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**SMALL FARMS IN CENTRAL AND EASTERN EUROPE: IS THERE A
FUTURE FOR THEM?**

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Foreword

Structural changes in agriculture have been going on in many countries all over the world during the last two decades. Developments were forced by radical reforms of countries concerned resulting in to establishing new farm structure. Large scale farm systems were broken up and tens of millions of small farms were established in Central and Eastern Europe (CEE) and former soviet states (CIS). Although small farms play a very important role in providing people with food, negligence and taking over the vertical coordination of food sector by multinational retail chains as well as severe competition have placed hard pressure on small farms. As a consequence number of small farms declined very much and this process still did not come to an end. The question arises: what is the future of small farms in the region? Our analysis is partly based on a worldwide research project called Regoverning markets¹ and intends to look at both the status and the perspectives of small farms in CEE and to provide an analysis of evolving relations in the food chain and impacts upon small farmers in the region.

The paper is organized in the following way. First part gives an overview of the dual farm structure occurred in the region. Second part is focusing on the characteristics of small farms in both Central Europe and the former Soviet Union countries. Third section discusses the problems and difficulties small farms are facing. Finally, some lessons will be listed for policy consideration.

1. The status of farming sector

The current state of primary agriculture in the region is a result of a relatively complex reform process including (a) land privatization/restitutions, (b) decollectivization, (c) creation of new private ownership based farming organizations (d) market and price liberalization and (e) the introduction of market conform support and incentive framework. These reforms have been more or less completed, the transformation is however not fully finished and the results are only partially meeting initial expectations. Reforms in agriculture have been overpolitised and often have included economically questionable decisions. Level of production is 20–30% below pre-reform levels in most countries and many of the farms have limited competitiveness, though agricultural productivity has increased significantly in recent years.

¹ Regoverning Markets is a multi-partner collaborative research programme analyzing the growing concentration in the processing and retail sectors of national and regional agrifood systems and its impacts on rural livelihoods and communities in middle- and low-income countries. The aim of the programme was to provide strategic advice and guidance to the public sector, agrifood chain actors, civil society organizations and development agencies on approaches that can anticipate and manage the impacts of the dynamic changes in local and regional markets. Related literature are as follows: Swinnen and Reardon (2004), and a World Bank study (2005), provided the first assessments in the international literature. Most recent publications are Csáki – Forgács (2007), Swinnen-Vandeplass (2007), Vorley et al. (2007).

1.1. Dual farm structure

After radical reforms in many countries a kind of dual farm structure has emerged in the region with national characteristics both in CEECs and CIS.² Consolidation of farm structure is still in progress and serious changes may take place in the years ahead.

1.1.1. Central Eastern European Countries (CEECs)

As a result of political turn to market economies farm structure has been conducted profound changes in the Central and East European Countries (CEECs). Though, in different degree, in all countries one can observe a dual farm structure including various combinations of relatively large scale and large number of small farms one decade after radical reforms.

Table 1 shows land use structure of individual and large farms as well as average farm size in CEECs in 2000. In seven countries out of ten majority of land is cultivated by small farms, in six countries small farms use amounts to some 80% or more of land. Latvia (95%), Slovenia (94%), Lithuania (93%), Poland (84%) and Romania (82%) belong to this group of countries. On the other end, large commercial farms cultivate most of the land in Slovakia and Bulgaria (77–77%) and in the Czech Republic (74%). Concerning average size of individual farms Czech Republic (27.4 ha), Estonia (20.8 ha) and Latvia (13.7 ha) show the highest average size while individual farms are much smaller in average in Romania (2.36 ha) and Lithuania (4.8 ha).

In 2007 (some 6 % decline in compare with figures in 2005) still there are as many as 6,7 Million small farms with less than 2 ESU in CEECs. 55 % of them are found in Romania and another almost one quarter in Poland where with EU accession number of small farms increased by 14 % (between 2003 and 2005) followed by a decline of 6 % after that. Within the countries the lowest ratios go to Slovenia (43) and Czech Republic (50,6). As far as the capacities of small farms is concerned average Standard Gross Margin (SGM) per farm varies very much country by country (min 0,96 and max 41,21 ESU/farm). Due to large partnerships and relative big size of individual farms Czech Republic has an outstanding per farm SGM figure (41,21) followed by a group of three countries (Estonia: 7,64; Slovakia:7,2; and Slovenia: 5,9). Romanian farms have in average SGM less the one ESU while in four countries it accounts for between 2,15 and 3,63 ESU.

² The Authors are greatfull to Prof Zvi Lerman for providing statistical information on farming structures in the CIS countries

Table 1. Farm-structure in CEECS (2000)

Country	Share in land area,%		Average size, ha	
	2000			
	individual farms	large farms	family farms > 1 ha	large farms
Latvia	95	5	13.7	1135
Slovenia	94	6	5.3	288
Lithuania	93	7	4.8	223
Poland	84	16	7.2	440
Romania	82	18	2.36*	212
Estonia	79	21	20.8	470
Hungary	57	43	8.6	960
Czech Rep.	26	74	27.4	998
Bulgaria	23	77	6.2	535
Slovakia**	11	77	10.6	1360

Source: Forgacs (2002).

Notes:

* including individual farms below 1 ha.

** 12% of land area is not classified.

Contribution of small farms to total SGM allows to get a better insight into the importance of this farm category. In five countries (Bulgaria, Latvia, Lithuania, Romania and Slovakia) more than 80 % of farms belong to the smallest (< 2ESU) category. This share is also high in Hungary (78,8) while the two lowest figures go to Slovenia (43 %) and Czech Republic (50,6 %). On the other end, the largest operations (100ESU<) have small portion (below 1,5 %) in total farms in all CEECs except in Czech Republic amounting to 6,4 %.

In Romania more than one in every two ESU (54,1 %) is produced by small farms and, similar to Slovakia it shows an upswing of 10 % during last two years while apart from Poland and in Czech Republic (their weight is marginal) in all other CEECs contribution of small farms to SGM has declined. The latter was especially significant in all Baltic countries and Bulgaria. Overall, small farms have significant contribution to Gross Agricultural Output and represent one of the most important sources of domestic food supply. However, these farms mostly are subsistence farms and in an increasing number they have becoming hobby farms and only limited volume of their products is marketed (Table 2).

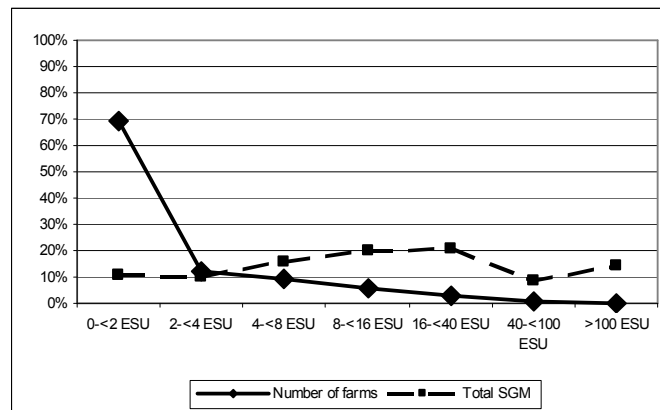
Table 2. Number of farms by size categories (ESU) in CEE, %, (2007)

Country	Holdings by size categories, %						SGM/farm in ESU	Farms <2esu in total ESU, %
	-2 ESU	2-8	8-40	40-100	100-250	250-		
Bulgaria	89,1	8,6	1,6	0,3	0,2	0,1	2,15	20,3
Czech Rep.	50,6	21,9	16,5	4,6	2,6	3,8	41,21	1,0
Estonia	68,7	20,6	7,7	1,6	0,9	0,5	7,64	7,4
Hungary	78,8	16,0	4,3	0,6	0,2	0,1	3,07	17,3
Latvia	82,8	13,5	3,1	0,4	0,2	0,1	2,47	23,3
Lithuania	86,0	9,4	3,7	0,6	0,2	0,2	3,25	11,3
Poland	67,9	21,8	9,5	0,6	0,1	0,1	3,63	11,0
Romania	94,0	5,4	0,5	0,1	0,0	0,0	0,96	54,1
Slovenia	43,0	41,4	14,4	0,9	0,1	0,2	5,90	8,1
Slovakia	88,7	6,3	2,7	0,9	0,7	0,8	7,20	6,3

Source: EUROSTAT

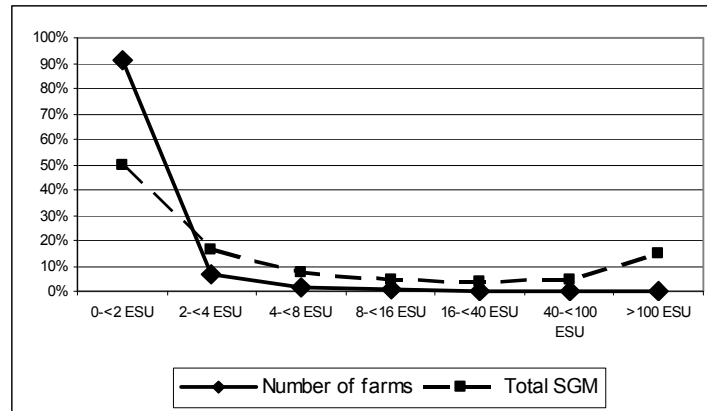
Concentration has brought some changes in the ratio of various farming categories in total land use since 2000, but the dual farm structure has basically remained intact. Typical patterns of distribution of farm sizes and their contribution to total output in CEECs in 2005 are presented on *Figures 1., .2. and 3.* In all three countries (Poland, Romania and Slovakia) the ratio of small farms is high (70 to 90 % of total farms), with strong weight of medium size farms in Poland, less middle size farms in Romania and strong large farms in Slovakia..

Figure 1. Pattern of farm distribution in Poland (2005)



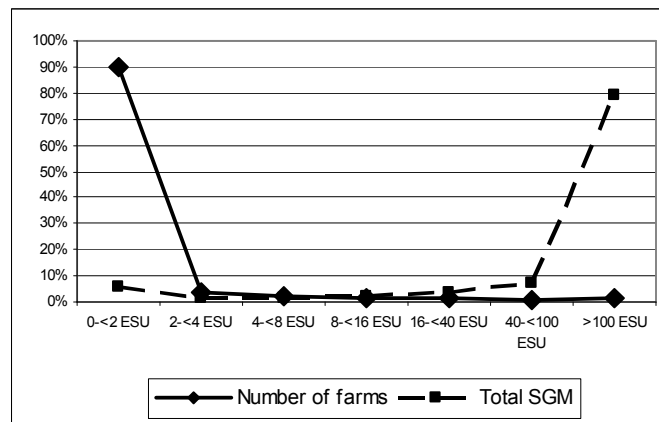
Source: EUROSTAT

Figure 2. Pattern of farm distribution in Romania (2005)



Source: EUROSTAT

Figure 3. Pattern of farm distribution in Slovakia (2005)

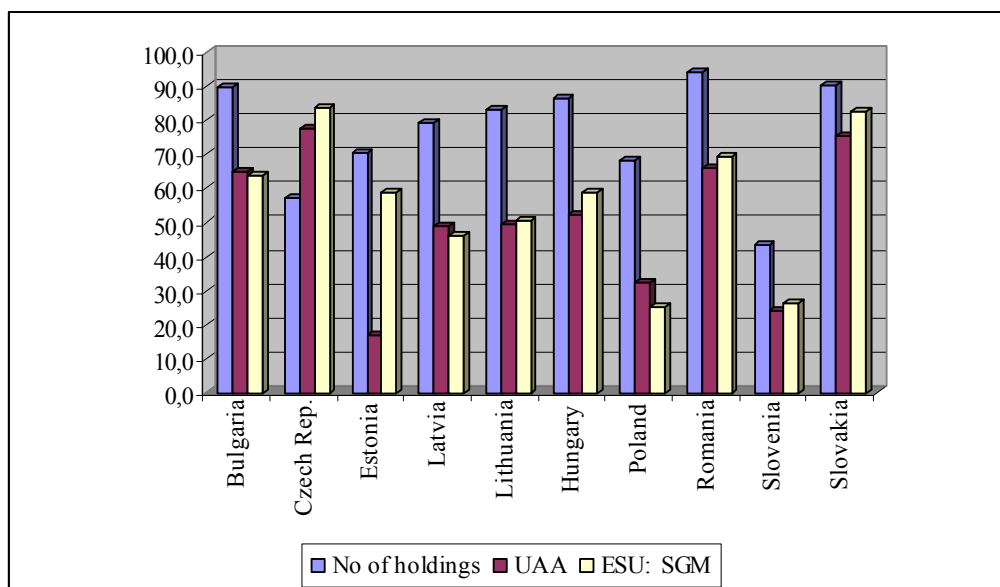


Source: EUROSTAT

Dual character of farm patterns has social, resource use and economic aspects. Besides the number of holdings it worth to see how much land they use in farming and what is the final economic outcome of farm activities. Figures of smallest (under 2ESU) and the top category (100ESU<) farms together show interesting picture in CEECs. These two farm categories apart, from Slovenia, have more than 50 % of total farms including 5 countries where the ration is above 80 % and, more than 90 % in Romania. Concerning land use in Czech Republic and Slovakia more than three quarter of land belongs to the smallest and largest farms. In two more countries (Bulgaria and Romania) this ratio is above two third, while in Latvia, Lithuania and Hungary about . half of the land is cultivated by the smallest and largest farms together. In Poland and Slovenia where radical reforms did not affect so much the farm structure much less land goes to these two extreme farm categories. Estonia is a special case, although, within total farms the number of small and large farms amount to 58,9 % still they use relatively low share (16,8 %) of land. Distribution of land between farm categories determines the prevailing farming practice. As far as the economic performance (ESU

production) is concerned in 7 countries (Bulgaria, Czech Republic, Estonia, Lithuania, Hungary, Romania and Slovakia) the bigger part of ESU is produced by the smallest and largest farms together having decisive influence on economic outcome of the agriculture sector of the countries (Figure 4).

Figure 4. Farm characteristics of farms together < 2ESU and 100ESU< in CEE, %, (2007)



Source: EUROSTAT

Looking at farms by land size there have been some further minor shifts between farm categories after 2005. In case of Bulgaria and Romania the lowest and the top category of farms' land use (below 5 ha and, above 50 ha) together amounts to 1-2 % less in 2007 than in 2005 while in all other CEECs this figure further increased a bit with more land use in the top and less in the smallest farm category. In three countries as Bulgaria, Czech Republic and Slovakia already more than 90 % of land is used by the smallest and the largest farm categories. It is around 80 % in Estonia and Hungary while the lowest figures go to Slovenia (32,7%) and Poland (41,9%) having more stabilized farm structure (Table 3).

Table 3. Farm categories by land size in CEECs, %, ha (2007)

Country	Total UAA, ha	UAA area, %						
		below 5 ha	5-10 ha	10-20 ha	20-50 ha	above 50 ha	Total	<5ha and 50ha<
Bulgaria	4087520	10	2,2	2,4	3,5	81,9	100	91,9
Czech Rep.	5032220	0,8	0,9	1,6	4	92,7	100	93,5
Estonia	1219390	2,4	4	6,5	10,1	77	100	79,4
Latvia	2848390	5,8	10,9	16,2	18	49,1	100	54,9
Lithuania	2908160	14,4	12,1	12,8	14,7	46	100	60,4
Hungary	6003560	6,8	3,9	5,5	9	74,7	100	81,5
Poland	18098650	17,6	17,9	21,3	18,9	24,3	100	41,9
Romania	15264650	35,1	14,7	6,7	3,5	40	100	75,1
Slovenia	921230	21,8	27,5	23,8	16	10,9	100	32,7
Slovakia	3055040	2,7	1	1,2	2,2	92,9	100	95,6

Source: EUROSTAT

Land use of small farms by ESU categories show different picture. Their weight is outstanding in Romania (49 %) indicating this farm category plays a more important role both in land use and in food supply than in any other CEECs and, probably it will be existing for a longer period. Almost one third of land is used by small farms in Latvia and Lithuania and about one fifth in Poland and Slovenia. On the other end farms above 100 ESU use more than 70 % of land in Czech Republic and Slovakia but, it is less than 6 % in Slovenia and a bit above 12 % in Poland (Table 4).

Table 4. UAA by farm size categories in CEE, %, ESU (2007)

Country	Total ESU	UAA in ha by size categories, %						Ha/farm	Total
		-2 ESU	2-8	8-40	40-100	100-250	250-		
Bulgaria	1061280	9,5	7,3	13,2	14,7	26	29,2	6,2	100
Czech Rep.	1623670	1,7	3,6	9,9	9,2	13	62,7	89,3	100
Estonia	178300	13	14,4	21,2	13,8	18	19,5	38,9	100
Latvia	331000	32,4	20,9	20	10,3	8,5	7,9	16,5	100
Lithuania	567650	31,4	21,1	20,4	9,1	7,6	10,3	11,5	100
Hungary	2032630	7	10,8	22,5	14,3	10,6	34,7	6,8	100
Poland	8672790	20,1	28,4	32,5	6,8	4,6	7,6	6,5	100
Romania	3789710	49	13,3	11,1	9,7	9,4	7,5	3,5	100
Slovenia	444160	18,2	37,5	32,8	5,8	1	4,8	6,5	100
Slovakia	496880	4	3,8	9,9	11,1	18,8	52,4	28,1	100

Source: EUROSTAT

One of the ways to increase competitiveness of farms is to take the advantage of economies of scale. In order to reduce per unit production costs farms intend to use more land. The bigger the farm by land size the higher the advantage of economies of scale achieved to a certain level. This forces small farms to expand by renting or buying more land if sufficient resources are available. Increase of average farm size is underway in CEECs, however, there is significant differentiation between countries (range between 3,1 to 9,4 ha in 2003 and 3,5 to 89,3 ha in 2007). Apart from Poland and Slovakia average farm size by land use has increased since 2003. The growth of average farm size has been rather fast in the Baltic states (25 % up to 80 %) and in Bulgaria (40,9 %). There are three countries (Czech Republic, Estonia and Slovakia) where average farm sizes is above that of EU 15, while catching up can be observed in Latvia and partly in Lithuania (*Table 5*).

Table 5. Average farm size in CEECs by land use (ha)

Country	Average farm size		2007
	ha		2003
	2003	2007	%
Bulgaria	4.4	6.2	140.9%
Czech Republic	79.4	89.3	112.5%
Estonia	21.6	38.9	180.1%
Latvia	11.8	16.5	139.8%
Lithuania	9.2	11.5	125.0%
Hungary	5.6	6.8	121.4%
Poland	6.6	6.5	98.5%
Romania	3.1	3.5	112.9%
Slovenia	6.3	6.5	103.2%
Slovakia	29.8	28.1	94.3%

Source: EUROSTAT.

A cross country analysis of farm categories by ESU shows that 54,8 % of smallest farms in CEE exists in Romania and another one quarter in Poland. Together this farm category produces 19,5 % of ESU at CEECs level. Concerning middle size farms from ESU 2 to ESU 250 most of the farms are in Poland followed by Hungary and Romania, however, distribution of largest farms above ESU 250 first place goes to Czech Republic (29,2%) followed by Poland and Hungary (20,1 and 19,4%) (*Table 6*).

Table 6. ESU distribution by economic size in CEE, %
(2007)

	Economic size, ESU, %						% in CEE 10
	< 2	2-8	8-40	40-100	100-250	250 <	
Bulgaria	5,8	4,1	2,7	6,6	12,9	7,1	5,5
Czech Republic	0,4	1,0	2,4	6,8	12,2	29,2	8,5
Estonia	0,4	0,5	0,6	1,4	2,6	1,4	0,9
Latvia	1,5	1,8	1,5	2,5	2,7	1,5	1,7
Lithuania	3,5	3,2	2,3	3,3	4,0	2,5	3,0
Hungary	6,2	6,6	7,9	13,5	13,1	19,4	10,6
Poland	25,6	59,6	72,3	50,4	31,9	20,1	45,2
Romania	54,8	19,4	6,0	11,0	14,2	9,6	19,7
Slovenia	1,0	3,5	3,4	2,2	1,0	1,7	2,3
Slovakia	0,8	0,5	0,7	2,3	5,4	7,6	2,6
<i>Total</i>	100	100	100	100	100	100	100
Size category within CEE, %	19,5	18,4	25,5	8,6	7,0	21,0	100,0

Source: EUROSTAT

1.1.2. CIS countries

The farming situation is somewhat different in the CIS countries. (Table 76). In case of Russia, Belarus Ukraine and partly Kazakhstan agriculture is dominated by large farms supplemented by a significant individual based household farms (over 50% of total agricultural output). It is estimated that about 24 million of household plots (1 or less than 1 ha in size) operate in the four countries. In addition to household plots about 1.5 million so-called registered peasant farms were also created mainly during the 1990s farming on an average of about 20 hectares. Armenia and Georgia resolutely individualized their agriculture back in 1992 by distributing all land traditionally held by large collectives to rural households. Azerbaijan followed in 1996. In these three countries, virtually all agricultural land today is in individual tenure and family farms produce almost the entire agricultural output. At the other extreme one can find Russia and Belarus, where family farms exist in much greater numbers than before 1991, but 80%–90% of agricultural land is still controlled by large former collectives and state farms (Lerman 2007). Land ownership is still a widely debated issue. Full fletch private land ownership exists only in 3 countries (Table 8). We can concluded that though among slightly different conditions a large number of small farms or household plots exists in the CIS countries as well. Their relations to the emerging new markets represent similar challenges as that in the CEECs. Table 9 gives an overview on Implementation of land reform in CIS.

Table 7. Structure of agricultural production by categories of farms in CIS (%)

Country	2000			2007		
	Ag enterprises	Households plots	Peasant farms	Ag enterprises	Households plots	Peasant farms
Armenia	3	97	0	3	97	0
Azerbaijan	2	98	0	4	96	0
Kazakhstan	25	75	0	27	73	0
Kyrgyzstan	10	90	0	3	97	0
Moldova	27	73	0	28	72	0
Russia	43	54	3	44	49	7
Tajikistan	38	48	14	14	58	28
Ukraine	36	62	2	36	60	4
Uzbekistan	26	64	10	3	64	33

Source: Zvi Lerman (2009)

Table 8. Structure of land use by farm type in selected CIS countries (%)

Country	1995			2007		
	Enterprises	Peasant farms	Household plots	Enterprises	Peasant farms	Household plots
Azerbaijan (1995, 2004)	90	0	10	25	25	50
Moldova (1990, 2003)	91	0	9	59	28	13
Russia (1995, 2006)	90	5	5	81	13	6
Tajikistan	98	0	2	30	64	6
Uzbekistan	97	1	2	68	29	3
Ukraine (1995, 2004)	85	2	13	58	8	34

Source: Zvi Lerman (2009)

Table 9. Differences in the implementation of land reform in CIS

	Potential private land ownership	Allocation strategy	Transfer-ability	Farm organization	Watershed date for individual-ization
Arm	All	Plots	Buy/sell, lease	Individual	1992
Geo	All	Plots	Buy/sell, lease	Individual	1992
Az	All	Plots	Buy/sell, lease	Individual	1996
Mol	All	Shares to plots	Buy/sell, lease	Individual + corporate	1998
Ukr	All	Shares to plots	Buy/sell, lease	Individual + corporate	2000
Kyr	All	Shares to plots	Buy/sell, lease	Individual + corporate	1998
Kaz	All	Shares to plots*	Buy/sell, lease	Individual + corporate	2003
Rus	All	Shares	Buy/sell, lease	Corporate + individual	**
Taj	None	Shares to plots	Use rights	Individual + corporate	1999
Tur	All	Leasehold	None	Individual leaseholds	1998
Uzb	None	Leasehold	None	Individual leaseholds	2004
Bel	Household plots only	None	None	Corporate + individual	**

Source: Lerman (2007).

Notes:

*The June 2003 Land Code practically annulled the permanent rights associated with land shares and forced the share-holders either to acquire a land plot from the state (by outright purchase or by leasing) or to invest the land share in the equity capital of a corporate farm.

**In Russia and Belarus individual farms began to be created in 1992, but the process of individualization has not taken off as in other countries.

One of the most visible outcomes of the transition is the existence of hundreds of thousands or even millions of small farms and household plots in most of the countries both in CEECs and CIS. Most of these farms are not producing regularly for the markets and having increasing difficulties to cope with restructured markets. As far as access to markets is concerned findings show that larger producers could become partner of big processors, multinationals and retailing businesses while small producers have been struggling and their general negative attitude to cooperation is a severe obstacle to provide a more suitable supply delivery to trade partners. However, positive collective actions of small farms joining marketing or purchasing cooperatives as Producers' Organizations provide good examples how to adjust and becoming included into dynamic markets.

2. The Status of Small Farms

There were only two countries (Poland and Slovenia) where traditionally small farm structure has been existed with a moderate role of large farm operations during socialist area. In all other CEECs and CIS practically a Russian type state and cooperative farms were organized with some national characteristics. Beside them

people may have had so called hobby gardens around the house producing mainly or exclusively for the family. If surplus occurred could it be marketed on local markets. However, Hungary was an exception to a certain sense as besides hobby gardens all members of cooperatives (producing about 50 % of GAO) were given half to one hectare of field for farming and this small scale production has been integrated by the coops over time by providing more and more inputs and marketing farm goods.

Currently three different small farm categories can be mentioned: (a) hobby gardens where practically all products produced is consumed by the family. Such hobby gardens can be seen across CEECs. (b) Small farms having UAA below 5 hectares where part of the output is to provide food for the family and the other part of goods are sold on the markets. (c) Household farms that are in operation under large farm structure (Russia, Belarus and Ukraine) where inputs and services including marketing the goods are mostly provided by the big farm. Small farms in Asian CIS are a bit similar to those in CEECs and not supported by local big farms.

In CEECs more than 6,7 million small farms (0-<2 ESU) exist in 2007. Romania and Poland give almost 80 % of small farms in CEECs. More than half of them (3,69 Million, 55 %) can be found in Romania. Looking at the farm structure by farm size small farms have higher a percentage than 90 % in Romania and close to it in Bulgaria (89,1 %), in Slovakia (88,7%), Slovakia and in Hungary (86%).. The lowest shares of small farms belongs to Slovenia (43,%) and the Czech Republic (50,6 %). Although Poland, by tradition, has small farm dominated agriculture including 1,7 million small farms (24 %) still their percentage in total farms is about 68 % indicating a higher level of concentration by farm size (*Table 10*).

Table 10. Small farms (0-<2 ESU) in CEE. 2007

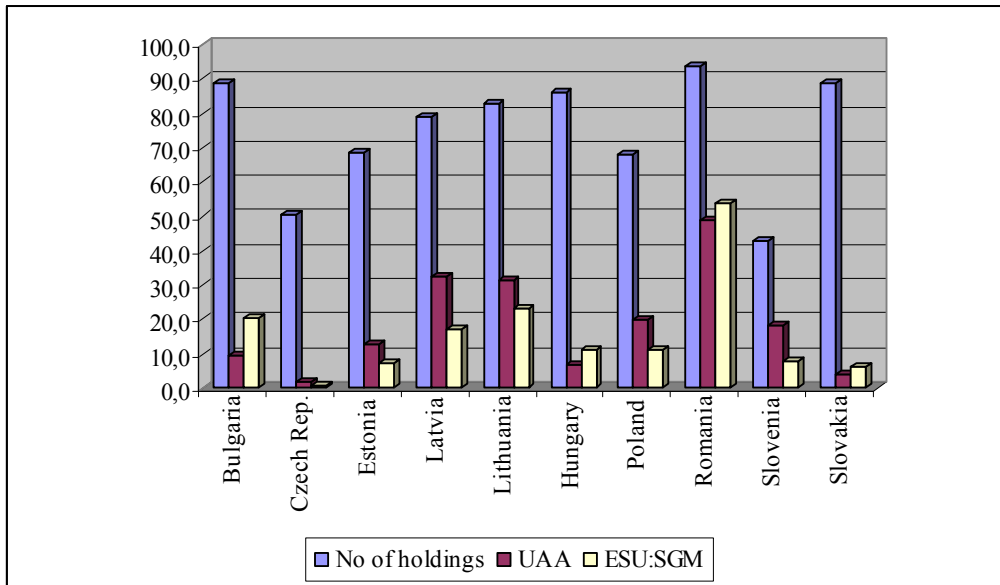
	No.of. farms <2 ESU	In total farms, %
Bulgaria	439280	89,1
Czech Republic	19920	50,6
Estonia	16030	68,7
Latvia	84930	78,8
Lithuania	190630	82,8
Hungary	538470	86,0
Poland	1624240	67,9
Romania	3694470	94,0
Slovenia	32370	43,0
Slovakia	61200	88,7
Total	6701540	-

Source: EUROSTAT

No matter most of the farms are very small in CEE. In 5 countries more than 80 % of farms cannot produce more than 2ESU. However, in some countries as Romania, Latvia, Lithuania they use 30 to 50 % of land. As far as increase of land productivity is

concerned (share of ESU produced above the share of land used) it is higher in Bulgaria, Slovakia, Hungary and Romania. Small farms use more extensive production technology in the Baltic countries Poland and Slovenia (*Figure 5*).

Figure 5. Proportion of small farms (0-2 ESU) in number of total farms, UAA and ESU:SGM in CEECs, % (2007)



Source: EUROSTAT

In CIS 23,8 million households and 1,55 Million peasant farms were in operation in 2005 (*Table 11 and 12*). 16 Million households in Russia and 4,9 Million in Ukraine shows that these households produce significant part of family food consumption. Calculating two people per family in averages it means some 42 million people are affected by small farming. In addition 1,55 Million peasant farms can be regarded as second important pillar of food production in CIS. Number of peasant farms have changed since 2001 but no consolidated structure has been achieved in 2008.

CIS had as many as 972,4 thousands peasant farms in 2001. In the coming years this number further increased to 1552 thousands in 2005 followed by a decline by 11,3 % from 2005 to 2008.. Not only the growing number of peasant farms indicates the capacity of this farm category (38 % growth between 2001 and 2008) in compare to that in 2001. The utilized areas more than doubled during the same period (152,3 %) pushing average peasant farm size of 5,6 ha in 2001 to 10,2 ha in 2008. Armenia, Moldova and Russia are the three countries having more than 81 % of peasant farms (*Table 12*).

Table 11. Registered Peasant Farms in Household Plots in CIS

Countries	Registered peasant	Household plots, 2005	
	farms, 2005	in million	average size in ha
Russia	261000	16,0	0,44
Ukraine	42500	4,9	1,20
Moldova	292200	n.a.	n.a.
Belarus	2300	0,8	1,00
Armenia	338500	n.a.	n.a.
Kazakhstan	157000	2,1	0,10
Kyrgyzstan	300200	n.a.	n.a.
Tajikistan	24900	n.a.	n.a.
Uzbekistan	125700	n.a.	n.a.
Azerbaijan	2700	n.a.	n.a.
Turkmenistan	5100	n.a.	n.a.
Together	1552100	23,8	

Source: Lerman (2009)

Table 12. Peasant Farms in CIS

Country	2001			2008		
	Number of registered peasant (private) farms, thousands	Area of land plots, 1000 hectares	Average land space per 1 peasant (private) farm, ha	Number of registered peasant (private) farms, thousands	Area of land plots, 1000 hectares	Average land space per 1 peasant (private) farm, ha
Armenia	332.6	458.6	1.38	339.2	469.7	1.38
Azerbaijan	3.2	62.2	19	2.5	27.5	11
Belarus	2.5	83	33	2	124	61
Kazakhstan	76.4	29.4	386	169.3	41.9	247
Moldova	201.5	364.1	2	292.2	539.1	2
Russia	261.7	15.3	58	255.4	20.6	81
Tajikistan	12.3	1396	113	26.5	2554	96
Ukraine	38.4	2158	56	43.4	4199	97
Uzbekistan	43.8	889.7	20	217.1	5787.8	27
CIS Total	972.4	5456.3	5,6	1347.6	13763.6	10,2

Source: Lerman (2009)

The majority of small farms in the region is subsistence oriented and have only marginal contacts with markets. Main function of most small farms is to provide food for the family and relatives while only surplus goes to the market. Most of these contacts are with local markets or in the form of direct sales from the farm or selling on road sides. They have practically no direct relations with large retailing systems. Beyond local markets small percentage of them sell farm products to wholesalers and to the processing industry. Impacts of retail revolution can be felt by them via increased demands and pressures from the wholesaling and processing side.

The integration of small farms to vertical chains requires fundamental change on the side of small farms as well. New needs are related to quality level, homogenous size of products, scheduled delivery and relative large quantity. However, these demands are real challenges for small farmers. To meet new requirements give pressure to farmers to change their attitude towards taking into account consumer needs better than ever before. Not only farmers' knowledge, skills should be improved but certainly there is a need for further investments into technology and/or transportation development, too. On the other side only through cooperation can homogenous products be produced by small farms in a larger quantity. Working together with other farmers is not an attractive issue for small farmers in the region. Partly due to bad experience of cooperation from the past on one side and, to ideology based "brain wash" vast majority of small farmers prefer to follow a free-rider approach no matter that it makes their operation more vulnerable. A large portion of small farms are not willing or not able to make the necessary changes to keep in line with competitors. These farms will either maintain part time, subsistence nature providing only additional income for the family or disappear providing scope for consolidation of the rest. There are also examples (see Polish case) when many of the small farmers however will become more commercial, increase size, improve technology and will cooperate to cope with the challenges of vertical chains. Policies should target the latter group supporting them in this process.

However, disappearing of increasing number of small farms is not only an economic issue but a social one, too. On one side small farms have been struggling for survival, while they have played very important role as part of social net by breaking crescendo rural poverty in agriculture dominated areas. However, the concentration process of small farms has been accompanied by enlarging camp of people losing their job. To avoid social explosions small farms need special attention of the policy. Small farming has three important aspects. Besides the economic one the social and environmental factors are also of great importance for the society. In agricultural areas small farms offer a chance for survival as due to breaking up large farms there is no job opportunities for most of them. However, quitting small farming pushes up unemployment level as there is no other subsectors in the region to absorb people quitting farming.

It is an important question how policy can handle the issue of small farmers. On one side, the policy has to force these farms to increase efficiency and do their best to be incorporated into re-governed retail chains. On the other, side policy should compensate small farmers for protecting environment and safeguarding the nature in order to avoid having increasing uncultivated fields and pushing more and more people in rural areas asking for financial aids.

3. Small Farmers in the Changing Markets

Probably the most significant challenge for the small farmers has been created by the revolutionary changes in the food chain. Changing the patterns of vertical coordination has a significant impact upon small farmers in the region mainly through their relations to processing and wholesaling but also by the changing structure of retailing. There are both positive and negative impacts. On the positive side the increased demand for quality products and the improved competitive input supply need to be mentioned at first. The assessments of the negative consequences are somewhat more complicated.

A key concern is that the emerging new vertical chains will exclude a large share of farmers, and in particular small farmers including household plot owners. There are a number of important reasons for this. *First*, transaction costs favor larger farms in supply chains. It is more difficult and costly to procure products from a larger number of producers. *Second*, when investment is needed in order to contract with or, supply to the company, small farms are often more constrained in their financial means for making necessary investments. *Third*, small farms typically require more assistance from the company per unit of output. *Fourth*, the small farmers are often conservative and unable to recognize the needs for quality and variety changes. *Fifth*, small farmers are suspicious and biased against any form of cooperation which would improve their bargaining position and their access to markets in general. *Sixth*, small farms are also handicapped by the state of rural infrastructure and the level of available communication facilities.

Case studies show a largely consistent picture and confirm the hypotheses that transaction costs and investment constraints are a serious consideration and that companies express a preference for working with relatively fewer, larger, and modern suppliers (Swinnen 2005). However, our initial observations also show a very mixed picture of actual contracting, with much more small farms being contracted than predicted based on the arguments above.

In the region small farmers are not fully excluded from the supply chains and most major companies contract also with small farmers. More sophisticated supplier assistance programs however tend to be more available for larger farms. Often, supplier programs differ to address the characteristics of these varying farms. For example, in case studies of dairy processors investment support for larger farms include leasing arrangements for on-farm equipment, while assistance programs for smaller dairy farms include investments in collection centers with micro-refrigeration units.

According to our investigation the degree of integration of small farmers into vertical product chains depends upon the actual farming structure in a given country. In countries like Hungary where larger farms dominate the supply of primary products, there is less encouragement for processors and traders to deal with small farms and the latter up to a great extent are excluded or unable to integrate into new vertical chains. In countries with majority of small holder agriculture, despite the apparent disadvantages noted earlier, the empirical evidence suggests that vertical coordination with small farmers is widespread. Furthermore, empirical evidence presented in the World Bank study indicating companies in reality work with surprisingly large numbers of suppliers and of surprisingly small size. In countries with large number of small farms companies are forced to deal with smaller farms to obtain the required amount of products since, small farmers represent the vast majority of the potential supply base.

Case studies in our research suggest also that company preferences for contracting with large farms are not as obvious as one may think. While processors may prefer to deal with large farms because of lower transaction costs in e.g. collection and administration, contract enforcement may be more problematic, and hence costly, with larger farms. Processors repeatedly emphasized (Swinnen 2005) that farms' "willingness to learn, take on board advice, and a professional attitude were more important than size in establishing fruitful farm-processor relationships".

In some cases small farms may have substantive cost advantages, too. This is particularly the case in labor intensive, high maintenance production activities with relatively small economies of scale. Processors may prefer a mix of suppliers in order not to become too dependent on a few large suppliers.

This situation is in a large extent due to the fact that during the first period of the transition Central and Eastern Europe has been a supplier market. The collapse of farm output and livestock numbers created a gap between processing capacity and supply: hence there has been excess demand based on processing capacity. Situation however changed quickly. Hungary and Poland and even Romania in recent years are already experiencing strong competition among farm suppliers and product quality is constantly improving. If competition among suppliers increases, or if demand falls, pressure on processors may lead to a consolidation of the supplier base. This suggests that one should not be complacent despite the observations of significant contracting with small suppliers taking place.

Small farmers often cannot make the necessary upgrades and will depend on farm assistance. If there is sufficient (quality) supply, this will be a problem, because the processor is unlikely to come up with VC packages. Hence, we have the paradoxical situation that small poor farms may be better off (in the perspective of "supply chain driven development") if they are in an environment which is dominated by small poor farms. In a more competitive and supply dominated environment, however, cooperation among small farmers is an essential precondition of survival and active participation in the product chains.

As our case studies indicate small farmers in the region are rather slow to recognize the necessity of cooperation in marketing of their products. The negative experience with collective farming from the communist period has made significant negative impact upon farmers' attitude toward any form of cooperation. Those of them who finally decided to join Producers' Groups (Producers' Organizations) were able to increase their bargain power and by this could maintain their production level and, even their adjustment to increased quality requirements was easier. Those producers who had joined Producers' Groups as well as the big independent wholesalers gained significant advantages to those not being involved in any cooperative arrangements. During the transition product markets were not well organized for some years. In recent years producers have to cope with stronger and stronger competition forced by super- and hypermarkets which forced them to enter some form of cooperation in marketing. But collective action on the small farmers' side is still rather limited.

In the CEECs during the pre-accession years, cooperation between farmers and emerging Producer Organizations (POs) started too late and too slowly. The lack of readiness for cooperation has spawned further weakening in producer bargaining positions causing an unfavorable effect on sales and incomes in CEECs. Currently, in Hungary there are only 52 provisionally recognized and 8 recognized POs integrating

some 21 thousand producers, and having an estimated 15–18% share of total fruit and vegetable sales which otherwise signals a considerable growth compared to 2004.

There also seem to be differences among processing companies in their willingness to work with small farms. Some processing companies continue to work with small local suppliers even when others do not. These companies have been able to design and enforce contracts which both the small firms and the companies find beneficial. This suggests that small-scale farmers may have future perspectives when effectively organized. That said, even companies willing to invest in upgrading small farms only go so far, and tend to have a strategy in the long run to upgrade part of their supply here to larger, more efficient, and fewer suppliers.

Finally, the question has to be asked: how the emergence of large retail outlets, the so called retail revolution, has impacted upon small producers? Farm leaders and the public media often blame supermarket chains for increased difficulties of small farms and persistent rural poverty. In reality, as our case studies show, the situation is much more complex. The difficulties of small farmers are results of a number of problems and supermarkets are only one of them. Further research would be, however, needed to get the insights into these factors and get fully verifiable conclusions on the impacts of retail revolution upon small farmers.

4. Constraints and bottlenecks for small farms

At first, the negative impacts of historical experiences have to be mentioned. This is valid for all the countries which went through of decollectivisation and massive land privatization. In these countries small farms are new creations. Most of them are without any history and family experience. Their assets are limited and the operators suffer by the lack of knowledge of agricultural technologies and management. They are generally small in size and not receiving proper advice and assistance.

Small farmers suffer by the lack of financing and rejection by the financial system. In the region the restructured and privatized financial institutions are not ready and prepared to deal with the special needs of small farmers. For them dealing with small farmers is to risky and less profitable.

4.1. Government Policies to support small farmers

Case studies indicate there is a wide range of government policies also influencing the environment for small farmers in the region. The major components of these policies are:

- support policies to agriculture,
- regulations of grades and standards,
- regulation of markets,
- regulation of competitiveness,
- targeted income support measures,
- provision of public goods such as market information, extension, veterinary and phytosanitary services etc.

In the broad set of policies there are only a few, which directly or mainly indirectly impact upon small farmers and their integration into vertical chains. Among them the support to create producer organizations mainly for joint marketing of products can be mentioned in the EU member countries. Marketing oriented producer organizations are common in the EU. The new member countries have introduced policies to facilitate their emergence. Of course general support policies might also have a positive impact by providing additional resources for the small farmers if they can access these funds. By facts most of the small farmers are excluded from a significant part of the support programs. The area based so called SAPS payments, introduced in the NMC s in 2004 and later in Romania and Bulgaria, are provided to all farmers who go through a relatively simply registration process. These direct payments provide measurable income for the small farmers and help their survival. They are however very modest in scale.

Our surveys indicate that small farmers have had difficulties accessing funds from pre-accession and EU CAP related investment support programs. In all the countries small farmers were de facto excluded from the SAPARD funds provided to improve competitiveness during the EU accession period due to the nature of the program (grant is provided after the project is completed). Similarly, CAP Pillar 2 resources are out of reach for most of the small farmers with the exception of the support to semi-subsistence farming. The design of these program do not take into account that small farmers have limited own resources and it is very difficult for them to obtain credit for bridge financing.

In the EU framework there is only one specific support program, "Support to semi-subsistence farms" which is specifically designed to assist small farms. This program is under CAP Pillar 2 and optional for the new member countries. Most of them have given low priority to this opportunity. Leader Programs might include small farmers providing them limited support. In the CIS countries government support is even more limited to small farmers.

There is some evidence that public policies not only support may even worsen the situation for small farms. Private processing and trading companies only implement their assistance policies out of necessity to enhance their supply base, and seem to do so with some but relatively little discrimination towards small farms. However, if government policies allow medium and large farms to upgrade their technology and farm infrastructure directly or to get access to formal bank loans, they may induce processors to drop their general supplier assistance packages and start working with the medium and larger suppliers with minimal assistance only. In this way, some public rural credit and investment policies may have both a direct and indirect anti-small farm biases.

A specific problem is the negligence of household plots in the large CIS countries. These farms operate under the shelter of collective farms. This situation provides them tax advantages and the collective farms assist them in marketing occasionally. At the same time they are almost non existent for the support policies and not getting any support to enter to markets beyond the local farmers markets.

4.2. Is there a future for small farms in the region?

The traditional thesis of agricultural economy is the negative correlation between productivity and economics scales. The advantage of small farms regarding efficiency under the conditions of traditional farming is beyond doubt (Eastwood et al. 2005). The higher productivity of family work and the lower management costs of smaller farms generally compensated for the advantages derived from the more developed technology of bigger farms. However, it is becoming more and more problematic whether or not small-scale family farming is capable of maintaining these advantages of efficiency under the conditions of the integrated agricultural markets. The transaction costs of participation on the integrated markets seem to exceed the advantages of efficiency stemming from the smaller sizes (Pingali 2006). Therefore, the changing agricultural markets raise the issue of reviewing the traditional thesis, and they will require an essentially new approach in relation to smaller producers and family farms. Experience shows that smaller producers will be able to survive in long run only in the case of unified and organized actions on the markets.

The changing criteria and sweeping globalization have caused essential changes and shifts in emphasis in the technology of agricultural production itself and in its structure alike, and this process seems to be continuing in the future. The rapid growth in the scale of production – in parallel with the intensification of market relations – is a very important new feature that is primarily seen in animal husbandry and very relevant for small farming. The large size industrial-like stock-yards provide for a growing rate of poultry, egg and pork production, Tendencies are also similar in milk production, although the growth is not as remarkable as in the two above-mentioned fields. Modern industrial animal breeding technologies are easily applicable in different parts of the world, essentially reshaping the traditional image of animal husbandry. However, the development of animal breeding technologies creates an increasingly difficult situation for small farms and family farms. Recent analyses and projections have made it evident that producers can survive in the market competition if they are able to considerably increase their productions scales in the poultry and the swine sectors, and even in milk production.

Obviously there is no straightforward answer to the question on the future of small farms in the region. They represent a large and diverse segment of farms. There are many reasons, as indicated earlier, to conclude that a significant part of small farms do not have a long term future. Some of them will disappear or become a part time or hobby activity. An another group, about one third of them according to several estimations (Csaki-Forgacs (2008) has the potential to grow and become linked to markets. The speed of this process however depends upon many factors outside and inside the small farming sector.

One essential factor determining the chances for small farms is the status of overall economic policy and institutional environment. First of all the macro economy has to be stable and public goods -rural roads, education, health care and agricultural extension be guaranteed on an acceptable level. Experiences underline the importance of good governance, ensuring the rule of law in the country, the transparency of public interventions and dispute resolution. It is essential, however, that policy makers have to be aware of specific difficulties of the small farmers and understand that targeted actions are also needed to facilitate the adjustment of small farmers to changing

markets. Successful intervention in the interest of small farms requires that governments have an interest mobilizing the support needed and the capacity to do so. The private sector generally has interest and resources to get involved. The public sector however has a crucial role to provide direction, coordination and specific funds to get started.

The variety of agricultural producers and farms is common over the world. The disputes between small and large farms have been going on for many years and often become political. Efficient agricultural production is possible with businesses of different sizes. Both small and large agricultural businesses can have their advantages under certain circumstances and labor conditions. This is why agrarian policy has to accept this diversity of farms in order to be prepared for future challenges. However, on this basis what is needed is a differentiated agrarian policy, one that does not strive to make large farms out of small ones, or vice versa, but instead provides support that is adapted to the specific features of each type of farm. For large farm what is most important is to have a transparent system of economic conditions. They are generally capable of exploiting the opportunities on the market and effectively representing their own interests if the business environment is free of discrimination. However, small and medium-sized farms require efficient support that is adapted to their particular conditions and circumstances. This is why helping small farms to develop and adjust to market conditions has to receive proper consideration in agrarian policy.

As indicated by Swinnen (2005), a government strategy to stimulate domestic growth in a supply-chain driven development process while ensuring the inclusion of small farms which face major constraints in this process should include, at least, four components: (a) create the environment for private investments to take place and induce supply chain coordination, (b) make sure (small) farms are included, and (c) make sure (small) farms get a fair deal. (d) support small farmers to cooperate in meeting standards and participate in the supply chain. To accomplish these objectives, such strategy should include several policy components, encompassing changes in the regulatory environment and public investments.

It is important to highlight the importance of a number of specific policy actions essential for facilitating the survival of small farmers in the changing vertical relations in food and agriculture. These measures are needed in order to guaranteeing the level of playing field for small farmers on the markets in the vertical chain:

- Removing all existing policy bias against small farmers,
- Facilitate the access of small farmers to CAP Pillar 2 and other investment programs,
- Develop support policies to assist household farming in CIS
- Strengthen land use right security for small farmers in CIS
- Support the increase cooperation of small farmers in marketing and the establishment of producer's organizations,
- Improve small farmers' access to credits and financing,
- Provide better extension and market information system,
- Facilitate land consolidation and improved access of small farmers to land,

- Accelerate the development of rural infrastructure,
- Promote rural non farm economic activities

It is beyond doubt that regarding small farming as a whole, the strengthening of its competitiveness and the measures serving this purpose are of primary importance. This is a complex task that should cover the further development of the macroeconomic management system, the expansion of knowledge and skills, investment and development and the related infrastructural and logistical investment.

The fragmentation of land property and the rigidity of rules on land usage represent a serious barrier for agricultural producers, especially for those intending to increase farm size and make investments. It is a crucial issue for the future whether a country will be able to implement measures that foster a more efficient land use. Fragmented land property, along with the restrictions regarding ownership, has become one of the most important barriers to development. Relaxing ownership restrictions or totally abolishing them, if coupled with thoughtful land planning, could accelerate the inflow of new resources into agriculture and could facilitate the development of the most successful small farms.

The regulatory system concerning agriculture is excessively rigid, dogmatic in some cases, characterized by a practice that neglects the specific circumstances of agriculture specifically of small farmers and by the almost literal application of EU directives. A more competitiveness-orientated and more flexible regulatory practice is required, in which regulation is more small farmer friendly.

A higher level of coordination between the state and the private sector is also an important priority. Although the development of agriculture depends on the private sector, both state subsidies and efficient supervision and control will continue to remain indispensable in the future. Consequently, the demands of production and the market require more efficient cooperation between the state and the private sector. The state should participate by means of decreasing its direct intervention and financial support. Among the conditions of restructuring agricultural and food markets, the most important responsibility of the state is to guarantee the production of safe and healthy food, as well as to gradually develop the regulatory and institutional background of market operation.

In the region not only agriculture is being restructured, but the surrounding economy as well. It is very important for the small farms to create a new type of synthesis between agriculture and rural areas, in which small scale agricultural production and the non-agricultural economy of the rural areas compose a coherent unity. In this framework, the role of local initiatives and small communities in terms of efforts to improve rural living conditions and to close the gap between rural and urban areas, is enhanced.

The precondition for the long-term development of agriculture as a whole and specifically for small farming is the priority development of the physical and social infrastructure in rural areas. According to international surveys, the development and expansion of the road system, especially in the most underdeveloped regions of the world, are at the same time one of the most important investment targets in agriculture. Growing emphasis on knowledge and special skills draw attention to the importance of rural education. Therefore, the future of small farming is inseparable from the

development of rural infrastructure and education, and it is hard to imagine it without them.

It is important to emphasize that many problems of small farmers are rooted in the small farmers themselves. Their future also depends upon a great extent how they can adjust to their environment and understand their options and possibilities. Accordingly, the small farmers' understanding and willingness to change are also crucial components of the problem. Some of them are conservative and reject innovation and change, others just do not know what to do. The public sector, the private companies, NGOs and farmers' associations together have to create the knowledge base and incentive for change. Key element of the change is the cooperation among small farmers. It seems to be a general conclusion that a higher degree of cooperation among the small farmers and other players in the product chains is essential for moving forward.

There is long and cumbersome history of small scale agriculture development in most of the countries of the region. Markets, even much liberalized often fail in rural areas, the private sector behaves in a distorted fashion and, the traditional approach of public sector leads to failures in a rural environment. Regoverning markets project indicates that beyond policy recognition innovation, a major change in the traditional behaviour along the whole product chain is also needed both in approaches and institutions to support small farmers in the changing market environment. The project resulted in a number of concrete examples of successful small farmers' adjustment among different conditions and environment. These examples indicate that there can be a future for small farms in the region if all parties-public, private and the small farmers themselves are ready to understand the constraints upon small farming and act in a coordinated manner to support the progressive segment of small farms.

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