INTAS Project: Supporting the International Development of the CIS Agricultural Sector

A Review of Organisational Change in the Moldovan Agricultural Sector

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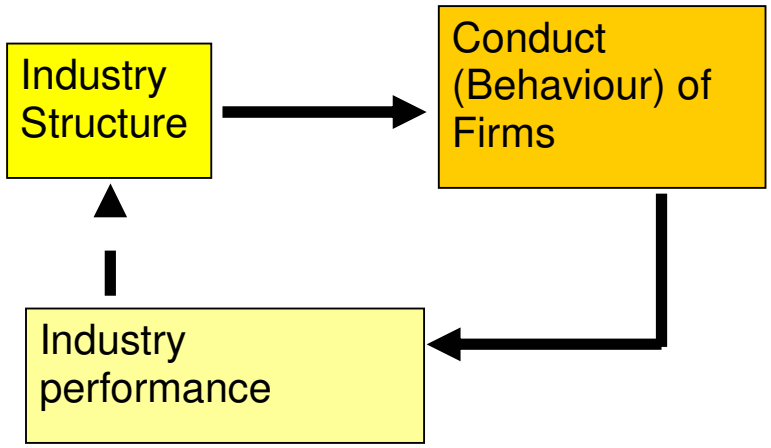
1. Objective

The objective of this report is to analyse the organisational change in agricultural markets in Moldova, drawing out the main market drivers and challenges facing the sector.

2. Background

A useful way of characterising the current state of a market and identifying the main drivers of structural change is the Structure-Conduct-Performance (SCP) framework. The central tenet of the SCP framework is that the economic performance of an industry is a function of the conduct of buyers and sellers which is related to, and influenced by, the industry's structure (Figure 1) (Bain, 1956). Bain's work has influenced writers on business strategy such as Porter (1980) and strategic groups (Harrigan, 1985). More recently, Strategic Management Theory (SMT) has emerged as an attempt to reconcile the traditional concerns of SCP research, which has been rooted in the Industrial Organisation literature, with a recognition of the role of heterogeneous resources across firms in a particular industry (Mahoney and Pandian, 1992).

Figure 1: SCP: Framework



The main elements of the SCP framework are discussed below with reference to Moldova.

3. Structure

3.1 Number and size of farms

Agricultural farms in Moldova can be classified into two groups according to their size. The first group is formed out of so called corporate farms. These farms cultivate on average around 1,000 ha of agricultural land, with the typical size varying by region: from around 640 ha in the South to around 860 ha in the Central regions and circa 1700 ha in Northern Moldova. Only approximately 2% of the cultivated land by these farms is owned by them with the rest (i.e. 98%) rented.

The second group is comprised of individual private farms that cultivate on average 3.8 ha of agricultural land. For this group, about 63.4% of the total land cultivated is owned by them with the remainder (36.6%) rented. The acreage of these farms has increased over the last decade.

The number of corporate farms increased from 1035 farms in 1996 to 1348 farms in 2003 (Table 1). This trend is due to two main reasons:

a) A large part of the corporate farms are successor organisation to the former kolkhozes and sovkhozes. This continuity relates not only to land area farmed and assets owned but also the organizational structures, management patterns and the mentality of directors. With such a background it is often rather difficult to compete with new active entrants in the agri-food market. Many such farms just changed their name from kolkhoz to another economic entity. In the process of this restructuring many farms were divided up into several smaller units and this contributed to the increased number of farms.

b) Another reason for the increase in the number of farms is the flow of newcomers into agribusiness. Several projects in Moldova have supported the creation of new businesses in rural areas.

Table 1: Main indicators of the activities of corporate farms

	1996	1997	1998	1999	2000	2001	2002	2003
Number of corporate agricultural farms	1035	1045	966	886	873	1034	1239	1348
Average number of employees, thou. persons	479,1	432,1	363,6	247,2	176,9	158,4	153,6	139,4
Average number of employees per farm	463	413	376	279	203	153	124	103
Agricultural production, USD mil.	174,3	186,1	126,6	136,0	157,8	170,1	190,5	226,5
Average agricultural production per farm, '000 USD.	168,4	178,1	131,1	153,5	180,7	164,5	153,7	168,0
Average agricultural production per employee, USD	364	431	348	550	892	1074	1240	1625

Source: Statistical Yearbook of Moldova (2004)

While the number of corporate farms is reasonably well documented, the official Statistical Year Book does not provide clear figures about the number of individual farmers. However, estimates by Muravschi *et al.* (2005) suggest that the number of individual farmers reached 268,444 in 2003 (see Figure 1). It is likely that the number of individual farms is significantly higher than this as only about 42% of farmers have registered themselves as individual farmers out of the total number of 645,300 who received a share of land after land privatisation. Individual shares of land privatisation were typically small, around 1ha (Table 2).

Figure 1: Number of individual agricultural farms, 1993 – 2003

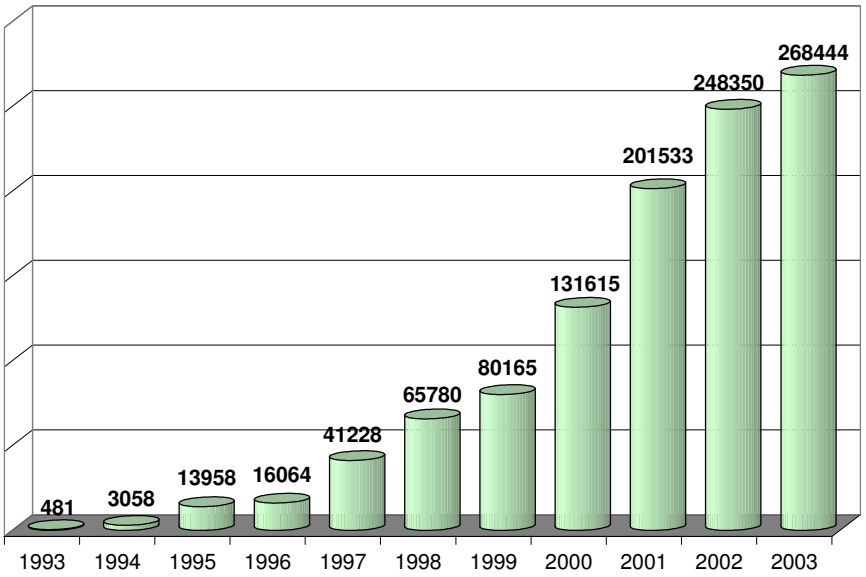


Table 2: Evolution of land in private ownership

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of persons with lands in kind (from land reform), thou.	47,6	117,0	175,8	241,1	429,0	502,7	565,8	617,0	645,3
Area of plots given in private ownership, thou. ha	58,3	123,0	224,9	317,5	590,8	701,8	805,4	836,6	867,9
Average share of equivalent land per owner, ha	1,22	1,05	1,28	1,32	1,38	1,4	1,42	1,36	1,35

While individual farms are on average small, their contribution to total agricultural output is considerable and after land reform their share of gross agricultural output rose significantly. For example in 2003, individual farmers accounted for 76.3, 96.6

and 73.5 per cent of total cereal, potato and grape production (Table 3). While individual farms have always been important for fruit and vegetable production, their growing share of cereal production is novel. While the overall the share of output accounted for by individual farms has grown, it is not the case for all products (for example sunflower seeds).

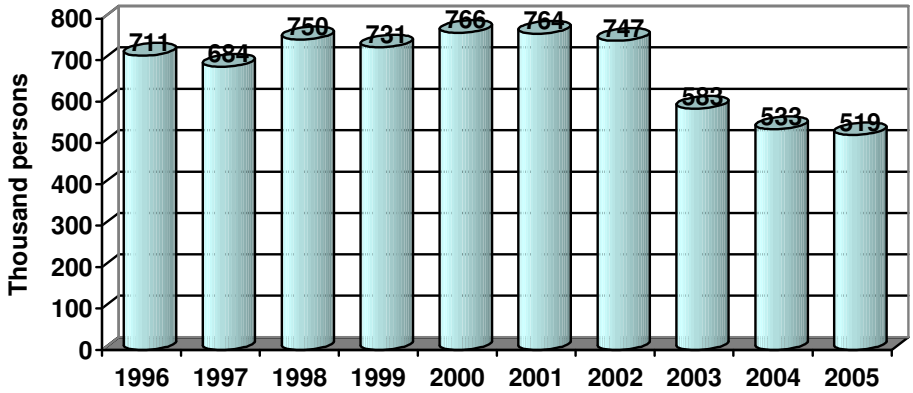
Table 3: Share of individual farms in total agricultural production, %

	2000	2001	2002	2003
Cereals (in weight after processing)	65.1	60.0	61.4	76.3
Sunflower seeds	51.0	52.9	47.1	40.3
Potatoes	97.4	97.3	97.0	96.6
Vegetables	79.0	82.9	84.8	80.8
Fruits and berries	50.6	56.2	56.9	48.2
Grapes	69.0	73.5	74.0	73.5

3.2 Employment in agriculture

The total number of people employed in agriculture, hunting and forestry and fishing has decreased from 711,000 in 1996 to 519,000 in 2005. However, this fall has not been even. During the late 1990s, the numbers employed in agriculture rose due to the collapse of other economic activities, reaching a peak of 766,000 in the year 2000. As the fortunes of the rest of the economy have improved since this time, employment in agriculture has fallen.

Figure 2: Total numbers employed in agriculture, hunting, forestry and fishing



Agriculture is still, however, the mainstay of employment in Moldova. For example in 2005, agriculture, hunting, forestry and fishing accounted for 40,5% of total employment. When the food processing industry is accounted for (10% share) it is clear that the majority of jobs in Moldova are still within the agri-food sector (Table 4). However, the number of people employed in food processing has fallen from 169,000 in 1996 to 137,000 in 2003.

Table3: Distribution of employment in agriculture and food processing industry, '000 persons, 1996-2003

	1996	1997	1998	1999	2000	2001	2002	2003
Total persons employed in economic activities / '000 persons	**1660**	**1646**	**1642**	**1495**	**1515**	**1499**	**1505**	**1356**
of which:								
Agriculture, hunting and forestry; fishing	711	684	750	731	766	764	747	583
Share (%)	42,8	41,6	45,7	48,9	50,6	51,0	49,6	43,0
Food processing industry	169	167	155	135	136	137	142	137
Share (%)	10,2	10,1	9,4	9,0	9,0	9,1	9,4	10,1
Total Agriculture and food processing industry	880	851	905	866	902	901	889	720
Share (%)	53,0	51,7	55,1	57,9	59,5	60,1	59,1	53,1

Source: Statistical Yearbook of Moldova (2004)

Rural Moldova is characterised by an ageing population, with a very high proportion of pensioners and a high rate of emigration, particularly of those of working age. Due to these two factors, the rural population has decreased rather rapidly and farmers often complain of a shortage of labour, particularly during the peak season.

3.3 Degree of vertical integration

Vertical co-ordination encompasses a continuum of possibilities from open market transactions, where the price is the only mechanism of co-ordination, to full vertical integration, where managerial orders direct the flow of goods between stages (Hobbs and Young, 2001; Martinez, 1999; Henderson, 1994). Full vertical integration refers to a system where the ownership and management of two or more successive stages of the supply chain are owned by a single firm (Hobbs and Young, 2001, Martinez 1999, Kohls and Uhl 1998).

In Western Europe and North America, closer vertical integration has been apparent in a number of food supply chains in recent years (particularly pork, poultry, fruit and vegetable processing). According to Stigliz and Mathewson (1986), this is because vertical integration enables the two firms to co-ordinate their actions (including the exchange of information) and thus to increase their profits. It also reduces the risk faced by the two firms, ensuring that the upstream firm experiences a demand for its output.

Seen as a whole, greater vertical integration could be beneficial to Moldova's export oriented food industry as a way of reducing its working capital requirements, transaction costs and becoming more price competitive. During transition, as a result of land reform and privatisation, many previously integrated supply chains became disconnected (Gorton et al. 2005).

This dislocation was aggravated by a loss of traditional markets in the rest of the CIS, particularly Russia. As a result of the lack of market outlets, many processors sought to develop their own retail outlets. As examples of successful forward integration one

can mention the development of retail networks by the meat processors "CARMEZ" and "BASARABIA NORD", confectioner "BUCURIA" and winery "MILESTII MICI" etc.

Likewise, several processors have backwardly integrated into farming to obtain sufficient quantities and qualities of raw materials. The degree to which processors have backwardly integrated has varied between sectors but it is particular prominent in the wine industry, where a large number of wine producers such as "Cricova", "Dionisos-Mereni", "Leo-vin" and many others have bought land on which vineyards were planted. However, according to expert opinion, the quantity of grapes produced on own plantations can cover at most 30% of the wine producers' needs. Procurement from other farmers and traders is therefore still an issue but such backward integration does give wineries a base level of grapes, grown to their own specification.

3.4 Major barriers to entry

The major barriers to entry into the agri-food sector can be divided into three main groups: a) barriers to entry to agricultural production; b) barriers to entry for the marketing of agricultural products for fresh consumption and c) barriers to entry to the market for processing agricultural products. These are discussed in turn.

a) The main barriers to entry into agricultural production are:

- Difficulties with buying or renting reasonably sized plots of land due to the high degree of land fragmentation (parcelling). Land consolidation is essential for meaningful agribusiness.
- Lack of a sufficient labour force in villages due to the massive exodus of people, especially of the youngsters to the West or to large Russian cities in order to obtain a better paid job.
- A problem with using more advanced equipment and technology due to the small size of the land plots and the distant location of these plots each from other. In some villages the share of 1.4 ha that was allocated to each worker of the former kolkhoz was spread in about 16 different plots of varying quality located at a distance of some tens of kilometres from each other.

b) Barriers to entry for marketing agricultural products for fresh consumption:

- Lack of necessary knowledge and experience on the part of the large number of new agricultural producers, created by land reform, has led to a choice of production systems that are relatively simple but may not be the most profitable. This factor has driven the shift to the production of cereals on individual farms. This further depresses the output price for cereals and the real incomes of small-scale producers, which just cover the minimum level of subsistence.
- The small scale of most agricultural production does not allow the majority of farmers to gain access large retailers that have now entered the Moldovan market, such as Metro, as the farmers cannot meet their technical specifications.
- There has been a lack of successful examples of agricultural co-operation among individual agricultural producers. By and large small-scale producers keep their distance from each other and do not join together in order to overcome such common problems as obtaining contracts and gaining better prices in inputs and output from increased bargaining power etc.

c) Barriers to entry the market for processing agricultural products.

These problems are similar to a large extent with those mentioned under points 1 and 2, however there are some peculiarities:

- Due to the small-scale of agricultural production which characterises most of Moldovan agriculture, farmers cannot supply sufficiently large quantities of raw materials to processing factories. Subsequently individual farms have low bargaining power and the prices they receive for their products are often insufficient or only just cover production costs. Therefore low prices for agricultural raw materials acts as a barrier to new entrants.
- While data is lacking, anecdotal evident suggests that most small-scale farmers sell their output to processing factories without a contract, relying on informal verbal agreements. Where formal written contracts are signed it is usually drawn up by the processing factory and the agreement typically stipulates preferentially the rights of the processing factory and very little, or nothing is mentioned about their obligations. This is most obvious regarding penalties for late payment. Therefore it is very rare to find written contracts with farmers which specify penalties for late payment and there have been almost no cases when such stipulations were enforced.
- The lack of written contracts also leads to other problems such as deviations from appropriate technical requirements. In this case factories typically refuse to receive the low quality raw materials.

3.5 Impact of the political and legal environment on sector performance

Significant agricultural reform in the post-Soviet era started in Moldova in 1996 with the initiation of the National Program “Land” a key element of which was the restructuring of the collective and state farms’ debts. During the period 1996-2000, more than 1 million people were allocated more than 3 million land titles. As a result about 1050 collective farms were dismantled and their debts, accumulated during soviet times, cancelled.

The recovery in the agricultural sector that started in the year 2000, was stimulated to a large extent by land privatization, the cancellation of the debts accumulated by collective farms during the soviet period, and stability as a result of reassigned property rights over land and other assets. These stages of the agricultural reform process were supported in a great measure by the Government of the Republic of Moldova and other governmental agencies.

The second phase of agricultural reform in Moldova is oriented to post-privatization technical assistance that takes the form of rural credits, transfer of improved technologies, consolidation of agricultural fields, reorganization of public institutions and the promotion of private sector investment. However these trends are rather slow to emerge because of the high risks and insufficient investment.

4 Conduct

This section focuses on the strategies employed by key actors in the agri-food sector.

4.1 Broad goals of farmers

As discussed above, there are two major groups of farmers in Moldova, namely large-scale farms (corporate farms) and small scale individual farms. The development of the corporate farms can be traced back to the disintegration of the collective farms into smaller units, while the development of individual farms takes place in terms of the integration of several land shares, received after land privatisation, into larger plots suitable for commercial agricultural production.

In the first case the corporate farms largely copy the pattern of the former collective farms, while individual farmers follow a model of family farming. Due to these differences there are also some discrepancies in their broad goals but both groups seek to:

a) consolidate their agricultural fields;
b) find an investor / external source of credit because bank credits are rather expensive and given for short periods;
c) find a stable client for their product, namely to have a contract based production for a longer period.

4.2 Investments in agriculture

Table 6 presents an overview of fixed capital investment in the Moldovan agricultural sector. The table indicates the shift from public to private financing, with the abandonment of collective farming. Foreign investment in Moldovan agriculture has been very modest.

Table 5: Fixed capital investment in agriculture, by forms of ownership (thou. USD)

	1996	1997	1998	1999	2000	2001	2002	2003
Fixed capital investments by premises with production purpose	**20987,9**	**25328,8**	**14964,9**	**5321,1**	**4737,2**	**8743,4**	**11780,7**	**13390,6**
of which:								
Public	**5170,9**	**2422,6**	**1284,3**	**1159,2**	**659,5**	**1562,2**	**1289,3**	**1972,4**
Private	**15447,6**	**14881,5**	**12787,2**	**4009,8**	**3715,8**	**6334,1**	**9681,0**	**10586,3**
Mixed (public and private), without foreign participation	**369,4**	**432,6**	**632,8**	**114,0**	**305,6**	**668,4**	**420,0**	**459,0**
Joint ventures	**-**	**7613,8**	**242,0**	**38,0**	**24,1**	**178,8**	**390,5**	**243,9**
Foreign investors	**-**	**-**	**-**	**-**	**32,2**	**-**	**0,6**	**129,1**

Source: Statistical Yearbook of Moldova (2004)

According to a recent study by Muravschi et al. (2005) about 65% of the interviewed large scale agricultural enterprises had made investments in agricultural production during the period 2003-5. About 92% of those enterprises that had made investments bought agricultural equipment and machinery. The main source of investments were own financing (79%), with just 17% using bank credits and 3% entered into leasing operations.

4.3 Information on quality and pricing behaviour

The main group of products exported in 2003 were processed foods, alcoholic and non-alcoholic drinks and tobacco. This group accounted for about 40% of total Moldovan exports in 2003 (see table 6). Out of this group the major components are wines and alcoholic beverages – 77.0%, preparations of vegetables and fruits – 12.2%, sugar and sugar confectionery – 3.8%, and tobacco and manufactured tobacco substitutes – 3.0%.

The second largest group of exported products are *vegetable products* with 11.5% of the total exports in 2003. The main products in this category are edible fruits – 60%, cereals – 20%, and oilseeds – 17%.

There are also two other groups of agricultural products that have a small but steadily increasing share of total Moldovan exports, namely raw hides and skins, leather and fur skins – 5.7% and animal or vegetable fats and oils – 3.7% in 2003. The share of the live animals and animal products has decreased over time, from 5.4% of the total exports in 1998 to 3.6% in 2003.

Table 6: Exports by selected groups of products (thousand USD)

	1998	1999	2000	2001	2002	2003
Exports – total	631817,3	463432,4	471465,6	568100,1	643896,5	790023,6
of which						
Foodstuff products; alcoholic and non-alcoholic drinks; tobacco	350163,8	197454,2	198433,4	251656,4	267363,6	314337,8
Share (%)	55,4	42,6	42,1	44,3	41,5	39,8
Vegetable products	71634	68080,8	65857	79098,4	106067,5	91243,3
Share (%)	11,3	14,7	14,0	13,9	16,5	11,5
Raw hides and skins, leather, fur skins and articles thereof	10698,7	12827,6	13056,7	11457,4	23353,6	44768,1
Share (%)	1,7	2,8	2,8	2,0	3,6	5,7
Animal or vegetable fats and oils	3780,4	2464,1	3868,1	8587,6	16819,7	28897,4
Share (%)	0,6	0,5	0,8	1,5	2,6	3,7
Live animals and animal products	34120,6	29305,9	22793,6	18274,6	15286,7	28598,2
Share (%)	5,4	6,3	4,8	3,2	2,4	3,6
Total agro-food exports	470397,5	310132,6	304008,8	369074,4	428891,1	507844,8
Share (%)	74,5	66,9	64,5	65,0	66,6	64,3

Source: Statistical Yearbook of Moldova (2004)

The most important market outlets for Moldovan agri-food products are the CIS countries - circa 32% of total agri-food exports. Amongst the CIS countries, the main importers of the Moldovan agro-food products are Belarus – 39%, Ukraine – 36% and Russia – 23%.

EU markets have become more important, and this group of countries accounted for 23% of Moldovan agri-food exports in 2002. Amongst EU-15 countries, the most significant markets for Moldova are France – 41% and Germany – 12%. Central and East European countries accounted for about 21% of Moldovan agri-food exports in 2002. The main relationships within this group of countries are with Romania and Hungary, which accounted for 41 and 32 per cent of Moldovan exports to CEE countries respectively (Muravschi *et al.* 2003).

4.4 Effects of the relationships with processors and retailers over farmers' strategies and position

One of the major problems stated by agricultural producers is the lack of stable market outlets. Without having a clear idea about the products which should be grown many farmers either produce traditional commodities such as grains, cereals, sunflower seeds, or those products for which prices are temporarily high on the market.

Very often both of these strategies bring poor returns because in one case farmers receive a very low income from the sales of commodities, while in other case the market quickly becomes oversupplied with similar products and income again is rather poor. This drives farmers' desire to find stable clients that will buy their products at a predictable and worthwhile price. Farmers are willing to produce any type of agricultural product, if a signed contract will assure them that all these products will be bought for a good price. However, farmers' knowledge of the legal aspects of signed contracts are typically quite superficial, often being limited to such stipulations as "product sold", "price" and "amount". Frequently, farmers have a vague idea about their obligations, such as terms of delivery, quality, applicable law etc. Generally speaking one can say that contracts still are not largely used by farmers, especially small-scale producers. An exception to this is where individual farmers supply their products on the contract base to larger processing units. Normally these processing units have a lawyer who is responsible for the preparation of contracts. In such cases contracts can be well developed, but as a rule these contracts defend only one side while farmers often sign the contract without reading it, and subsequently without a clear understanding about their rights and obligations.

In the case of a conflict, individual farmers have few chances of winning the case in court. As a rule cases may go to court when there is a lengthy delay in payments or where the processing unit tries to cheat farmers. However there has been one recent case of a milk collecting cooperative wining in court and forcing a processing plant to pay all delayed payments, which had been in arrears for six months, plus forsaken profit.

4.5 The main changes in the marketing mix for agricultural commodities

The marketing of agricultural products was severely disrupted by the reforms of the 1990s although there is a clear, but rather slow shift to greater market orientation in mentality and practices. The more successful farmers are more responsive to

changes in market needs and have looked to improve their overall product by investing in labelling and branding. As an example, some farmers who started out in grain production later invested in processing equipment for flour production, and then packing equipment. Thus they sell a large part of the cereals produced not as a commodity but as a final product (maize flour) in small bags under their own brand name. From this they capture a far greater share of value added.

The price policy adopted by agricultural producers is, however, rather confused and this has not always been helped by government intervention. For example, in 2004 the government decided to channel the export of cereals through several state controlled companies. As a result of this decision, the export of cereals ceased and subsequently a large part of internal trade operations also stopped functioning. Due to the cessation of exports, cereal prices fell with the price received by farmers often insufficient even to cover variable costs.

Another recent case is connected to the decision of Russian custom bodies to stop the import of horticultural products from Moldova under the pretext that Moldovan horticultural products do not meet Russian phyto-sanitarian requirements. As a result of the oversupply of fresh fruits on the internal market the prices for sweet and sour cherries decreased sharply. A large part of the crop went unpicked because the internal market was unable to accommodate the loss of export markets without such a sharp fall in prices.

Promotion as used by agricultural producers is typically rudimentary. However taking into account that the two most widely methods of promotion are personal selling and advertising (Stanton & Sommers, 1973) one can mention that personal selling is a very important tool especially in the case of the small scale individual farmers, who market much of their output at peasant markets. The most obvious cases are dairy products and fresh fruits and vegetables.

Some limited advertising conducted by farmers is also emerging. This includes advertisements in national and local newspapers for produce and different types of outdoor advertisements naming the product to be sold, the price, producer's name and telephone numbers. However, by and large, farmers prefer to sell their output through middlemen rather than direct marketing.

4.6 Characteristics and strategies of the most successful farms

Among the basic features of the most successful farms are:

a) diversification of agricultural production.

b) Utilization of more advanced technologies for agricultural production (drip irrigation, virus free saplings, high precision sowing machines etc).

c) Forward integration into processing products for final consumption (pickled vegetables, maize and wheat flour, vegetable oil, meat products etc.) and eventually further sales of these products through own market outlets.

4.7 The main operational difficulties faced by farmers

According to a study recently conducted in the Republic of Moldova on the efficiency of the agricultural sector during the post-privatization period (Muravschi et al, 2004), the main difficulties faced by agricultural producers are the following:

a) Limited access to key inputs such as fertilizers, plant protection, certified seeds and planting materials due to a lack of financial resources.

b) Lack of tractors, agricultural equipment and machinery as well as a high degree of deterioration in the machinery currently available.

c) Small share of lands which are irrigated which sharply reduces yields of the major crops and increases the risk of their loss in drought years.

d) Lack of credit. High interest rates and the short term nature of credits hinder investment in agricultural machinery and equipment, perennial plantations, and thoroughbred cattle.

e) The exodus of qualified specialists from villages to large cities and foreign countries due to low salaries or inefficient use of the available manpower in rural areas.

f) Underdeveloped market infrastructure: enterprises lack basic marketing services in rural areas with poor co-operation amongst small-scale farmers.

5 Performance

Analyzing market performance involves a normative evaluation of the results from a market's conduct (Delorme *et al.* 2002). Caves (1987), for instance, analyses market performance by four criteria: (1) efforts to maximize consumer welfare by producing goods at lower cost; (2) improvements in the quality and diversity of goods and technology; (3) stability in prices and employment; and (4) producing an equitable distribution of goods among consumers of different needs. For Moldova, we review data on prices, costs, trade and profitability.

5.1 Changes in prices

Output prices for cereals are decreasing due to the oversupply of these commodities as a result of the shift to these commodities instead of labour and technology intensive cultures such as fruits, vegetables and grapes (Table 7).

Table 7: Average sale prices for the major types of agricultural products, USD/tonne

Crops and types of products	2001	2002
Winter wheat	74,7	59,5
Barley	61,2	51,2
Peas	202,4	211,5
Maize	104,8	96,2
Sunflower	125,8	144,3
Tobacco	551,6	518,3
Sugar beet	21,6	17,0
Vegetables	76,6	84,7
Fruit	65,5	80,9
Grape	121,8	153,4
Meats in live weight	835,5	832,8
Whole milk	133,1	136,6

Source: Muravschi et al (2004)

5.2 Levels of exports and imports, import penetration

The external trade of the Republic of Moldova is characterised by a high trade deficit that has grown in recent years. Only for the agri-food sector does Moldova have a positive balance in external trade. However trade flows have been rather erratic and in

some sub-sectors, such as vegetable products, Moldova's traditionally strong trade performance has been eroded (Table 8).

Table 8: Exports and imports by selected groups of products (million USD)

	1998	1999	2000	2001	2002	2003
Exports – total	631,8	463,4	471,5	568,1	643,9	790,0
Imports – total	1023,6	586,4	776,4	892,7	1038,5	1402,7
Difference	-391,8	-122,9	-305,0	-324,6	-394,6	-612,7
Of which						
Foodstuff products; alcoholic and non-alcoholic drinks; tobacco						
Exports	350,2	197,5	198,4	251,7	267,4	314,3
Imports	56,6	18,4	71,2	78,9	72,6	91,9
Difference	293,5	179,1	127,2	172,8	194,7	222,5
Vegetable products						
Exports	71,6	68,1	65,9	79,1	106,1	91,2
Imports	16,5	11,1	25,3	37,6	43,5	82,3
Difference	55,2	56,9	40,5	41,5	62,6	9,0
Raw hides and skins, leather, fur skins and articles thereof						
Exports	10,7	12,8	13,1	11,5	23,4	44,8
Imports	2,2	2,6	2,5	3,8	16,2	36,3
Difference	8,5	10,2	10,6	7,6	7,1	8,5
Animal or vegetable fats and oils						
Exports	3,8	2,5	3,9	8,6	16,8	28,9
Imports	3,1	2,0	2,4	3,0	7,1	5,5
Difference	0,7	0,5	1,5	5,6	9,8	23,4
Live animals and animal products						
Exports	34,1	29,3	22,8	18,3	15,3	28,6
Imports	17,3	6,5	10,7	23,9	23,9	24,8
Difference	16,8	22,8	12,0	-5,6	-8,6	3,8

Source: Statistical Yearbook of Moldova (2004)

5.3 Costs and profitability

The production costs of corporate farms have increased during recent years. Excluding inflation, the main reason for this is the high level of running costs of these farms, which follow largely the pattern of development of the former collective farms (Table 9).

Table 9: Production costs for corporate farms, USD per tonne (current prices)

	1996	1997	1998	1999	2000	2001	2002	2003
Plant production								
Cereals	74,3	60,1	58,4	42,3	58,2	45,9	44,6	147,9
Sugar beet	21,1	20,8	18,6	14,9	15,0	15,7	13,9	18,6
Sunflower seeds	104,9	155,3	133,6	77,4	82,0	84,7	86,9	101,8
Tobacco	1123,3	1148,8	1015,2	653,1	609,6	632,9	566,3	631,6
Potatoes	532,3	351,1	318,5	154,3	122,9	104,9	132,8	137,2
Field vegetables	195,3	185,8	120,2	71,0	83,6	78,1	85,6	88,1
Fruits and berries	116,7	78,1	145,0	170,7	77,2	68,5	71,9	44,3
Grapes	100,2	210,0	179,2	88,0	73,7	106,2	97,6	107,3
Animal production (I*ncrease in weight in the result of fattening of livestock and poultry)*								
cattle	2379,9	3009,4	2466,8	1404,0	1277,1	1204,7	1142,9	1283,5
pigs	1550,6	2027,0	1344,2	864,2	1565,1	1407,6	999,0	1384,3
sheep	1837,2	1780,8	1672,9	800,8	862,5	855,8	979,4	1062,2
poultry	1274,5	1356,9	1179,5	875,5	1078,0	1011,4	845,6	933,7
Milk	240,3	315,1	261,9	147,0	140,3	135,2	132,7	155,2
Eggs (1000 pieces)	58,2	65,1	39,5	29,2	33,9	33,2	29,0	33,9
Wool (in natural weight)	3473,2	2979,5	2604,0	1111,2	1411,5	1340,2	1401,0	1372,8

Source: Statistical Yearbook of Moldova (2004)

Results of such management can be seen in Table 10 which indicates negative returns for goods which are normally profitable, such as field vegetables and fruit and berries.

Table 10: Level of profit and loss on output sold by corporate agricultural farms (share of income to cost of sold production), %

	1996	1997	1998	1999	2000	2001	2002	2003
Plant production								
Cereals (including corn)	31,7	37,4	-2,1	25,3	36,3	30,9	13,8	15,6
Sugar beet (industrial)	-5	-2,7	-14,9	-0,6	-4,1	9,7	16	6,4
Sun-flower seeds	17,8	-7,1	-10,9	51,1	36,4	41,9	54,1	39,8
Tobacco	-25,3	-22,5	-26,6	6,8	0,6	-14,7	-6,6	9,3
Potatoes	-36,9	-36,8	-28,8	-9,7	3,1	-12,1	-6,4	13
Field vegetables	-40,5	-38,5	-33,4	-6,1	-17,9	3,5	-8,6	-8,9
Grapes	4,4	-35,9	-27,7	24	47,2	20,6	58,5	77,1
Fruits and berries	-11,9	-8,9	-48,3	-36,3	-4,7	-10,4	-3	14,1
Animal production								
Livestock and poultry (in live weight)	-42,5	-52	-44,6	-47,4	-37,3	-13	-14,4	-35,1
cattle	-53,1	-63	-64	-61,9	-48,9	-31,9	-38,6	-47,9
pigs	-38,8	-49,6	-30,2	-42,8	-35,8	-9	-7,8	-39
sheep and goats	-67,8	-62,6	-64,8	-44,5	-44,2	-17,4	-18,9	-26,6
poultry	-24,2	-12,8	-16,3	-18,1	-12,5	0,6	0,5	-9
Milk	-48,4	-44,1	-34,6	-15,4	-1,1	6,1	4,8	-3,3
Eggs	0,7	-0,6	22,7	37,3	20,4	23,3	11,3	17,3
Wool	-82,8	-85,2	-84,4	-76,6	-74,1	-71,3	-71,9	-74,6

Source: Statistical Yearbook of Moldova (2004)

Note: The (-) sign indicates the level of losses.

5.4 Evolution of market segmentation

During recent years new market segments have appeared for agricultural producers in Moldova. First of all there are several supermarkets, mainly in Chisinau. For example, “Metro Cash & Carry” opened this year in the capital city. This supermarket has stated that it is ready to procure agricultural products from local producers, but up to now none of them is able to meet the quality and quantity requirements specified by “Metro”. Therefore “Metro” imports tomatoes, potatoes, onion, peppers, greens etc., despite such products being produced in Moldova.

Another important market for agricultural producers is the processing industry, principally wineries and the canning industry. In this case the question raised by processors is again the quality and quantity of the products supplied. Additionally, the problem of dealing with a huge number of small scale producers appears. This implies higher transaction costs that can be avoided only by small farmers co-operating together in larger entities.

Taken together this review, applying the SCP framework should provide good contextual information for the future survey and case study phases of the project.

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