

Regoverning Markets

Small-scale producers in modern agrifood markets

Innovative Practice

Bulgaria

Inclusion of small-scale dairy farms in the supply chain in Bulgaria: A case study from the Plovdiv region

Hrabrin Bachev and Ivan Manolov

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Regoverning Markets

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Introduction

This study forms part of the project “Regoverning Markets – Inclusion of Small-Scale Producers in Dynamic Local and Regional Markets” coordinated by the International Institute for Environment and Development (www.regoverningmarkets.org). It is an empirical case study of a business innovation leading to an effective inclusion of small scale dairy farms in big food chains in Bulgaria.

Post-communist dairy farming in Bulgaria is a typical example of domination of subsistence and small scale farms with little or no commercialization opportunities. Moreover, rapid development of markets and the institutional environment present serious challenges for adaptation for the majority of dairy farms and processors. Therefore, a positive case for the successful inclusion of dairy producers in marketing channels would be interesting to study and replicate elsewhere.

This paper presents a business model for an effective market inclusion of numerous small scale dairy farms from the Plovdiv region developed by a private entrepreneur. The “Dimitar Madzarov” Ltd dairy was set up in first years of the transition and successfully modernised up to the highest industry standards. This enterprise has managed to adapt to the dynamic market and institutional environment, effectively governing relations with supplying farmers and downstream partners.

In our analysis we use the guidance of the Regoverning Markets team and research framework outlined in the background paper by Julio Berdegue and Lucian Peppelendos. Firstly, we give insights on the general background and situation before the innovation. Next, we describe the content of the business innovation. After that, we provide the evidence of inclusion of small scale producers. Then, we specify the drivers and changes of inclusion. Later, we assess the cost, benefits, and sustainability of inclusion. Finally, we evaluate the possibilities for scaling up and replication of the model, and make business and policy recommendations.

The study is based on extensive fieldwork activities carried out in March to May 2007 including many interviews with the manager of “Dimitar Madzarov” Ltd, experts in the dairy sector, and farmers supplying milk to the dairy. In addition, a large amount of data has been collected by farmers through a survey on diverse aspects of governing of holdings and relations with “Dimitar Madzarov” Ltd (Annex 1). A questionnaire was distributed randomly to 50 farmers (5 per cent of the suppliers) and the response rate was 84 per cent.

The positive Bulgarian experience could be effectively replicated in other transitional and developing countries with widespread semi-subsistence and small scale farming,

lack of farmers organizations, shortage of adaptive and innovative processing enterprises, deficiency of public support to farms, dynamic evolution of modern food chains and increasing demand for high quality local products.

The authors would like to express their gratitude to the IIED Regoverning Markets team for funding this study, and to regional coordinators Csaba Csaki and Csaba Forgacs for their support. We also thank Mr. and Ms. Madzarov for their invaluable ideas and information, and enormous assistance in carrying out this research.

1 Background and situation before innovation

The post-communist reforms in Bulgarian agriculture at the start of the nineties were associated with liberalization of markets, restitution of farmland, and privatization of assets of former cooperative and state farms.¹ By 1994 all farming activities were entirely transferred into new emerging private structures; numerous unregistered farms, and several thousands of production cooperatives and agrifirms.

The transition has led to a considerable decrease in the number of livestock. Compared to the pre-reform year the number of cows diminished by 39 per cent, dairy buffaloes by 59 per cent, and ewes by 73 per cent (National Statistical Institute). Moreover, most of the dairy animals have been reared in small scale (subsistence, semi-subsistence) farms accounting for the biggest portion of livestock holdings (Table 1). Almost all livestock farms are unregistered individual, family or group holdings (“physical persons”) where the majority of dairy cattle in the country are concentrated (Annex 2).

Table 1: Number and size of livestock holdings in Bulgaria

Type	Share		Share		Share		Share		Total (000)		Average
	farms	heads	farms	heads	farms	heads	farms	heads	farms	heads	
	<i>1 -2*</i>		<i>3 - 9</i>		<i>10 - 19</i>		<i>20 and ></i>				
Cows	87.3	56.4	11.0	23.3	1.1	6.9	0.6	13.5	193.7	371	1.92
Buffaloes	85.7	47.5	11.5	20.6	1.6	8.8	1.2	23.1	2	4.6	2.26
	<i>1 - 9</i>		<i>10 -49</i>		<i>50 -99</i>		<i>100 and ></i>				
Sheep	89.3	56.7	9.6	26.0	0.7	7.8	0.4	9.5	233	1365.8	5.86
	<i>1 - 9</i>		<i>10 - 19</i>		<i>20 - 49</i>		<i>50 and ></i>				
Goats	98.2	86.8	1.3	5.8	0.4	4.4	0.1	3.0	263.2	683.6	2.60

*number of heads in farms

Source: Agricultural Census 2003

In many small scale farms the use of primitive technologies is still the norm, productivity is very low, and no modern standards (in safety, quality, hygiene, environmental, animal welfare) are applied. Persistence of small scale livestock farming has been increasingly associated with growing environmental problems and social conflicts resulting from poor manure management and nuisance (odour, noise) for rural populations.² A significant portion of the product is consumed by the households themselves, and surpluses are sold to processors, street markets or delivered to relatives and permanent customers. According to the last census, 42 per cent of the dairy farms sell “only surpluses of produced milk” (Annex 3).

¹ Bachev, 2007b

² Bachev, 2007a

There have been significant problems for small scale dairy farms to sell out their output, meet increasing consumer and industry demands in quality and safety, and to integrate successfully into rapidly evolving markets and food chains. The smaller scale dairy farms are entirely ignored by dominant large processors since they are not able to meet quantity and quality requirements, and command high transportation, training and transaction costs. What is more, while only three to four per cent of dairy imports are finished products, a good number of local processors increasingly work with imported powder milk in order to meet tough European Union (EU) standards.³ Furthermore, smaller farms usually face price discrimination and can barely break even production costs (especially in the summer season when supply is bigger than demand). In addition, farmers often experience delayed payments by a monopoly buyer which may be up to several months duration.⁴

Collective organizations of dairy farmers for inputs supply, marketing and processing have not emerged because of: the diversified interests of farmers (different age, different size and type of operations, distinct diversification and market orientation, specific political and ethnic ties); unfavourable perceptions associated with “collective” forms (a leftover from the communist period); mismanagement and misuse of power in newly established associations; huge transaction costs for initiation and development; lack of appropriate legislation and incentives for association.⁵

Transitional Bulgarian farming has been one of the least supported in Europe. Estimates suggest that before 2000 the Aggregate Level of Support to Agriculture was very low, close to zero or even negative.⁶ Despite the progress in public assistance in recent years it tends to go to a tiny proportion of farms (mostly large agrifirms and cooperatives, and tobacco producers) and only these are effectively supported.⁷

As a result of all these factors, the majority of dairy farms have been left out of modern marketing channels and their prospects of post EU accession development are extremely limited. Many farms have not been able to adapt to ever increasing competition, industry requirements, and evolving institutional quality, hygiene, animal welfare, environmental etc. standards. Consequently, the number of livestock farms constantly decreases (since the peak in 1994) while the number of animals per farm has slightly increased. Just for the two years 2003-2005, the number of livestock holdings diminished by more than 20 per cent according to the MAF.

³ Kovacheva et al., 2007

⁴ Stoyanov et al, 2007

⁵ Bachev, 2006b

⁶ OECD 2000

⁷ Bachev, 2005

Since other employment opportunities (lack of resources, unfavourable conditions, age of farmers) are largely lacking, a significant proportion of small scale livestock farms could survive in years to come as part time and subsistence farming with restricted (mostly informal) marketing possibilities.⁸

According to the Association of Milk Producers there are only 900 farms with 50,000 cows meeting EU standards for raw milk quality. They account for 0.5 per cent of cattle farms and 13 per cent of the cows in country. There is a transition period until the end of 2009 for milk producers to adapt to new quality, building and manure management requirements in the dairy sector. Special measures are being envisaged from 2007 onwards, to use EU funds for modernization of dairy farms and support market orientation of "semi-market" farms. The EU quota system for cow milk has also been introduced which is expected to stabilise the income of dairy producers.

After 1990 a huge number of dairy processors emerged making up an industry of around 840 enterprises. Many of them have not been able to adapt to modern market and institutional requirements. As much as 45 per cent of industrial and 77 per cent of small scale dairies have failed since 2000.⁹ Currently there are 216 milk processors, of which only 22 have a licence to export to the EU (others can sell in Bulgaria or export to third countries). Dairy processors are categorised into four groups: the first group with 15 companies exclusively processes milk corresponding to EU standards; the second group with 69 companies processes with separate technological lines for "EU" and "non EU milk"; the third group with 121 dairies processing milk according to Bulgarian standards; and the fourth group with 3 processors working with milk from animals other than cows.

The Plovdiv region is located in the southern central part of Bulgaria (Annex 4) where agriculture has been well represented. There are more than 52,000 farms averaging 2.8 hectares mostly in labour intensive production: vegetables, fruit, grape, and livestock.¹⁰ More than 99 per cent of farms are unregistered individual, family or group farms.

A good proportion of the holdings in the region raise some kind of livestock; 34 per cent have goats, 30 per cent have cattle, 19 per cent have sheep, and 0.4 per cent have buffaloes. Trends for development of dairy farming in the region are even worse than for the country as a whole (Annex 5). The number of cows, buffaloes and sheep is respectively 55 per cent, 78 per cent and 75 per cent smaller than in 1990, while the increase of goats is slightly less than for country as a whole. Concentration of all dairy livestock (except goats per holding) is higher than in the country as a whole; correspondingly 2.34 cows, 3.67 buffaloes, 7.93 sheep and 3.39 goats. Semi-subsistence

⁸ Bachev, 2006a

⁹ Kovacheva et al., 2007

¹⁰ Agricultural Census, 2003

and small scale farming is typical in the south central region, where most holdings have an economic size of less than 2 European Size Units. More than 93 per cent of holdings specialise in milk cows and 94 per cent of farms that specialise in sheep and goats are in that group.¹¹ Similarly, more than 95 per cent of mixed holdings with mainly grazing animals, 94 per cent of mixed farms with mainly cereals and grazing livestock, and 96 per cent of mixed farms with other crops and livestock belong to same grouping. There are 22 dairy processors in the Plovdiv region facing similar challenges to the entire industry.

¹¹ Ibid.

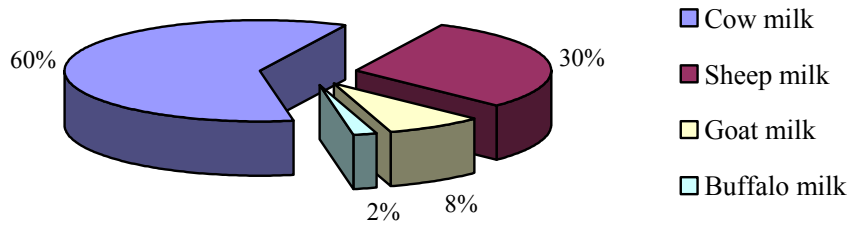
2 Content of business innovation

A new business model for market inclusion of small scale dairy farms from the Plovdiv region has been developed by a private entrepreneur. “Dimitar Madzarov” Ltd was set up by Mr. Dimitar Madzarov in 1991. The company’s business includes the production and trade of dairy and meat products. Dairy processing facilities are located in the town of Stamboliyski (15 km east of Plovdiv) and there is a storehouse in Plovdiv (Annex 6). “Dimitar Madzarov” Ltd is owned by Mr. Madzarov and his wife Julia Madzarova is the dairy manager. They both graduated from the University of Food Processing Industries, Plovdiv with qualifications in “Refrigeration Techniques and Technologies” and “Technology of Dairy and Dairy Processing” respectively. Both of them had considerable previous professional experience as employees of the State Dairy Processing Company.

Major features of the business model include:

● *starting up and developing a modern dairy processing enterprise for locally produced milk.* The Madzarovs have successfully developed a new dairy processing enterprise and modernised it in accordance with up to date technological and quality standards. Their own know how has been used extensively and the funding of investments has been carried out exclusively from their own sources and bank loans. Now the dairy competes effectively in the environment of exacting market and institutional requirements and is well known in the region and beyond. The company is staffed by qualified specialists; is equipped with modern plant for milk pasteurization, and production and maturing of various dairy products; a modern laboratory for chemical analyses of raw milk, milk processing and final products; and effective storage facilities. The processing capacity of the dairy is 50t milk a day from cow, sheep, goat and buffalo (Figure 1). Production comprises a wide range of traditional and original products: brined cheeses, yellow cheeses, soft cheeses, processed cheeses, curds, butter, katuk etc. (Annex 7). All products are developed by Ms. Madzarova and company food technologists. Unlike large industrial processors working exclusively with large dairy farms from around country and/or imported powder milk, “Dimitar Madzarov” Ltd uses only locally produced fresh milk from the Plovdiv region.

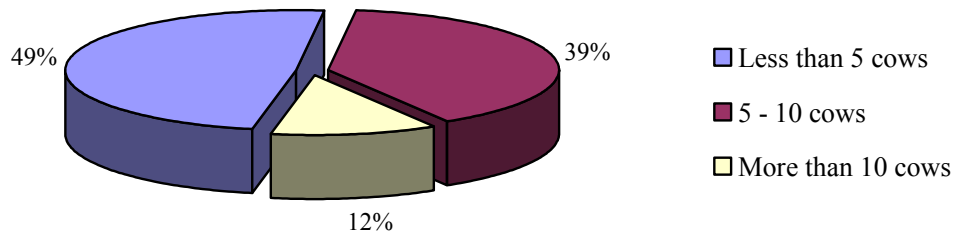
Figure 1: Structure of processed milk by "Dimitar Madzarov" LTD



Source: "Dimitar Madzarov" Ltd

•installing milk collecting, cooling, and controlling facilities in the neighborhoods of small scale farms and within groups of farms and bigger farms. The suppliers to the dairy are more than 1,000 livestock farms from the Plovdiv and Pazardjik areas located up to 30 km from the processing facilities. The majority of the suppliers are small scale producers with few heads per holding (Figure 2).

Figure 2: Size of milk suppliers of "Dimitar Madzarov" LTD



Source: "Dimitar Madzarov" Ltd

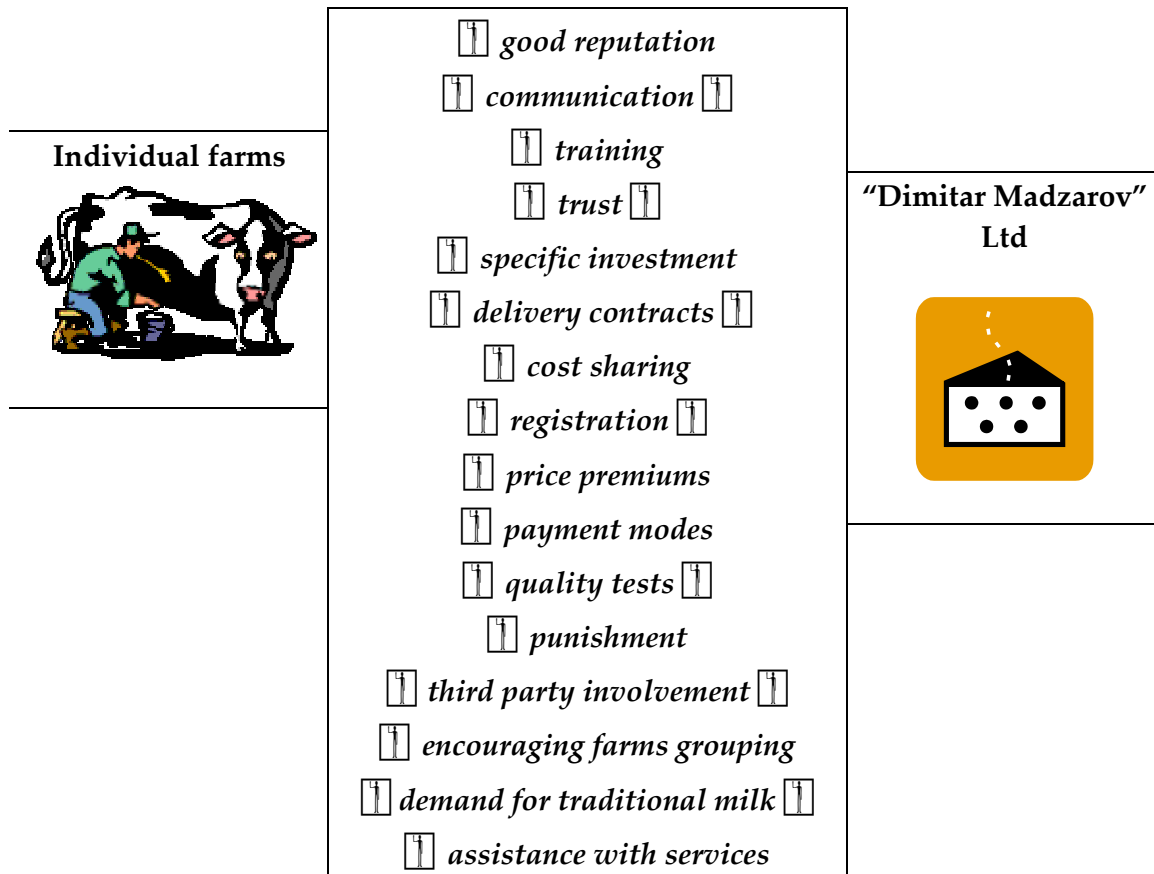
The company has built 80 terminals in different locations close to the dairy farms. Each terminal is equipped with 2-3 tanks for milk, staff and devices for analysing the major indicators of the delivered milk, ie. butter and water content, traces of antibiotics and other physical and chemical characteristics. In addition, 150 tanks have been installed within individual or groups of dairy farms. They are rented for nothing to farmers and are entirely maintained by the company while raw milk is collected by the dairy trucks daily or every other day. Livestock farmers equipped with tanks are responsible for electricity and cleaning costs. Installation of common and group collecting capacity near to small farms, having few or no alternatives for marketing their milk, allows them to become major suppliers to the dairy. In addition, group organization of milk collection increases farmers incentives for cooperation by restricting their opportunistic behaviour and by mutual control and saves costs for quality and quantity verification and testing. The company buys and processes all types of milk produced in the area (cow, sheep, goat, and buffalo)

which supports the keeping and extension of traditional livestock production in region.

● ***modernising milk supply and processing quality according to the highest industry standards and EU requirements.*** “Dimitar Madzarov” Ltd is among the few Bulgarian enterprises that not only helped to shape evolving national standards but also introduced high international quality standards such as HACCP, Good Production Practices, and ISO 9000. It has been able to meet and maintain tough EU standards for technologies, buildings, and organization of milk purchase, storing and processing. A modern system of laboratory and on the spot quality and safety checks up has been introduced; separate lines for purchasing, storing and processing of “euro milk” have been launched; all requirements concerning registration of individual suppliers and every purchase of milk has been put in place. Since 2000 the dairy has been certified for EU export, and always meets the high standards of national and EU inspectors. Currently, a third of processed milk fully meets EU requirements while the rest is processed separately according to Bulgarian standards. Farmers have until the end of 2009 to adapt to the new requirements.

● ***building an effective system for governing relations with individual farmers.*** An effective system for coordination, stimulation, and conflict resolution with individual farms has been developed by “Dimitar Madzarov” Ltd (Figure 3). A good reputation as a reliable partner has been built up by the dairy. This gives farmers a sense of security and increases their willingness to maintain trade relations. This is additionally enhanced by formal delivery contracts with individual suppliers. Not surprisingly more than a half of farms are long term suppliers of the dairy. The high frequency of contacts between the same partners facilitates transactions, develops friendship and trust, stimulates cooperation and restricts individual opportunism. The dairy manager is personally responsible for communications with farmers, and she is available to discuss goals and problems with every supplier at any time. Twice a month regular group discussions are held for training of farmers on new company and institutional requirements, prospective standards, problem identification and resolution, opportunities for participation in public support programmes etc.

Figure 3: Structure of governance of relations of “Dimitar Madzarov” Ltd with farmers



Significant on farm (site) specific investment has been made by the company consisting of milk collection, cooling, and controlling facilities and staff. Many of these are highly specific to individual/groups of farms where material assets are provided (rented) for free to suppliers as the dairy carries out further maintenance and repair of facilities. This creates strong incentives (“dependency”) for farms to trade with that particular dairy since it makes marketing of milk feasible for farms and saves them considerable investment and maintenance costs. The provision of “group” tanks increases the efficiency of milk collection, minimising costs for communication, verification, tests, and transportation. It also encourages group organization, increasing farmers common interests and mutual (self)control.

An efficient system for verification and registration (documentation) of quality and quantity of delivered milk from each supplier has been put in place. That guarantees precise control by permanent testing on quality, full traceability, and avoids possible conflicts between the company and farmers on milk quantity and quality. In addition, where standards are not met, supplied milk may not be accepted or paid for. In this way, farmers who supply contaminated milk, eg by treating animals with

antibiotics, or under the limit quantities are sanctioned. This is coupled with notification to and consequent involvement of the State Veterinary-Sanitary Control (an example of a trilateral governance mode).

Regular payment for supplied milk (every 15 days) brings about a stable income for farming households and incentives to maintain good relations and the contract with the dairy. Differential prices are used to stimulate extension of livestock operations and milk supply. Small suppliers (holders of 1-2 cows) are paid at the current market price (0.20 euro/litre), bigger suppliers (more than 100 litre) get a premium of 12.5 per cent (0.225 euro/litre), and the biggest farms (more than 300 litre) receive a 17.5 per cent premium (0.235 euro/litre). In the winter period when the supply of milk is lower, advance payment is also given. That mode of interlinking “interest free credit” against “marketing of raw milk” guarantees farms much needed cash flow and working capital, secure continuation of livestock production, and stabilises milk delivery.

The company buys and processes all types of milk produced in the area, from cows, sheep, goats, and buffalo. That gives new employment and income opportunities for small scale holdings (usually rearing all kinds of livestock) opening new possibilities for commercialization of traditional produce. It helps maintain and even extends some traditional livestock production in the region such as goats, sheep and buffalo.

The dairy provides assistance to milk suppliers in the construction of new facilities and preparation of projects for public support. This is particularly necessary since small scale farmers have no capacity in resources or expertise to carry out these operations or hire market providers. The dairy uses its own experts and explores the economy of scale saving costs on provision of “standard” services to numerous farms.

All these facilitate, intensify and stabilise relations with farmers, decrease information asymmetry, restrict opportunistic behaviour, support farmers’ adaptation to evolving market and institutional demand, increases efficiency and diminishes the costs of transactions for both sides.

● ***setting up the company mark and label, and building reputation for high quality and authentic origin products.*** The company mark and own label have been designed and registered. “Dimitar Madzarov” Ltd has developed a good reputation for high quality and safe products among leading food retailers, wholesale traders and exporters, and final consumers. For many years the company has been seen as a leader of dairy production in the region and nationwide. That is an important factor for progressive expansion of the business in an environment of high competition with local and international players, increasing consumer demand for quality and safety, and tightening institutional requirements for the food, particularly the dairy and meat, sector.

•introducing a great variety of specific, original and locally produced dairy products in a wide selection of packages into regional, national, and international markets. “Dimitar Madzarov” Ltd has introduced a huge assortment of specific local products such as Bulgarian white brined cheeses, Bulgarian yellow cheeses, soft cheeses, katuks, processed cheeses, curds, and butter. It processes all major milk types (cow, sheep, goat, buffalo, mixture), and contributes to the revival of traditions in production and consumption of a variety of local dairy products. The range of new original products has been developed inhouse headed by Ms. Madzarova and has also been successfully introduced to the market: Bulgarian yellow cheese with red pepper flavour, Bulgarian yellow cheese with oregano and savoury flavour, Bulgarian yellow cheese with hot paprika flavour, smoked yellow cheese, roll of yellow cheese with red paprika, and roll of yellow cheese with savoury flavor (Annex 7). A great range of packaging has been used to suite the specific requirements of various traders and final consumers. All these eventually contribute to increasing demand for consumption of local dairy products, and greater commercialization of milk produced by local farmers.

As much as 60 per cent of the dairy output is marketed to the biggest food chains in the country such as 345, Billa, Fantastico, HIT, Klaufland, and Piccadilly (Annex 8). Delivery contracts are signed annually after negotiating quantities, assortments, packaging etc.. In contracting, both the specific requirements of supermarkets and promotion of the company’s new products play an important role. The contract model improves coordination with vertical partners and facilitates integration into the food chain, it reduces market and price uncertainty, and guarantees effective marketing of final products. Long term trade relations with the same downstream partners develop trust and effective planning, adjustment and conflict resolution mechanisms. The remaining portion of the dairy product is sold on regional wholesale markets (10 per cent) or exported (30 per cent). Here the good reputation of the dairy and effective adaptation to market demand in terms of quality, assortment and packaging is also critical.

3 Evidence of inclusion of small scale producers

The inclusion of small scale producers is also demonstrated by the study of suppliers to “Dimitar Madzarov” Ltd. It shows that the majority of suppliers of all kinds of milk to the dairy are farms with few animals (Table 2). Most small holdings are not specialised and produce more than one sort of milk from different kinds of livestock. Milk collected and processed by “Dimitar Madzarov” Ltd has increased 20 fold in the last 10 years. At the same time, the structure of suppliers has not changed while there is some increase in the number of head of cattle per farm. So significant numbers of new small scale farmers have been involved in business with the dairy, included in the food chain, and in commercialising their milk production thanks to integration with the dairy.

Table 2: Type and size of farms supplying to “Dimitar Madzarov” Ltd

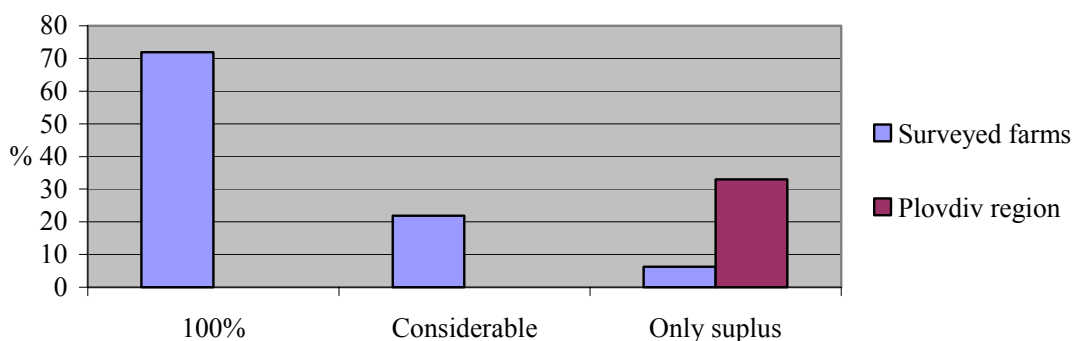
Farm type and size	Number		Share		Average Heads	Mix livestock farms	
	farms	heads	in farms	in heads		number	share
<i>Cow</i>							
1 - 5	7	24	17.5	2.9	3.4	7	100
6 - 10	5	44	12.5	5.3	8.8	1	20
11 - 15	10	130	25.0	15.8	13.0	0	0
16 - 20	5	89	12.5	10.8	17.8	0	0
21 - 35	6	167	15.0	20.3	27.8	0	0
36 - 50	4	187	10.0	22.7	46.8	0	0
> 51	3	206	7.5	25.0	68.7	0	0
Sub total	40	847	100	100	21.2	8	20
<i>Sheep</i>							
1 - 10	6	55	54.5	12.6	9.2	6	100
11 - 20	2	33	18.2	7.6	16.5	2	100
21 - 50	1	28	9.1	6.4	28.0	1	100
51 - 99	1	59	9.1	13.6	59.0	1	100
> 100	1	260	9.1	59.8	260.0	0	0
Sub total	11	435	100	100	39.5	10	90,9
<i>Goat</i>							
1 - 10	3	23	75	54.8	7.7	3	100
> 11	1	19	25	45.2	19.0	1	100
Sub total	4	42	100	100	10.5	4	100
<i>Buffalo</i>							
1 - 5	1	4	50	19.0	4	1	100
> 6	1	17	50	81.0	17	0	0
Sub total	2	21	100	100	10.5	1	50
TOTAL	42	1345			32.0	23	54.8

Source: Field survey data

More than 71 per cent of surveyed farms are unregistered farms. One holding is identified as “cooperative” with a small number of animals (17 cows). Since 1990 individual and family livestock holdings are typical examples of small scale farming in the region and nationwide.¹² A significant portion of cow, sheep, goat and buffalo holdings in Bulgaria and the Plovdiv region are subsistence or semi-subsistence farms. In the case study, 15 per cent of farms report that their holdings are “predominately for their own consumption”. One farm declares that his/her holding is “entirely for own consumption”. Small scale farms produce a great range of products including vegetables, fruit and grain, mainly for household consumption. For all farms supplying the dairy, livestock comprises either “significant” (43 per cent) or “entire part of farming activity”. The level of (semi)subsistency of surveyed small scale farms is much lower than in the region, where the majority of mixed holdings are less than two ESU¹³ (used to define semi-market farms).

Most of the surveyed farms are market oriented, as one quarter of them identify their farm produce as “mostly for sale” and 57 per cent as “entirely for sale”. The greatest portion of farms report they sell “their entire” or “a considerable” fraction of produced milk (Figure 4) which is much higher than at the regional level, where 77 per cent of dairy farms “regularly sell all” their milk. The national figure for the latter mode of milk marketing is even lower, only 58 per cent, according to the Agricultural Census of 2003.

Figure 4: Share of sold milk in farms from case study and region



Source: Field survey data

All but one farm reported that they sell their entire milk output to a single buyer, in this case “Dimitar Madzarov” Ltd. Therefore, the trade relationship with the dairy is an important factor in significant commercialization of milk production for the surveyed farms. The number of farms selling an “insignificant” segment of their

¹² Bachev, 2006

¹³ 96 per cent of mixed holdings with dominating grazing livestock, 94 per cent of mixed farms with cereals and grazing livestock, 97 per cent of mixed holdings with other crops and livestock (Agricultural Census, 2003).

milk is very small. The latter percentage is much lower than the share of farms “selling only surpluses of milk” in the Plovdiv region (one third of dairy farms). All these figures prove higher commercialization of the case study farms compared to the rest of the farms in the region.

All farms sell milk to the dairy “daily” which demonstrates the high frequency of contact between farms and the processor. The latter indicates the high efficiency of transactions and thus the bigger involvement of participating farms in the market chain. The high recurrence of transactions between the same partners develops knowledge, trust, and mechanisms to facilitate mutual trade. Almost every other farm responds that “if they sell milk that is for retail sale” and just one farm has an alternative buyer “another processor from region”. This indicates the high intensity of relations between farms and “Dimitar Madzarov” Ltd since demand for retail sales in rural areas is not high (many households have their own livestock) while “street markets” in cities command high costs in transportation, transaction, fines and bribes.¹⁴

The larger suppliers to the dairy are mostly registered as firms. They are entirely commercial enterprises specialised in livestock and related operations such as production of forage. Surveyed farms are either “solely owned by farmer” (55 per cent of cases) or “co-owned with other family members”. As many as 70 per cent of farms use only their own and family labour, which indicates the entirely “household” character of many farms. For all holdings farming is either the “single” (54 per cent) or the “major occupation” (46 per cent) while regional and national figures stand at around 71 per cent.¹⁵ The latter is an indicator of the higher importance of farming for farmers taking part in integration with “Dimitar Madzarov” Ltd. Thus, specialization into farming rather than off-farm diversification of activity is typical for the surveyed farms. Moreover, livestock accounts for the entire or a considerable part of the farming activity. All this suggests that specialization into farming and integration with the dairy gives higher employment and income opportunities for surveyed farms compared to other farming and off-farming employment. These figures are also much higher than the relevant regional and national levels. Similarly, for the bulk of investigated farms their holding is the “single” or a “major income source” both for the farmer and his/her household (Annex 9). This again demonstrates the higher significance of integration with dairy farms to individual and household economies. On the contrary, in the country as a whole and the Plovdiv region in particular, part time farming is dominant, and farming is mainly a “supplementary income source”.¹⁶

¹⁴ It is prohibited to sell milk and dairy products on the street and in open markets but such informal marketing is still practiced.

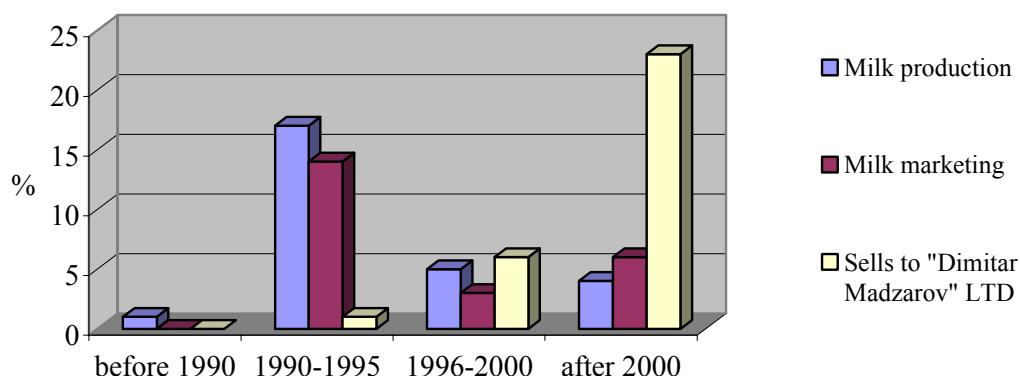
¹⁵ Agricultural Census, 2003

¹⁶ Ibid.

The survey has found that the majority of farms supplying milk to “Dimitar Madzarov” Ltd started milk production and marketing in the period 1990-1995 (Figure 5). During that time privatization of old farm structures and agrarian resources took place, and farming activity was transferred into emerging private farms.¹⁷ Since 1995 there has been a decrease of “new comers” in milk production as a result of specialization changes, takeovers or the start up new farms among surveyed farms.

Simultaneously, there has been increase in the number of farms marketing milk and a large increase in the number of farms marketing milk to “Dimitar Madzarov” Ltd. At the same time, the number of milk producers in the Plovdiv region, and nationwide, has decreased with an insignificant increase in the number of livestock and head per farm according to MAF. Therefore, the appearance and development of the new dairy has had a positive impact on commercialization of the surveyed farms against a background of general decline in the dairy sector in the region and the country. Effective new demand by “Dimitar Madzarov” Ltd has attracted both new comers in the sector and existing producers with no or few marketing alternatives.

Figure 5: Year of starting of milk production and marketing of suppliers of "Dimitar Madzarov" LTD



Source: Field survey data

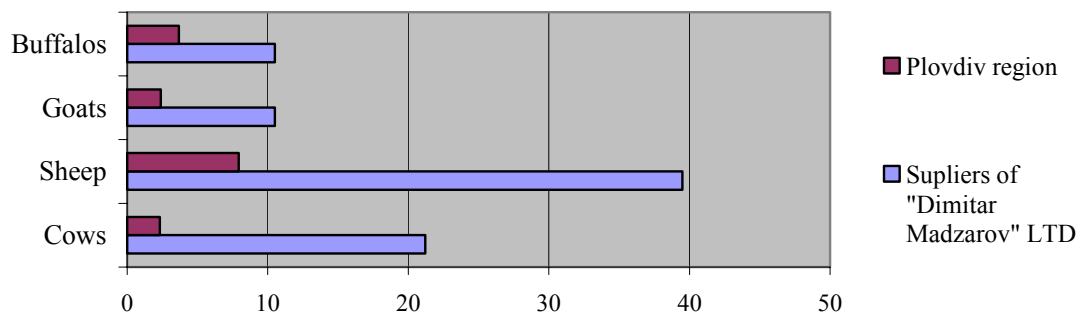
Involvement in trade relations with “Dimitar Madzarov” Ltd has positively affected most of the surveyed farms. A great proportion of suppliers say that they have increased “milk production” and “milk marketing” compared to the year(s) of starting milk production and marketing (Annex 10). The dynamics of surveyed farms are significant, as average growth in production is 195.4 per cent and expansion in milk marketing 115.1 per cent. Most farms indicate a boost in marketed milk to “Dimitar Madzarov” Ltd in comparison with the beginning of trade relations with the dairy. For the latter farms, growth in milk marketed to the dairy is 83.5 per cent. Some farms report diminishing amounts of sold milk compared to the period

¹⁷ Bachev, 2007a

when they started marketing of milk, an average decrease in milk production and sales of 70 per cent, despite the fact that no farm indicates any decrease in milk sold to "Dimitar Madzarov" Ltd since the beginning of bilateral trade. All this confirms the high efficiency and extension of trade relations with the dairy for all participating farms. This is in sharp contrast with the evolution and commercialization of small scale dairy farming in the Plovdiv region and nationwide.

Integration with "Dimitar Madzarov" Ltd and extension of bilateral trade has eventually led to enlargement of the size of participating farms. That positive effect is proved by the fact that the average number of heads of all kind livestock in surveyed farms is higher than in the region as a whole (Figure 6). Hence inclusion of dairy farms in the food chain through "Dimitar Madzarov" Ltd has created incentives for farm extension and further commercialization compared to the rest of the livestock holdings in the region.

Figure 6: Average number of heads in farms supplying to "Dimitar Madzarov" LTD and Plovdiv region



Source: Field survey data

4 Drivers and changes of inclusion

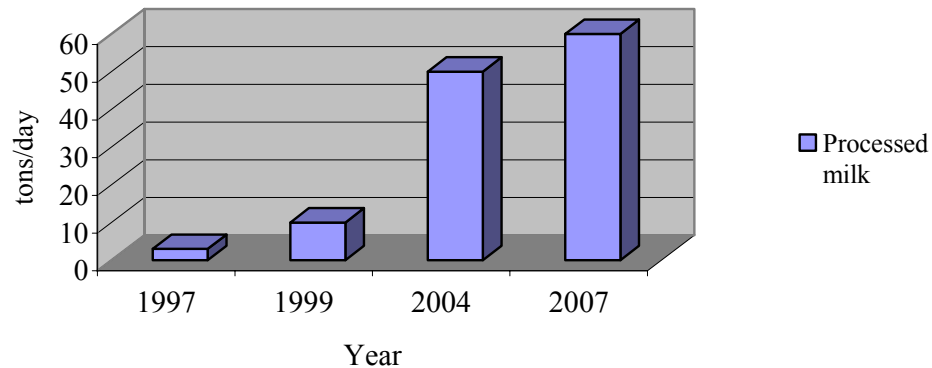
The major driving factors and pace of evolution of innovation are presented in Figure 7. The entrepreneurship of Mr. and Ms. Madzarov is the chief factor for development of the new enterprise. Over a short period of time the dairy has extended its production capacity and now it process 20 times more milk than in its first years after establishment (Figure 8). The Madzarovs have been able to mobilise significant capital from their own resources and from bank credits to extend and modernise the production potential of the dairy according to modern industrial standards. Consequently, they are able to fully explore technological economies of scale and scope; build significant capacity for product innovation and promotion, and adapt to evolving formal requirements and standards; and govern outside relations with buyers and suppliers effectively. Now “Dimitar Madzarov” Ltd is a well known enterprise in the region, being one of the biggest employers in the Stamboliyski area with staff numbers reaching 140 people.

Another factor is increasing consumer demand for dairy products. Unlike the first years of transition, since 1997 there has been an increase in the purchasing power of the population and in the consumption of food, including dairy, products. Demand is not merely for more dairy goods but also for higher quality and a bigger range of traditional and new products. Along with that, concerns about safety, specific taste, and the origin of food products has also started to play a role. All these factors have boosted demand for specific products of “Dimitar Madzarov” Ltd, allowed realization of its comparative advantages in productivity, quality, innovation potential and good reputation, and contributed to the expansion of the dairy.

Figure 7: Driving factors and timeline of innovation

<i>Factors</i>	Evolution of “Dimitar Madzarov”Ltd		Evolution of supplying farms	<i>Factors</i>
<i>Entrepreneurship</i>	Extension of production capacity (1999, 2005)	⊙	Extension of farm size	<i>Entrepreneurship</i>
<i>Competition</i>	Building effective milk collecting facilities (1999, 2005)	⊙	Improving milk quality	<i>Demand by “Dimitar Madzarov”Ltd</i>
<i>Consumers demand</i>	Adaptation to national standards (continues)	⊙	Improving animal structure and breeds	<i>Incentives by “Dimitar Madzarov”Ltd</i>
<i>Expansion of large food stores</i>	Product diversification and innovation (continues)	⊙	Studying “Dimitar Madzarov”Ltd and formal requirements	<i>Requirements and control by “Dimitar Madzarov”LtdD</i>
<i>Evolution of formal restrictions and standards</i>	Export license to EU (2000 - current)			
	Introduction modern quality control (2004: HACCP, 2006: Good Production Practices, 2007: ISO 9000)	⊙	Improving technology and hygiene	<i>Support by “Dimitar Madzarov”Ltd</i>
<i>EU integration</i>	Long-term contracts with buyers and suppliers	⊙	Improving care for animals	<i>Cooperation</i>
	System for consulting and servicing suppliers	⊙	Improving environmental performance	<i>Formal standards and control</i>
	Adaptation to EU requirements for separate milk collection and processing (2005)	⊙		<i>Public subsidies</i>
				<i>CAP implementation</i>

Figure 8: Evolution of production in "Dimitar Madzarov" LTD



Source: "Dimitar Madzarov" Ltd

The last ten years have seen the emergence and rapid expansion of large food stores and chains in Bulgaria, with big super and hyper-markets like Metro, Billa, HIT, Klaufland, Fantastico, 345, Piccadilly, Ramstore. They have arrived with new requirements for large volume, standardised products, up to date quality control, modern packaging, varied product assortments etc.. This has generated great potential for profiting from tight integration with food chains for innovative companies like "Dimitar Madzarov" Ltd. In addition, the opening of the EU market for Bulgarian products created new unlimited opportunities. The dairy responded to new market demands and opportunities by the timely introduction of a modern system for quality control (HACCP, Good production practices, ISO 9000), diversification of products, development and promotion of new products, and the adaptations of labelling, packaging etc. to the needs of the big distributors and exporters. In addition, since 2000 a significant part of the marketing of the dairy has been effectively integrated through delivery contracts with the biggest food stores (60 per cent) and exporters (30 per cent).

The development of markets and EU integration enhanced competition with the existing big industrial dairies, numerous newly emerged small dairies, and imported cheap and quality dairy products. Along with that, rapid harmonization with EU laws and standards has brought about new institutional requirements and restrictions for the dairy sector in the country. The timely adaptation to new rules of the game by "Dimitar Madzarov" Ltd is another factor in the success of the business model. The company managed to make all the necessary arrangements of considerable investment and reorganization of production, to secure separate collecting and processing of milk in two lines; milk corresponding to EU standards for production, quality, hygiene, animal welfare, ecology, and milk meeting only national standards. It should be emphasised that in the transitional, to some extent still current, conditions of high uncertainty and low enforcement of standards, competition with the large "grey" sector has been neither fair nor easy to win.

“Dimitar Madzarov” Ltd has been able to adapt successfully to ever increasing market demand, and tough formal requirements and standards introducing high quality and safety control, and extensive product diversification and innovation. During the difficult years of the fundamental transformation of the industry “Dimitar Madzarov” Ltd has found its place among leading Bulgarian dairy operators, in accordance with modern industry and EU standards. Since 2000 a great number of dairy processors have left the business including 45 per cent of industrial and 77 per cent of small dairies. Currently only ten per cent of dairies have licences to export products to the EU, and “Dimitar Madzarov” Ltd is among them. What is more, unlike industrial dairies that work extensively with imported powder milk, “Dimitar Madzarov” Ltd processes only local fresh milk. In addition to that, 30 per cent of milk processed by the dairy entirely meets EU standards for milk quality. The dairy is well integrated in the food chain through forward contracts with big supermarkets and exporters, and backward contracts with supplying farmers. That guarantees effective governance of outside relations, overcomes high marketing and input supply uncertainty (risk), safeguards investments, and minimises the costs of transactions.

According to Mr. and Ms.Madzarovi, major factors for the success of their enterprise are mostly internal: their entrepreneurship, managerial experience and skills, technological knowledge, high technological discipline, available resources for investment, introduction of innovation, introduction of effective control, introduction of incentives and sanctions, and building a good reputation. The only outside factors that have been critical are development of markets and demand and formal regulations. The existence of personal connections, good luck, access to outside credit, public support, local policy, and national policy, have all been identified as unimportant for the development of the dairy and for case study innovation.

The process of inclusion of dairy farms into the food chain and the progressive changes they make have been determined by number of factors. The entrepreneurship of farmers and their ability to adapt to the new market and institutional environment have been crucial factors for farming development. The study shows that most of investigated farms assess as a significant factor their own experience and skills and none considers it insignificant (Table 3).

Table 3: Assessment of factors for farm development (per cent of farms)

Factors	Significant	Moderate	Insignificant
Own experience and skills	70.6	14.7	0.0
Available farm resources	32.4	32.4	5.9
Introduction of innovation	20.6	14.7	14.7
Closer integration with "Dimitar Madzarov" Ltd	32.4	23.5	11.8
Development of "Dimitar Madzarov" Ltd	44.1	11.8	5.9
General development of region	11.8	23.5	11.8
CAP implementation	32.4	11.8	8.8
Development of formal regulations	26.5	17.6	5.9
Improvement of farm education and advice	23.5	17.6	11.8
EU integration	17.6	17.6	8.8
Development of competition	11.8	23.5	14.7
State control on production	23.5	26.5	5.9
State control on quality	35.3	17.6	0.0
State guarantee of milk prices	29.4	2.9	23.5
State financial support to farms	26.5	8.8	23.5
State support to dairy processors	17.6	5.9	23.5
Extension of farm	38.2	17.6	2.9
Association with other farmers	5.9	5.9	35.3
Participation in larger projects for agrarian and rural development	11.8	8.8	23.5
Participation in professional organizational and associations	5.9	8.8	29.4
Respecting laws and private contracts	41.2	8.8	5.9

Source: Field survey data

Analysis of professional experience, age structure, education level, and professional training of farmers has found that these factors are more favourable for farmers in the region than nationwide (Annex 11, 12, 13 and 14). More than 80 per cent of suppliers have got more than ten years of farming experience. Most suppliers are the younger generation of farmers (average age of 44.5 years), and thus more amenable to learning, adaptation, innovation, and long term investment than other farmers in region. A large number of participating farmers have a high level of education (high school or university levels), and a significant number of them have professional (livestock or another) training. The latter is in big contrast with the national figure where 98 per cent of unregistered, and all, farms have "only practical experience in agriculture" while very few have secondary vocational education (two per cent) and higher education (one per cent).¹⁸ All these positive personal differences are critical factors for higher entrepreneurship of farmers, and reasons for their willingness and possibilities for adaptation to new requirements of processors, the market, and the

¹⁸ Agricultural Census, 2003

institutional environment. They eventually lead to effective participation of these particular farms in the innovative model studied and to greater inclusion in modern marketing channels.

The development of "Dimitar Madzarov" Ltd and closer integration with the dairy are major factors for the evolution of many of the surveyed farms. First of all, the establishment and expansion of that new enterprise in the region increases significantly demand for locally produced milk. Next, "Dimitar Madzarov" Ltd provides new incentives for farmers to increase production and commercialization of milk, and to improve milk quality. According to farmers investigated in the study, the main reasons for selling milk to "Dimitar Madzarov" Ltd are the "existence of contract", "collecting milk close to farm", "better quality control", "good reputation", "high trust", "timely payment", "higher prices", and "lower risk" (Table 4). All these factors facilitate and intensify bilateral trade, and decrease transaction costs. Furthermore, close integration (and existing communication, coordination and stimulation mechanisms) allows "Dimitar Madzarov" Ltd to introduce new requirements for suppliers such as milk quality, time and mode of delivery etc. effectively. They also facilitate adaptation of farmers to modern market and institutional standards, and further increases commercialization and effective inclusion of supplying farms in big food chains.

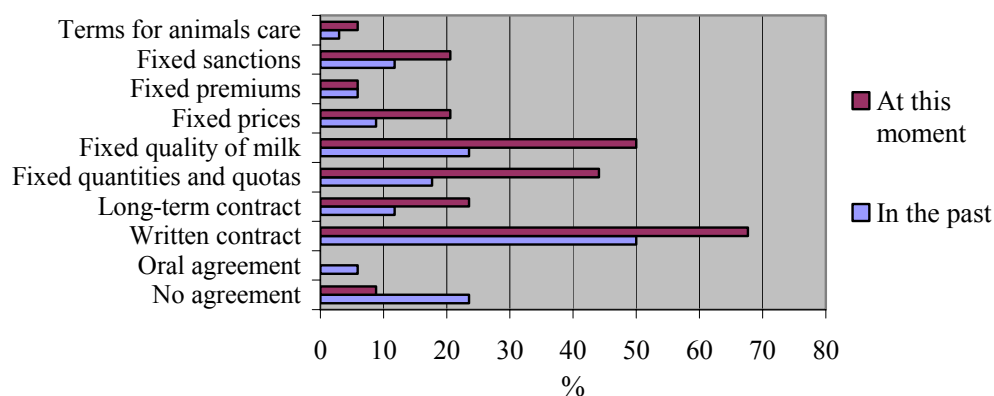
Building an effective system for governing relations with farmers has been an important factor for the success of the studied model. The development of the system includes the building of good reputation and trust, improving coordination and information mechanisms, investing in on site farm specific assets for milk collection, providing significant incentives and services, effective contracting, timely payment and conflict resolution modes. There has been significant evolution of contract relations between "Dimitar Madzarov" Ltd and suppliers (Figure 9). Now a written contract is commonly used to formalise relations for the long term, fixing quality, quantity, pricing and sanctions, in negotiated terms. The contract governance improves coordination between partners, allows easy adaptation to evolving market conditions, gives security for both sides, facilitates relations and decreases the costs of transactions. Furthermore, a written contract has a number of advantages over oral agreements such as clarity of provisions, the possibility to specify and fix more details, easy verification and control, incentives to meet negotiated terms, easier dispute resolution, including through the court system etc.. The high recurrence of agreements between the same partners (bilateral trade) justifies the efforts made and allows an effective return on and pay back of costs for negotiations and putting agreements in a written form. Not surprisingly a considerable number of farms see "respecting laws and private contracts" as one of most important factors for farm development.

Table 4: Main reasons for selling milk to “Dimitar Madzarov” Ltd (per cent of farms)

Reasons	At this moment	In the beginning
No alternative buyer in region	5.	11.8
Higher prices	41.	38.2
Additional premiums	20.	5.9
Possibility for unlimited sell	23.	5.9
Lower risk	38.	11.8
Timely payment	44.	44.1
Existence of contract	55.9	26.5
High trust	47.1	23.5
Lower costs associated with sell	14.7	5.9
Receiving additional services from "Dimitar Madzarov"LTD	8.8	14.7
Friendship relations	8.8	0.0
Good reputation	52.9	26.5
Better quality control	47.1	11.8
Lack of special requirements	5.9	2.9
Existence of sanctions	11.8	5.9
Easy dispute resolution	17.6	8.8
Collecting milk close to farm	55.9	26.5
Opportunity to reach final consumers	11.8	2.9
No special reason	20.6	11.8

Source: Fled survey data

Figure 9: Type of contracts between suppliers and "Dimitar Madzarov"LTD

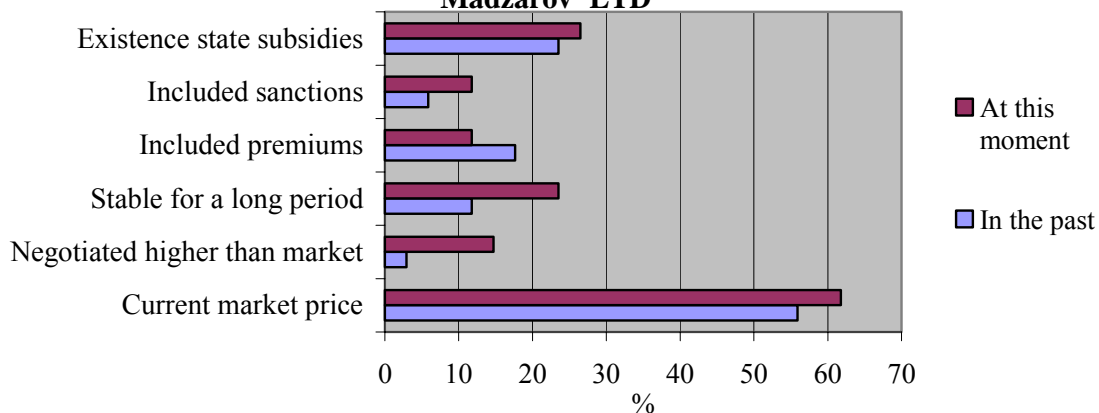


Source: Fled survey data

As far as prices are concerned, most farms report that “market prices” are employed (Figure 10). However, there is considerable development of the pricing mode which

is adjusted to partner needs including negotiation of levels, periods, sanctions etc.. More often than in the past, it is possible for farmers to negotiate higher than market prices, and to get stable prices in the long term, and see sanctions (linked to milk quality and safety) included in price terms. Also there is a slight increase in the number of farmers obtaining subsidies on milk from the state. This latter is an example of third party intervention and support aimed at increasing production and supply of high quality milk. That public involvement facilitates and intensifies relations between dairy farmers and the dairy, and eventually improves the quality of raw milk and dairy products.

Figure 10: Type of milk price for selling to "Dimitar Madzarov" LTD



Source: Field survey data

For the majority of farmers, payment is made every 15 days, and the importance of this frequency has increased compared to previous arrangements. In addition, around three per cent of farms indicated that they continue to get "advance payment" as before, and another three per cent receive "payment in cash combine with other services". Advance payment, and cash and service payment are modes for interlinked organization combining "supply of interest-free short-term credit against marketing of milk" and "service supply against marketing". They further encourage production and marketing from the most needy farmers with shortages of working capital. This mode of private governance enhances integration of farms with the dairy and thus inclusion in the food chain.

According to the farms surveyed, major conflicts with "Dimitar Madzarov" Ltd are associated with low milk price. More than 35 per cent of farms report currently having such conflicts compared to 24 per cent having this problem previously. Like the majority of milk producers in Bulgaria those farmers surveyed are not happy with "free" market prices of milk. All of them want to see it raised and ten per cent consider an increase of up to 50 per cent enough to allow effective adjustment to new market and formal requirements. The rest would like to see an even higher rise in the purchase price, averaging 125 per cent and reaching 275 per cent in one case.

Another point of conflict has been connected with milk quality, but the share of farmers experiencing this sort of conflict decreases from 12 per cent in the past to just below six per cent now. Currently around six per cent of farms have conflicts associated with “assuring needed milk quality” and that share has doubled from past levels. Also a portion of farms report continued conflicts related to “assuring needed milk quantity” and “environment protection”, around three per cent in each category. Apparently, some of surveyed farms are still experiencing problems adapting to evolving market and institutional requirements, price competition, quality demand, new EU regulations and restrictions.

Most needy farmers get predominately two types of service from "Dimitar Madzarov" Ltd, around 30 per cent mention receiving “consultation and information” and six per cent “crediting”. Such interlinked organization (“information and consultation supply” and “credit supply” against “marketing of milk”) facilitates trade, increases efficiency and cements relations, and maintains/increases milk production and supply. In addition, farmers report receiving four type of services from the state. “Crediting” and “veterinary services” are mentioned by just under 15 per cent of surveyed farms, “consultation and information” 12 per cent, and “professional training” three per cent. Again these are examples of third party Government intervention in private transactions in milk production and processing. The latter support production and commercialization in certain farms, and thus assist their integration in the food chain.

The implementation of effective control on milk production, output, and farm performance has been an important factor for farm development and inclusion. A considerable number of investigated farms report that "Dimitar Madzarov" Ltd executes strict control on milk quality, milk safety, and hygiene of production (Annex 15). Moreover, according to many respondents, sanctions and punishments are applied by the dairy on offenders. All these methods of private governance restrict poor performance and opportunistic behaviour, improve quality, and enhance effective commercialization of farm output. In addition, state control is applied on animal health, milk quality, hygiene of production and environmental performance of farms. These mechanisms of third party (Government) intervention assist the timely adaptation of farms to modern quality and eco-standards, and thus effective integration into big food supply chains.

Table 5: Farm changes which had to be made and have been made in order to sell milk to “Dimitar Madzarov” Ltd (per cent of farms)

Changes to be made	In the past	At this moment
In number of animals	11.8	29.4
In animals breed	2.9	20.6
In kind of livestock	0.0	17.6
In volume of production	8.8	26.5
In milk quality	20.6	41.2
In technology of breeding	2.9	23.5
In costs and investment	14.7	35.3
In hygiene of production	29.4	61.8
In animal welfare	5.9	26.5
In environmental care	8.8	20.6
In specialization of production	5.9	17.6
In amount and intensity of labor	8.8	26.5
In labor organization	0.0	23.5
In farm management	29.4	5.9
In formal registration	17.6	2.9
In farms type	17.6	5.9
Membership in professional organizations	8.8	0.0
Others	0.0	2.9
No any significant changes	11.8	11.8

Source: Field survey data

Another important factor for farming development and commercialization has been the cooperation of farmers. More than a quarter of farms are members of cooperatives and around six per cent belong to informal farm groups. Only small scale holdings were members of formal and informal farm organizations in the past and remain so. Development and sustainability of small scale (subsistence and semi-subsistence) farming and production cooperatives in Bulgaria are highly complementary.¹⁹ Cooperatives provide highly specific products and services to farms and farm households (forage for livestock, mechanization services, food for consumption) while farm groupings allow exploration of economy of scale on joint operations. All these let individual farms benefit from coop membership with member orientation and a not-for-profit character and specialise in “profitable” and market oriented livestock operations. What is more, as much as 62 per cent of farms investigated state that they produce forage for their animals, while 69 per cent, the bigger operators, report purchasing forage.

¹⁹ Bachev, 2006b

Among the most common changes farmers had to make to start selling milk to “Dimitar Madzarov” Ltd in the past were in production hygiene, farm management, and milk quality (Table 5). Continuation of relations with the dairy placed higher requirements on the majority of farms at their current stage of development. Most farms have to improve production hygiene and milk quality in order to carry on selling milk to the dairy. Many farms are to increase the number of animals, increase the volume of production, improve animal welfare, and improve environmental care. That requires progressive changes in breed of animals, technology of breeding, and labour organization in the bulk of suppliers. Some of the necessary changes are dictated by new EU regulations about food traceability, safety, animal welfare and environmental protection. Adaptation to new “Dimitar Madzarov” Ltd requirements and formally imposed standards are being associated with additional costs and investment and raising the amount and intensity of labour in a significant number of farms. Only 12 per cent of surveyed farms can adapt easily to the changing requirements, having no major changes to make before starting to do or carry on business with the dairy.

5 Cost, benefits, and sustainability of inclusion

Involvement of farms with “Dimitar Madzarov” Ltd has led to higher commercialization and greater inclusion in marketing channels. The study has found that the general status of surveyed farms is better than similar farms from the region not supplying to “Dimitar Madzarov” Ltd. According to their own estimates the majority of these farms enjoy higher income, better quality of production, greater stability of sales and prices, better possibilities for modernization and adaptation to formal requirements, and care for animals and environment, than other farms in region (Table 6). Integration with “Dimitar Madzarov” Ltd has led to progressive improvement of the relative situation of farms. Now the number of farms feeling they are better-off for all these major indicators is much higher than it was in the past. Farm improvement is judged to be even higher against the background of lack of progression and even regression of the dairy sector nationwide, a sharp decrease in the number of farms, widespread economic losses from milk production and the poor state of manure management. The proportion of farms having worse than average income and expenditure dropped significantly, and now it comprises only a tiny segment of surveyed holdings.

The number of farms that perceive their situation as “the same” as other farms not supplying to “Dimitar Madzarov” Ltd in levels of income, expenditure, and production is not small and has not changed over time. Partially that has been result of progressive changes in the general economic level of dairy farms in the Plovdiv region; one of the biggest milk producing regions of the country with numerous milk processors. Correspondence of status of significant share of surveyed farms to other similar market or semi-market farms prove that a good number of suppliers of “Dimitar Madzarov” Ltd are just typical farms from the region. Nonetheless, surveyed farms still benefit from carrying on and extending commercialization through integration with the dairy. The latter is very important bearing in mind the low level of inclusion of small scale farms in marketing channels and the continuing process of cessation of commercial activity including turning to subsistence, failures, take-overs, of a great number of dairy farms in Bulgaria.

According to Mr. and Ms. Madzarovi evolution of their business model contributes to “creation of employment in region” and “popularization and development of local products”. At the same time this innovation does not affect “demand on milk in region” neither does it “restrict production of dairy products in households and subsistence farms”. A neutral impact of the business could be also considered as positive since “own production” accounts for a significant part in consumption of dairy products for a good number of rural households.

Table 6: Status of surveyed farms comparing to other similar farms in region not supplying to “Dimitar Madzarov” Ltd (per cent of farms)

Indicators	In the past			At this moment		
	Better	Same	Worst	Better	Same	Worst
Level of income	23.5	26.5	11.8	41.2	26.5	2.9
Level of expenditures	14.7	26.5	11.8	20.6	26.5	5.9
Level of production	20.6	17.6	8.8	38.2	17.6	0.0
Quality of production	29.4	20.6	0.0	47.1	20.6	0.0
Possibility for modernization	17.6	23.5	5.9	32.4	26.5	5.9
Level of risk	5.9	20.6	14.7	2.9	14.7	26.5
Stability of sells	17.6	29.4	2.9	44.1	20.6	2.9
Stability of prices	14.7	29.4	8.8	29.4	29.4	8.8
Care for animals	11.8	26.5	0.0	32.4	23.5	0.0
Care for environment	11.8	20.6	5.9	23.5	26.5	2.9
Social status	8.8	29.4	0.0	17.6	26.5	0.0
Possibility for adaptation to formal regulations and standards	14.7	14.7	0.0	26.5	5.9	0.0

Source: Field survey data

Analyses of major items of production and transaction costs shows that the greatest efforts and time of suppliers of “Dimitar Madzarov” Ltd are associated with: “production activity”, “quality control”, “planning farm activity”, “studying formal requirements” and “adaptation to new formal requirements” (Annex 16). A good number of farms also spend great efforts for the “introduction of innovation”, “relations with control authorities”, and “relations with bureaucracy”. Our research has found that for Bulgarian farms in general and dairy farms in particular “marketing costs”, along with “credit supply costs”, account for the greatest part of managers’ efforts.²⁰ In contrast with the common situation in the country “marketing of product takes insignificant costs” for most surveyed farms. The latter is a consequence of higher integration with “Dimitar Madzarov” Ltd and the existence of effective mechanisms for governing various (including marketing) relations between farms and the dairy. According to Ms.Madzarova “relationships with milk suppliers” accounts for a significant part of her managerial efforts. Apparently, the dairy bears a considerable part of the costs for improving governance of bilateral trade.

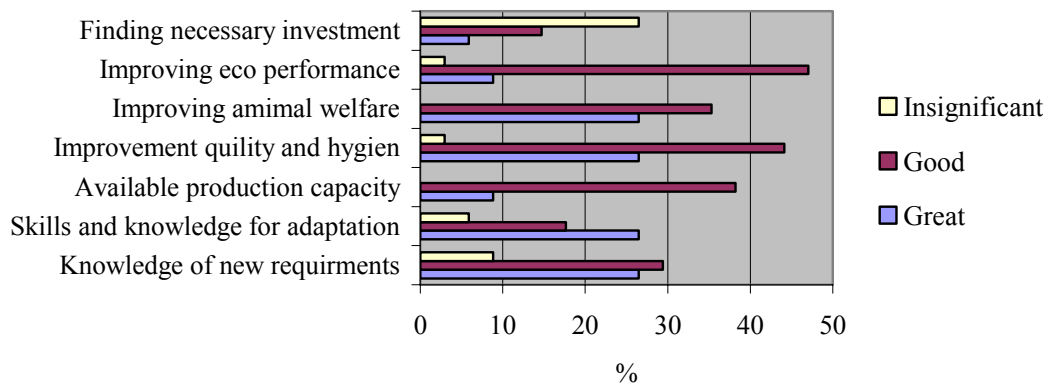
More than half of surveyed farms declare their intention to “extend current farm activity”, and 30 per cent aim at “keeping activity unchanged” (Annex 17). Moreover, no farms intend to decrease their present farm size, concentrate on crop production, or change type of farm. Besides, only a few farms plan to focus on

²⁰ Bachev and Kagatsume, 2003

subsistence farming in future. Furthermore, the greatest part of farms has in mind to “modernise their farm”, and a considerable number of farmers envisage “closer integration with “Dimitar Madzarov”Ltd”. Mr. and Ms. Madzarovi also see further integration with chief suppliers as the probable direction for development. All these suggest high sustainability of the studied mode and participating farms. The latter is extremely important since all experts assessments and trends show low sustainability of the greater part of the mostly small and middle-scale dairy farms in Bulgaria.²¹

The sustainability of farms and the future evolution of business model is strongly affected by the introduction of the EU CAP in the country. All analyses indicate that the majority of dairy farms, especially small scale operators, will not make the necessary changes and associated investments and will have to cease commercial activity.²² Unlike the most common situation, the farms surveyed declare having high capacity for adaptation to new EU requirements for the dairy sector (Figure 12). As our survey has shown, most farm managers have a great or good “knowledge of new requirements” and the “necessary skills and knowledge for adaptation”. Furthermore, the farms potential is significant in all critical areas such as: “available production capacity”, “improvement of quality and hygiene”, adaptation to requirements for “animal welfare” and “environment”. All these will facilitate adaptation to new institutional requirements and enhance the sustainability of participating farms.

Figure 12: Farm capacity for adaptation to new EU requirements for dairy sector



Source: Field survey data

A good number of farms indicate that they do not have sufficient financial capacity to cover the necessary investment costs associated with adaptation to EU standards. From 2007 on there will be significant public support to farms in forms of direct support and investment subsidies for modernization of enterprises and

²¹ Bachev, 2006a and Mladenova et al., 2007

²² Bachev, 2006b and Mladenova et al., 2007

adaptation to new quality, safety, animal welfare and environmental standards. Special support measures for “semi-market” and smaller scale dairy holdings are also being prepared, which will assist their adaptation to new institutional and quality requirements. Therefore, high capacity for adaptation and the special position of surveyed farms with effective integration and inclusion, would let them take advantage of new funding opportunities and enhance farm efficiency. Thus sustainability of farms under CAP conditions would increase, and integration with “Dimitar Madzarov” Ltd strengthened and extended.

The survey has found that more than 40 per cent of farms expect implementation of the CAP to increase their income and product quality (Annex 18). Around a third of farms also anticipate a positive impact of the new policies on volume of production, improvement of care for animals, and social status of farm household. A good proportion of farms are optimistic for the CAP effect on investment, technology of production, improvement of environmental care, development of infrastructure, and increasing access to public programmes. All these figures are much higher than the widespread expectations of dairy farmers in Bulgaria generally for a predominately negative or neutral effect of the CAP implementation on their farms.²³ In our case a fifth of surveyed farms have pessimistic expectation for the impact of new policies on their income.

According to Mr. and Ms. Madzarovi the most important factors for the future development of “Dimitar Madzarov” Ltd and the business model of farmers inclusion are following: “own experience”, “implementation of the CAP and EU integration”, “closer integration with suppliers”, “enhancement of competition”, “state control on production”, “state control on quality”, “state financial support to farms”, “state support to processors”, “extension of “Dimitar Madzarov” Ltd”, “modernization of “Dimitar Madzarov” Ltd”, “farmers training”, “enlargement of farms”, “farmers association”, “participation in bigger projects for agrarian and rural development”, “general development of region”, “taking part in professional associations”, “improvement of formal regulations”, and “respecting lows and private contracts”. “Closer integration with buyers” and “state guarantee of milk prices” are considered as insignificant factors for development of “Dimitar Madzarov” Ltd and the studied business model.

In addition to “perfection of institutional environment” (improvement and better enforcement of laws and regulations), “state support to milk producers” is perceived as crucial for development of the model. The owner is planning to extend the capacity of “Dimitar Madzarov” Ltd by 20 per cent in the near future. The necessary land in proximity to Plovdiv has been purchased and construction started. Significant “new” demand by the dairy will increase and boost extension of the

²³ Bachev, 2006a

business model. A great part of that new demand will be effectively met by current suppliers. Most of them will adapt to new EU requirements and extend their operation size. Farms and the dairy have developed effective mechanisms to govern their relations: trust; communication, coordination, payment, dispute resolution etc. modes, and that will facilitate further extension of mutual trade. Not the least important, from 2007, a new quota system obliges each producer of cow milk to have a "sale contract with a single buyer". That additionally will increase sustainability of trade relations between farms and the dairy.

The extension of "Dimitar Madzarov" Ltd will open new inclusion and commercialization opportunities for a number of other semi-subsistence and small scale farms from the region. They will be likely to start supplying to the dairy, integrate with enterprise, and therefore join the big marketing chains. Incoming special public measures for supporting commercialization of semi-subsistence farming would considerably help in that respect. Since cow milk quotas are already exceeded by ten per cent nationwide, further diversification into sheep, goat, and buffalo milk production (where no quantity restrictions exist) is to be expected in smaller farms.

The effective and expanding business model of "Dimitar Madzarov" Ltd will also attract some regional suppliers of other dairies. Enforcement of EU standards and enhancement of competition would take out of business some existing dairies which will not be able to adapt to new institutional and market requirements. Attractive conditions and commercialization perspectives offered by "Dimitar Madzarov" Ltd will also take over effective middle and big sized suppliers of competitors.

According to Mr. and Ms. Madzarovi only two criteria will continue to be important for selecting suppliers of the dairy in future: "category of farms" and "milk quality". Since smaller farms have serious difficulties adapting to new EU requirements they can hardly manage to adapt to new standards by the end of transitional period in 2009. Therefore, farm enlargement and association along with state support policy for milk producers is considered as extremely important. Also further extension of vertical integration with suppliers is envisaged in future. As far as tighter integration with buyers of dairy products is concerned the Madzarovs do not perceive any significant change in the status quo.

6 Up-scaling and replication of model

The business innovation developed by Dimitar Madzarov is a positive example for an effective private model for inclusion of small scale dairy farms into the supply chain. That this effective model emerged in specifically Bulgarian conditions is characterised by:

- fundamental institutional transformation – rapid liberalization and development of markets, privatization of major agrarian resources, overall restructuring of farms and processing industries, introduction of modern quality and safety standards, progressive integration into regional, EU and world markets;
- high market, economic, and institutional uncertainty and instability – carrying out farming and business activities in an environment of swift changes (dynamics) of markets, prices, formal regulations etc. as well as domination of the huge informal, including “grey” and illegal, sector of the economy;
- absence of public support to farming and processing sectors – deficiency of public law and contract enforcement, lack of any financial, price, tax and extension support to farms and business enterprises;
- domination of small scale (semi-subsistence, domestic) farms and business enterprises with good professional but no managerial experience in marketing, contracting and investment;
- evolution of new production cooperatives with member oriented (food, services, and forage supply) functions, and undeveloped farmers association in marketing, processing, price negotiating, risk bearing etc;
- transformation of the food retail sector – the widespread appearance of big international and local food chains with specific demands for large volume and standardised, superior quality, safe, labelled, diversified and original products.

In such a rapidly evolving market and institutional environment the personal characteristics of agents such as education, previous experience, available resources and private entrepreneurship have happened to be the most important factors for successful development of farming and business activities. Initiatives by private entrepreneurs like Dimitar Madzarov have been able to set up adaptive business enterprises, take advantage of specific milk supply and marketing conditions, accumulate significant capital for effective extension and modernization up to top industry standards, and compete successfully in a fast changing market and institutional environment. What is more, development of various private modes of governance have been an effective way to overcome great market and institutional uncertainty, safeguard private investments and absolute and contracted rights, and intensify trade with diverse partners. These managerial innovations have been successfully employed to “correct” market failure and coordinate, stimulate, integrate, interlink, and enforce relationships with counterparts both backward into

inputs supply and forward into marketing. They make possible and lead to, effective inclusion in big commercial channels of small scale processors and numerous small scale farmers.

The up-scaling of that particular enterprise will predominately depend on ongoing extension of processing capacity of “Dimitar Madzarov” Ltd, and farmers adaptation to new EU quality and safety requirements. To a great extent the latter will be predetermined by the efficiency of public policies in supporting modernization of farms according to modern quality, safety, animal welfare, environmental etc. standards.

The state of development of the dairy sector and livestock farms are quite similar in other parts of the region and the country. Therefore, this business model could be successfully replicated around the country. For achieving that, widespread popularization of the positive experience of “Dimitar Madzarov” Ltd, and the effective extension education of entrepreneurs and farmers, and appropriate public support policies, would all be essential.

Furthermore, the positive Bulgarian model for inclusion of small scale dairy producers in big marketing chains could be effectively replicated in other transitional and developing countries with widespread semi-subsistence and small scale farming, lack of farmers marketing and processing organizations, shortage of any or domination of less-adaptive and innovative large state processing enterprises, deficiency of public support to small scale farms, both by government and international assistance, and increasing demand for high quality local dairy products. As Mr. and Ms. Madzarovi put it: their model would be good for similar conditions of “chaotic markets” and “absence of state support”. Experience shows that similar conditions are quite common in many countries around the world.

Effective transfer of business innovation could be achieved after appropriate popularization of the pace and factors of its development. Our recommendations to prospective business entrepreneurs are to use the “Dimitar Madzarov” Ltd experience in governing relations with suppliers and buyers. Crucial for the success of farmers integration would be:

- a) investment in relation specific capital to suppliers such as good reputation, near or on farm milk collecting facilities, training of farmers;
- b) building effective communication, stimulation, control, payment and sanction mechanisms;
- c) interlinking marketing of milk supply by farmers with credit and service supply by the dairy.

All these would develop mutual trust, overcome uncertainty and risk, stimulate dairy specific investment by farmers and effective adaptation to evolving requirements, minimise costs of transactions, facilitate and intensify bilateral trade between dairy and farmers. In addition, effective public and/or international assistance policies could considerably accelerate successful replication. In that respect, a number of recommendations to relevant government bodies and international assistance organizations could be suggested:

Firstly, policies should be directed to support private initiatives and entrepreneurship through providing information, education, advise, sharing positive (and negative) experiences as well as assisting financially innovative small scale business projects.

Secondly, no restrictions have to be put on business entrepreneurs to invent and apply effective private governing modes such as special contractual agreements, product specification, price and payment modes and joint ventures with suppliers and buyers which most suit the particular conditions of their mutual trade. On the contrary, public intervention is to be focused on improvement of general regulations, fight against “grey” and black sectors, execute control on critical points within food chain (eg. food safety), effective enforcement of laws and private contracts, financial and other support to prospective joint initiatives. The latter is particularly important as far as new ventures are concerned that aim at the inclusion of small scale farmers in modern food chains.

Thirdly, identification of big transaction difficulties (“failures”) in market and private transactions between farmers and processors, and third party (public, international assistance, hybrid) assistance through market and price information, setting up and enforcing prospective quality and safety standards, independent control and arbitration, price stabilization schemes etc.

Fourthly, considerable effort has to be made on giving information to small scale farmers on market and business opportunities, training in farm business management and contracting, providing technical and financial assistance for adaptation to new consumers, processors, food chains, export, and institutional requirements. For instance, public premiums for high quality products or preferential credits for enlargement and modernization of farms could significantly speed up transformation. In order to guarantee the access of small scale rather than larger producers in public support programmes, special criteria tailored to their particular conditions have to be applied; eg. maximum size, particular structure of production, available cost sharing potential, existing project preparation capacity, feasible project implementation terms.

Fifthly, when certain “public goods” are to be supplied by farmers, such as conservation of the environment and biodiversity, keeping traditional productions and varieties, they have to be effectively funded by the state budget. Here neither pure administrative measures, “public orders”, nor market competition and private (voluntary) initiatives can be effective. Likewise when significant “non-productive” investment is to be made to benefit the entire food chain, such as adaptation to new safety, hygiene, animal welfare etc. standards, then they are to be financed by public funds or shared by all actors; farmers, processors, retailers and final consumers).

Finally, public support is to be provided to grouping, cooperation, and association of small scale farmers through assisting initiation, registration, and organizational development; providing independent control, and tax breaks; and funding common projects and collective actions etc. Furthermore, public support is to embrace larger joint initiatives and collective actions of farmers and rural actors: projects for environmental and biodiversity conservation, integration of farming with agritourism and retailing, other agrarian and rural development plans.

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Annexes

Annex 1: QUESTIONNAIRE

with milk supplier farm for "Dimitar Madzarov" Ltd, Stamboliyski town

This questionnaire is part of research and it is strictly anonymous. No personal data of respondents will be published or give to somebody else.

Please, fill with figure, or X, or text according to your state.

1. Age

2. Sex Male Female

3. Education Without education Elementary Primary High school University

4. Vocational training Management Agronomy Animal husbandry Other

5. How long are you farmer?

6. Your farm is: Unregistered Cooperative Firm

7. Your farm is: Entirely for self-sufficiency Mainly for self-sufficiency Mainly for selling Entirely for selling

8. Your farm is:

	for yourself	for your household
• single income source	<input type="checkbox"/>	<input type="checkbox"/>
• major income source	<input type="checkbox"/>	<input type="checkbox"/>
• supplementary income source	<input type="checkbox"/>	<input type="checkbox"/>

9. Work in farm for you is:

• only work load	<input type="checkbox"/>
• basic work load	<input type="checkbox"/>
• no basic work load	<input type="checkbox"/>

10. You are:
- the only owner of the farm
 - co-owner with family members
 - co-owner with no family members
-

11. What part the animal husbandry took place from entire farm activity:

100%

Significant part

50%

Insignificant part

12. in the farm work

		number	milk (liters)
13. Number and yearly yield of milk from reared animals:	• caws	<input type="text"/>	<input type="text"/>
	• sheep	<input type="text"/>	<input type="text"/>
	• goats	<input type="text"/>	<input type="text"/>
	• buffalos	<input type="text"/>	<input type="text"/>

14. The forage for your animals you:

<input type="text" value="Produce yourself"/>	<input type="text" value="Produce in a group"/>	<input type="text" value="From cooperative"/>	<input type="text" value="Buy"/>
---	---	---	----------------------------------

15. What part from produced milk do you sell:

• caw milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• sheep milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• goat milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• buffalo milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>

16. What part from entirely sell milk do you sell to Dimitar Madzarov

• caw milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• sheep milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• goat milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>
• buffalo milk	<input type="text" value="100%"/>	<input type="text" value="Significant part"/>	<input type="text" value="Insignificant part"/>	<input type="text" value="0%"/>

17. Show the year when you have started to:

<input type="text" value="Produce milk from..... year"/>	<input type="text" value="Sell milk from..... year"/>	<input type="text" value="Sell milk to D. Madzarov from..... year"/>
--	---	--

18. If the quantity of milk in the year when you have started to *produce* milk is 100 per cent, the quantity of produced milk *now* is:

19. If the quantity of milk in the year when you have started to *sell* milk is 100%, the quantity of sell milk *now* is:

20. If the quantity of milk in the year when you have started to *sell* milk to D. Madzarov is 100%, the quantity of sell milk to D. Madzarov *now* is:

21. D. Madzarov's dairy is:

22. What are the main reasons to sell your own milk to D. Madzarov *now*, as well as in the year when you *initially started* to sell milk to D. Madzarov:

	At the moment	In the
beginning		
• No alternative buyer in the region	<input type="checkbox"/>	<input type="checkbox"/>
• Higher prices	<input type="checkbox"/>	<input type="checkbox"/>
• Additional premiums	<input type="checkbox"/>	<input type="checkbox"/>
• Possibility for unlimited sell	<input type="checkbox"/>	<input type="checkbox"/>
• Lower risk	<input type="checkbox"/>	<input type="checkbox"/>
• Timely payment	<input type="checkbox"/>	<input type="checkbox"/>
• Existence of contract	<input type="checkbox"/>	<input type="checkbox"/>
• High trust	<input type="checkbox"/>	<input type="checkbox"/>
• Lower costs associated with sell	<input type="checkbox"/>	<input type="checkbox"/>
• Receiving additional services from "D. Madzarov" LTD	<input type="checkbox"/>	<input type="checkbox"/>
• Friendship relations	<input type="checkbox"/>	<input type="checkbox"/>

- Good reputation
- Better quality control
- Lack of special requirements
- Existence of sanctions
- Easy dispute resolution
- Collecting milk close to farm
- Opportunity to reach final consumers
- No special reason
- other reason (*show what*)

23. How often do you supply milk to D. Madzarov's dairy:

Every day	During some seasons	Sometimes	Seldom
-----------	---------------------	-----------	--------

24. If you sell milk to another buyer except D. Madzarov's dairy this is:

Retail sell	Milk processor in the region	Middelman	Milk processor outside the region
-------------	------------------------------	-----------	-----------------------------------

25. What kind of changing in the farm were obligatory to be done in *the past* and *now*, in order to be able to sell your own milk to D. Madzarov

- number of animals in the past at present moment
- race of animals in the past at present moment
- animal species in the past at present moment
- quantity of production in the past at present moment
- milk quality in the past at present moment
- technology of animal rearing in the past at present moment
- expenses and investments in the past at present moment

• production hygiene	in the past	at present moment
• behavior to animals	in the past	at present moment
• preserving the environment	in the past	at present moment
• specialization of the production	in the past	at present moment
• quantity and intensity of the work	in the past	at present moment
• work organization	in the past	at present moment
• farm management	in the past	at present moment
• some formal registration	in the past	at present moment
• type of the farm	in the past	at present moment
• member in professional organizations	in the past	at present moment
• others (<i>show what kind</i>)
• none essential changing	in the past	at present moment

26. Is there control from the *dairy* or *state organization* on:

	from dairy	from state
<i>organization</i>		
• quality of the milk	<input type="checkbox"/>	<input type="checkbox"/>
• assurance of the milk	<input type="checkbox"/>	<input type="checkbox"/>
• hygiene of production, preservation and delivery	<input type="checkbox"/>	<input type="checkbox"/>
• animal health	<input type="checkbox"/>	<input type="checkbox"/>
• forages of the animals	<input type="checkbox"/>	<input type="checkbox"/>
• behavior to the animals	<input type="checkbox"/>	<input type="checkbox"/>

- preserving the environment
 - the control is permanent
 - sanctions and penalties are applied
-

27. What kind is your contract with d. Madzarov's dairy in *the past* and *now*:

- | | in the past | at present moment |
|---|--------------------------|--------------------------|
| • there is not preliminary contract | <input type="checkbox"/> | <input type="checkbox"/> |
| • oral contract | <input type="checkbox"/> | <input type="checkbox"/> |
| • written contract | <input type="checkbox"/> | <input type="checkbox"/> |
| • long-term contract | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with fixed volumes and quotas | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with fixed quality of milk | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with fixed prices | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with fixed premium | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with fixed sanctions | <input type="checkbox"/> | <input type="checkbox"/> |
| • contract with conditions of rearing of animals | <input type="checkbox"/> | <input type="checkbox"/> |
| • with other special conditions (<i>please, show what kind</i>) | | |
-

28. What is the type of the price you sell to D. Madzarov's dairy in *the past* and *now*:

- | | in the past | at present moment |
|--|--------------------------|--------------------------|
| • current market price in the region | <input type="checkbox"/> | <input type="checkbox"/> |
| • higher than market price on the base of contract | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | |
|---|--------------------------|--------------------------|
| • lower than market price on the base of contract | <input type="checkbox"/> | <input type="checkbox"/> |
| • stable price for longer period | <input type="checkbox"/> | <input type="checkbox"/> |
| • with stipulate premiums | <input type="checkbox"/> | <input type="checkbox"/> |
| • with stipulate sanctions | <input type="checkbox"/> | <input type="checkbox"/> |
| • available state subsidies | <input type="checkbox"/> | <input type="checkbox"/> |
-

29. What is the type of your milk payment from D. Madzarov's dairy in *the past* and *now*:

- | | in the past | at present moment |
|--------------------------------------|--------------------------|--------------------------|
| • pay in advance | <input type="checkbox"/> | <input type="checkbox"/> |
| • daily | <input type="checkbox"/> | <input type="checkbox"/> |
| • weekly | <input type="checkbox"/> | <input type="checkbox"/> |
| • every 2 weeks | <input type="checkbox"/> | <input type="checkbox"/> |
| • monthly | <input type="checkbox"/> | <input type="checkbox"/> |
| • periodically | <input type="checkbox"/> | <input type="checkbox"/> |
| • combine – money and other services | <input type="checkbox"/> | <input type="checkbox"/> |
-

30. What kind of services do you obtain from *dairy* of D. Madzarov and from the *state*:

- | | from dairy | from state |
|-----------------------------------|--------------------------|--------------------------|
| • vocational training | <input type="checkbox"/> | <input type="checkbox"/> |
| • consultancy and information | <input type="checkbox"/> | <input type="checkbox"/> |
| • crediting | <input type="checkbox"/> | <input type="checkbox"/> |
| • veterinary | <input type="checkbox"/> | <input type="checkbox"/> |
| • supply of forages and materials | <input type="checkbox"/> | <input type="checkbox"/> |

- others (*please, show what kind*)

.....

.....

31. What main problems do you have during sale of your milk to D. Madzarov dairy in the past and now:

• conflicts connected with execution of contracts	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• providing for the necessary quality of the milk	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• conflicts connected with milk quality	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• providing for the necessary quantity of the milk	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• conflicts connected with milk quantity	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• providing for necessary conditions and care for the animals	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• conflicts connected animal care	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• providing for conditions for protection of the environment	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• conflicts connected to protection of the environment	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• low milk prices	<input type="text" value="in the past"/>	<input type="text" value="now"/>
• others (<i>please, show what kind</i>)

32. What is the level of your efforts and time for:

	very high	high	
insufficient			
• planning farm activity	<input type="text"/>	<input type="text"/>	<input type="text"/>
• production activity	<input type="text"/>	<input type="text"/>	<input type="text"/>
• introduction of innovations	<input type="text"/>	<input type="text"/>	<input type="text"/>
• marketing of production	<input type="text"/>	<input type="text"/>	<input type="text"/>
• quality control	<input type="text"/>	<input type="text"/>	<input type="text"/>
• studding formal regulations	<input type="text"/>	<input type="text"/>	<input type="text"/>

- adaptation to new formal requirements
- relations with banks
- relations with control authorities
- relations with bureaucracy
- relations with professional organizations

33. Assess present *capacity* of the farm for adaptation to *new EU requirements* for dairy farming:

- | | great | good | insignificant |
|---|--------------------------|--------------------------|--------------------------|
| • knowledge of new requirements | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • available skills and knowledge for adaptation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • available production capacity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • improvement of quality and hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • improving animal welfare | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • improving eco performance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • finding necessary investments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

34. Status of surveyed farms comparing to other similar farms in the region not supplying “Dimitar Madzarov” LTD (*in the past* and now)

	<i>in the past</i>			<i>At this moment</i>		
	Better	Same	Worst	Better	Same	Worst
• Level of income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Level of expenditures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Level of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Quality of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Possibility for modernization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

• Level of risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Stability of sells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Stability of prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Care for animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Care for environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Social status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Possibility for adaptation to formal regulations and standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

35. Intentions for future development of farm

• extent current farm activity	<input type="checkbox"/>
• keep activity unchanged	<input type="checkbox"/>
• decreasing of the size of the farm	<input type="checkbox"/>
• change structure of animals	<input type="checkbox"/>
• focus of plant growing activities	<input type="checkbox"/>
• to restrict farm activities to only for self-sufficiency	<input type="checkbox"/>
• closer integration with "D. Madzarov" LTD	<input type="checkbox"/>
• change type of the farm	<input type="checkbox"/>
• to modernize farm	<input type="checkbox"/>
• participate in agrarian and rural development projects	<input type="checkbox"/>
• join to production cooperative	<input type="checkbox"/>
• join producer group or association	<input type="checkbox"/>

- other (*please, show what kind*)
-

36. What kind of professional organizations do you member *in the past* and *now*:

- | | | |
|--|--------------------------------------|------------------------------|
| • production cooperative | <input type="checkbox"/> in the past | <input type="checkbox"/> now |
| • informal group of farmers | <input type="checkbox"/> in the past | <input type="checkbox"/> now |
| • marketing cooperative | <input type="checkbox"/> in the past | <input type="checkbox"/> now |
| • professional union, association | <input type="checkbox"/> in the past | <input type="checkbox"/> now |
| • Others (<i>please, show what kind</i>) | | |
-

37. How do you assess the following factors on development of *your* farm:

- | | Significant | Moderate | Insignificant |
|--|--------------------------|--------------------------|--------------------------|
| • Own experience and skills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Available farm resources | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Introduction of innovation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Closer integration with "Dimitar Madzarov" LTD | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Development of "Dimitar Madzarov" LTD | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • General development of the region | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Implementation of CAP | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| • Development of formal regulations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

• Improvement of farm education and advice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• EU integration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Development of competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• State control on production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• State control on quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• State guarantee of milk prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• State financial support to farms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• State support to dairy processors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Extension of farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Association with other farmers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Participation in larger projects for agrarian and rural development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Participation in professional organizational and associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Respecting laws and private contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• other important factors (<i>please, show which</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38. What are your *expectation* for impact of EU CAP implementation on *your* farm:

	Positive	Neutral	Negative
• Volume of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Income of farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Technology of production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

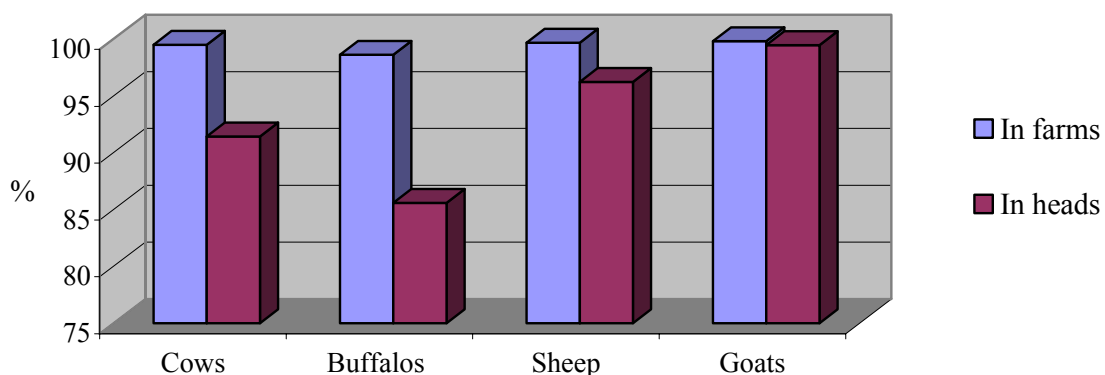
- Products quality
 - Access to public programs
 - Improvement of care for animals
 - Improvement of care of environment
 - Development of infrastructure
 - Opportunities for new income
 - Social status of your household
 - Other expected impact (*please, show what*)
-

39. What buy up price will be satisfactory for you and will ensure to you enough income in order to meet new European requirements for animal breeding?

Up to 15 euro cents	15 – 17,5 euro cents	17,5- 20 euro cents	20 – 22,5 euro cents
22,5 - 25 euro cents	25 – 27,5 euro cents	27,5 – 30 euro cents	More than 30 euro cents

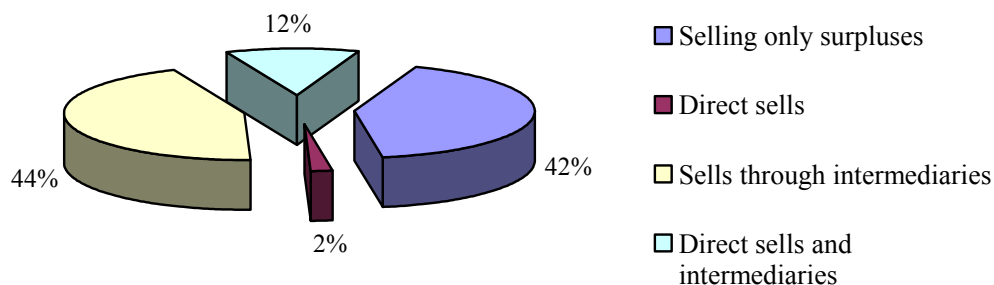
How much?

Annex 2: Share of unregistered farms in all livestock holdings and dairy animals in Bulgaria



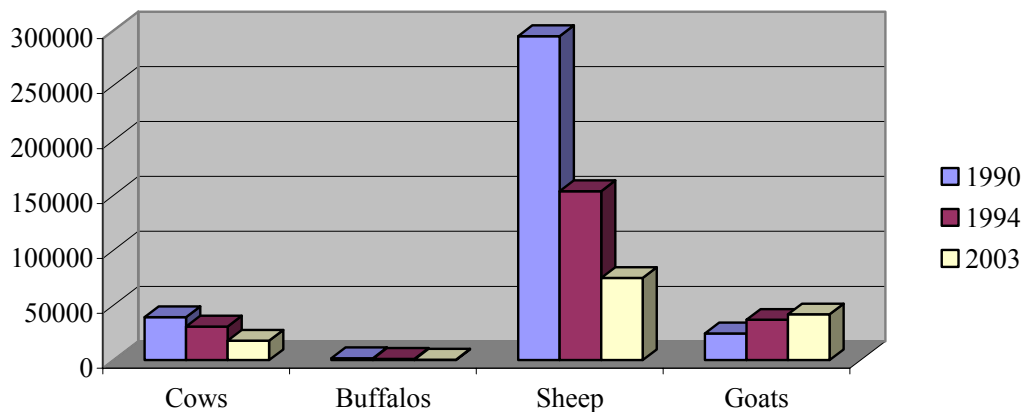
Source: Agricultural Census 2003

Annex 3: Share of farms using different ways of marketing of produced milk in Bulgaria



Source: Agricultural Census 2003

Annex 5: Number of livestock in Plovdiv region



Source: Agricultural Census 2003

Annex 4: Map of Bulgaria

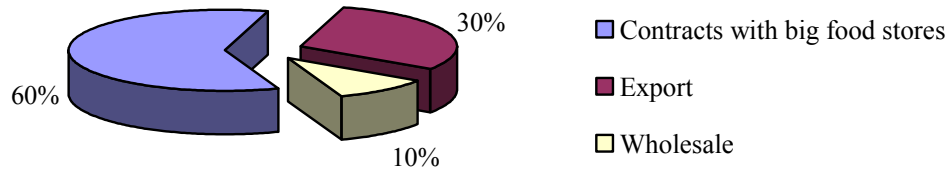


Annex 6: Map of Plovdiv region and location of “Dimitar Madzarov” Ltd



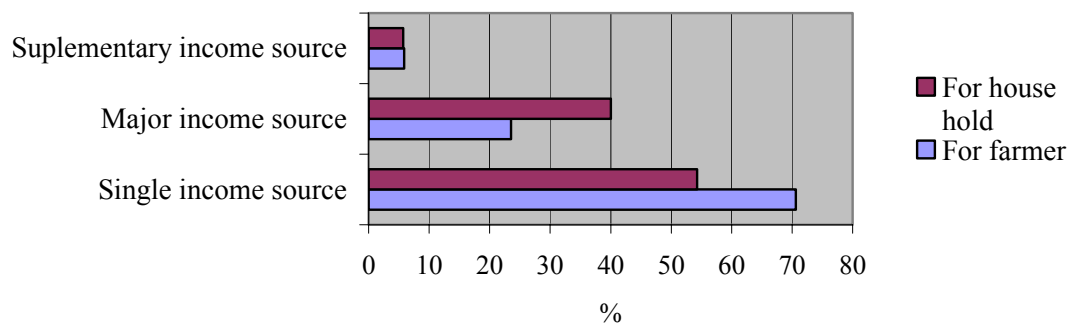
Annex 7: Leaflet with “Dimitar Madzarov” Ltd products

Annex 8: Marketing of dairy output of "Dimitar Madzarov" LTD



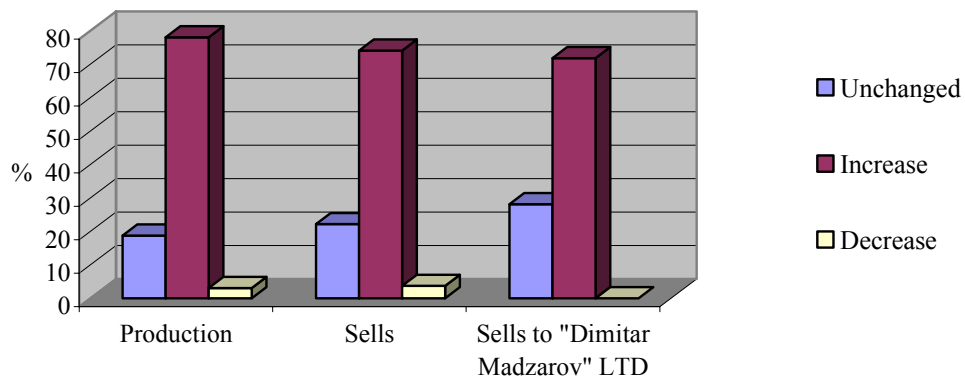
Source: "Dimitar Madzarov" Ltd

Annex 9: Economic importance of farm for the suppliers of "Dimitar Madzarov" LTD



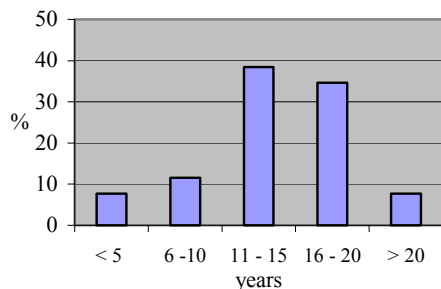
Source: Field survey data

Annex 10: Share of farms with different dynamics of milk production and sells



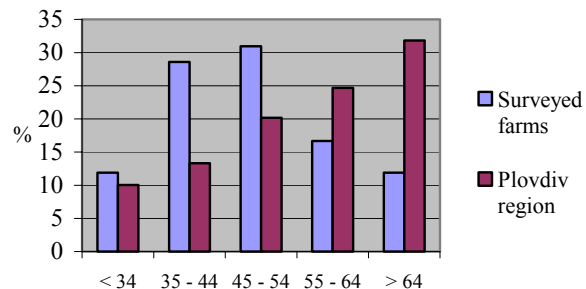
Source: Field survey data

Annex 11: Farming experience of managers of surveyed farms



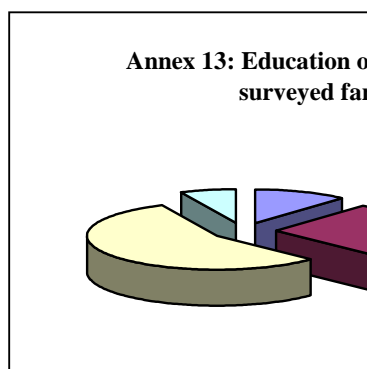
Source: Field survey data

Annex 12: Age structure of farm managers



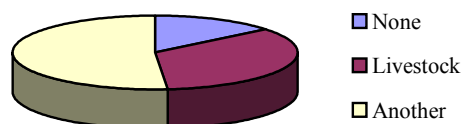
Source: Field survey data

Annex 13: Education of surveyed farms



Source: Field survey data

Annex 14: Type of professional training of farms managers



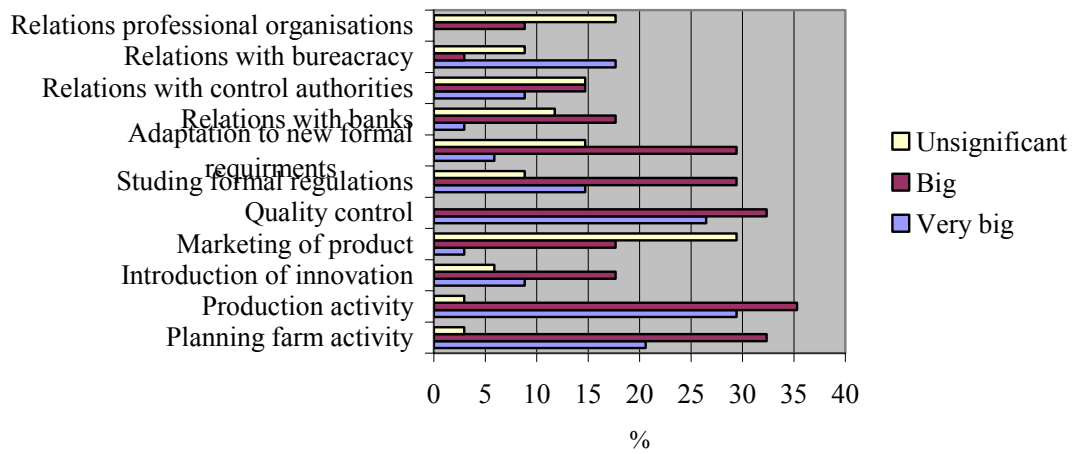
Source: Field survey data

Annex 15: Control from "Dimitar Madzarov" Ltd and the state on farms (per cent of farms)

Control on:	"Dimitar Madzarov" LTD	State body
Milk quality	94.1	52.9
Milk safety	47.1	17.6
Hygiene of production	58.8	44.1
Animal health	20.6	55.9
Forage for animals	11.8	35.3
Care for animals	8.8	35.3
Care for environment	8.8	41.2
Control is permanent	2.9	20.6
Sanctions and punishments are applied	38.2	8.8

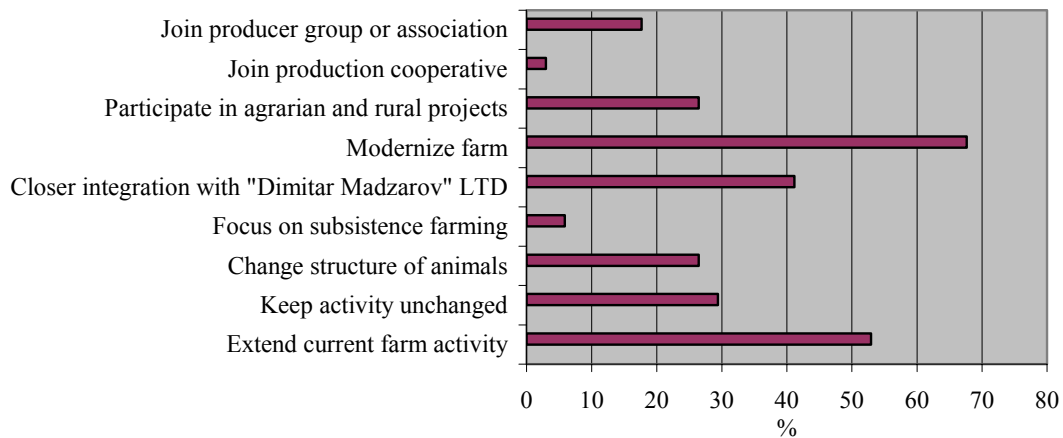
Source: Field survey data

Annex 16: Level of efforts and time of suppliers of "Dimitar Madzarov" LTD



Source: Field survey data

Annex 17: Intention for future development of farm



Source: Field survey data

Annex 18: Expectation for impact of EU CAP implementation on your farm (% farms)

Impact on:	Positive	Neutral	Negative
Volume of production	32.4	14.7	17.6
Income of farm	41.2	5.9	20.6
Technology of production	29.4	17.6	8.8
Investment	29.4	8.8	11.8
Products quality	38.2	14.7	0.0
Access to public programs	23.5	8.8	11.8
Improvement of care for animals	32.4	14.7	2.9
Improvement of care of environment	26.5	11.8	5.9
Development of infrastructure	29.4	8.8	5.9
Opportunities for new income	26.5	20.6	8.8
Social status of your household	32.4	14.7	14.7
Other expected impact	2.9	2.9	5.9

Source: Field survey data

Regoverning Markets

Regoverning Markets is a multi-partner collaborative research programme analysing 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 is 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. The programme is funded by the UK Department for International Development (DFID), the International Development Research Centre (IDRC), ICCO, Cordaid, the Canadian International Development Agency (CIDA), and the US Agency for International Development (USAID).

Innovative Practice

Innovative Practice is a series of case studies from the Regoverning Markets programme providing examples of specific innovation in connecting small-scale producers with dynamic markets at local or regional level. Based on significant fieldwork activities, the studies focus on four drivers of innovation: public policy principles, private business models, collective action strategies by small-scale farmers, and intervention strategies and methods of development agencies. The studies highlight policy lessons and suggest working methods to guide public and private actors.

The case studies were coordinated by:

Julio Berdegúe, RIMISP - Latin American Centre for Rural Development, Chile
Lucian Peppelenbos, Royal Tropical Institute (KIT), Netherlands
Estelle Biénabe, University of Pretoria, South Africa and Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), France

