

# The importance of local networks for solving land fragmentation problems in Bulgaria

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**Abstract:** Bulgaria as one of the transition countries in the Central and Eastern Europe has been conducted a land policy which aimed to give back user rights to individual owners and to privatize the physical assets from collective farms. The restitution of ownership rights has led to land fragmentation in ownership and use. The aim of this paper, in one side, is to investigate how land fragmentation in term affects contract arrangements between landowners and land users, and, on the other side, to demonstrate how local networks, informal and formal, solves land fragmentation problem. In order to explain the processes affected by land fragmentation it will be employed agricultural contract theory and social capital. First, the article reviews the appropriateness of each theory. Second, analyzes different informal and formal contract arrangements among landowners and land users by employed case study approach, and third, evaluates the role of local networks for solving land fragmentation.

The main argument in the article is that fragmented ownership generates high costs of searching for owners as well as high costs of contracting. Therefore, the informal contracts dominate among landowners and land users. The level of social capital is different between different actor groups: landowners, land users and local authority. Therefore, networks among three contractual groups were defined: first, among local/absentee landowners and local farmers, second, among local landowners and outside framers through using local authority in the villages and third, among all land users. The findings lead to conclusion that local networks reduce costs of contracting even in a low trust/commutation environment among some of different groups of actors occurs. Also, local networks among different groups of actors are importance for solving land fragmentation.

**Key words:** Bulgaria, contracts, farmland, land fragmentation, local networks

## 1. Introduction

Bulgaria as one of the transition countries in the Central and Eastern Europe has conducted a land policy which aimed to give back user rights to individual owners and to privatise the physical assets from collective farms. Since formal ownership titles had remained unchanged over four decades in the country, the land was distributed to former owners or their heirs. The restitution of ownership rights has led to land fragmentation in ownership. The farmland is shared by several co-owners. Each of them has on average 4-5 plots with share per plot less than 0.3 hectares.

The transformation from large scale farming to small subsistence farming also has led to fragmentation in land use. The farmland is cultivated by many small subsistence farms with farm size less than one hectares and small number of large commercial farms with farm size over 600 hectares. However, land fragmentation is

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not a new phenomenon in Bulgarian agriculture. There was always a strong tradition of small scale family farming in Bulgaria and farmers usually had several non-contiguous plots. The land fragmentation in the country is among the main factors that constrain sustainable development of agriculture, farm efficiency, land use, and land market.

The aim of the paper is to study effect of land fragmentation in terms of ownership on contract arrangements between landowners and land users in rental market in Bulgaria, and also to demonstrate how local networks solve land fragmentation problems. In order to elucidate the processes affected by land fragmentation two theories are employed: agricultural contracting and social capital. The paper reviews the appropriateness of each theory, and puts forward assumptions which are empirically tested in two villages in Bulgaria. The paper also analyzes different contract arrangements among actors: landowners and land users by employing case study approach.

## **2. Land fragmentation as a phenomenon throughout the world**

Land fragmentation is a great problem in societies where population growth is high, small-scale farming and inheritance patterns are dominant, and land reforms take place. It mostly occurs in the countries of South Asia, Sub-Saharan Africa and Europe. For instance, land fragmentation in South Asia is a result of land reforms, inheritance and high population. Existence land fragmentation in South Asia has sped up land degradation and constrains agricultural development (Niroula and Thapa 2005). Moreover, land fragmentation of small landholdings and tiny land parcels harms land conservation and economic gains, thereby discouraging farmers from adopting new agricultural innovations. In early study for China, Nguyen et al. (1996) also add that land fragmentation affects farm productivity and suggest that policymakers should focus on reducing the causes for existence of land fragmentation as well as on establishing land markets and improving rural credit market. In Wan and Cheng's study (2001), the authors empirically analyze the effects of land fragmentation linked to returns of scale. They propose that a rental land market and exchange of plots are better alternatives for solving land fragmentation. The Chinese government only needs to offer a reasonable compensation scheme for farmers who lose their cultivation rights and exchange good plots for worse plots.

Land fragmentation is also a common phenomenon in Sub-Saharan Africa, where the farmland on which households operate is usually composed of more than one parcel of land. Blarel et al. (1992) discuss the incidence and causes of fragmentation in Ghana and Rwanda and also relation between fragmentation and land productivity. Their conclusion is that consolidation programs are unlikely to lead to significant increases in land productivity and may actually make farmers worse off. They suggest that policymakers must concentrate on factor and food markets, rather than on altering the root causes of land fragmentation.

In Western Europe, increased population density, road density, building of new railroads, different inheritance patterns, and intensity of land use have led to land fragmentation too. An early study about land fragmentation shows that, in Western Europe in 1949, the average number of noncontiguous plots per farm was 2.5 in Denmark and Sweden; from 11 to 20 in West Germany, Italy and Switzerland; and many more in Portugal and Greece. Single farms had been found in France and Spain with over 275 and 256 noncontiguous plots, respectively (Meer 1975)

Land fragmentation becomes also a phenomenon after land reforms in 1990s in Central and Eastern Europe. In most of the CEEC, farmland was restored to the former owners, who received property rights to land of comparable size and quality, even if it was not necessarily the exact land that they had previously owned. For instance, in some transition countries, land was mostly distributed to the former, pre-collectivization owners and, partially, to labourers (Bulgaria, Hungary and Romania), in others land was distributed to people equally (Albania), or restored to citizens living permanently in the countries (Czech Republic and Slovakia). The land fragmentation in CEEC affects land productivity, land market development and land abandonment (Kopeva et al. 2002, Rembold 2003, Dirimanova 2006).

### 3. Land fragmentation in Bulgaria

Land fragmentation in Bulgaria is a result of land reforms carried out in the country after the de-collectivization process. The restitution process, based on historical boundaries, typically led to an ownership structure that is now very fragmented. Five million hectares of land in the country were restored on the basis of highly fragmented land, already a result of the land reform of 1946.

Land reform was initiated at the beginning of 1991, when the Law for Ownership and Use of Agricultural Land (LOUAL) was approved by the Parliament. The objective of the LOUAL was to return land to those who owned it prior to collectivization. Land in Bulgaria was never nationalized. Therefore, land reform in 1991 was an act of restitution from a legal point of view and returned property to those, who were defined as 'legitimate' owners. Moreover, the LOUAL imposed restrictions on the size of plots below which land could not be fragmented: for arable land, 0.3 hectares; for meadows, 0.2 hectares; and for orchards, 0.1 hectares. These sizes correspond mainly to small-scale farming. The result of the land reform was land fragmentation in ownership and use.

*Land fragmentation in ownership* refers to the number of landowners who own a particular plot of land. Land fragmentation in ownership results from a combination of factors, such as (1) the way land was restored, (2) the inheritance system, and (3) fragmented ownership prior to 1946. Land ownership is a traditional problem in the country because of conducting land reforms and agriculture policy. For instance, the average size of plots has varied between 0.35 hectares before collectivization to around 0.52 hectares after de-collectivization (table 1).

**Table 1: Agricultural indicators for Bulgaria**

Indicators		1897	1908	1934	1946	2001
Farmland	ha	3,977,557	4,625,787	4,368,429	4,317,696	4,182,000
Farms	number	546,084	640,511	884,869	1,103,900	1,777,200
Plots	number	7,980,000	9,880,000	11,862,158	12,200,000	8,007,000
Average farm size	ha	7.3	6.3	4.9	3.9	2.4
No of plots in a farm	number	9.98	10.58	13.4	11.0	4.5
Average size of a plot	ha	0.49	0.47	0.37	0.35	0.52

Source: NSI and SYB, 1897, 1908, 1934, 1946, and 2001

*Land fragmentation in use* refers to the number of plots used by an agricultural enterprise. Land reform privatized old collective farms and created opportunities for establishing new types of cooperatives, large commercial farms and many

subsistence farms. For instance, individuals and organizations own 99 percent of the total farmland but cultivate only 7.5 percent of it, with an average plot size of 0.52 hectares, whereas 66.7 percents of land is cultivated by large-scale farmers and cooperatives. The state and municipalities own only 17 percent of total farmland and mostly rent it out.

In conclusion, land fragmentation in Bulgaria can be a barrier for sustainable development of agriculture, farm efficiency and land use. It also makes land transactions more complicate and more expensive in land market. Moreover, it hinders the development of the farms, and creates high uncertainty of farmers' production and their future investments.

#### **4. Theoretical and methodological approach - contracts, social capital and networks**

The *contract* for farmland is an exchange among landowner and land user. Exchange of land usually concerns costs. Costs of land exchange include (1) transaction costs, influenced by properties of transaction; (2) opportunity costs affected by characteristic of land; and (3) land price connected to the choice and opportunity to obtain access to credit, financing and investments (Hurrelmann 2005). Costs of exchange, usually, influence farmers' and landowners' contract decision in rental and sale land markets even though they share these costs. The situation is a little different, when land fragmentation in ownership exists because fragmented ownership increase costs of exchange. These costs can be minimized only when there are clear internal rules, information and exchange mechanisms among contract parties (Hayami and Otsuka 1993). However, some of the rules cannot be specified, for instance with what to cultivate on the land and how because it is too costly for contractual parties. Therefore, contracts as well as rights are always incomplete because not all of the dimensions of the contractual relation subject to control problems can be covered by a contract.

The choice between different markets (sale and rental) and types of tenancy contracts (share contract, fixed-contract and fixed-wage contract)<sup>2</sup> is also affected by land fragmentation. Land fragmentation in ownership constrains land market participants to exchange land and they are forced to participate only in tenancy market. However, land fragmentation also hinders the choice between different tenancy contracts (*annual* and *multiyear*, and *informal* and *formal*). For instance, we expect that land fragmentation makes annual and informal contracts more frequent than multiyear and formal. Furthermore, landowners' interest to annual contracts are also high since they can control all daily actions of tenants and also provide possibility for them to reduce moral hazard problem. But, if the contract is only annual land shirking might reduce land quality and decrease tenants' incentive to care and to invest on the land (Allen and Lueck 2003).

Land exchange among landowners and farms are also based on the economical and social relations. The economical relation relates to exchange a resource for a specific economical rent while social relation relates to socioeconomic status and level of *social capital*. The social relations also help actors to solve problems in a certain environment and minimize costs of exchange. The role of social capital (informal ties, trust and reputation) is an important component for land exchange

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<sup>2</sup> The share contract is a contract where landowner and tenant share inputs and outputs, or outputs with different share rates. The fixed-rent contract is a contract where tenant pays to landowner a fixed amount of money or production for using land, while wage contract is a contract where landowners or tenants employ worker(s) to operate their land for a fixed wage.

among landowners and farmers. When the social capital is high the costs of exchange can be reduced and land fragmentation can be an insignificant factor for local farmers. According to Hooghe and Stolle (2003), the benefit of high social capital usually generalizes trust which facilitates social life in the society and fosters acts of tolerance and acceptance of otherness. Moreover, social capital assists collective actions (Ostrom 1994) and makes informal contracts stronger and significant for locals (Putnam 2000).

*Networks* among people can be informal and formal. Informal networks (contracting) is among people who have the same social status, education, class, race and have high degree of social trust while formal network is among people who has common economical interests and aims. For instance, actors with lower living standard have low level of social capital (social trust) rather than others with higher ones. Therefore, contractual parties who live at the same environment have more or less the same perception of trustworthiness of their fellows and they experience similar atmospheres of trustworthiness. In this case, we may expect that the people who live in the same village have high level of social capital and their contractual arrangements can be more informal than formal. The arrangements with people, who live out of the village, may have lower level of social capital and may expect more formal and multiyear contracts. Therefore, we may assume that role of informal rules, social relations (local networks) and information flow among local people in a community help for contracting and reducing costs of exchange. To check above assumptions we will take local networks as an issue which facilitate contracts and solve land fragmentation.

The data presented in this paper were collected in two Bulgarian villages during 2005. These villages were selected after using landownership data. By employing cluster analysis, first two regions with high and low levels of land fragmentation were selected by using average plot size as a criterion, then villages were selected in respective regions by three criteria: average plot size, number of plots per owner and land per owner. Furthermore, the selected villages were consulting with regional and municipal offices "Agricultural and Forest" in Bulgaria.

To understand how local networks affect contractual arrangement and work for solving land fragmentation, we will use comparative design, which is most efficient and corresponding with the research problem. This approach is a comparison of two contrasting cases and gives possibility to understand the social problem of different prospective views. The interviews were conducted with local landowners, absentee landowners, farmers and local authorities.

By using open-ended questions, the qualitative data was collected in *village L* (village with low level of land fragmentation) in Dobrich region and *village H* (village with high level of land fragmentation) in Plovdiv region. The questionnaire concerns contractual choices made by actors between informal, formal, annual and multiyear, and level of social capital defined by the components trust and reputation.

## **5. Analytical outcomes**

Analytical part of the paper provides several components. First, it presents descriptive background of the study villages; second, shows different types of contractual arrangements among landowners and farmers within and village; and third, demonstrates land transactions (local networks) among actors.

## 5.1 Descriptive background of the study villages

The study villages are selected from two regions with low and high levels of land fragmentation (table 2). The *village L* is located in Dobrich region, Northeast Bulgaria. The agricultural land occupies about 2,923.24 hectares. The average plot size per owner is 2.44 hectares (NSI 2003). Agriculture is the main source of income for the population in the village. The village is well known for its massive grain production. The soil is fertile but not irrigated. Farmland is divided into large tracts called *massifs*. Forest belts are the natural boundaries of these *massifs*, while a permanent route network subdivide them into smaller areas. The largest size for these *massifs* is around 150-180 hectares, while the smallest size is about 30-60 hectares. Also, there is a system of forest belts to protect cultivated crops and to separate land tracts. The main crops grown in the village are wheat, barley, maize and sunflower.

**Table 2: Characteristics of the study villages**

Issues	Dobrich region	Plovdiv region
	<i>Village L</i>	<i>Village H</i>
1. Accepted documents for proving landownership rights	Deep acts, register for enter labor-production organizations, Romanian land register and conducted interviews with old people in the village. Land reform has completed in study village 2000.	Deep acts, register for enter labor-production organizations and conducted interviews with old people in the village. Land reform has completed in 1994.
2. Land restitution in new or old real boundaries	new real boundaries	new/old real boundaries
3. Average plot size, ha	2.44	0.80
4. Number of plots	1-1.5	3-6
5. Average land per owner, ha	3.73	2.20
6. Abandonment land	no	10-15% of the land
7. Crop production	cereals	cereals/vegetables/perenical crops
8. Farm structure (main land users)	<i>Large leaseholders</i> (5) cultivate 90% of the land <i>Small producers</i> cultivate 5% of the land	<i>Large leaseholder</i> (1) cultivates 73% of the land. The tenant is local landowner. <i>Cooperative</i> (1) cultivates 18% of the land. <i>Small local and outside producers</i> cultivate 9% of the land.
9. Rent	Pay in kind and/or cash in advance one part and the rest after harvest, 30-35% of the yield, all producer pay almost the same rent	Pay in kind regular, 10% of the yield from large leaseholder and 5% of the yield from the cooperative
10. Type of contracts and term	<i>Formal contracts</i> all leaseholders for 5 years period <i>Informal contracts</i> have small and family producers for 1-2 years	<i>Formal contracts</i> with large leaseholder and cooperative for 9 years; cooperative and outside producers for one year. <i>Informal contracts</i> again with tenant with the landowners who have not separate their land for 1 year period
11. Land price	300-400 EUR/ha	1,000-1050 EUR/ha

Source: own presentation, based on data from conducted interviews

Land reform in the region began in 1991 and finished in 1994. The transformation process started with land restitution. Landowners claimed their property using different documents: Romanian land registers<sup>3</sup>; registers for entering cooperatives, tax books and notary deeds. The land restitution process in village was completed more quickly in comparison to the other villages of Bulgaria. The critical point to note here is that, during restitution, some landowners took advantages of the frequent changes in the LOUAL and uncertain situation in the country and claimed more land than they really had.

The farm structure in village includes large commercial farms and the individual producers. The individual producers cultivate only the land close to the village and their backyards, around 5% of the backyards while large leaseholders cultivated the rest of the land. The average size of an individual farm is around 4 hectares, while the size of a large commercial farm is 423 hectares.

The *village H* is located Plovdiv Region, South Central Bulgaria. Total farmland there is about 1,493.70 hectares. The soil is fertile and irrigated. The main crops grown in the region are cereals, vegetable and perennial crops.

The land restitution process started in 1991 and was completed in 2000. The main documents used for land restitution were deed acts, tax books, and registers for entering the cooperatives in 1956. The main problem during restitution was that many of the documents had landowner names and land size but no information about the precise location of the parcels. In such cases, witnesses provided information about the location of the claimed property. These witnesses were older people from the village, interviewed by the land commissions.

The farm structure in the village includes one large producer, cooperative, outside producers and many small local and outside producers. The cultivated land from large leaseholder is over 73% while the land from cooperative is 18%. The rest of the land is cultivated by small local and outside producers.

## **5.2 Comparison of the contractual arrangement in study villages**

This section compares different type of contracts within and between the study regions of Bulgaria. Then follows a brief analysis of different contracts made under the conditions of increased land fragmentation (table 2).

***Contractual arrangements within Village L.*** In *Village L*, there are five large-scale leaseholders. They have large grain stores and machinery pools. The age of the population is 68, and this is obvious reason why much of the land is rented out to large commercial leaseholders in *village L*.

The leaseholders in the village are competing among themselves for farmland. 40% of farmland in the study village is formally contracted. The contract duration is for long-term periods at least four years. The share rate is 35 percent of output for landowners. When the contract period is complete, the leaseholders offer a new 'standard' contract to landowners. The new contract has the same text contained in the previous contract but with small difference - longer contractual duration. The time duration for the new contract is between 5 and 10 years. The conditions of the offered type of contracts and contract duration are almost the same. The differences in the contracts among leaseholders are mainly related to procedures for terminating the contract, obtaining rent, and re-renting the land to another leaseholder. Share contracts are officially formalized and registered in municipal agricultural offices only

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<sup>3</sup> The Romanian land register was created during the period when South Dobridza was part of Romania. After returning the region to Bulgaria, the Romanian land register for South Dobrudza were provided to the Bulgarian government and a large share of farmland was restored based on it.

when leaseholders need to apply for state subsidies or bank credits; otherwise the contracts are informally organized.

In the village, the evidence shows that landowners are willing to rent out the land to a certain leaseholder if he/she has a good relationship and high reputation with locals. The leaseholders, usually, does not compete through the amount of rent but through some other factors, such as reputation, social or economic benefits which they provide to the members in the village.

Frequently, local landowners cultivate plots for their own production. Mostly, the plots for 'personal use'<sup>4</sup> are allocated around the villages or in their back yards. The size of these plots is between 0.2 - 0.5 hectares. Landowners cultivate on their plots corn, pumpkin, watermelon and beans. When they cannot cultivate their own plots, they rent out them to relatives or friends. They usually have informal contracts or 'kinship' contracts with their relatives/friends for one-year period.

The old age of the populations in the village makes tenancy contracts significant for local landowners. The share contract is common in the region. The fixed-rent contract exists only for state and municipality lands. Subsistence farming for 'personal use' is only common on small holdings, which comprise only a minor part of the farmland. In the village, there is no abandoned land.

**Contractual arrangements within Village H.** In *village L*, land transactions are between landowners and local and outside individual producers, or large leaseholder or cooperative. The main crops grown in the village are high-value crops: vegetables, orchards and vineyards. The land in *village H* is formally contracted with large leaseholder for a long period – nine years – while the rest of land is informally contracted with cooperative and outside producers for a shorter period – one year. When the contract period expires, the landowners re-sign the contract. The new contact is signed by contractual parties with the same contract conditions.

The land is rented in the village under fixed-rent contract. The large leaseholder, who is only one in the village, rent in land and acts as a monopsonist, while the cooperative rent in and then rent out land. The cooperative acts as a mediator. The reasons that drive the cooperative to act as a mediator are: lack of machinery, labor and finances. Both, the leaseholder and the cooperative, offer fixed-rent contracts to landowners. The cooperative rents out farmland to outside producers under fixed-rent contracts, e.g. to Turkish tobacco producers. The landowners in the village refer to their contracts with tenants receive only 20 percents of the average yield. Also, fixed-rent contract is preferred for Municipal land in the study village.

The share contract only occurs between neighbors and relatives, and is often informal. Their contracts are based on the 'kinship' contract, which is a type of sole-ownership agreement. They mostly exchange their dispersed plots (1) to reduce time and transport costs or (2) to increase their own farming land. They also share their labor and machinery costs. The size of these plots is around 0.2 hectares, cultivating mostly vegetables.

The problem of monitoring land and output is a significant for the village with higher level of land fragmentation. Land fragmentation and large variety of crops (vegetable, orchards, and grain production) are the main reasons that create difficulties in monitoring the land and output. In addition, different quality land also influences crop productivity and final output. Therefore, fixed-rent and informal

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<sup>4</sup> Land used by a landowner for cultivating land for his or her own food needs is called 'land for personal use'. In Bulgaria, it is a tradition that all local landowners cultivate a small share of their own land for 'personal use', and the rest of the land they rent out to local farm operators.



contracts become more likely than share contracts among landowners and land users when degree of land fragmentation increases.

**Comparison contractual arrangements between villages.** Contractual choice is complicated when cost component land fragmentation exists. In the study villages, the amount of leaseholders increases when the farmland becomes less fragmented (table 3). The contract type changes, from share to fixed-rent or sole-ownership, with increased land fragmentation. The share rate also decreases for landowners when fragmentation increases. The state and municipal lands is always contracted under fixed-rent contracts.

Long-term contacts are more common for *village L* rather than for *village H*. Informal contract dominate in both villages. For instance, the land under informal contact in *village L* is 38 percent while the land under informal contracts in *village H* is over 60 percents. Share contracts also often exist between individual landowners, who are mostly relatives, friends, or neighbors. They share production costs, both input and output, equally among themselves. However, such arrangements rarely occur in the study *village L* and often in *village H*. The reason is that low-value crops (maize, crop, wheat, sunflowers) are cultivated in *village L*, and for this kind of production landowners need heavy machines (combines and tractors).

Lack of machinery and high age of local landowners (over 65 years) constrains individuals from organizing their own farming and they need to rent out their land. In the *village H* with high level of land fragmentation, the land is more abandoned than the land in *village L* (around 15%).

**Table 3: Leaseholder contractual agreements with different types of landowners**

Regions/villages with different levels of land fragmentation, LF	<i>Village L</i>	<i>Village H</i>
Local landowners	SC	FR, SO
Absentee landowners	SC	FR
State and municipal lands	FR	FR
Share rate owner/tenant	35:65	20:80
No. of leaseholders	5	2
Duration of the formal contracts, years	5-10	4-9
Duration of the informal contracts, years	1	1
Land under informal contracts, percent	38	65
Population	452	456
Average age of population, years	68	65
Abandonment of land	no	15%

SO: Sole Owner, SC: Share Contract, FR: Fixed-Rent Contract

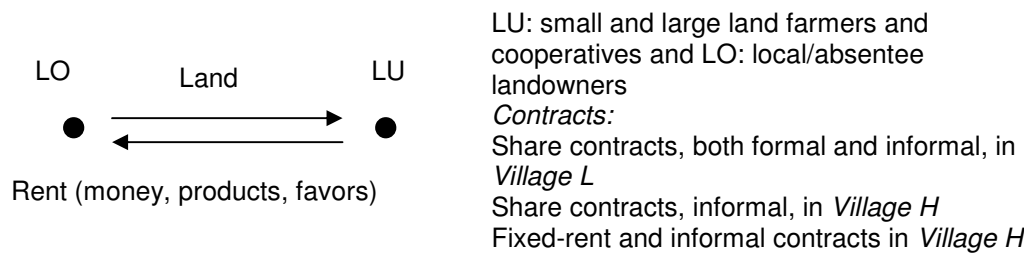
Source: own presentation

### 5.3 Local networks for contracting among actors

In light of the study findings, we can present different local - informal and formal - networks. These networks are based on the relations and contractual arrangements regarding the land among actors. The following abbreviations are used below LO - land owner, LU – land users; SLU - small land user; and LLU - large land user.

- *Basic networks (transactions)* between land owners and land users in the land rental market (figure 1). In cases where this relation is maintained over year, a

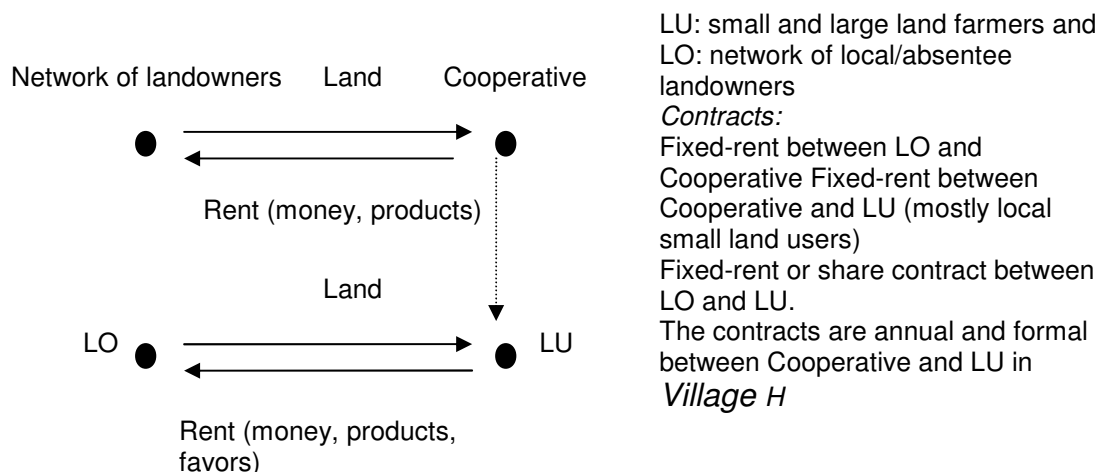
“coalition” between them is likely to develop. This transaction could be through a formal written contract or informal oral contract (in cases of trust between them). The findings show that that, for the small land users, a considerable part of these transactions are (1) between relatives and friends under equal share contract; (2) between landowners and leaseholders (share contract in *Village L* and fixed-rent in *Village H*); or (3) between landowners and cooperatives (share contract in *Village L* and fixed-rent in *Village H*).



**Figure 1: Basic networks (land transactions)**

Source: own presentation

- *Land networks among landowners and cooperatives (figure 2).* The cooperatives in Bulgaria have their own network of landowners. They mostly serve absentee landowners who rarely contract among themselves. The absentee landowners often communicate with a relative from the village instead of directly with the cooperative management. Sometimes, the cooperatives act as mediators between landowners and large leaseholders (mostly outside leaseholders). They contract with landowners under fixed-rent contracts, written for one year. They renew the contracts every year during the rent payment period. The findings show that the cooperatives in *Village L* are production cooperatives, while in *Village H* they are mediators between landowners and other land users (mostly outside producers).

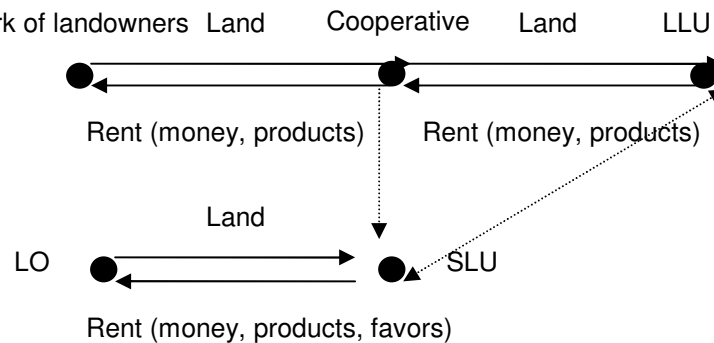


**Figure 2: Land networks (transactions) where a cooperative acts as a mediator**

Source: own presentation

- *Land networks (transactions) with cooperatives and large land users (figure 3).* In this case the cooperatives maintain their own network of land owners, consolidating the land and providing part of it to large producers. In this way, the large producers economize on transaction costs for negotiating with many small landowners. The contract arrangements between large land users and cooperatives

are formal and for one year. The rent is in cash or in kind. A typical example is *Village H*.



SLU leases land from LO. Cooperative leases land from network of local/absentee landowners and leases to LLU. Also, LLU leases land from SLU.

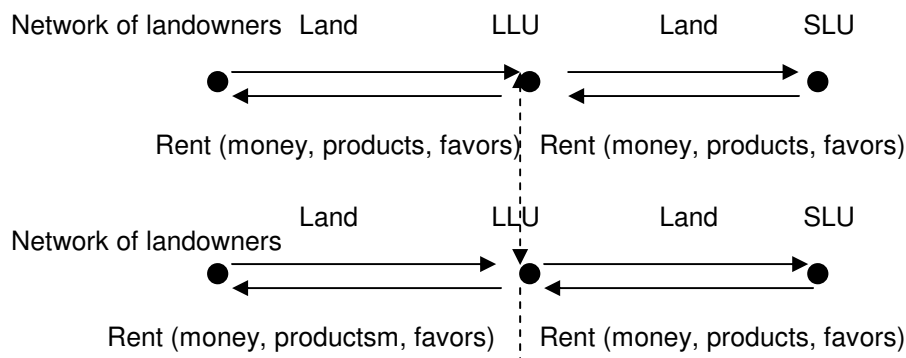
*Contracts:*

Fixed-rent contracts among contractual parties for one year. Typical for

**Figure 3: Land networks (transactions) when a cooperative acts as a mediator**

*Source:* own presentation

- *Land networks between many large producers (figure 4).* In this case, it is likely that the large producers develop their own network of landowners. Since they share the land of the whole village, some land transactions are also observed between the large and small land users. This case is typical for *Village L* and also often occurs in *Village H*. The contracts are long term between the network of landowners and large land users and annual between small and large land users. There are also land transactions among large land users. Their contractual arrangements are informal and annual. In this case, we observe horizontal and vertical integration among network of landowners and different land users.



Each Large Land User (LLU) has its own network of landowners and also leases to small land users (SML). The LLU exchange their rented land among themselves for only one purpose: to consolidate the land.

*Contracts:*

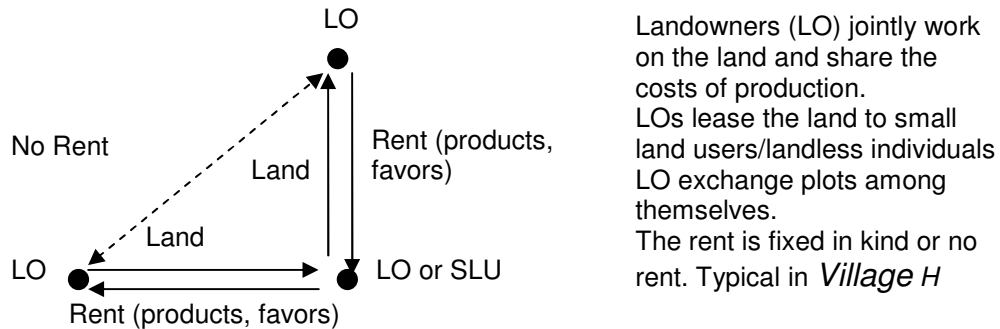
Share contracts between landowners and LLU and fixed-rent contracts between LLU and SLU.

The land transactions between LLU are informal and annual. Typical for *Village L*.

**Figure 4: Land networks (transactions) between landowners and large producers**

*Source:* own presentation

- *Land networks with no cooperatives or large producers (figure 5).* In this case, there are many informal transactions between land owners and small subsistence users or landless individuals. The contractual arrangements are informal and fixed. Share contracts occur only among relatives and friends. They share production costs and output equally. This is often the case in region *Village A* and *Village H*.



**Figure 5: Land networks (transactions) between landowners**

Source: own presentation

All of the above kinds of land networks (transactions) between actors have an influential role on the level of land fragmentation. High levels of trust and reputation, and well established local networks may reduce costs of exchange for contracting and can support solving land fragmentation.

## 6. Conclusions

Contracts in Bulgaria can be summarized into two groups: (1) under sole ownership for subsistence farming and (2) under share or fixed-rent contracts for large-scale farming. The first group of contracts is called 'kinship' contracts, which are based on a high level of trust and cooperation between co-owners. In such cases, the contractual parties almost equally share the costs and benefits from farming. The second group comprises the 'standard' contracts. Leaseholders offer formal 'standard' share contracts to the owners. The share rate is strongly dependent on the level of land fragmentation of the contracted land. Higher land fragmentation leads to a lower share rate for owners. Therefore, the question regarding land fragmentation and its effect on contractual choice cannot be answered simply. Land fragmentation obviously affects contractual choice among economic actors. Rational actors make their choices based on the existing contracting costs. A weakness of theory of agricultural contracting is its inability to suggest a common contractual form for combination of costs.

The main argument in the paper is that fragmented ownership generates high costs of searching for owners as well as high costs of contracting. Therefore, the informal contracts and networks dominate among landowners and land users. The level of social capital is different between different actor groups: landowners, land users and local authority. In the study three contractual groups were defined: first, among local/absentee landowners and local farmers, second, among local landowners and outside framers through using local authority in the villages, and third among all land users.

The local networks between absentee and local landowners, between members of the village community, and between local landowners and local farmers were characterized by high levels of social capital, high levels of trusts and strong

communication among them. The findings show that local landowners and local farmers, the first contractual group, are contracting based on their informal networks and high level of trust. The absentee landowners contract with the same farmers as their local relatives, who live in the village. The local landowners play a mediator role between farmers and their absentee relatives. This reduces costs of contracting. The contractual arrangements are mostly long-run and informal.

The level of social capital for the second contractual group is, however, low and there is a weak communication between landowners and outside farmers. Therefore, they cannot get easy access to the farmland. The only way for them to contract with local owners is through using local authorities. The findings show that mayors play a significant role for lobbying and gaining new landowners for outside farmers, and also reducing costs of bargaining. The contract arrangements among landowners and outside farmers are for a short-run and formal.

The level of social capital and trusts is furthermore low among all land users in the rural areas. However, unfavorable conditions as land fragmentation and lack of machinery facilities inducing them to cooperate for reducing the costs of production and farmland use. The findings show that informal networks among them partially help for organizing efficient land use. They apply informal resolution mechanisms for solving land fragmentation problem. Frequently these informal resolution practices have to be organized formally in short-run. The mayor has a role of an arbiter among land users, locals and outsiders, during contracting.

The findings lead to conclusion that local networks among different groups of actors are crucial for solving land fragmentation problems. They reduce costs of contracting even in a low trust and low communication environment.

## References

- Allen, D. W. and Lueck, D. (2003). *The Nature of the Farm: Contracts, Risk, and Organization in Agriculture*. London, The MIT Press.
- Blarel, B., Hazell, P., et al. (1992). The Economics of Farm Fragmentation: Evidence from Ghana and Rwanda. *The World Bank Economic Review* 6(2): 233-254.
- Dirimanova, V. (2006). Land Fragmentation in Bulgaria: An Obstacle for Land Market Development. *ANNALS of the Polish Association of Agricultural and Agribusiness Economists*. Vol. VIII. 6: 37-42.
- Hayami, Y. and Otsuka, K. (1993). *The Economics of Contract Choice*. Oxford, Clarendon Press.
- Hooghe, M. and Stolle, D. (2003). Generating Social Capital civil society and institutions in comperative perspective, Palgrave.
- Hurrelmann, A. (2005). Agricultural Land Markets: Organization, Institutions, Costs and Contracts in Poland, Vo.24. Aachen: Shaker.
- Kopeva, D.; Noev, N.; and Evtimov, V. (2002). *Land fragmentation and Land Consolidation in the agricultural sector: A Case Study from Bulgaria*. International FAO Symposium Land Fragmentation and Land Consolidation in the CEEC, Munich, Germany. February 25-28, 2002. FAO
- Meer, P. V. (1975). Land Consolidation through Land Fragmentation: Case Srudies from Taiwan. *Land Economics* 51(3): 275-283.
- Niroula, G. S. and Thapa, G. B. (2005). Imapcts and causes of land fragmentation, and lessons learned from land consolidation in South Asia. *Land Use Policy* 22: 358-372.
- Nguyen, T., Chenh, E., et al. (1996). Land Fragmentation and Farm Productivity in China in the 1990s. *China Economic Review* 7(2): 169-180.
- Ostrom, E., Gardner, R. and Walker, J. (1994). *Rules, Games and Common-Pool Resources*, Ann Arbor: University of Michigan Press.
- Putnam, R. (2000). Social capital: measurement and consequences", Workshop organized by OECD.
- Rembold, F. (2003). Land fragmentation and its impact in Central and Eastern European countries and the Commonwealth of Idependent Study. *Land reform*. Groppo, P., FAO. 1: 83-90.
- Wan, G. H. and Cheng, E. (2001). Effects of land fragmentation and returns to scale in the Chinese farming sector. *Applied Economics* 33: 183-194.

