to self-organization of communities and the quality of civil society, which have had positive effects on the process of economic and social changes (Fedyszak-Radziejowska, 2006).

A lot of research was focused on social resources representing mainly informal social networks, mutual trust, readiness to cooperation and presence of leaders being able to stimulate others (Giza-Poleszczuk, 2000). It was stressed that, when activated, social resources constitute social capital (Fedyszak-Radziejowska, 2006).

In this section an attempt to verify if social resources in rural areas in Poland have been converted into social capital, is undertaken. Therefore, four components of social capital are discussed: norms, networks, social trust and cooperation.

Norms

"There are some things you do and others you do not do." Patterns of behaviour, of acceptable and expectable behaviour, start off as social norms, enforced by parental pressure or peer pressure or religious instruction, or in some other way, and are eventually internalized (Dasgupta, Serageldin, 1999). Social norms are viewed as statements that regulate behaviour and act as informal social controls. These norms are usually based on consensus and are enforced through social sanctions.

The way how members of certain social group are perceived by others, to some extent, indicates the norms and values that guide individuals in everyday life. Table 1 presents popular opinions about different features of rural inhabitants in Poland. As it is shown, the social image of rural areas is positive. In 2006 72% of respondents agreed that rural inhabitants are hardworking (45% for people living in cities), 62% of respondents present opinion that rural inhabitants are moral (only 27% for people living in cities) and friendly (31% for cities). Rural people are also seen as more honest (50% against 27% for urban inhabitants) and generous (43% against 23% for cities). However, people living in cities are more often perceived as resourceful (64% in cities and 46% in villages) and well-groomed (74% in cities and 39% in villages) (CBOS 2007).

Table 1. Popular opinions about rural inhabitants in Poland (1993, 1998, 2006)

Rural inhabitants are:	Share [%] of respondents agreeing with the opinions about rural inhabitants:		
	XII 1993	VII 1998	VII 2006
Religious	86	82	79
Hardworking	80	76	72
Moral	59	64	62
Friendly	57	64	62
Honest	46	52	50
Well-mannered	-	39	46
Resourceful	45	38	46
Generous	31	38	43
Well-groomed	24	29	39

Source: Data from Public Opinion Research Centre (CBOS), "Wieś i miasto w badaniach opinii społecznej 1993-2006", Opinie i Diagnozy nr 5, Warszawa 2007.

Table 2 presents positions of respondents on *popular opinions about villages and relationships with cities*. These opinions are vague and marked with emotions, thus should be considered as stereotypes. However, such informal judgements of certain group allow to conclude about atmosphere within the social group and type of attitudes towards other social groups and institutions.

Table 2. Popular opinions about villages and relationships with cities (1993, 1995, 1998, 2006)

Which opinion is closest to your own?	I agree				I disagree				Hard to say			
	'93	'95	'98	'06	'93	'95	'98	'06	'93	'95	'98	'06
in percent												
Rural people preserve old tradition and customs	86	76	89	88	10	20	8	9	4	4	3	3
National government has always treated villages worse than cities	66	62	74	65	22	27	15	21	12	12	11	14
Truly, villages contribute a great deal to livelihoods of urban areas	34	29	34	31	56	65	58	60	10	6	8	8
In rural areas ignorance and backwardness prevail	10	12	11	11	87	86	87	87	3	2	2	3

Source: Data from Public Opinion Research Centre (CBOS), "Wieś i miasto w badaniach opinii społecznej 1993-2006", Opinie i Diagnozy nr 5, Warszawa 2007.

Presented opinions are stable and have not changed significantly since 1993. It is worth stressing that in 2006, 65% of all respondents (Table 2) and 77% of farmers-respondents (Table 3) shared the opinion that *national government has always treated villages worse than cities*. Such results are the proof that farmers present an attitude of distrust to national institutions, moreover in some way to other people, like these living in cities (46% of farmers points that village people contribute to livelihoods of people from cities) (Table 3). Explanation for this position can be the fact that farmers have been exploited during

the communist period and they have not divested themselves of suspiciousness. However, situation in this matter has improved for last 10 years and since the accession to the European Union Polish farmers for the first time, in such scale, are supported instead of being exploited.

Table 3. Rural inhabitant's and farmer's popular opinions about villages and relationships with cities (2006)

Which opinion is closest to your own?	I agree		I disagree		Hard to say	
	Rural areas	Farmers	Rural areas	Farmers	Rural areas	Farmers
in percent						
Rural people preserve old tradition and customs	90	97	7	3	2	0
National government has always treated villages worse than cities	74	77	12	14	14	9
Truly, villages contribute a great deal to livelihood of urban areas	39	46	52	45	8	8
In rural areas ignorance and backwardness prevail	12	9	86	91	3	0

Source: Data from Public Opinion Research Centre (CBOS), "Wieś i miasto w badaniach opinii społecznej 1993-2006", Opinie i Diagnozy nr 5, Warszawa 2007.

Trust

There is no easy answer to the question about the condition of social capital in Polish rural areas and it is necessary to be very cautious in formulating opinions about its level. One of the reasons is a still dominating attitude of lack of trust which can be considered as one of the social resources playing profound role in building social capital. It is worth referring to the level of generalised trust in rural areas which is defined by Sztompka as "readiness to take action based on a priori assumption that majority of people and institutions will work in a way which is beneficial to us" (Rural Poland, 2004, p. 92). Generalised trust defines the climate of a given community: it is either dominated by a "culture of trust" or a "culture of distrust" (Rural Poland, 2004).

Table 4. Level of social confidence among rural inhabitants and farmers

Year	Share [%] of answers to the following question: Which opinion is the closest to your own?					
	People may be trusted, generally speaking		One must be very cautious in relations with others		Hard to say	
	Rural areas	Farmers	Rural areas	Farmers	Rural areas	Farmers
1992	10	14	88	83	1	1
1993	8	10	89	87	2	2
1994	7	5	90	93	2	3
1995	7	6	91	93	1	1
1997	9	7	88	90	2	2
1999	9	13	89	84	2	2

Source: Own calculations: data from Polish General Social Survey 1992 - 2002.

According to Table 4 during the mid 90`s level of generalised trust among farmers decreased by over half in comparison to 1992 and 1999. It should be noted that the climate of distrust is the legacy of 45 years of socialism in Poland. Perepeczko (2003) reminds about the consequences of the policy of “repressive tolerance” pursued by communist authorities against traditional peasant norms and values. During this period trusting “all people” was irrational strategy especially in a country where people acting by orders from authorities, controlled, eavesdropped, or read other people correspondence and were never penalised. Moreover, experience from the transition period is rather a barrier than support in the process of reconstruction of a climate for trust in Poland (Fedyszak-Radziejowska, 2006, Rural Poland, 2004).

Table 5. Level of social confidence (2002, 2004, 2006, 2008)

	Share [%] of answers to the following question: Which opinion is the closest to your own?		
	People may be trusted, generally speaking	One must be very cautious in relations with others	Hard to say
Poland, 2002	19	79	2
Rural areas, 2002	15	83	2
Farmers, 2002	16	84	0
Poland, 2004	17	81	2
Rural areas, 2004	14	83	3
Farmers, 2004	9	91	0
Poland, 2006	19	79	2
Rural areas, 2006	15	82	3
Farmers, 2006	5	94	1
Poland, 2008	26	72	2
Rural areas, 2008	26	71	3
Farmers, 2008	20	73	7

Source: Data from: Rural Poland 2004, Rural Poland 2006, CBOS: “Społeczeństwo obywatelskie 1998-2008”, Opinie i diagnozy nr 8, Warszawa, 2008.

Table 5 explicitly follows that trust amongst farmers was on a downward trend decreasing from 16% to 5% between 2002 and 2006. This situation completely changed in 2008 when the declared level of “general trust” significantly increased to 20% and is the largest since 1992 (26% for rural areas). Such rapid change of farmers’ opinions can result from positive effects of Poland’s integration with the EU.

Table 6. Level of trust in private sphere

In general, do you trust your...?	Share [%] of answers:					
	I do trust		I do not trust		Hard to say	
	Rural areas	Farmers	Rural areas	Farmers	Rural areas	Farmers
closest family 2008	99	99	1	1	0	0
further family 2008	91	90	7	5	2	5
friends 2008	88	90	6	2	7	8
people you work with every day 2008	84	83	6	2	9	14
neighbours 2002	74	76	-	-	-	-
neighbours 2004	72	73	-	-	-	-
neighbours 2006	81	87	-	-	-	-
neighbours 2008	75	77	21	16	4	7

Source: Data from: Rural Poland 2006, CBOS: “Społeczeństwo obywatelskie 1998-2008”, Opinie i diagnozy nr 8, Warszawa, 2008.

However, a completely different picture emerges when social capital is measured by level of trust in private sphere (Table 6). Almost every respondent (99%) in rural areas as well as farmers declare that trust the closest family, about 90% trust further family and friends, and about 85% trust people they work with every day. It is worth noting that farmers represent high level of trust in neighbours: adequately 76% in 2002, 87% in 2006 and 77% in 2008.

As it is shown in Table 7 there is a high and steadily increasing level of trust displayed by farmers in their local government authorities (52% in 2002 and 72% in 2008). It is also interesting that farmer’s trust in political parties, and in 2004 this tendency was not displayed by any other social group, including rural inhabitants (Rural Poland, 2004). Currently trust in political parties declare as many farmer-respondents as on average in Poland (28%).

Table 7. Level of trust in local government authorities and political parties (2002, 2004, 2008)

	Share [%] of answers to the following question: Do you, or not, generally trust local government authorities and the political parties?	
	I do trust local government authorities	I do trust the political parties
Poland, 2002	43	15
Rural areas, 2002	56	17
Farmers, 2002	52	13
Poland, 2004	53	13
Rural areas, 2004	62	12
Farmers, 2004	70	20
Poland, 2006	56	24
Rural areas, 2006	-	-
Farmers, 2006	-	-
Poland, 2008	68	28
Rural areas, 2008	67	23
Farmers, 2008	72	28

Source: Data from: Rural Poland 2004, Rural Poland 2006, CBOS: "Społeczeństwo obywatelskie 1998-2008", Opinie i diagnozy nr 8, Warszawa, 2008.

Level of trust in strangers that are met in various situations can be considered as the measure of openness towards others and play a key role in establishing weak ties between individuals. These ties can be used in different situations to access to specific resources. Between 2006 and 2008 trust in strangers declared by farmers declined from 40% to 33%, while in group of self-employed increased by 8% (from 34% to 42%). In general, rural inhabitants trust less "recognized strangers" than medium and big cities' inhabitants. Even an average national level of trust in strangers is stronger than village people's and farmers' (Table 8). It is interesting that white and blue collars are least open for "strangers encountered" amongst all considered socio-demographic and professional groups.

Table 8. Level of trust towards strangers met (2006, 2008)

	Share [%] of answers to the following question: Do you trust strangers you meet in various situations?					
	I do trust		I do not trust		Hard to say	
	2006	2008	2006	2008	2006	2008
Poland	33	37	54	45	13	18
Rural inhabitants	36	36	49	42	15	22
City 101-500 thousand	30	39	56	49	14	11
City 501 thousand and more	35	41	60	45	4	13
Managerial staff	44	36	45	38	11	26
White collars	28	29	60	50	12	21
Blue collars	24	23	64	66	12	11
Farmers	40	33	42	36	18	31
Self-employed	34	42	39	39	27	19

Source: Data from: Rural Poland 2006, CBOS: "Społeczeństwo obywatelskie 1998-2008", Opinie i diagnozy nr 8, Warszawa, 2008.

Propensity to Cooperate

Another indication of social capital is the level of feeling that individual is able to influence everyday reality by acting together with others. The most important result of comparison of data for 2002-2008 (Table 9) is the substantial growth of conviction that joint action gives results and leads to improvement of one's environment. As it is presented in Table 9 the number of supporters of this opinion grew: on national level by 15%, among rural inhabitants by 22% and among farmers by 34%, between 2002 and 2008. Results of this survey are clear symptoms of changes occurring in the awareness of Polish farmers (Rural Poland, 2006).

Table 9. Readiness to cooperate and ability to influence reality (2002, 2004, 2006, 2008)

	Share [%] of answers to the following question: Which of the opinions on social life is the closest to your own? People like me:											
	<i>...acting together with others may help those in need or solve certain problems of our neighbourhood</i>				<i>... even in cooperation with others are not able to help those in need or solve problems of our neighbourhood</i>				Hard to say			
	2002	2004	2006	2008	2002	2004	2006	2008	2002	2004	2006	2008
Poland	50	54	63	65	38	35	26	25	12	11	11	10
Rural areas	43	52	63	65	45	34	23	21	12	14	14	14
Farmers	41	55	75	79	50	34	15	11	9	11	10	10

Source: Data from: Rural Poland 2006, CBOS: "Społeczeństwo obywatelskie 1998-2008", Opinie i diagnozy nr 8, Warszawa, 2008.

A very important indicator of social capital, from economic point of view, is the willingness to cooperate, not only in terms of social life but also in other forms, especially in conducting business. Unfortunately, data is available only for 2002 and 2004. Table 10 shows that less than 45% of farmers was ready to cooperate in form of economic activity (2004) when 70% of managerial staff declared such readiness. One of the explanatory factors can be farmers' low level of trust in "strangers encountered".

Table 10. Readiness to cooperation with others (2002, 2004)

	Share [%] of respondents declaring readiness to cooperation with non-relatives in form of:							
	Lending of valuable thing		Work for the local community		Economic activity		Political activity	
	2002	2004	2002	2004	2002	2004	2002	2004
Poland	61	59	48	54	39	47	33	43
Managerial staff	79	79	58	77	60	70	45	66
Self-employed	82	74	55	58	62	54	50	45
Farmers	67	55	61	54	38	44	52	48

Source: Data from CBOS, Warsaw 2004.

Data presented in Table 11 confirm readiness of farmers to cooperate with others for the good of local community (68%) and informally in e.g. conducting agricultural activity (69% declare readiness to lend a valuable thing to others). However, Polish farmers and rural inhabitants do not wish to cooperate formally in conducting business with non-relatives. Only 46% of farmers know somebody who they would like to have a business with (36% of rural inhabitants).

Table 11. Readiness to cooperation with non-relatives (2008)

Do you know any non-relative...	I know		I do not know		Hard to say	
	Rural areas	Farmers	Rural areas	Farmers	Rural areas	Farmers
in percent						
...to whom you would lend a valuable thing (car, agricultural machinery)?	60	69	34	25	6	5
...whom you would help in voluntary, non-paid work for neighbourhood or those in need?	48	68	48	32	4	0
...who you would like to conduct a business with (be a partner with)	36	46	59	44	5	10

Source: Data from CBOS, Warsaw 2008.

Membership in organisations

The major and the most convincing indicator of social capital, is not related only to readiness to joint working but the actual engagement of rural people in forms of activities such as NGOs. This form of activity is still not a very common feature in Poland. Compared to the national average rural inhabitants as well farmers fare rather well (Table 12). In 2007, 39% of farmers were involved in social work for their community (27% of rural people) but only 21% were members of at least one NGO (19% of rural people). Farmers engagement in voluntary work in NGOs is lower in comparison with professional group of managerial staff among which 49% declared involvement in at least one. Group of self employment is ahead of farmers as well (29% respondents declares involvement in at least one NGO).

Table 12. Level of engagement in voluntary work by social and professional groups (2001, 2003, 2005, 2007)

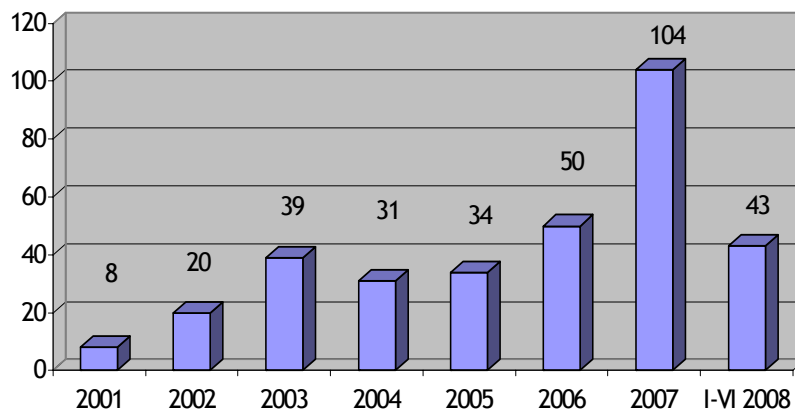
Socio-demographic features	Respondents involved in social work [%]:											
	For their own community				In at least one NGO				Consolidated indicator of engagement in voluntary work*			
	2001	2003	2005	2007	2001	2003	2005	2007	2001	2003	2005	2007
Poland	19	24	23	20	21	24	23	20	33	37	36	31
Rural areas	24	33	30	27	23	21	24	19	39	41	43	38
Cities with over 500 thousand	12	17	20	12	26	30	20	25	30	38	29	30
Managerial staff	34	41	40	38	54	53	45	49	57	62	61	56
Self-employment	31	33	41	28	18	35	42	29	38	47	62	50
Farmers	30	51	44	39	30	22	34	21	47	53	57	47

Source: Data from CBOS, Warsaw 2008.

* Consolidated indicator of engagement takes account of all activity declared by respondents in CBOS polls in considered years.

Historical evidences show that cooperation within producer organisations and cooperatives has been one of crucial means by which farmers can enhance their performance (Chloupkova, 2002). As it is depicted on the graph below dynamics of establishing producer organisations (fruits and vegetables organizations are not included) increased rapidly in 2007 (104 registered organisations). In may 2008, such formal cooperation associated over 19 thousand members.

Figure 1. Producer organisations registered in Poland (2001 - 2008)



Source: Ministry of Agriculture.

Since Poland joined the EU in 2004, the process of establishing producer organisations has been driven mostly by admitting funds from Rural Development Program. However, this process requires the climate of trust between potential founders for setting up organisation. Trust is an important factor at the stage of establishing, admitting new members and deciding about joining to organisation (Chlebicka, 2007). According to this study members of producer organisations are mostly friends (93%), related (53%) or are neighbours (27%).

The major weakness of social capital in rural areas in Poland is the relative lack of engagement of rural people in such forms of activities as NGOs but also a very low propensity to cooperate in conducting economic activity. It is worth noting that in 2008 20% of farmers and 26% of rural inhabitants declared (the most often since the process of transition has started, see Tables 4 and 5), that “generally speaking people may be trusted”. Farmers declare readiness to cooperate for the good of local communities but these declarations are not embodied in memberships in formal organisations. It seems that rural Poland still relies on its traditional social capacities but does not formalise and institutionalise these ties for joint working and cooperation.

The above discussion was focused on the nature of social capital and its role in facilitating cooperative behaviour. Social capital defined as norms and networks plays a key role in enabling people to act together. Trustworthiness is as much important: culture of trust determines favourable environment for cooperation. Collective nature of social capital is very important for development of rural areas, and especially for understanding intangible factors that decide about cooperation among farmers. Poor rural communities are more often lacking expensive production factors (e.g. natural resources, financial capital, etc.), thus cooperation can be the strategy for economic performance of their households. This is especially an important issue for small-scale producers, who decide whether produce for the market or for the consumption. Market participation is possible only if production surplus exists, and this is achievable only when specific resources can be accessed. Social

capital facilitates such access by promoting formal and informal cooperation. Research in this field seems crucial to verify if social capital is one of the important determinants of cooperative behaviour among subsistence and semi-subsistence farmers. Subsequently, identification and understanding of other factors' impact on cooperation is in area of our great interest. Formal and informal cooperation is particularly important for small- scale farms which face the barriers to the market, and more precisely to rapidly restructuring supply chains.

3 EMPIRICAL RESEARCH ON COOPERATION AMONG POLISH FARMERS

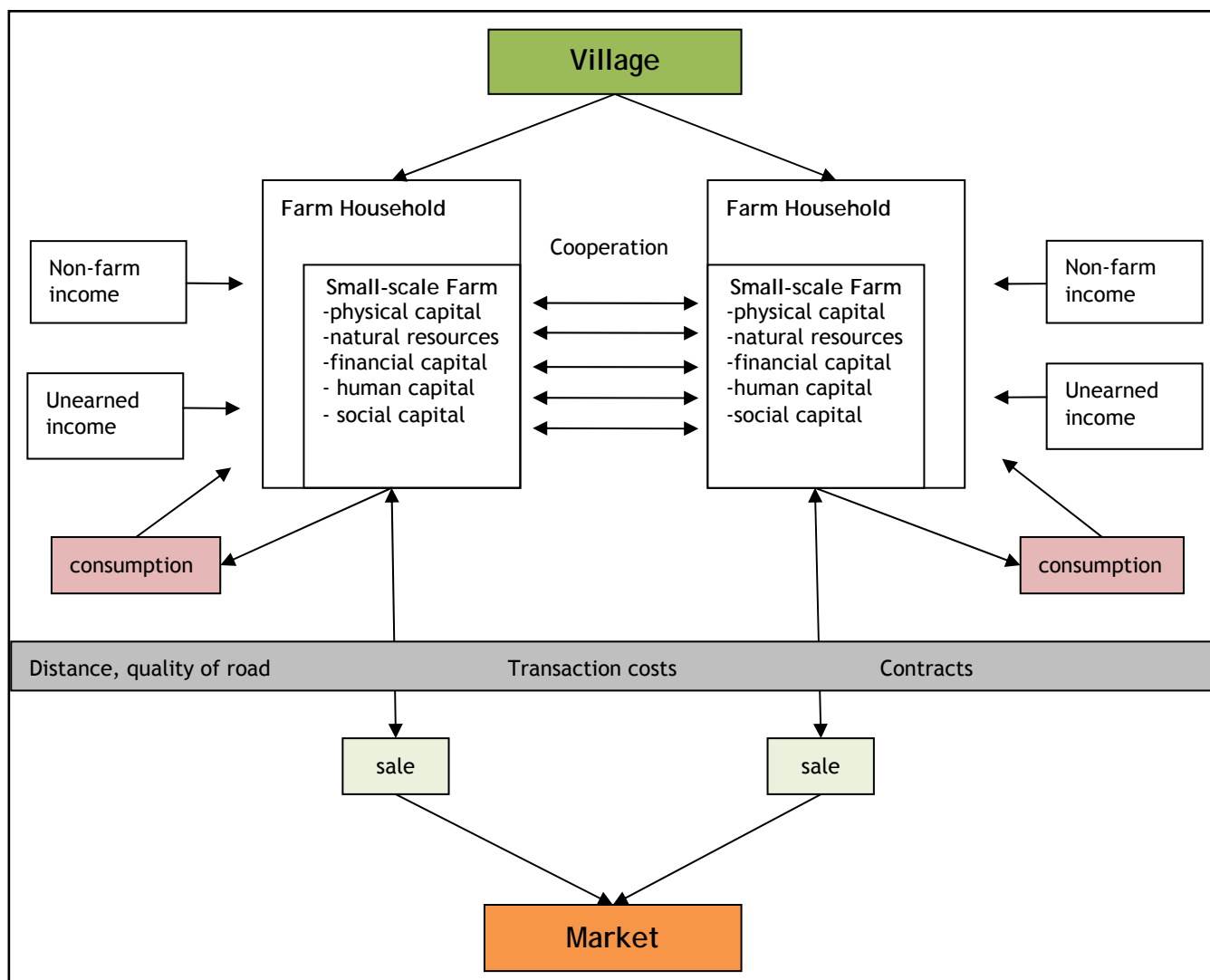
3.1 Model to analyse economic effects of cooperation among Polish farmers

The objective of the research is to analyse the role of social capital in promoting cooperative behaviour among small-scale farmers in Poland. To achieve presented goal we define social capital as the norms and networks that enable people to act collectively, which is in line with the definition of Woolcock and Narayan (2000). However, we emphasize an important role of trust as collective asset which promotes the relations and networks and enhance the utility of embedded resources, or vice versa (Dufhues *et al.*, 2006). For the purpose of conducting a comprehensive examination of the subject, we apply the following proxies for social capital: different dimensions of trust which is in our opinion, necessary for formal as well as informal cooperation to exist, participation in formal organizations (producer organizations as well as non-agricultural organizations), willingness to cooperate, attitude to help others, and civil engagement. As we investigate the linkage of quality of social capital (intangible determinant) to cooperative behaviour, the next stage of the analysis will be identification of the other (tangible) determinants. The hypothesis we plan to verify is: social capital facilitates formal and informal cooperation among small-scale farmers, however, scarcity of production factors decides about their engagement in cooperative action, moreover formal and informal cooperation helps farms to overcome impediments to commercialisation.

Figure 2 depicts a schematic input-output diagram in which social capital component is incorporated, and in addition relations between small-scale farmers and their access to the market are presented. First, it should be stressed that in the analysis we are concerned with farm households and farms. The former are considered as more general units with possibly diversified sources of income (wage job, self-employment, unearned income), the latter is connected to only agricultural activity with two possible types of outputs: production for sale or for consumption. Farm households are more or less interested in farming, and thereby in selling or consuming products dependently on how much they gain from different forms of economic activity. However, it is not obvious how non-farm incomes influence the degree of commercialisation. Moreover, taking under consideration farm households enables to incorporate into analysis social aspects.

Each farm household conducting agricultural activity owns set of resources, which are directly connected to farm's production potential, thus are deciding about the success or failure in the agricultural business. For example farms with little resources (land, labour, machinery, know-how etc.) do not have possibilities to succeed, and the most reasonable solution for them is to find non-farm employment or to expand agricultural activity. The question is how small-scale farms can overcome the barriers of scarcity of resources in the situation when they want to farm and receive sufficient income from farming. As it is presented in Figure 2 social capital is included among other production factors such as physical capital, natural resources financial capital and human capital. Social capital is considered as the factor which enables people to act collectively within formal organizations as well as informal relations. Other determinants of cooperation are related with incentives to access lacking resources or to cross the barriers from the market. Thus, we can distinguish potentially two drivers of cooperation: one linked to farm's characteristics and household's income strategy and second directly linked to characteristics of the market.

Figure 2. A schematic input-output diagram with social capital component



Source: Own depiction.

In consequence, if farm households decide to receive income from agricultural activity in the face of scarcity of resources or barriers from the market, establishing producer organization or tighten informal cooperation with closest (area of home or adjacent village) farmers can be effective solution. Agricultural activity conducted in cooperation within the group of farmers is more likely to result in achieving marketable surplus, therefore acting together is conducive to commercialisation.

This analysis is focused on the role of social capital in facilitating formal and informal cooperation, and moreover on the structural determinants of the collective behaviour of farmers towards market oriented production. We assume that higher level of social capital has positive impact on cooperation between farmers, and along with other determinants, like access to production factors, facilitate market participation of subsistence and semi-subsistence farms. More specifically, our analysis is based on the hypothesis that social capital facilitates formal and informal cooperation among small-scale farmers. However,

scarcity of resources decides about their engagement in cooperative action, moreover formal and informal cooperation helps farms to overcome market barriers to commercialisation. As the statistical method of analysis of the foregoing problem factor and cluster analysis are chosen. Factor analysis is a multivariate procedure that extracts independent factors from a set of correlated variables. Cluster analysis is the method to partition a set of observations into a distinct number of unknown groups or clusters in such manner that all observations within the group are similar, while observations from other groups differ (Timm, 2002). There are various procedures for grouping of observations, which in general can be divided into hierarchical and non-hierarchical procedures. In this deliverable a hierarchical agglomerative cluster analysis, which is most commonly used, will be applied. For the purpose of analysis the following variables are specified:

1. Factors of production: land assets, labour, machinery, livestock, perceived access to credit,
2. Head of household characteristics: age, gender, level of education, farming experience (know-how), engagement in non-farm employment, attitude to farming,
3. Market characteristics: distance to the urban centre, quality of road, contract requirements, access to services and institutions, labour market in the closest surrounding,
4. The level of commercialisation: share of agricultural production sold on the market.

The following variables describing social capital and cooperation are used to validate the clusters: declared attitude to trust, passive and active membership in producer organizations, membership in non-agricultural organizations, involvement in informal cooperation, willingness to cooperate, attitude to help others, and civil engagement.

On the basis of the proposed method of analysis we expect to identify determinants of cooperation, which as we suppose are related mostly to scarcity of production factors and a low level of social capital, and constrains in access to the market.

Due to a lack of available micro data including information on social capital and cooperation in rural areas in Poland the specific survey was designed and implemented within the SCARLED project. The following sections describe the questionnaire used, sampling method and characteristics of the surveyed households.

3.2 Design of questionnaire - questions on cooperation in Poland

The survey within WP 6 consisted of two different questionnaires: the main rural household questionnaire and a complementary questionnaire at the village level.

The rural household questionnaire included questions on the following issues:

1. Household characteristics
2. Farm characteristics
3. Agricultural production and sales
4. Farm/household income
5. Consumption expenditures
6. Time allocations
7. Market access and integration in the food supply chain
8. Investment and finance

In Poland specific questions on social capital and cooperation were added (see the Appendix). This part of the questionnaire included questions on: formal and informal cooperation in agricultural activity as well as on trust, networks and sociability.

At the village level, the questionnaire covered the information on village characteristics, land markets and infrastructure. This questionnaire allowed for gathering data on market characteristic.

3.3 Selection of regions and sampling frame for rural/farm households

Verification of the hypothesis is based on the primary data of Polish farm survey which was carried out in 2007/2008 by Institute of Agricultural and Food Economics - National Research Institute (IERGiŻ) for the purpose of the SCARLED project. For the survey sample 3 regions at NUTS-3 level are selected according to their degree of economic development. The criteria is corresponding to GDP *per capita* for NUTS-3 regions with reference to national level (GDP *per capita* in Poland = 100). From the number of regions big urban centres are excluded. All remaining NUTS-3 regions in Poland are ranked in ascending order to facilitate selection. Finally all 39 regions are divided into 3 groups according to the value of GDP *per capita*: lagging behind, average and prosperous. Further, among all villages placed in 39 selected regions, these which are systematically surveyed by IERiGŻ are chosen (76 villages). Moreover, from these 76 villages 5 have been surveyed within IDARA⁷ project. As the main goal of SCARLED project is to capture structural change in rural areas decision for matching the data from both surveys have been made. Therefore from the number of 76 villages geographically placed in 39 NUTS-3 regions ranked in ascending order, the following selection was made:

- From 13 lagging behind regions: 2 villages surveyed in IDARA and 1 is selected randomly
- From 13 average regions: 3 villages surveyed in IDARA,
- From 13 prosperous regions: all 3 villages are selected randomly.

In consequence, 9 villages are selected to the SCARLED survey and 5 villages have been surveyed in the IDARA project in 2000. In every village 30 households is randomly chosen by interviewer (independently on the fact that this is a farm household or not). Finally, 270 observations are obtained from 9 villages in Poland.

⁷ „Strategy for Integrated Development of Agriculture and Rural Areas in CEE Countries” financed under the Sixth Framework Programme for Research.

3.4 Characteristics of the surveyed households - descriptive analysis

Within the Polish component of the SCARLED project 270 households were surveyed. 245 of them conducted agricultural activity in 2006 and 260 in 2003. During the period 2003-2006, 25 households exited from agriculture and 11 entered (Table 13).

Table 13. Number of households conducting/not conducting agricultural activity in 2003 and 2006

	Number of households conducting agricultural activity	
	Yes	No
2006	245	25
2003	259	11

Source: Own calculations: data from the SCARLED survey.

In 211 surveyed households answers to the questionnaire are given by the household's head. Average age of the household's head is about 50 years. The youngest household's head is 21 and the oldest one is 85 years old. The most numerous groups constitute the household's heads of the age between 51 and 65 years (29,6%) and 41-50 years (27.8%) (Table 14). The household's heads in the age group of 21-40 years constitute 26.3% of surveyed households.

Table 14. Share of household's heads (HH) in age groups [%]

Share [%] of HHs in the following age groups:				
21-30	31-40	41-50	51-65	>65
8.5	17.8	27.8	29.6	16.3

Source: Own calculations: data from the SCARLED survey.

Between 2003 and 2006 the household's head has not changed in 88.2% of households. Over 31% of household's heads have agricultural education (66.7% indicated other type of education)⁸. More than 71% indicates basic vocational schools as completed, 17.9% indicates other secondary school and 4.8% indicates having tertiary education (Table 15).

⁸ The remaining household's heads (2.2%) have not indicated any type of education or are studying.

Table 15. Share of household's heads (HH) by type and level of education [%]

Level of education	Agricultural education	Other type of education
Total	31.1	66.7
incomplete primary school or primary school	3.6	38.3
middle school	1.2	1.1
basic vocational	71.4	35.0
general secondary	0.0	1.7
other secondary school	17.9	20.6
post secondary	1.2	1.1
tertiary	4.8	2.2

Source: Own calculations: data from the SCARLED survey.

Among household's heads with non-agricultural education over 38% indicates incomplete primary school or primary school as completed, 35% basic vocational school, and about 20% other secondary school. Tertiary education is pointed by only 2.2% of interviewed household's heads.

On average there is about one child (younger than 16 years) and about 3 adults (16 years old and above) in each household. 59% of households have no children, 15.9% have one child, and 16.7% have two children. 8.1% households have from 3 to 6 children (Table 16).

Table 16. Share of households by number of children and adults [%]

Share [%] of households by number of children younger than 16 years:			
0	1	2	3-6
59.3	15.9	16.7	8.1

Share [%] of households by number of adults 16 and above:					
0	1	2	3	4	5-8
-	4.8	33.0	28.1	24.8	9.3

Source: Own calculations: data from the SCARLED survey.

In the surveyed group, 4.8% constitute a single person household. In 33% of households there are 2 persons, in 28.1% - 3 persons, and in 24.8% - 4 persons. There is 9.3% of households with 5-8 adults (Table 16).

Over 98% of household's heads lived in the same village before 1990. Almost 86% of household's heads declare engagement in agricultural activity before 1990. 76.7% of household's heads had technical experience and 54.5% managerial experience in agriculture before 1990.

Table 17. Share of household's heads (HH) by main occupation [%]

Share [%] of HHs engaged in following activity:	
Main occupation	%
Farm work on own land/holding	43.7
Agricultural wage job off own land/holding	0.7
Non-agricultural wage job	25.9
Non-farm family business	3.0
Homework/caring for household	1.1
No work/unemployed	0.0
In education	0.0
Military service	0.4
Pensioner	24.8
Other	0.0
No answer	0.4

Source: Own calculations: data from the SCARLED survey.

Among all household's heads, 43.7% is mainly employed on own farm/holding, 25.9% work in non-agricultural wage job, and 24.8% are pensioners (Table 17). In 5.9% of households their members being 16 years old and older are engaged in any self-employment activity, and in 53.3% of cases members who are 16 years old and above are engaged in wage employment. The attitudes presented by household's heads towards different occupations are shown in Table 18.

Table 18. Household's heads' (HH) attitudes towards different occupations

Occupation	Share [%] of HHs declaring the following attitude towards occupation:					
	very negative	somewhat negative	indifferent	somewhat positive	very positive	NA
agriculture	0.4	8.2	19.6	53.3	17.8	0.7
self-employment	8.9	20.4	37.8	8.2	6.3	18.5
wage employment	1.5	3.0	22.2	40.7	18.2	14.4

Source: Own calculations: data from the SCARLED survey.

Over 71% of household's heads have very positive or somewhat positive feelings about agriculture. Regarding self-employment, household's heads have rather negative feelings declaring in almost 30% of cases, that they are very or somewhat negative. However, wage employment is considered by almost 59% of household's heads as somewhat or very positive.

From 270 surveyed households 137 pointed out the income band for their total annual net income for 2006. Within this group, 19.7% declared income between 100-125% of average income in rural areas⁹ (band 5 in Table 19). The same share of respondents declared that their income constitutes 75-100% of rural average (band 4, Table 19). More than 13% of interviewees (137 respondents) achieved income above 225% of rural average (band 10).

Table 19. Share [%] of households by income bands [PLN] (total annual net income for 2006)

1	2	3	4	5	6	7	8	9	10
0-6338	6339-12676	12677-19014	19015-25353	25354-31691	31692-38029	38030-44367	44368-50705	50706-57043	>57043
0.7%	7.3%	13.1%	19.7%	19.7%	9.5%	7.3%	5.8%	3.7%	13.1%

Source: Own calculations: data from the SCARLED survey.

About 70% of households did not support any people (not members of household) in kind or financially, either in 2003 or 2006. However, about 18% (2006) declared help to 2-4 people and 2.2% to 5-7 people (adequately 17.4% and 1.5% in 2003).

Table 20. Share [%] of households by number of people (not members of household) supported in cash or kind (2003, 2006)

Year	Share [%] of households supporting the following number of people:			
	0	1	2-4	5-7
2006	70.4%	8.9%	18.5%	2.2%
2003	71.1%	10.0%	17.4%	1.5%

Source: Own calculations: data from the SCARLED survey.

Within the whole surveyed sample in 2006 only one farmer was a member of a producer organisation and only thirteen respondents (ca. 5% of all) indicated that any producer organisation operates in the closest surroundings. With regard to other forms of cooperation the statistics are much more optimistic: almost 37% of farmers declared that they cooperate with other farmers informally (e.g. using machinery, buildings, etc.). Nearly 9% of respondents pointed out that they or someone from their household is a member of any formal non-agricultural organisation.

In the surveyed group about 44% of respondents did not represent any opinion on generalised trust to other people (Table 21). However, almost 40% of farmers indicated that they trust other people to some extent. 3.7% of respondents totally agreed with a statement that in general most people can be trusted.

⁹ Amount of 25353 PLN is the average income in rural areas for the year 2006 (Social Diagnosis 2007).

Table 21. Share [%] of households declaring that in general most people can be trusted

Possible answers:				
Totally disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Totally agree
0.7%	11.5%	44.2%	39.8%	3.7%

Source: Own calculations: data from the SCARLED survey.

Conclusions from the presented above descriptive analysis of the surveyed households' basic characteristics will be included in a Working Paper "Analysis of farmers' co-operation in Poland and lessons for the other NMS" (Deliverable 6.4). The research will be focused on the role of social capital in facilitating formal and informal cooperation, and moreover on the structural determinants of the collective behaviour of farmers towards market oriented production. For the purpose of verification of the hypothesis factor and cluster analysis will be applied.

4 CONCLUDING REMARKS

Cooperation among farmers is often advised as a remedy for small-scale farmers confronting growing power of processing and retail sectors resulting from rapidly restructuring supply chains. Common action problems and the importance of effective activity of producers' organizations have been also recognized as important factors influencing the process of economic and social changes in rural areas in Poland.

According to several analyses the level of cooperation in rural areas in Poland is relatively low, which is mainly a result of low level of social capital. The attitude of the lack of trust still dominates in Polish rural areas.

Therefore, research in this field seems crucial to verify if social capital is one of the important determinants of cooperative behaviour among subsistence and semi-subsistence farmers. The analysis is focused on the role of social capital in facilitating formal and informal cooperation, and moreover on the structural determinants of the collective behaviour of farmers towards market oriented production.

Multidimensional nature of social capital requires a broad approach to analyse this vague concept. The adopted approach includes four components of social capital - norms, networks, social trust and cooperation. Within the SCARLED project all these aspects are taken under considerations and moreover an attempt to quantify the effects of social capital is undertaken.

To analyse the role of social capital in facilitation of formal and informal cooperation among small-scale farmers, as well as to analyse impediments to commercialisation, factor and cluster analysis has been chosen. Due to a lack of available micro data including information on social capital and cooperation in rural areas in Poland the specific survey has been designed and implemented within the SCARLED project.

Methodological approaches to analyse cooperation among Polish farmers

5 APPENDIX - QUESTIONNAIRE

Methodological approaches to analyse cooperation among Polish farmers

L. SOCIAL CAPITAL - FORMAL COOPERATION IN AGRICULTURAL ACTIVITY

L.1 Are you currently a member of a producer organisation? Yes No

L.2 What is its main activity?	L.3 In which sector is it operating?
a) Agricultural production <input type="checkbox"/>	a) Pigs <input type="checkbox"/>
b) Sales of agricultural products <input type="checkbox"/>	b) Grain crops <input type="checkbox"/>
c) Agri-food processing <input type="checkbox"/>	c) Oil seeds <input type="checkbox"/>
d) Purchase of production inputs <input type="checkbox"/>	d) Grain crops and oil seeds <input type="checkbox"/>
e) Marketing activity <input type="checkbox"/>	e) Fruits and vegetables <input type="checkbox"/>
f) Marketing research <input type="checkbox"/>	f) Tobacco <input type="checkbox"/>
g) Others <input type="checkbox"/>	g) Poultry <input type="checkbox"/>
What kind of? <input type="checkbox"/>	h) Milk <input type="checkbox"/>
	i) Eggs <input type="checkbox"/>
	j) Other sector (What kind of?) <input type="checkbox"/>

If Yes, go to questions L.2 - L.6. If No, go to question L.7.

Methodological approaches to analyse cooperation among Polish farmers

L.4 Please evaluate benefits of cooperating within the producer organisation	Not important at all	Of little importance	Of moderate importance	Very important	The most important
	(1)	(2)	(3)	(4)	(5)
a) Common use of machinery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Common use of buildings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Common transportation means	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Increase in scale of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Increase in sales revenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Decrease in production costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Higher prices of agricultural products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Possibility of signing contracts with purchasers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Possibility of signing contracts with production input providers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Gaining technological knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Gaining knowledge of marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Gaining knowledge of support schemes for producer organisations (from UE or national funds)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Methodological approaches to analyse cooperation among Polish farmers

L.5 How the following factors have influenced establishment of the producer organisation? Please rate from 1 to 5.

No influence 1 « 2 « 3 » 4 » 5 Large influence

a) Possibility of development of agricultural activity	/ ___ /
b) Possibility of signing contracts with purchasers	/ ___ /
c) Possibility of signing contracts with production input providers	/ ___ /
d) Possibility of common use of production inputs (machinery, buildings, transportation means, etc.)	/ ___ /
e) Possibility of receiving higher prices for products	/ ___ /
f) Possibility of receiving support from EU funds or national aid	/ ___ /
g) Others (What kind of?)	/ ___ /

Methodological approaches to analyse cooperation among Polish farmers

L.6 Please evaluate barriers for operating of your producer organisation.

	Not important at all	Of little importance	Of moderate importance	Very important	The most important
	(1)	(2)	(3)	(4)	(5)
a) Bad economic situation in the sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Lack of interest of purchasers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Lack of interest of production inputs providers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Other farmers do not wish to cooperate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Lack of trust between members of the producer organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Members of the producer organisation do not trust members of the managing board	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Formal requirements and bureaucracy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Lack of funds for administrative operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Organisational problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Go to question L.8

Methodological approaches to analyse cooperation among Polish farmers

L.7 Please evaluate reasons of not being a member of a producer organisation.

	Not important at all	Of little importance	Of moderate importance	Very important	The most important
	(1)	(2)	(3)	(4)	(5)
a) Lack of producer organisation in the closest surroundings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Lack of knowledge and information on functioning and benefits from membership in producer organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Lack of other farmers willing to cooperate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In general I do not trust in business cooperation with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Non-agricultural employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Lack of market sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

L.8 Have you ever been elected as a member of managing board of any producer organisation? Yes No

How many times?.....

L.9 Have you ever tried to establish a producer organisation? Yes No

L.10 Does any producer organisation operate in the closest surroundings? Yes No

Methodological approaches to analyse cooperation among Polish farmers

If Yes in L.10:

L.11 What is its main activity?	L.12 In which sector is it operating?
a) Agricultural production <input type="checkbox"/>	a) Pigs <input type="checkbox"/>
b) Sales of agricultural products <input type="checkbox"/>	b) Grain crops <input type="checkbox"/>
c) Agri-food processing <input type="checkbox"/>	c) Oil seeds <input type="checkbox"/>
d) Purchase of production inputs <input type="checkbox"/>	d) Grain crops and oil seeds <input type="checkbox"/>
e) Marketing activity <input type="checkbox"/>	e) Fruits and vegetables <input type="checkbox"/>
f) Marketing research <input type="checkbox"/>	f) Tobacco <input type="checkbox"/>
g) Others What kind of? <input type="checkbox"/>	g) Poultry <input type="checkbox"/>
	h) Milk <input type="checkbox"/>
	i) Eggs <input type="checkbox"/>
	j) Other sector (What kind of?) <input type="checkbox"/>

Methodological approaches to analyse cooperation among Polish farmers

L. SOCIAL CAPITAL - INFORMAL COOPERATION IN AGRICULTURAL ACTIVITY

L.13 Do you cooperate with other farmers informally (e.g. using machinery, buildings, etc.)?

Yes No

If Yes, go to question L.14. If No, go to question L.17.

L.14 What kind of informal cooperation are involved in?

- | | |
|--|--------------------------|
| a) Common use of machinery | <input type="checkbox"/> |
| b) Common use of buildings | <input type="checkbox"/> |
| c) Common transportation means | <input type="checkbox"/> |
| d) Common sales of agricultural products | <input type="checkbox"/> |
| e) Common purchase of production inputs | <input type="checkbox"/> |
| f) Help in field works | <input type="checkbox"/> |
| g) Exchange of information | <input type="checkbox"/> |
| h) Others (What kind of ?) | <input type="checkbox"/> |

Methodological approaches to analyse cooperation among Polish farmers

L.15 Please evaluate benefits from informal cooperation with other farmers.

	Not important at all	Of little importance	Of moderate importance	Very important	The most important
	(1)	(2)	(3)	(4)	(5)
a) No need for additional investment in machinery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Increase in scale of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Increase in sales revenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Decrease in production costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Higher prices for products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Possibility of signing contracts with purchasers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Possibility of signing contracts with production input providers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Gaining technological knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Gaining knowledge of marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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L.16 Please evaluate barriers for informal cooperation among farmers.

	Not important at all	Of little importance	Of moderate importance	Very important	The most important
	(1)	(2)	(3)	(4)	(5)
a) Other farmers do not wish to cooperate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) It is not profitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) In general I do not trust in business cooperation with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I do not trust other farmers in my village	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) There are no possibilities to receive higher price through common sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) There are no possibilities to receive lower price for production inputs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Production is not profitable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 L.17 Do you know any example of informal cooperation in the closest surroundings? Yes No

If Yes, go to question L.18. If No, go to question L.19.

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L.18 If Yes, what kind of informal cooperation is it?

a) Common use of machinery	<input type="checkbox"/>
b) Common use of buildings	<input type="checkbox"/>
c) Common use of transport means	<input type="checkbox"/>
d) Common organisation of sale of agricultural products	<input type="checkbox"/>
e) Common purchase of production inputs	<input type="checkbox"/>
f) Help in field work	<input type="checkbox"/>
g) Exchange of information	<input type="checkbox"/>
h) Other (What kind of?)	<input type="checkbox"/>

L.19 Will, in your opinion, intensity and frequency of cooperation among farmers change in the future? Please rate from 1 to 5.

/ ___ /

Will decrease a lot	1	◀	2	◀	3	▶	4	▶	5	Will increase a lot
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L.20 Please evaluate factors which can increase intensity and frequency of cooperation among farmers in agricultural activity. Please rate from 1 to 5.

	Not important at all	»	Of little importance	»	Of moderate importance	»	Very important	»	The most important
	(1)		(2)		(3)		(4)		(5)
a) Necessity of help in field work	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
b) Lack of necessary machinery	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
c) Lack of knowledge and information on farming	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
d) Possibility of common marketing and receiving higher prices for agricultural products	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
e) Possibility of common purchase of production inputs	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
f) Other factors (what kind of?)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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L. SOCIAL CAPITAL - TRUST, NETWORKS AND SOCIABILITY

L.21 Are you ready to cooperate with people (not from your family) in the following situations:

- a) lending valuable thing? Yes No
- b) in business activity? Yes No
- c) working in favour of your society? Yes No

L.22 Are you (or someone from your household) a member of any formal non-agricultural organisation? Yes No

Name of organization	<i>Codes (appendix 12)</i>

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L.23 In general, do you agree or disagree with the following statements? Please rate from 1 to 5.

		Totally disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Totally agree
		(1)	(2)	(3)	(4)	(5)
a)	Most people can be trusted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Most of the people in the village know each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	You should be very careful in your relation to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	In this village people generally do not trust each other in matters of lending and borrowing money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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L.24 How much do you trust different types of people and institutions. On a scale of 1 to 5, where 1 means very small extent and 5 means a very great extent, how much do you trust people in that category?

		Very small extent	Small extent	Medium extent	High extent	Very high extent
		(1)	(2)	(3)	(4)	(5)
a)	Local governmental officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Central governmental officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Police	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Doctors and nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f)	Shopkeepers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g)	Strangers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h)	Neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i)	Inhabitants of your village	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j)	Political parties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

L.25 If people asked you for a favour, could you help most of them? Yes No

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L.26 Could you describe your relation to your direct neighbours? Use the scale.

Friend 1 ◀◀ 2 ◀◀ 3 ▶▶ 4 ▶▶ 5 Hostile relationship

Neighbour 1 / ___ /

Neighbour 3 / ___ /

Neighbour 2 / ___ /

Neighbour 4 / ___ /

L.27 Many people find it difficult to get out and vote. Did you vote in the last elections?

	Yes... (1) No.... (0)	If not, why? (codes, appendix 13)
a) Local		
b) National		
c) Presidential		
d) EU		

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