EC Project EUMERCOPOL

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Competitiveness of Wheat Agri-System

Argentina, Brazil and Uruguay

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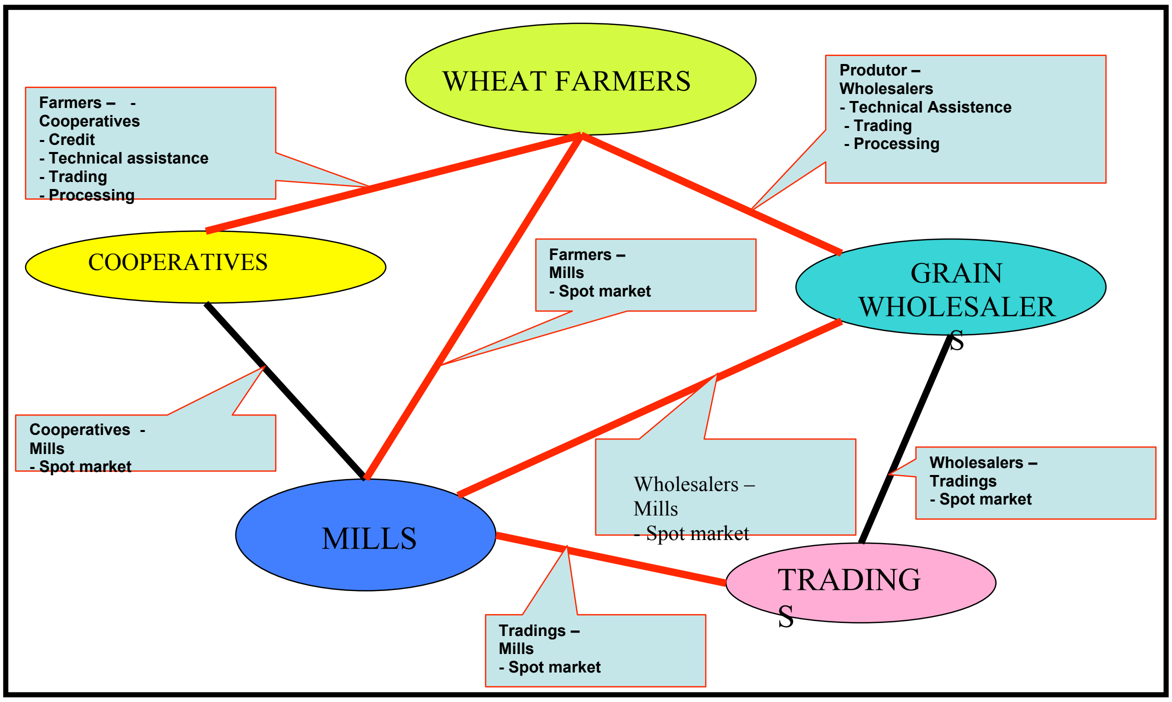
Índice

1. Introduction

This report comprises the main results of the analyses for the wheat agri-systems, as part of the research project "Analysis of the competitiveness of Mercosur's key agri-food sectors, comparison of policies and the ex-ante impacts of EU-Mercosur trade liberalisation ". Its main goal is to evaluate the capacity of wheat agri-systems of three Mercosur countries – Brazil, Argentina and Uruguay – to respond to possible free trade agreements between the European Union (EU) and Mercosur.[1]

The main players in the wheat agri-systems of Argentina, Brazil and Uruguay are the farmers, farming cooperatives, the wholesalers of grains and trading companies responsible for the international trade. Figure 2 shows such actors, highlighting the types of relationships established between each one.

Figure 2 - Relations between agents of wheat agry-system



This system works similarly in Brazil, Argentina and Uruguay. However, some differences can be observed in the wheat paths from farmer until the mill. As shown in Figure 2, mills use to buy wheat from four sources, which change

[1] A more thorough analysis of each country's agri-system can be found in individual reports available on the Project EUMERCOPOL web page (www.eumercopol.org).

according to the country. In Brazil and Uruguay, the main sources are trading companies. Also, the mills buy wheat direct from farmers, although this alternative is rarely used. In Brazil, farmers' cooperatives became important suppliers, while wholesalers are much used in Argentina and Uruguay. Thus, differences can be noticed in the wheat supply system for the domestic market of these countries, while in Brazil this role is performed mainly by cooperatives, in Argentina and Uruguay this is held by private wholesalers companies.

The main tasks performed by cooperatives and wholesalers companies are collecting, drying, storage and trading of wheat. In some cases, these agents, mainly the cooperatives, also provide funding and technical assistance to farmers. In Argentina, these agents are called "acopiadores" and play a relevant role in the productive system of that country, not only in performing the tasks mentioned above as well as vertical coordination, transmitting the sector's demands downstream to the farmers. This feature gives great response capacity for the Argentine agri-system. These actors also perform the contact with the trading companies in order to supply production surpluses for foreign markets.

The methodology used in this study relies on the concept of agri-system and competitiveness. Competitiveness of an agri-system takes into account the verticality of the economic system and the combined impact of several factors. These factors are taken as drivers of competitiveness, and are closely related to the efficiency and efficacy of an agri-system. Taking the economic, organizational and technological environments, nine drivers of competitiveness were evaluated in this study: International trade policies, Industry programs and special policies, Domestic taxation, Food safety and inspection services, Technology, Market structure and governance structure, Firm management, Inputs, and Storage and transport. These drivers also guided the identification of strengths and weaknesses of the agri-system in order to take advantage of possible opportunities of increasing export to EU in face of scenarios of trade agreement, which is a SWOT analysis.[2]

Next section presents a summary description of the international context in which the production, consumption and commercial flow of the agri-system's main commodity is inserted. Section 3 presents the main aspects of wheat agri-system competitiveness in the three countries studied. In section 4, the SWOT evaluation of the critical elements of this agri-system in the two Mercosur

[2] SWOT is a planning tool that was used in this study to identify the major factors affecting competitiveness and capacity to trade. Eumercopol researchers, after taking into consideration their own analysis of competitiveness drivers and experts evaluation, presented their perception of critical points of the agri-system.

countries is presented. Section 5 provides final comments and indication of actions and investment areas in order to improve competitiveness.

2. World Consumption, Production and Trade Flow

TABLE 1 shows the consumption of wheat in main consuming countries from 1995 to 2005. The main consumers of wheat are China, EU and India. In 2005, these countries accounted for respectively 16%, 21% and 16% of the wheat consumed in the world.

TABLE 1 - World wheat consumption (1000 ton)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
UE 15-27	77.241	81.800	82.707	88.135	113.228	118.354	118.456	124.991	115.095	123.220	127.525
China	106.499	107.615	109.056	108.250	109.340	110.278	108.742	105.200	104.500	102.000	101.000
India	64.978	66.064	69.246	63.707	68.793	66.821	65.125	74.294	68.258	72.838	69.971
Russia	39.810	38.134	39.809	34.838	35.365	35.158	38.078	39.320	35.500	37.400	38.400
EUA	31.028	35.397	34.212	37.589	35.373	36.184	32.434	30.448	32.507	31.823	31.191
Pakistan	18.904	20.124	20.258	21.284	20.452	20.500	19.800	18.380	19.100	20.000	21.500
Turkey	16.046	16.363	16.751	16.886	16.777	16.700	16.501	16.800	16.800	16.800	16.100
Iran	14.500	15.500	15.500	15.400	15.700	15.500	14.800	14.350	14.300	14.700	15.000
Egypt	11.222	12.425	12.783	12.958	12.750	12.486	12.750	12.800	13.300	14.200	14.800
Ukraine	15.413	15.515	15.643	12.419	12.186	12.155	13.450	14.500	9.025	11.700	12.500
World	542.902	565.013	576.847	577.799	580.906	582.828	585.839	602.644	580.851	608.630	618.604

Source: USDA

The world consumption of wheat has been increasing over the past five years; however, this increase is small and reflects the population growth. Between 2001 and 2005, this reduction was of 7,742 tons. An explanation for this would be the increase of per capita income in developing countries, which allowed low income households diversify their diet, previously based on wheat products.

TABLE 2 shows the evolution of the main producing countries between 2000 and 2005. In 2005, the amount produced in the world was 622.72 million tons. China is the largest wheat producer worldwide, with 97 million tons in 2005, followed by India, United States and Russia. But, China consumes all the wheat that produces, so it does not have surpluses for export.

TABLE 2 - World production of wheat (1000 ton)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
UE 15-27	86.161	98.506	94.181	103.085	122.441	131.697	123.353	132.579	110.578	146.878	132.356
China	102.215	110.570	123.289	109.726	113.880	99.640	93.873	90.290	86.490	91.950	97.450
India	65.470	62.097	69.350	66.350	70.780	76.369	69.680	71.810	65.100	72.150	68.640
EUA	59.404	61.980	67.534	69.327	62.475	60.641	53.001	43.705	63.814	58.738	57.280
Russia	30.100	34.900	44.200	27.000	31.000	34.450	46.900	50.550	34.100	45.400	47.700
Canada	24.989	29.801	24.280	24.082	26.941	26.519	20.568	16.198	23.552	25.860	26.775
Australia	16.504	22.925	19.224	21.465	24.757	22.108	24.299	10.132	26.132	22.600	25.000
Pakistan	17.002	16.907	16.651	18.694	17.858	21.079	19.024	18.227	19.183	19.500	21.612
Ukraine	16.273	13.550	18.404	14.937	13.585	10.197	21.349	20.556	3.600	17.500	18.700
Turkey	15.500	16.000	16.000	18.000	16.500	18.000	15.500	16.800	16.800	18.500	18.500
Argentina	8.600	15.900	15.740	13.300	16.400	16.230	15.500	12.300	14.500	16.000	14.500
World	537.927	582.609	609.959	589.960	585.817	581.500	581.138	567.617	554.575	629.085	622.272

Source: USDA

Table 3 - Quantity exported by the main exporters worldwide (1000 ton)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EUA	33.778	27.257	28.315	28.460	29.570	28.904	26.190	23.139	31.524	29.009	27.467
Canada	16.342	19.501	20.134	14.705	19.165	17.316	16.272	9.403	15.836	14.880	16.096
Australia	13.311	19.225	15.343	16.473	17.844	15.930	16.409	9.146	18.031	14.742	16.012
UE 15-27	13.242	17.835	14.196	14.589	20.380	15.675	12.751	18.132	9.834	14.745	15.694
Russia	206	697	1.111	1.652	518	696	4.372	12.621	3.114	7.951	10.664
Argentina	4.483	10.198	11.151	8.560	11.589	11.272	10.075	6.759	9.407	11.834	9.563
Kazakhstan	4.279	2.320	3.560	2.295	6.514	3.972	3.977	6.238	4.110	2.700	3.000
Ukraine	1.343	1.285	1.364	4.696	1.952	78	5.486	6.569	66	4.351	6.461
China	496	969	1.162	542	542	623	1.512	1.718	2.824	1.171	1.397
Turkey	1.054	967	1.324	2.626	2.163	1.601	753	794	839	1.998	3.173
Syria	364	460	796	411	82	0	300	800	1.200	600	600
Pakistan	1	1	12	0	0	253	495	1.185	193	50	50
Mexico	472	227	374	311	404	705	548	597	451	504	533
World	99.195	106.903	104.413	101.284	113.449	101.498	105.712	105.567	108.321	110.356	115.611

Source: USDA

World exports are led by United States, Canada and Australia (Table 3). The U.S. exports are well above of other exporters, totaling almost twice the exported by Canada, the second largest exporter. It is expected that U.S. exports be reduced in coming years due the increasing expansion of corn for the production of ethanol. It is worth emphasizing that the wheat quality’s produced in U.S. and Canada is different from that produced in Brazil and Argentina, and that the wheat coming from these North-American countries is preferred by most of mills due to the specific characteristics and greatest care in separation and processing of grains. Russia deserves prominence in world exports, rising from importer to one of the main exporters of the product in a short period of time.

Table 4 presents the imports of main importers worldwide from 1995 to 2005. The main world importers of wheat are Egypt, Brazil, Japan and the European Union.

Table 4 - Volume imported by the main importers (1000 ton)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Egypt	5.932	6.893	7.134	7.454	5.872	6.050	6.944	6.327	7.295	8.150	7.771
Brazil	5.809	5.111	6.183	7.074	7.698	7.201	7.007	6.727	5.179	5.211	6.718
UE 15-27	2.545	2.503	3.858	3.761	3.956	3.536	8.720	10.686	7.374	7.061	6.758
Japan	6.101	6.418	6.082	5.945	5.929	5.885	5.836	5.579	5.751	5.744	5.469
Indonesia	3.632	4.201	3.664	3.117	3.744	4.069	3.677	3.984	4.535	4.661	4.981
Algeria	3.782	3.630	5.221	4.250	4.750	5.600	4.572	6.079	3.933	5.398	5.469
Nigeria	674	986	1.145	1.466	1.282	1.913	2.446	2.304	2.383	3.014	3.656
Mexico	1.581	1.940	2.166	2.485	2.632	3.066	3.171	3.161	3.644	3.717	3.549
Iraq	515	1.140	2.707	2.028	2.654	3.200	2.801	1.579	1.925	3.010	4.878
World	97.312	98.487	103.803	100.017	109.214	100.083	106.385	104.523	100.823	109.198	109.726

Source: USDA

From 1995 to 2005, Asia, Africa and South America concentrate 70 to 80% of world imports, with shares of 42.0%, 24.0% and 11.0% respectively. Brazil is the main buyer of South America. In some years, Brazil was the world's biggest importer of wheat. Egypt stands out as the main importer of the African continent, besides being usually the world's largest importer of the product. Finally, in Asia, Japan, Indonesia and South Korea are major buyers of wheat. Japan, for instance, purchases of 5 to 6 million tons of wheat per year.

The world stocks of wheat have been reducing since 2007, a fact that has caused increase in the prices of this commodity. The rate of stock to use (world inventories over world consumption) decreased to 16% in 2008, the lowest historical level. The expectation of high of prices has led several investment funds to buy the product, inflamed further grants of stock prices in Chicago and Kansas. With that, prices approximated the historical mark established in 1996 of US$ 6 per bushel.

The growing in wheat import by countries such as China is identified as an important aspect in raising the prices. In 2008, this problem tends to worsen due a strong drought in that country. Also, US exports have been decreasing due substitution for maize for ethanol production.

3. Mercosur Agrisystems Competitiveness

In this section, the key issues regarding competitiveness of wheat agri-systems in the leading producing Mercosur countries will be addressed. The main aspects in terms of production are presented. Also, the section provides qualitative and quantitative aspects of each country, according to the drivers of competitiveness.

3.1 - Mercosur Production

The Mercosur countries are not among major world producers of wheat. Argentina, the largest producer of the block, is not among the five largest world producers. Most of its production has been exported to the region, mainly to the Brazilian market. Brazil is not a large producer, and relies on importation to fulfill domestic demand. In 2005, Brazil was a major importer of 6,718 million tons, totaling 6.12% of world imports.

TABLE 5 – Argentina, Brazil and Uruguay Production (1000 ton)

Year	Argentina	Brazil	Uruguay
1994/95	11.300	2.063	0,4869
1995/96	8.600	1.524	0,3929
1996/97	15.900	3.001	0,6497
1997/98	15.740	2.407	0,5048
1998/99	13.300	2.188	0,5592
1999/20	16.400	2.403	0,383961
2000/01	16.230	1.658	0,324352
2001/02	15.500	3.194	0,143624
2002/03	12.300	2.914	0,205804
2003/04	14.500	5.851	0,326004
2004/05	16.000	6.074	0,5326
2005/06	12.100	4.873	0,4541

Source: USDA

Argentina is the largest wheat producer of Mercosur, supplying the whole region (TABLE 5). Whereas Argentina's domestic consumption is around 5 million tons, there is a surplus to export exceeding up 10 million tons per year. Brazil buys over 90% of this volume. The Brazilian production fluctuates considerably, among other factors due weather and market issues, and has not exceeded 6 million tons, well below the consumption which in 2007 was estimated in 10 million tons. In

Uruguay, production also fluctuates considerably; in recent years, it has been below the 500 thousand tons. Uruguay is also an importer of Argentine wheat.

In Worldwide terms, the production of these countries represents a very small share of overall harvest of wheat, that is around 620 million tons per year.

TABLE 6 shows the planted area of wheat in the three Mercosur countries between the years 1994 and 2006.

TABLE 6 – planted area of wheat in Mercosur (1000 ha)

Planted Area (million of has)

Year	Argentina	Brazil	Uruguay
1994/95	5.100	1.472.083	0,1898
1995/96	4.500	1.036.343	0,1682
1996/97	7.100	1.825.648	0,2503
1997/98	5.702	1.544.489	0,2454
1998/99	5.399	1.423.789	0,1933
1999/20	6.153	1.254.275	0,1965
2000/01	6.408	1.535.723	0,128
2001/02	6.825	1.730.908	0,12495
2002/03	5.900	2.151.831	0,137121
2003/04	5.700	2.562.067	0,11773
2004/05	6.100	2.810.874	0,1793
2005/06	4.800	2.363.390	0,1535

Source: USDA

As can be seen in Table 6, the planted area in Argentina has remained relatively stable, between 5 and 7 million hectares. In general, there is a competition for area between the wheat cultivation and other winter crops as soybeans, corn and barley.

In Brazil, this area is much smaller and is concentrated in the southern region of the country, where weather conditions suits better this cereal cultivation. Recently, the planted area of wheat has increased in Brazil. This can be explained by the increase in the international price of wheat. Much of the fluctuations in Brazilian wheat production are explained by this factor, as the formation of domestic price depends on international prices and the exchange rate.

In Uruguay, the planted area of wheat is usually below 250 thousand hectares, fluctuating over the past ten years due mainly the weather in the main production region of the county.

In a general way, there is availability of land for cultivation of wheat in the three countries, but better prices of other crops such as corn and soybeans in recent years have not encouraged farmers to invest in wheat. The 2008 increase in prices of wheat may change this scenario. In Brazil, as mentioned, this is already happening and there is a considerable increase in planted area since 2007. In Parana, the main producer state, the price of wheat increased 59% in April 2008 compared with the same month the previous year.

TABLE 7 shows that yield in the Mercosur countries increase considerably over the past ten years. Yield in Argentina increased from 2.2 tons / ha to more than 2.5 tons per ha. In Brazil, yield increased from 1.4 ton / ha for more than 2.0 tons per ha. In Uruguay, this growth was even greater, rising from 2.5 tons / ha to nearly 3.0 ton per hectare, the highest in the region and similar to yields obtained in major world producers. Still, these yields could be well above if known technological processes were widespread diffused in the Mercosur.

TABLE 7 – Yields of Wheat Production in Mercosur (ton / ha)

Year	Argentina	Brazil	Uruguay
1994/95	2,220	1,474	2,565
1995/96	1,910	1,744	2,336
1996/97	2,240	1,603	2,596
1997/98	2,760	1,593	2,057
1998/99	2,460	1,919	2,893
1999/20	2,670	1,112	1,954
2000/01	2,530	1,864	2,534
2001/02	2,270	1,385	1,149
2002/03	2,080	1,944	1,501
2003/04	2,540	2,112	2,769
2004/05	2,620	2,095	2,97
2005/06	2,520	2,048	2,958

Source: USDA

3.2 - Brazil

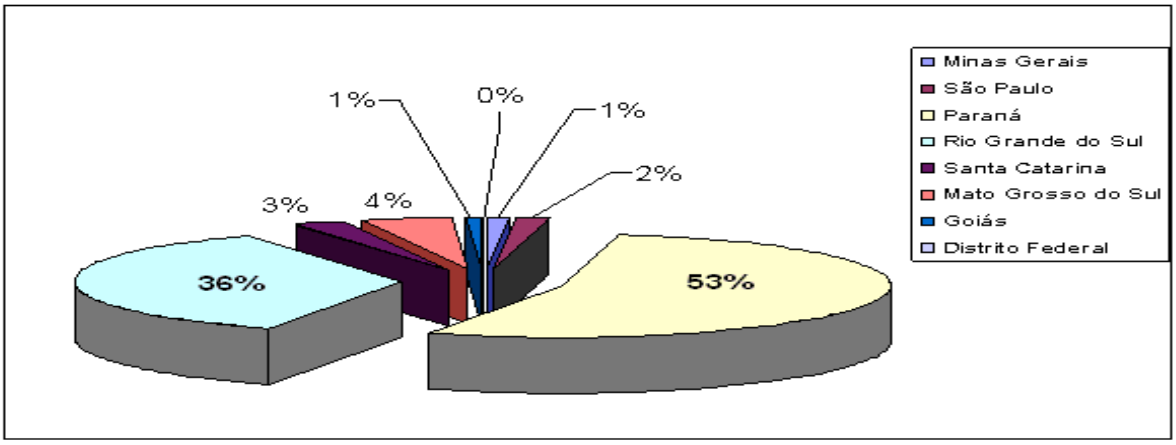
The wheat consumption in Brazil has increased: from 7.43 million tons in 1990 to 10.65 million tons in 2005. The 1994 Real Plan brought an increase of income to the Brazilian lower income households, contributing to the increase in consumption of wheat products, such as pasta. According to EMBRAPA, in the next years, Brazil must raise its consumption of wheat to around 14 million tons due to population growth and the increase in per capita consumption. Per capita consumption has also grown considerably and almost doubled in the last twenty years. Still, per capita consumption is very low in comparison to the rest of the world. While in Argentina per capita consumption is around 90 kg per year, in Brazil this number is between 50 and 55 kg a year, according to ABITRIGO.

In the same period, domestic production of wheat has grown much less, from 3.09 million tons in 1990 to 4.42 million tons in 2005. Since the formation of Mercosur in the 1990s, and the consequent tariff reduction, Argentina became the main supplier of wheat to Brazil. Domestic prices dropped in Brazil, damaging the national production, which has relatively high costs of production. Another important event was the currency devaluation occurred in 1999. It raised the prices of wheat imports allowing a resumption of wheat domestic production until 2003. Since then, Real has been valuated, so domestic production has not been stimulated. In 2006, Brazilian production was around 2 million tons, well below the volume of 6 million tons produced in 2003.

Historically, domestic consumption exceeds domestic production. This deficit, and corresponding importation, has varied according to national production. Brazil shows great dependence on the international market, with Argentina as major supplier. In 2004, Argentina accounted for 96.9% of total Brazilian imports of wheat.

The states of Rio Grande do Sul and Parana account for about 90% of Brazilian production of wheat. Other states of central-west of Brazil are increasing their production, but still account for small share of production. It shall be highlighted the role of EMBRAPA in this process which has been developing new varieties adapted to the weather of these new agricultural regions. But it can be said this process of relocation is not significant for wheat yet. Chart 1 shows the distribution of wheat production in the states of the federation:

CHART 1- States Participation in Brazilian Wheat Production (2003)



Source: Conab (2003)

Because it is fundamentally an importer country, the main barriers that affect international trade of wheat in Brazil are their own barriers to imports. These can be divided into two main groups: special tariffs for the countries that comprise Mercosur and other tariffs to countries that are not members of this economic bloc. Wheat is in the list of goods exempted from import tariffs for member countries of MERCOSUR, however, it is interesting to highlight that Argentina's export tariff for wheat was 20%, before recent "retenciones". For countries that do not comprise Mercosur, a Common External Tariff (TEC) of 10% is imposed. There are also tariffs for imports of wheat from European Union, which is of 10% on the value of the imported product, limiting the entry of wheat coming from this economic bloc. As mentioned in the introduction of this report, in 2008, the Brazilian government announced the temporary suspension of tariffs aiming to supply the domestic market, which has not been able to import sufficient quantity of wheat due the export restrictions imposed by the Argentine government.

Yield in Brazil is around 2 tons per hectare. Technological innovations, mainly in adaptation of seeds to soil and climate conditions allowed to increase yields considerably in the last twenty years. But yet, Brazilian average yield is well below the one of major producers such as the U.S. which shows yield around 6 tons per hectare.

Costs of production in Brazil are high when compared to those of Argentina. In 2004, production costs in Parana were around US$ 324.00 per ha. Most of this value is composed of fertilizer and pesticides, which must be used in large quantities due to Brazilian climate and soil conditions.

The transportation of wheat from farms to cooperatives and to the port of Paranaguá (PR) is mostly made by trucks. From Paranagua, wheat is transported by ship to the major urban markets of Southeast and Northeast regions. Most roads are in bad conditions.

The privatization of ports since 1990 led to a considerable improvement of efficiency of cargo terminals. However, the port infrastructure is well below of the ideal and needs investments, mainly in new terminals and improvements in existing ones.

According to CONAB, 2006, the national capacity for storage of grains was around 113,412,080 tons, concentrated in about 15,572 registered establishments. The storage capacity does not constrain wheat production growth. Indeed, the biggest problem is the lack of "compartments" in the silos, which would allow the correct separation of different classes of the wheat. This problem is a legacy from the past state regulation, when the issue of wheat quality was not taken into consideration.

In general, wheat is cultivated in small and medium-sized farms in the states of Parana and Rio Grande do Sul. The cultural characteristics of the farmers, mostly descendants of European immigrants, promote the coordination of the sector through cooperatives. There were 63.914 wheat farmers in Brazil according to the Agricultural Census of 1996 (IBGE). Almost two-thirds of the farmers grow the product in farms with areas between 10 and 50 ha.

Importation of wheat is mostly held by 4 main multi-national companies: ADM of Brazil, CARGILL, DREYFUS and MULTIGRAIN. The market power of these companies in the domestic market of wheat is huge. But still, the strong organization of the farming sector through cooperatives ensures proper political representation of interests in government programs and agencies operating in the sector.

Most transactions of wheat are held in spot market; there is no case of vertical integration. This is largely explained by the fact that the trading companies have always supplied mills with large share of imported wheat, so they do not establish a stable supply chain in the domestic market.

Until 1990 the cultivation of wheat had special police instruments to funding farm operating cost, farm capital investments, and trade. Since then, the wheat agri-system no longer has special policy, but the same for other crops: National Program of Rural Credit and the General Policy of Minimum Price available for some of the main crops of the country.

Recent data show that due the small size of farmers, most of them are able to access credit from the National Program for Family Agriculture (PRONAF). This program offers lower interest rates (between 1% and 4% a year). Besides the credit policy, the Brazilian Government provides a program to support minimum prices for farmers and strategic stocks (especial credit to support private stocks). However, in some years, this program is not effective because lack of financial resources. In these years, prices have fallen below the minimum level set by government.

The crisis of wheat supply in 2008 seems to change the course of these policies. In 2008, the government announced an increase of 20% in the minimum price of guarantee and increase credit supply at low interest rates (6.75% per year, below the 8.75% previously available). It was expected a growth of 20% on production in the 2008/09 harvest.

Brazil has a high tax burden. There are cascade taxes on wheat trade and wheat products; as well as on inputs agricultural inputs. The main taxes which incur directly on wheat are PIS (Program of Social Integration), COFINS (Contribution to Finance Social Security) and ICMS (Tax on Movement of Goods and Services, VAT). Imported wheat, however, is free from most of these taxes.

The sum of PIS / COFINS is around 9.25%, charged on wheat production. The ICMS (VAT) is charged on goods traded between states of the federation. In May 2008, aiming to contain the increase in prices of wheat and wheat products in the domestic market, the government announced temporary suspension of such taxes, totaling a tax waiver of R$500 million.

There is a tax imposed on the coastal transport, the AFRMM (Additional on Freight for Renewal of the Merchant Fleet), which is of 10% for the transport from Rio Grande do Sul to Santos and of 25% on the transport of cargo from Vancouver and Gulf of Mexico to Santos. Collection of this tax was also temporarily suspended until December 2008 in order to reduce freight and the final domestic price of wheat.

The total tax burden on national wheat is around 25% of the FOB value. It is interesting to point out that this rate is well above the taxes paid by the imported wheat that enters the country. Even considering the tariffs levied on imports from countries like Canada and U.S., the amount of taxes that incurs on domestic production is higher. Considering that the major Brazilian supplier, Argentina, is exempt from taxes on imports because of MERCOSUR, the competitiveness of domestic production of wheat shows even more fragile.

The availability of land for the wheat cultivation in Brazil is large. The development of new varieties has allowed the expansion to the Central West despite the cost of production in this region be still well above those recorded in southern of Brazil. But even in more traditional producing regions, highlighting Parana and Rio Grande do Sul; there is still wide availability of land for wheat cultivation. In general, high production costs and unfavorable conditions of credit and taxation are the most limiting factors to wheat production in Brazil.

The main inputs used in the wheat production are seeds, fertilizers, fungicides and insecticides. The seeds are domestically produced by the cooperatives and some private agents. Most of these cooperatives have farms to develop and cultivate seeds. These farms have the support of public agencies of R&D, highlighting EMBRAPA. There is no import of such input. However, the other industrial inputs are mostly imported.

The dependence on those products is very high, 60% of the fertilizers are imported. About 90% of the "active principle" of the pesticides is imported. The main suppliers of these products are multinational companies like Syngenta, Bayer and Monsanto.

3.3 - Argentina

Domestic consumption of wheat in Argentina has changed in recent years, ranging between 4.6 and 5.0 million tons. As noted in TABLE 5, the Argentine production varied from 12 to 16 million tons between 2000 and 2005, generating a considerable surplus for export. There is a wide disparity between the variation of production and domestic consumption; this latter grew far less than the production (between 1995 and 2004 ranged from 4.3 to 5.0 million tons).

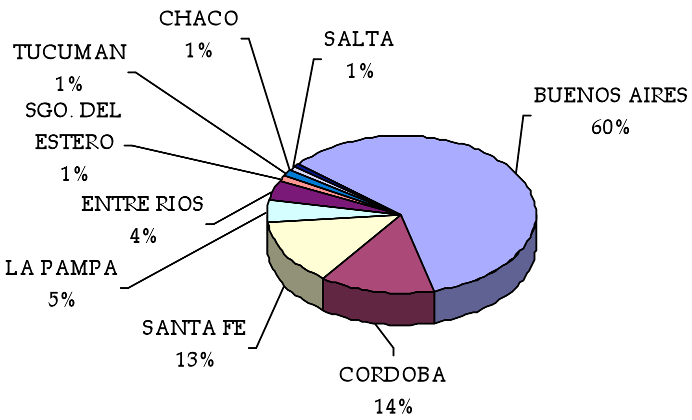
Brazil is the main destination of Argentine exports due the geographical proximity which reduces the freight costs and trade tariff in the Mercosur (10% in the bloc). Thus Argentina has preferential market for its surplus of wheat and flour.

The share of wheat exports in the total Argentine exports has decreased in recent years due the increase of soybeans price in the international market, which has cause substitution effect.

There are some sporadic imports without great importance. In general these imports are of particular varieties used for very specific purposes. Such imports are not enough to achieve 1% of domestic consumption.

The geographical analysis of distribution of wheat production in Argentine provinces, point Buenos Aires as the main district, followed by Cordoba, Santa Fe, La Pampa, Entre Rios and the provinces of NOA and NEA. The percentages of total production observed in each province are presented in Chart 2.

Chart 2 –Share of the participation of provinces in the cultivated area of wheat (in % for 2000/01 - 2004/05)



Source: SAGPyA / Argentina

Tariff barriers on Argentine exports are extremely high for some countries: Tunisia has the largest tax on wheat from Mercosur, reaching 90% of the FOB value; there are also high tariffs in Mexico (67%), Philippines (8.5%) and Korea (3.5%). In EU, there are very high tariffs for wheat, reaching 97 euros per ton. Japan and South Africa also has specific tariffs for wheat, but in an amount well below of that of European Union.

It is interesting to note that the price received by Argentine farmers by exports to countries outside of MERCOSUR is higher. Thus, after the harvest the farmers seek exporting as much as possible for other regions of the world. When this path of trade runs out, the rest of the production is targeted to the Brazilian market, which is the main buyer of Argentine wheat.

The European Union requires prior surveillance on wheat imports entering into any of the countries members, which characterizes the existence of non-tariff barriers. Other countries like Japan and Mexico have other requirements as tests of quality by random or production and storage inspections to ensure safety and quality of these products.

The average yield of Argentina is over 2.5 tons / ha and is comparable to those seen in Canada and Australia, but considerably lower than in US. This difference is even greater when compared to some EU countries and Eastern Europe, where yields are as high as twice of Argentina. In this sense it is important to note that the production costs also rise considerably in some countries with high yields.

Average yield of wheat in Argentina has increased from 2001 to 2005, mainly because diffusion of new varieties and new techniques, such as zero tillage that favors water and nutrients retention in the soil.

Argentina has very low costs compared to major world exporters such as USA and Canada. The compared analysis of costs of major wheat exporters (Argentina, USA, France, and Ukraine) shows that Ukraine has the lower costs of production, around 15 US $ / ton, followed by Argentina with 41 US $ / ton and Canada, with 43 US $. France and US have higher costs (68 and 80 US $ / ton respectively). Thus, Argentina can export its production, even with the tariff of 20% on the value of wheat exported charged by the Argentine government before recent “retenciones”.

In a total production of 84 million tons, almost 75 million were transported from farms or cooperatives to processing plants or ports, being, 61 million tons by road, 13 million by rail and 600 thousand tons by river transport. Most of the transport is done by trucks, with high the cost of freight. Transportation by road to neighbor countries has also high cost of freight (above 40-U.S. $ / ton).

The capacity of Argentine ports has grown considerably since the 80’s. In 2004, ports capacity in Argentina was considerably increased by the heavy investments of several companies in the construction of new terminals. Thus, the Argentine port structure is prepared for an expansion of wheat exports. In 2004, the total grain storage capacity in Argentina was around 41 million tons. This was not enough in recent seasons. The need to improve the storage structure is clear when looking to the increase in the grain production in Argentina, a fact that demands more points of collecting in the new producing areas and the need of segregating the grains, a constant request from international markets. It is interesting to point out that the mixture of grains with different standards of quality ends just "leveling-down" the price received by the whole lot. Thus, high quality wheat is sold below the correct market price. This segregation requires larger number of silos.

In order to analyze the impact of taxes on wheat production in Argentina, it is considered a typical farm of 250 hectares with a yield of 62.4 tons / year and net income of 60 thousand dollars a year which pays US$ 11.8 per ton. This value amounts 11.7% of internal price of wheat. This value is not considered high by farmers, and does not undermine the competitiveness of Argentine wheat production.

But a high 20% tariff is charged on exported wheat. This amount ends up 29.1% of the FOB value of the exported grain. This tax has been the cause for many protests by Argentine farmers. Recently, the Argentine government imposed sanctions on the exports of Argentine wheat, as a way to contain the rising in the domestic prices. This policy had a huge impact on the Brazilian market, where the price of wheat and wheat products increased significantly.

The average aggregate price of inputs has been stable in recent years. Analysis of monthly average prices between 1995 and 2005 shows an increase of 44% in the price of gasoline, reflecting the increase in oil prices. The inputs used in tillage have been reducing in that period; the urea dropped 11%, Cypermethrin 74% and the seeds 39%. It can also be observed decreases in the cost of rural work, which fell 42% in the period analyzed. However, these reductions were offset by increases in rent of the land which rose 100% in constant US dollars. This is explained by the already aforementioned increase in prices of soybean that dispute area with wheat. Thus, land rents have increased, generating a process of economic concentration, with diffusion of large scale and capital intensive technologies to make wheat production economic viable.

3.4 - Uruguay

The wheat consumption in Uruguay is estimated between 350 and 375 tons annually. The production and planted area with wheat showed constant fluctuations in recent years. In the 2006/07 season, production was over 500.000 tons, generating even exportable surpluses. It must be noted that Uruguay imported for several years wheat from Argentine to supply its domestic consumption.

Since 1995, the TEC (Mercosur's Common External Tariff) is the only tariff on imported wheat from non-signatory countries. Like the others Mercosur countries, there are no sanitary barriers on Uruguayan imports of wheat.

Uruguay has costs of production of around US$ 283/ha. These costs were stable in recent years, despite the increase in the price of land. Although not a traditional exporter, Uruguayan low production costs allow the country to compete in the international market. However, as said the great volatility of production has not enabled this country to become a large exporter.

The Uruguayan average yield is considered high for the region: nearly 3 tons per hectare in 2006. It is worth to be said this is the highest yield among Mercosur countries, well above of the 2 tons per hectare in Brazil and 2.5 in Argentina.

In 2004, the total storage capacity of grain in country was 3.788.073 tons, shared by 274 silos. Most of these units can store more than 50.000 tons, with several resources for grain conservation such as air flow and temperature control. The main wheat grain-producing areas in Uruguay (Cologne, Rio Negro, Soriano and Paysandú) are near Uruguay River. The main storage facilities of the country are in these regions: capacity of nearly 1.5 million tons of grain in 84 silos. Overall, storage and segregation infrastructure do not constrain further increase of Uruguayan wheat production.

Transport of Uruguayan wheat is done mainly by road, using trucks of great capacity. In 2006, the average cost of road freight up to 50 km was 0, 16 US$ / ton / km and 0, 6 US$ / ton / km for distances above it. The port costs have remained constant over the past 10 years, depending mainly on commercial terms negotiated by traders.

Overall, the wheat production in Uruguay has gone through a process of concentration, and since 2000 the number of farmers fell from 2212 to 1205. Currently it is highly concentrated: 50 farms account for half of the national production of wheat. These 50 farms grow over 500 hectares of wheat, showing high rates of adoption of new technologies, a fact that confirms for the raise of the average yield of the country. In these farms, the existing legislation on food safety and tools to prevent contamination of grain with fungi and toxins are adopted.

In general, there is great asymmetry of market power between different agents of this agri-system. Still, the vertical coordination in this agri-system is rather weak.

The market transactions are carried out in the spot market, without more elaborate contractual mechanism. This fact is also observed in other countries, mainly due to inherent characteristics of wheat as a commodity (high standardization and easy measurement of quality attributes).

In Uruguay, the wheat agri-system is not benefited by any kind of special government policy, such as subsidies or tax exemptions. Not even the credit to farmers is subsidized, as observed in other countries. Farmers who need credit resources shall look for public and private banks. In that sense, there is credit availability to operating capital and to the leasing of machinery and vehicles.

Interest rates are determined by credit market, without any form of government intervention.

Domestic taxation is a complicated point of Uruguayan wheat agry-system. Currently the taxation is made up through a complex system (CONEAT), but is not considered an obstacle to production. This system is undergoing through a reform that shall affect all farmers in the country.

The availability of land for farming in Uruguay is estimated at around 4.069.972 hectares of a total of 17.377.455 hectares (Souto, 2004). Diffusion of innovations such as zero tillage (tillage without any preparation of soil) could raise availability of arable area in at least 2.5 million hectares. Overall, the availability of land is not considered a barrier to expanding wheat cultivation in Uruguay.

Concerning the inputs used in the wheat production, seeds are the only one produced in Uruguay. They had their prices stable in recent years. Fertilizers are the main component of the production costs of wheat. Its active ingredients are all imported at a increasing prices in the last 3 years due the expansion of agriculture worldwide, mainly in the commodities sector. Pesticides showed a reduction in prices, mainly the gliphosato, widely used in combination with zero tillage.

4. Critical Issues from SWOT Analysis

Some critical points can be object of public and private efforts to increase the competitiveness of these agri-systems, and to meet the possible future expansion of production. As seen in TABLE 8 each country has its own set of priorities. In this sense, some critical points can be pointed out in this agri-system: technology, logistics, food safety, market structure, special programs, firm management and taxation.

Table 8 - SWOT Analysis: critical points to development of wheat agry-system of Mercosur

Critical Issues	Argentina	Uruguay	Brazil
Storage infrastructure	-	+	-
Transport infrastructure	- -	0	- -
Land availability	- -	+	+
Wheat quality	+	+	+
Technology	-	+	-
Taxation	- -	0	- -

(+ + Very favorable; + favorable; 0 neutral - unfavorably - - very unfavorable)

Storage Infrastructure: despite having sufficient storage capacity, the three countries do not have adequate storage facilities for the segregation and drying of grains. Segregation is essential to meet the processing industries' strategy of product differentiation. This deficiency reduces competitiveness of Mercosur wheat production in face of imported wheat from USA, Canada and Australia, which arrives segregated and classified. The lack of suitable storage facilities also contributes to the high rate of wheat contamination by fungi and toxins, when compared to other producing countries with better infrastructure. This problem seems critical in Brazil and Argentina and is less severe in Uruguay.

Transport infrastructure: as most of the transportation of the wheat from producing areas to the ports and consumer markets is done by road, the freight cost is very high due the high value of diesel, precarious roads and the large amount of tolls (in recently privatized roads) on those roads. This problem is critical in Argentina and Brazil, greatly reducing the competitiveness of these countries. A possible solution would be the construction of railways and waterways for the disposal of production to the ports. Substantial investments in infrastructure would be required in order to increase the railway and waterway network so reducing the cost of freight. Uruguay does not face this problem because the better logistic infrastructure and the small size of the country.

Land availability: Prices of land increase in recent years because competition of crops such as soybeans and maize, which have shown higher profitability. The high prices of these commodities, and their consequences on the price of the land renting, hampered wheat cultivation. In 2008, the rising in prices because of the crisis of wheat supply would make this crop more competitive in the near future.

Wheat Quality: The quality of wheat produced in the region is still considered inadequate by the processing industry, which has to import special wheat from Canada and Australia for blends. Despite massive investments in developing new varieties, the issue of yields has received more attention than the quality. Another factor that hinders the production of better quality wheat is the lack of coordination between farming and processing. Lack of good coordination prevents transmission of incentives from processing industry to farmers. Farmers do not receive higher prices for better quality wheat, so they do not have any incentive for replacing the old varieties. This problem is critical in the three countries.

Technology: Despite the increase in yields in recent years, diffusion of innovations is still low. This carries a gap between the actual and potential yield. Studies indicate that large increases in yield could be achieved if some management tools and modern machinery presented higher rates of diffusion in wheat production of Mercosur countries. The level of diffusion of modern technology in Argentine, Brazilian and Uruguayan is lower than in large producers such as U.S. and Canada. Average yield in U.S is around 6 tons per hectare, while in Mercosur is between 2 and 3 tons per hectare.

Taxation: The problem of taxes on the wheat production is quite critical in Brazil and Argentina. In Brazil, stands out taxes in cascade passing on the same product in different stages of its production. In Argentina, apart from regular taxes on production, exporters of wheat pay 20% tariff on FOB value for the Argentine government, substantially reducing the competitiveness of the product in foreign markets. The reduction of "retenciones" tariffs has been claimed by Argentines farmers. Recently this restriction was expanded and the Argentine government set an export quota in order to control the price of wheat in the domestic market. Such restrictions create obstacles to the competitiveness of Argentine farmers. In Brazil, the tax reform project, currently in the Congress, could increase competitiveness of Brazilian wheat farmers. In Uruguay the tax system has cannot be considered an obstacle to the wheat production.

5. Final comments and indication of actions and investment areas

Mercosur does not appear as a major exporter of wheat in the world market. Except for Argentina, the main objective have been the reduction of dependence on imported wheat, whose supply has shown very unstable due the reduction of world stocks. To reduce these imports, some measures could be adopted to raise the competitiveness of Mercosur agry-system in the future:

1. Investments in infrastructure for storage, to enable better segregation of grain in different classes and thus raise the pay of local farmers. Such investments also reduce the losses of wheat due the contamination by fungi and toxins in inappropriate warehouses.

2. Investments in infrastructure for transport to reduce the cost of freight between the producing regions and consumer markets. The construction of railways and waterways has proven crucial in this direction, allowing a reduction in the use of roads.

3. Investments in technology to increase yields and quality of wheat produced in the Mercosur countries. Such improvements could increase farmers' profitability and reduce the need of importing special wheat from countries outside the bloc.

4. A reform of the Brazilian tax system and revisions of tariffs for exports in Argentina would increase competitiveness of the agri-systems of these two countries.

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