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Agricultural Outlook Forum 2002 Presented: Friday, February 22, 2002

FINAL VERSION

Grain Markets: a South-American Perspective[1]

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[1]. Paper presented at the "Grains and Oilseed Outlook" of the AGRICULTURAL OUTLOOK FORUM 2002, that took place in Arlington (VA) in February 21-22, sponsored by the United States Department of Agriculture (USDA). The authors acknowledge the assistance of **Daniel Baptistella, Jailton Pereira Santos, Eduardo Barker**, **Guilherme Soria Bastos Filho**, **and Eduardo Leão**. Direct all correspondence to agroconsult@agroconsult.inf.br or msjank@usp.br.

Grain Markets: a South-American Perspective

This article is divided into three parts. First, it will show the likely scenarios for the agriculture industry in Brazil and Argentina during the 2002-03 crop. Second, it will lay out the main factors contributing to the increase in competitiveness of the grain export industry for both countries in recent years and the likely future trends. Finally, it will analyze the impact of the new U.S. agriculture legislation on South American efforts to get increasingly competitive

Part I - Short-Term Scenario for the South American Grain Markets

1.1. The current Brazilian crop season

SOYBEAN - the 2001/02 crop of soybean in Brazil will be a record, estimated at 43.3 million tons (1,6 billion bushels), 15 percent more than the previous crop. This favorable performance can be explained by the following factors:

a. Soybean commercialization was favored by the Real[2] devaluation during the first semester of 2001, more than compensating the fall in CBOT prices;
b. Part of the producers in the Center-West region benefited from rallies of prices in Chicago during July and August by fixing future prices, making swap operations to fix future prices in Real, and taking advantage of the strong devaluation of the Real during this period;
c. Producers used the same level of technology, and even more fertilizers;
d. Soy expanded on areas previously cropped with corn and cotton, which have faced low prices and liquidity problems in 2001;
e. Expansion of new frontiers in the states of Mato Grosso, Bahia, Maranhão and Piauí;
f. Good weather conditions, except in the states of Rio Grande do Sul and Santa Catarina.

CORN - the production estimate for this coming crop season is 30.4 million tons (1,2 billion bushels), a reduction of 13 percent from the previous season. This reduction of corn production during the summer crop will be partially compensated by a strong expansion of the fall crop (i.e., the second crop in the same agricultural season), that may reach 8.3 million tons (0,33 billion bushels), with a 64 percent growth from the previous period. The factors that caused this weak performance of the summer corn crop are described below:

a. The production record of the last crop, greater than 41 million tons (1,6 billion bushels), generating an excess of 6 million tons (0,24 billion bushels), was mainly due to a 20 percent growth in average productivity. This fact caused a strong depression of the prices during the first semester of 2001;

[2]. The Real is the Brazilian national currency. It was established as part of the successful 1994 economic stabilization plan. In this paper we used data from May 2001, when the exchange rate was R$ 2.36 per U.S. dollar. Today the exchange rate is R$ 2.42 per dollar.

b. The fall of corn price coupled with the impact of the Real devaluation on soy prices brought about a Soybean-to-Corn Price Ratio extremely favorable to soybean when producers had to decide what to plant this year;
c. The exchange rate devaluation positively affects the price of soybean, but does not have the same effect on corn which has been historically influenced by the domestic market. However, the devaluation has a proportional effect more on the variable costs of corn production than of soybean production, since corn uses agricultural inputs more intensively and its prices varies according to dollar;
d. Despite the spectacular performance of poultry and pork exports (they grew 38 percent and 113 percent, respectively, with respect to previous year) that brought huge profits to the exporting companies in 2001, corn producers did not internalized this boom in profits.
e. The excellent performance of corn exports during the year, which reached 6.2 million tons (0,24 billion bushels in Feb/2001-Jan/2002) or about 15 percent of the production, is explained not only by the exchange rate devaluation, but also by the level of production costs that some producers have already reached in Brazil. While the Brazilian average yield is 55 bushels/acre, the most efficient producers reach 130 bushels/acre without irrigation and up to 175 bushels/acre, with irrigation. At the level of 100 bushels/acre, Brazilian producers near the ports of Paraná and Rio Grande do Sul can be extremely competitive in the international market, even with prices lower than US$ 90/ton. Poultry and corn companies underestimated the ability of cooperatives in the South of Brazil to export a huge volume of corn to the international markets and not offer forward contracts for corn producers.

WHEAT - the Brazilian harvest of wheat in 2001 was 3.2 million tons (1,2 billion bushels), a 96 percent increase from the weak harvest of the previous year, harmed by the occurrence of drought and frosts. This crop was marked by good product quality and reasonable yield performance. This harvest was not any larger because the serious climate problems of 2000 reduced the availability of seeds for the 2001 crop. The factors that stimulated the growth of the acreage and the production in 2001, were:

a. Exchange rate devaluation in the first semester, affecting the cost of importing wheat from Argentina (price maker in the Brazilian wheat market), thus prices received by wheat producers increased;
b. Excellent performance of the new varieties that had been introduced;
c. Low competition for area with the second corn crop (wheat prices were more attractive than corn).

Table 1 – Brazil's Forecast for 2001/02 crop.

Brazil: 2001/02 – million tons and acres				
	Production	%	Acreage	%
Soybean	41,3	15,0	39,0	13,1
Corn	37,8	-7,0	30,6	-3,8
Wheat[1]	3,2	96,0	4,2	13,0

(1) Refers to 2000/01 crop.
Source: Agroconsult

1.2. Perspectives for the Brazilian 2002/03 crop

SOYBEAN - forecasts predict a 2.5 percent increase of acreage, achieving 16.1 million hectares (39,8 million acres) and a 6 percent rise in production to 45.8 million tons (1,7 billion bushels). The factors that will contribute to this performance are:

a. Good commercialization of the 2001-02 crop, due to the great volume carried through anticipated sales in 2001 greater than US$5.00/bushel, and to the likely slow commercialization of the Argentine crop (trend of clamping down on the part of the producers, who must use soy as currency in an environment of extremely tight liquidity until exchange rates improve;
b. Expected stability or fall in acreage of soy in the U.S. in 2002;
c. Reestablishment of the Soybean-to-Corn Price Ratio favorable to corn in the domestic market in time for the planting decision;
d. It is expected to liberalize the use of GMO varieties, which may significantly reduce the variable costs and agricultural practices;
e. The excellent performance of the poultry and pork industry is expected to recur, particularly in exports;
f. The rate of opening new areas will continue to rise in the regions of Cerrados and in degraded areas of pastures;
g. Yield should increase again, with the introduction of new and more productive varieties.

CORN – The planted area for summer crop is expected to increase 5.5 percent to a projected production of 33.3 million tons (1,3 billion bushels). For the 2003 second crop, it is expected the acreage to remain unchanged well below the 28 percent observed growth in 2002. However, projected production may increase 2 percent due to a continuous rise in yield, to 8.75 million tons (0,34 billion bushels). Annual corn supply may be 11 percent higher than the 2001/02 crop, at 42 million tons (1,7 billion bushels). The main factors, which may explain this performance, are:

a. Favorable conditions for commercialization since the first semester of 2002, as a result of the decline in supplies and market liquidity in the Southern region, where export contracts can be set at approximately USS 100/t;
b. Significant export volume (more than 3 million tons) in a year of short supply;
c. Good performance of the poultry and pork industry in particular for exports;
d. Rise in the consumption of corn by cattle raised confined and semi-confined;
e. Soybean-to-Corn Price Ratio favorable to corn;
f. Generalized use of contracts which anticipate sale of production;
g. Corn imports are expected to be higher than 2 million tons (0,08 billion bushels), but with a short Argentinean net export, prices for corn during the second semester may be very attractive.

WHEAT – Forecasts expect a 1.5 % increase of acreage and an estimated production of 3.6 million tons (0,13 billion bushels). The factors that will contribute to this performance are:

a. Positive impact from the last year's commercialization;
b. Strong competition for area with second corn crop planted in the North and West of Paraná, in the South of Mato Grosso do Sul and in the South of São Paulo;
c. Pressure from Argentinean wheat and wheat products at low prices in dollar due to the Peso[3] devaluation.

Table 2 – Brazil's Forecast for 2002/03 crop.

Brazil: 2002/03 – millions tons and acres				
	Production	%	Acreage	%
Soybean	46,2	6,0	39,8	2,5
Corn	42,0	11,0	31,9	4,2
Wheat[1]	3,6	12,5	4,45	1,5

(1) Refers to 2001/02 crop.
Source: Agroconsult

1.3. The current Argentina's crop season

SOYBEAN - The 2001/02 crop will be a record of 28.5 million tons (1,1 billion bushels), a 5 percent increase from last crop. Some of the factors that contributed to this result are described below:

a. Higher profitability than corn and wheat during the commercialization of the 2001 crop;
b. The Brazilian production of corn increased (basically there were not imports of corn from Argentina) and production of wheat almost doubled, which reduced market liquidity for these products, and lost attractiveness to producers;
c. Less consumption of inputs when compared to wheat and corn, due to utilization of GMO's varieties (95 percent of the acreage);
d. Incidence of flooding in the period of sowing corn in the main regions contributed to producers' decision to sow soybean instead of corn, as the soybean sowing period is wider.

CORN – The Argentinean 2001/02 crop will decline drastically, with an expected production of 12.0 million tons (0,47 billion bushels), representing a 22 percent decline from the previous crop. The main factors for this weak performance is:

a. Brazilian demand for Argentinean corn declined due to the biggest corn harvest in the neighboring country (41 million tons – 1,6 billion bushels). This year, Brazil also competed with Argentina for the traditional importers of the Argentine corn. While Argentina exported 9.8 million tons (0,38 billion bushels), Brazil exported 6.2 million tons (0,24 billion bushels);

[3]. The Peso is Argentina's national currency and was established in the "Cavallo Plan" of 1991, and since then fully converted to dollar in a 1:1 basis. Last December, Argentina's Government devaluated the Peso and currently the exchange rate is close to 2.2 pesos per dollar. In this paper we used data from May/2001, when the exchange rate was 1:1.

b. The need to consume more agricultural inputs, such as seeds, fertilizer and agrochemical under an environment of credit restriction;
c. Incidence of flooding in the main regions of production, resulting in the transference of areas to soy.

WHEAT – The 2001 Argentinean crop is approximately 2 percent below of the previous crop, 15.7 million tons (0,58 billion bushels). The main factors that explained this reduction are:

a. Reduction in the expected harvested area because of weather conditions. The planted area was 9.4 percent greater, with strong increase in non-traditional areas, achieving 7.1 million hectares (17,5 million acres). However harvested area will only be 6.8 million hectares (16,8 million acres);
b. Productivity may decrease due to rain incidence during crop season; thus one may also expect a reduction in wheat quality.

Table 3 – Argentina's Forecast for 2001/02 crop.

Argentina: 2001/02 – millions tons & acres				
	Production	%	Acreage	%
Soybean	28,5	5,0	27,9	6,5
Corn	12,0	-21,8	6,4	-22,0
Wheat[1]	15,7	2,0	17,5	9,4

(1) Refers to 2000/01 crop.
Source: Agroconsult

1.4. Perspectives for Argentina's 2002/03 crop

SOYBEAN – The planted area is expected to increase 5%, and production is estimated at 30.0 million tons (1,1 billion bushels). The path of productivity growth will come to a halt, mainly due to the no-tillage system that will be affected by the reduction in use of agricultural inputs. Positive and negative factors explain this performance:

a) Commercialization at a very low pace in 2002, which may reduce Argentinean market share. Many producers may use soybean instead of currency due to the extreme reduced liquidity in the Argentinean economy;
b) Financing through swap operations (*canje*) will be the main alternative for financing input acquisitions. This will be crucial in Monsanto's decision to keep financing sales, after great losses caused by the conversion of debts from dollars to Pesos in 2002;
c) Decline in fertilizer consumption due to shortening payment conditions;
d) Favored by maintenance or decline of planted area in the U.S. and reduced growth rate of planted area in Brazil;
e) Decline of corn and wheat acreage.

CORN – Forecasts expect a 5% decline of acreage, reaching 2.5 million hectares (6,2 million acres) and an 8% decline in production. Credit restrictions in 2002 will determine the utilization of low technology levels, thus affecting yields. Projected production is estimated at

approximately 11.0 million tons (0,43 billion bushels). Some factors that will contribute to this scenario are described below:

a. Corn is demanding in inputs, mainly hybrid seed and fertilizers;
b. Consolidation of Brazil as a competitor in the international market for corn. From now on, Brazil will be a marginal net importer of corn from Argentina;
c. Recovery of China and US corn production, the two largest competitors of Argentina.

WHEAT – Stable acreage due to significant increase in the non-traditional regions for the second consecutive year. Yields may remain low as input use declines. Production is estimated at 16.5 million tons (0,61 billion bushels).

Table 4 – Argentina's Forecast for 2002/03 crop.

Argentina: 2002/03 – millions tons & acres				
	Production	%	Acreage	%
Soybean	30,0	5,2	29,4	5,0
Corn	11,0	-8,0	6,2	-5,0
Wheat[1]	16,5	5,1	18,5	5,0

(1) Refers to 2001/02 crop.
Source: Agroconsult

Part II - Building up Long-term Competitiveness: a Complex Process Underway

The USDA has systematically underestimated the grain production in Brazil and Argentina for recent years, especially with regards to the production of soy. For the last 5 years the miscalculation of the USDA's forecast for the South American soy[4] production was on average 18% per year. Just as an example, while the February 2001 USDA's *Baseline* estimated Brazil's soy exports for last year to be 11.1 million tons (0,41 billion bushels) and that it would reach 15.3 million tons (0,56 billion bushels) in 2010, the actual export number was 15.5 million tons (0,57 billion bushels) in 2001 (ten years ahead the forecast).

Differently from the opinion of South American producers, the USDA is not trying to influence international market prices during the North American harvest with this gap. The mistakes are a result of a simplistic and partial view of the evolving process that has taken place in these two countries, especially in Brazil.

[4]. The evaluation of the precision of the USDA's projections considered the reports of October of each year, a month prior to the first official estimate of the Governments of Brazil and Argentina, in comparison with the harvest final numbers.

Figure 1 – USDA's forecast for the Brazilian Soy Production.

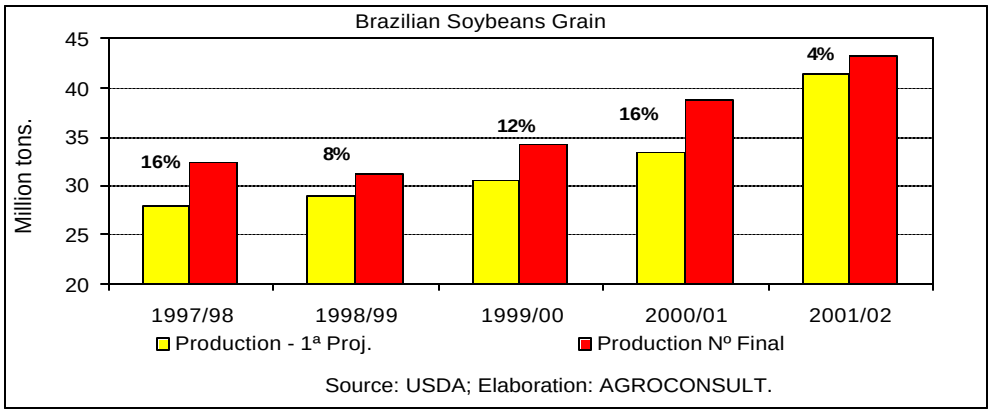
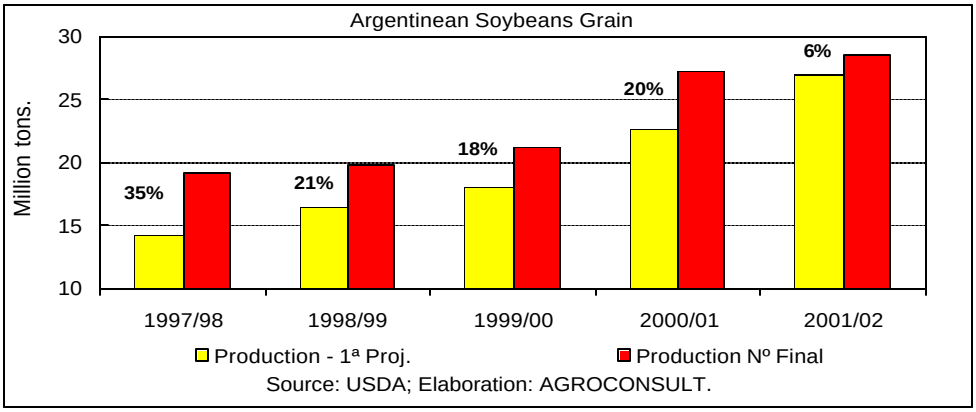


Figure 2 – USDA's forecast for the Argentinean Soy Production.



2.1. Recent Evolution of Brazilian Agriculture

Brazil is harvesting its largest crop of grains ever during the 2001-02 year. Estimates run at a 102 million tons crop, where soy is the highlight with a crop of 43 million tons (1,6 billion bushels). As a comparison, the country harvested 68 million tons in 1991-92 out of which 19 million tons (0.5 billion bushels) were soy. Brazil has been suffering a currency devaluation process since the first half of 1999, when a free-floating exchange rate regime was introduced. International market players, particularly those competing directly with Brazil, have blamed the devaluation of the Real for the increased volume of production and exports from Brazil. It is true that the devaluation has helped the competitiveness of Brazil's agriculture but to point to that, or the abundance of land and labor, as the only cause of the excellent performance of the country, is to simplify a complex process that the industry is going through. Among these structural changes:

1 – The Stability of the Economy - With the introduction of the Real economic stabilization plan in 1994, Brazil dropped its inflation rate from 40 percent per month to around 5 percent a year. The renewed confidence in the economy and its currency has had several consequences in the agriculture industry, among them:

(a) **Decrease of the real value of land** – Previous to 1994, price of land included a premium as a good hedge against high inflation rates. This importance of land as a hedge has diminished significantly. Estimates state that from 1994 to 1998 (i.e., before the devaluation in 1999) the dollar price of land decreased by 40 percent. After the devaluation and up until 2001, prices continued to go further down by some 20 percent. One should also add that the increase usage of ratios as "return on assets" (ROA), has also pressured land prices down.

Figure 3 – Evolution of Brazilian Grain Production.

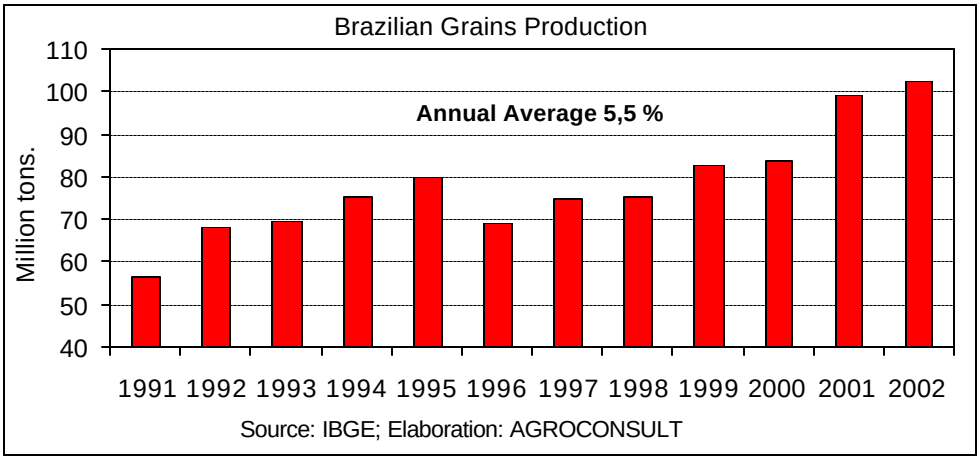
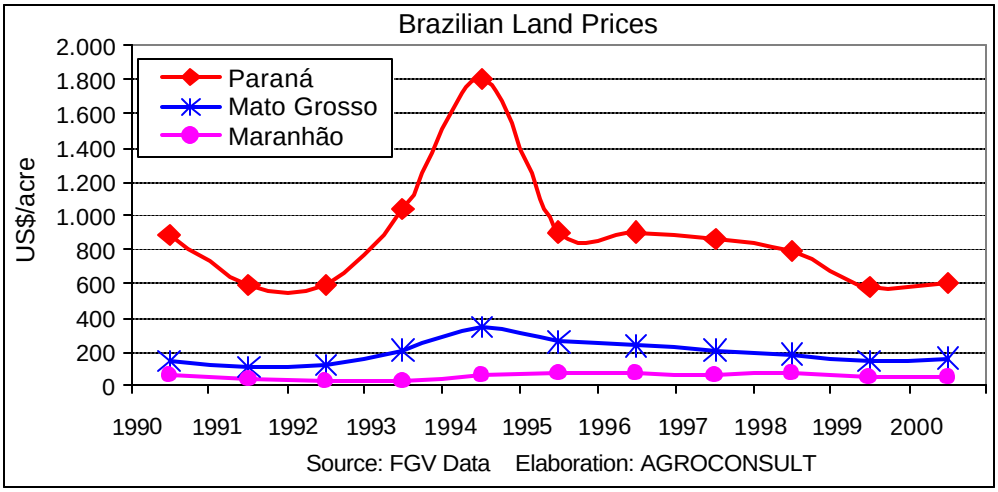


Figure 4 – Brazilian Land Price Evolution



(b) **Restructuring of a Credit System** – Private banks restructured their credit system after inflation rates dropped. Money became available to purchase machinery and equipment, raw inputs, personal finance, and other commonly available financial transactions in other places. This also helped to push land prices down, as mortgage financing became less attractive.

(c) **Increase of domestic aggregate demand** – The end of the inflationary environment promoted an increase in purchasing power of low-income families, where food is

considered *staple-bonds*. This has allowed an increase in the local demand for products such as meats, eggs, sausages, dairy, pasta, and processed food, with a very positive influence on the domestic grain market.

(d) **Renewed Capacity to do Medium-Term Planning –** With high inflation rates and total uncertainty over terms of trade, interest rates, exchange rate, and GDP performance, the planning and decision making ability for any business can be highly damaged. Although the Brazilian interest rates are still high and the exchange rate is quite volatile, there is a stable environment that favors medium- and long-term planning. This includes the possibility of performing hedging financial operations with tenors of over one year. Exchange and interest rate swaps are already utilized by producers who want to take advantage of a favorable US dollar, also with tenors of more than a year.

2 – Enhancements in Transport Logistics – A series of government initiatives and private firms were put in place in the last years to reduce transportation costs of agricultural goods from producing regions to ports and consumption regions. Among them:

(a) **New Port Legislation –** The legislation that allowed the privatization of port terminals (including grain handling terminals) was approved in 1995, giving also flexibility to the regulation of labor force in those places. This resulted in increased efficiency and a meaningful reduction of operational costs. Broad investments in automation and processes also contributed to the reduction of costs and time spent on Brazilian ports. New grain handling terminals in the ports of *São Luis, Itacoatiara, Ilhéus, Vitória and Salvador* have also helped to reduce average costs as it takes pressure away from the ports of *Rio Grande, Paranagua and Santos.*

(b) **Privatization of Railways –** The Brazilian government has transferred 100% of the rail system to private companies. Now, the system is being restructuring through new investments after a long period without any new money. Heavy investments are already being done with the rail network that existed, but it was in very poor conditions. This is reflected on the volume being transported by train. Also, investments are being directed to new railways, such as the Ferronorte from *Santos, in the State of São Paulo* to *Alto Taquari* in the *State of Mato Grosso*, allowing average transportation costs to decrease in those regions.

(c) **Privatization of Federal and State Roads –** The new privatization process in place has significantly helped the conservation of those roads. This has also contributed to speed up trucks and their garage time.

(d) **Greater Usage of Waterways –** During the last years the government has renovated operational conditions of the *Paraguay-Parana* and the *Tiete-Parana* waterways, and their capacity has increased significantly. A new one, *Madeira-Amazonas*, was delivered and is operational carrying some 2 million tons (0,07 billion bushels) of soy to the port of *Itacoatiara*, in the *Amazon River*.

3 – Globalization of the Trade and Inputs Industries – In the second half of the 1990's one can see the input and grain trading industries intensely consolidating in Brazil with strong market share concentration among large international players. In the seed industry, *Monsanto, Dow AgroSciencies, Dupont-Pionner* and *Syngenta* have more than 80 percent of the hybrid corn and close to 40 percent of the basic soy seed market. In the fertilizer industry, *Bunge, Cargill* and *Norks Hydro* have 30 percent, 20 percent and 10 percent market share respectively. In agrochemicals 95 percent of the market belongs to foreign companies. *ADM, Cargill, Bunge* and *Louis Dreyfus* control the majority of Brazilian soy exports. The commercialization of corn is different from soy, with a large part being handled by co-ops from the Brazilian Southern region. This massive participation of foreign companies in Brazil's agriculture scenario has brought local producers two advantages:

(a) **Technology Transfer and Development –** Any new technical development of products or services is immediately available to Brazilian producers with no delay when compared with other countries. The size of the Brazilian market (third largest for fertilizers and chemicals) allows large investments in research and development of customized products to enhance productivity under tropical and sub-tropical weather[5].

(b) **Credit Availability –** The presence of large multinational corporations in Brazil has diminished the difficulties of producers to seek credit from commercial banks. Generally, those corporations carry funding structures that grant credit to producers buying their products[6]. The companies also have easier access to the international credit markets to finance the acquisition of inputs[7]. Thus, these companies that look for wider margins and generous collaterals are replacing the credit gap left behind by commercial banks.

4 – Managerial Revolution – During recent years, a real revolution has taken place in the management of agriculture activities in Brazil. Here we highlight the search for lower average production costs. Below are some of the improvements taking place:

(a) **Continuous Incorporation of Technology –** The constant search for new technologies to improve yields is now common and generalized. This mostly leads to a lower average cost of production even though it may imply higher operational costs per acre.

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[5]. EMBRAPA (The Brazilian Agricultural Research Corporation) together with research centers across the country has put Brazil in the technology edge of tropical agriculture in the world. The knowledge base from the public research with private companies has accelerated the development of new products and technologies, facilitating the decision to invest in agriculture research in Brazil.

[6]. About 70% of the chemicals sold in Brazil have payment tenors of over 6 months, and farmers will be paying after their harvest.

[7]. Cash advance from trading companies to soy farmers is a common transaction. This transaction also allows some financial gains as a result from the gap between domestic and international interest rates.

Figure 5 – Brazilian Fertilizer Consumption

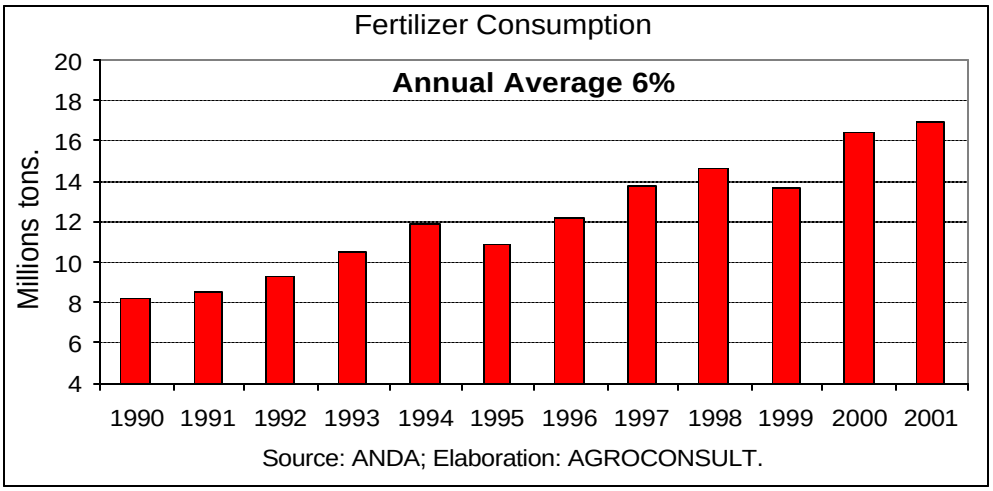
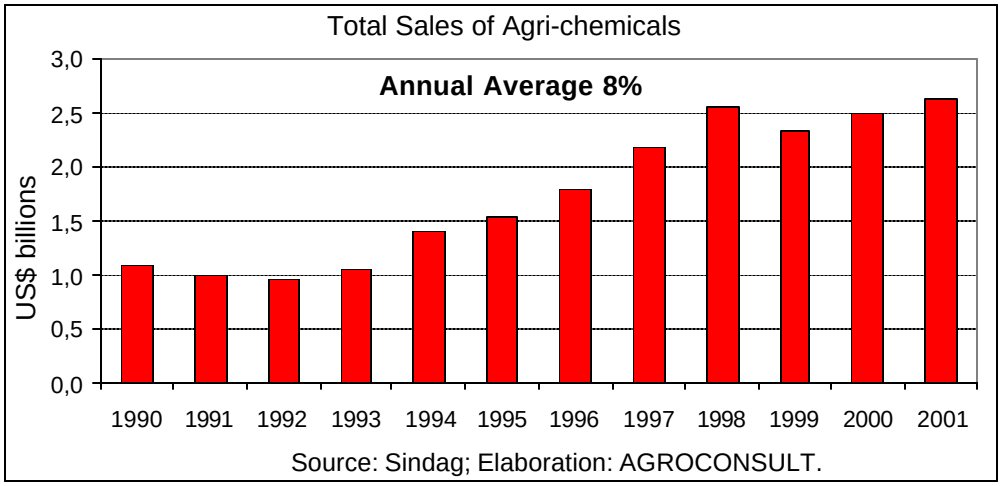


Figure 6 – Brazilian Agrochemicals Consumption



(b) **Improvement of Tax Controls –** This means a more fluid system of tax credits derived from the ICMS (Brazilian states' value-added tax), reducing the overall burden on the Agribusiness industry.

(c) **Adequate Dimension of Machinery and Labor Force –** The crippled national fleet of tractors and harvest machinery has been renewed according to strict criteria of size to avoid excessive weight of depreciation on fixed costs. The continuous concentration process of the farms and the benefits of exploring economies of scale, especially in the Brazilian Central-West region, have also contributed to the reduction of costs. The rigorous farming labor legislation, the broad usage of machinery and services of third-party companies, has significantly reduced costs of direct payroll.

(d) **Professional Technical Management –** The employment of professionals such as agronomists and agricultural technicians, is becoming common practice to help management in the technical decision making process. The average age of farmers is

decreasing, something uncommon in Brazil. A new generation, most with degrees from Schools of Agriculture, Veterinary, Animal Sciences, Forestry, etc., are managing thousands of farms.

5 – Modernization of Marketing Capabilities – Some recent facts have helped farmers to improve performance when selling their products. Some are:

(a) **Change of Government's Intervention Approach –** The Federal Government has been going away from direct intervention on the grain market. During recent years it has reduced the usage of AGF (Acquisition of Federal Government) and EGF (Loan from the Federal Government), and has preferred to use instruments as PEP (carry out premiums) and *put options* issued by the Federal Government. The results of this change are lower public stocks of products, and increased market liquidity, especially for corn, wheat, cotton and rice.

(b) **Broader Usage of Futures and Derivatives Markets –** The use of price hedges by producers has become quite common. Instruments such as futures and options from the CBOT or the Brazilian Futures Exchange (BM&F); forward contracts with trading and wholesale companies; and more sophisticated over-the-counter options. A growing number of brokers, banks, insurance companies, consultants and even input companies have helped farmers keep updated with market conditions and minimize price risk.

(c) **New Instruments and Operations –** With the intent to compensate the lack of credit from traditional sources, farmers have swapped products for inputs or even cash during recent years. The "green-soy"[8] was the first contract of this type; in time, it has progressed to what is called the CPR (Farm Product Bond)[9]. Today estimates show that 20 percent of marketed fertilizers, and 60 percent of chemicals were sold in exchange to output, or at least as payment guarantee. The farmer uses it as a way to fix the price from the time the purchase of the input is made to when the product must be delivered, generally a period of 6 months. A few contracts allow the separation of the premium and the selling price. With these contracts farmers have fixed favorable terms of trade when prices in Chicago rally, and are also able to determine factors influencing prices in the international markets.

6 – Renewed Terms of Farm Debts – During the first years of the 1990's, amidst a chaotic economic scenario in Brazil, financial transactions of farm credit were indexed by the TR (Reference Interest Rate) with an additional premium of 6 percent to 9 percent, depending on the size of the farm. The TR was derived from the market free interest rate conditions that in those days were skyrocketing, making any debt unplayable. The "Collor" stabilization plan back then

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[8]. The "green-soy" is a financial contract by which any cash credit from a trading company is replaced by a soy credit, and its value is based on the price of futures in Chicago and adjusted for the local market.

[9]. The CPR is a forward contract whereby the farmer transfers ownership of his grains to the person lending him money to plant. This bond may carry the signature of a bank, and may contain clauses of guarantees and collaterals. The settlement of the bond may be physical (delivery of products) or cash, depending on the terms established upon issuance. It is estimated that some R$ 500 million in CPR's with bank approvals and some R$ 3 billion without it have been issued in 2001.

made this condition worse, as debts were adjusted at a higher rate than minimum prices. These facts resulted in a snowball effect on the indebtedness of most farmers, especially those depending on credit lines of the official "Bank of Brazil". Since 1995, the government has engaged in diminishing the weight of those debts, as an example:

a) **Debt Rescheduling for Small and Medium Size Farmers** (called "Securitization") – In 1995 the Federal Government and Congressmen with links in the industry have agreed to make the rescheduling of R$ 8.5 billion (approx. U$$ 3.5 bi) of outstanding debt from 350 thousand farmers. Initially an 18-month without payment period was established, after which it would be paid out in seven annual installments.

b) **Debt Rescheduling for Large Size Farmers –** In 1998, all outstanding debt larger than R$ 200,000 was negotiated under a new program with a more severe rule, and some 70 percent of those under this category participated. With an estimated R$ 3 billion of debt outstanding the program only covered some R$ 2.1 billion.

c) **Restructuring Program for Cooperatives –** Also in 1998 it was established the "Re-co-op" program (Co-ops Recuperation Program), which is a credit line for co-ops to modernize and construct long term strategies. Under the Re-co-op, the co-ops are stimulated to merge and sell any assets not directly linked with their core business. Over 400 co-ops have requested around R$ 2.5 billion from the program and about R$ 1 billion has been granted.

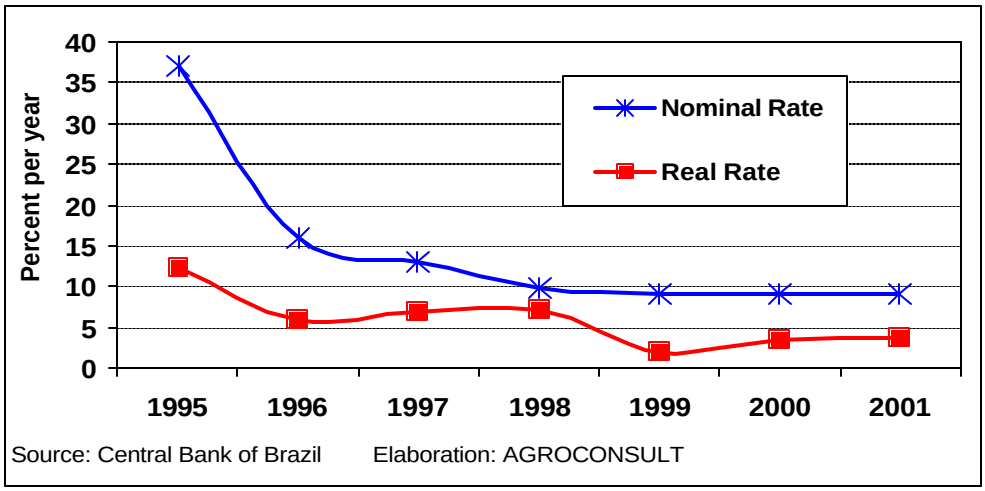
d) **General Debt Restructuring –** In 2001 all farm credit on the books of the official "Bank of Brazil" were transferred to the National Treasury, within the context of the National Program for the Recuperation of Government Banks.

7 – Farm Credit – In the early part of the 1990's a severe fiscal crisis resulted in a huge decrease in the amount of Government financing to agriculture. Since then the economic stability and new management practices in public banks, Bank of Brazil in particular, have given the Government power to improve its credit performance. Some initiatives are:

a) **Swift Credit Evaluation –** In the past, credits to fund sowing would only be granted around September when the official Government Crop Plan for the year was issued. The Plan would include the rules for that harvest season, at a time when farmers had already purchased part of the inputs or even initiated their sowing. Since 1995, the Crop Plan has been released earlier in the year, before the end of second quarter, and credit is being made available for those who wish to buy inputs.

b) **Reduction and Guidance of the Interest Rate –** From 1995 to 2001, not only a large decrease of nominal interest rates (down from 37 percent per year to 8.75 percent per year) and real interest rates (from 12 percent to 4 percent) has occurred, but also rates are being fixed. Farmers now pay a lot less for their borrowings, and have stable financial liabilities.

Figure 7 – Brazilian Interest Rates of Rural Credit



c) **Increase of Available Credit –** In the 1994-95 crop, the amount of credit made available was US$ 4.9 billion, or US$ 66.9 per ton of grain produced. In the current 2001-02 crop, as much as US$ 7.2 billion has been lent, or US$ 76.8 per ton of grain. This represents an increase of 47 percent and 15 percent respectively. It is important to note that in local currency (R$) the increase is much higher (76 percent), as the large devaluation in 1999 distorts the figure in US dollars. One other important factor is the increase in credit directed to acquisition of inputs and investments which grew by 126 percent and 61 percent during these years, while funds available to trading went up by only 20 percent as private firms have increasingly taken the role of financiers here. One should also note that most of the funds that the Government is making available is going to low-income farmers.

Table 5 - Destination of Rural Credit (R$ Billion)

	Short-Term Loans	Long-Term Investments	Marketing	Total
1994/95	4,6	1,9	2,5	9,1
1995/96	4,5	1,5	0,7	6,8
1996/97	5,6	1,6	0,6	7,8
1997/98	6,6	2,3	1,2	10,1
1998/99	7,3	1,9	1,6	10,8
1999/00	8,6	2,3	2,2	13,1
2000/01	9,1	2,7	2,6	14,4
2001/02	10,5	3,1	3,0	16,6

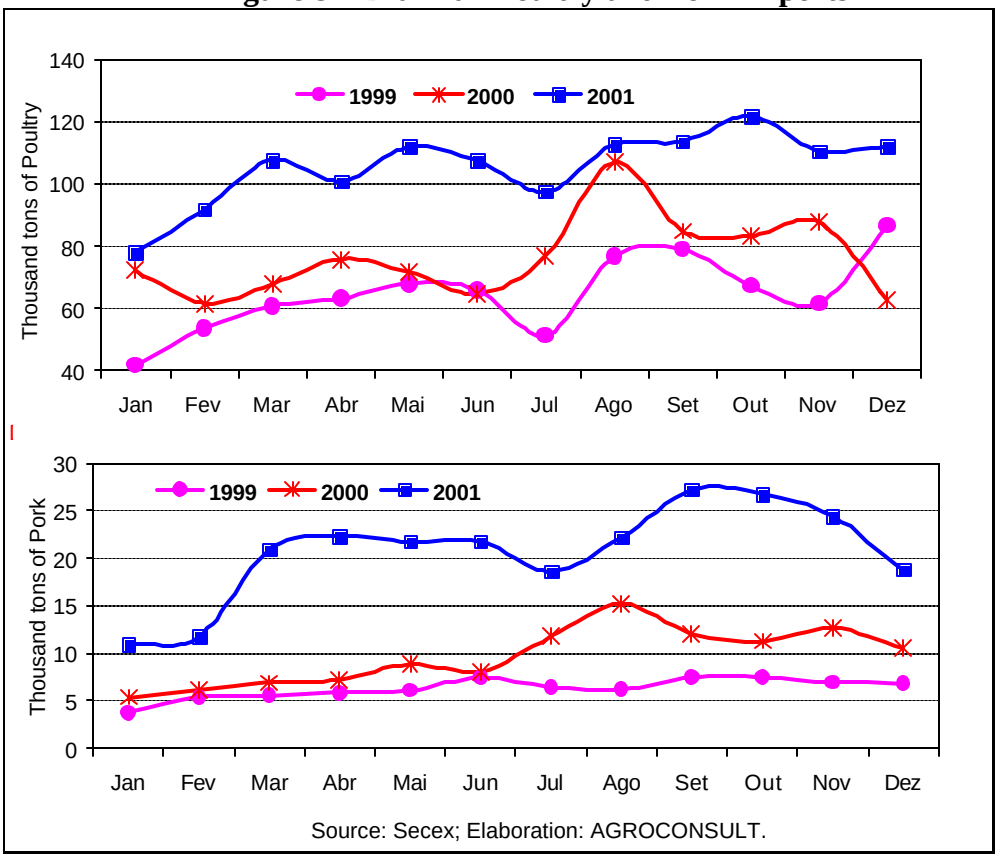
Source: Central Bank of Brazil Elaboration: AGROCONSULT

8 – Tax Exemption for Exports – The Government exempted the ICMS value-added tax to basic and semi-manufactured products being exported (13 percent). This has prompted an immediate price hike for producers. This sudden increase of their income has positively reflected in the expansion of newly planted land, particularly in the "Cerrados" region (the mid-west Brazilian "savannas").

9 – Strong Production and Export Performance of Meats – From 1991 to 2001 the production of poultry in Brazil increased by 130 percent, and its exports quadrupled (304 percent), and now it is the World's second largest producer and exporter. The production of pork doubled during the same period (95 percent), and the exports had a magnificent performance with an increase of 1,576 percent, making the country the fourth largest pork exporter. These trends were intensified with the devaluation of the Real and the European sanitary crisis (e.g., the BSE and foot-and-mouth diseases). The excellent performance of meat production in Brazil has also positively impacted the domestic demand for grain.

10 – Image Change of Agriculture and Farmers – During recent years the perception that the Brazilian society and media have of farming and farmers has changed dramatically. In the past, the industry was perceived to be inefficient and highly dependent on government support. Nowadays it is seen as an important sector that generates hard currency through its exports (the agribusiness trade surplus in 2001 was US$ 18 billion), that maintains inflation rates low (food represents over 30 percent of price indices) and that is a propeller of development in poorer regions of the country (Center-West, North and North-East) alleviating pressure for services and utilities in major urban centers of the South and South-East regions. There is a broad perception that Brazil's agriculture is highly competitive globally (but highly limited by protectionism from developed nations), and that the development of the national economy is dependent on the competitiveness of agriculture. This change of posture towards the industry is highly favorable and helps obtain strong support within the Congress.

Figure 8 – Brazilian Poultry and Pork Exports



When one analyzes all these complex factors together, one may conclude that the good performance of Brazil's agriculture has not been a result solely from the currency devaluation. The devaluation certainly helped its competitiveness. However, one has to acknowledge the joint initiatives of the Brazilian private and public sector to put forward the competitive advantages Brazil has with grains and meats. In addition, when addressing the devaluation of the Real, one must realize that a major part of variable costs (fertilizers, seeds, chemicals) are priced in U.S. dollars and follow the swings of the exchange rate. It is important to note that the share of variable costs in Brazil are larger than those in Argentina and the United States where fixed costs (land in particular) represent most of the operational costs. It should also be noted that the devaluation of the Real was part of macro-economic adjustments, and not the means to aid an exporting industry. However, it did correct major distortions from the implementation of the Real Stabilization Plan when the currency became over-valued and the competitiveness of Brazilian tradable goods decreased while imports were highly favored in the domestic economy.

2.2. Brazilian Agriculture in Perspective

Considering that Brazilian competitiveness is still in progress and that many variables affect competitiveness, one can expect improvements in the next few years, and consequently a larger market-share for Brazil in world grain markets. Some items that will contribute to the strengthening of the Brazilian competitiveness in the production and exports of grains are highlighted below:

1. Sustainable growth of the Brazilian economy - At growth rates greater than 4% per year, it stimulates demand for food in the domestic market. We expect an important decline in interest rates, which implies a reduction of the effective rates for financing crop expenses and investments.

2. Investments in transportation infrastructure – Improvements in highways, railways and waterways conditions. For example, pavement of BR-163 (between *Cuiabá*, in the *State of Mato Grosso*, and *Santarém*, in the *State of Pará)*; expansion of existent railroads, for example, Ferronorte (expansion to *Porto Velho*, in the *State of Rondônia* and *Santarém*, in the *State of Pará*) and Novoeste (expansion between *Santos*, in the *State of São Paulo* and *Corumbá*, *in the State of Mato Grosso do Sul*). There are also plans to improve existent waterways, *Paraná-Paraguay*, *Tietê-Paraná*, *Madeira-Amazonas*, *São Francisco*, *Araguaia-Tocantins*. There is also a strong movement to reduce tolls when transporting agricultural loads. In addition, significant improvements in the operational capacity of the grain terminals at the main ports are expected.

3. Consolidation of Brazilian's position as one of the largest world exporters of all kinds of meat (poultry, beef and pork) - New investments will expand meat production in the Center-west region, which will cause an increase in domestic consumption of corn and soybean.

4. Consolidation of Brazil as an exporter of corn - There is a great chance that Brazil will be ranked higher than Argentina and China, but still largely behind the US. Corn yields are increasing, favored by the introduction of new hybrids (more adapted to tropical conditions) as a result of important investments in research. The consolidation of Brazil as a corn net exporter

will be the solution for the problem of low liquidity in this market in some periods of the year, mainly in the agricultural frontiers.

Table 6 – Corn Production Costs

Corn	**USA**	**Brazil (1)**	
	Heartland	**Paraná**	**Mato Grosso**
Variable Cost:	**2000/01**	**2001/02**	**2001/02**
Seed	30.64	12.55	10.87
Fertilizers	42.06	30.72	42.72
Chemicals	30.51	21.28	21.49
Machine operation / repair	53.35	19.99	20.49
Interest on capital	4.51	3.26	3.58
Hired labor	2.35	3.26	5.22
Miscellaneous		1.65	1.91
Total Variable Costs	**163,42**	**92.71**	**106.26**
Fixed Costs:			
Depreciation of machinery / equipment	68.32	16.34	14.35
Land Costs (rental rate)	100.73	12.09	2.86
Taxes and insurance	6.97	3.92	4.41
Farm Overhead	11.11	17.65	17.61
Total fixed Costs	**187,13**	**50.00**	**39.22**
Total Production Costs	**350,55**	**142.70**	**145.49**
Yield (bushel/acre)	**148.00**	**95.59**	**95.59**
Variable Costs per bushel	1,10	0.97	1.11
Fixed Costs per bushel	1,26	0.52	0.41
Total Costs per bushel	2,37	1.49	1.52

(1) Brazil: CONAB production costs, using data from May/201 when the exchange rate was R$ 2.36 per dollar.
Source: CONAB and USDA [10]
Elaboration: AGROCONSULT

5- Authorization for commercial production of GMO's - Consequently, there will be a significant reduction of the cost with defensives, and facilitating the agricultural practices, mainly in the large farms of the Center-West region.

6. Adoption of a new tax system - By introducing the value-added tax (VAT). In this new system, tax collection will occur at the destination where consumption takes place, and not in the origin, as it happens nowadays. Tax rates will not differ among states, avoiding incidence of taxes in cascade, such as *CPMF*, *PIS* and *COFINS*. The new system will also phase-out taxes on staple bound products and interstate commercialization of agricultural inputs. These changes will significantly reduce the current tax burden of the agricultural sector.

[10]. Schnepf, R.D., Erik Dohlman and Christine Bolling. *Agriculture in Brazil and Argentina: Developments and Prospects for Major Field Crops.* USDA, Market and Trade Economic Division, Economic Research Service, Agriculture and Trade Report. WRS-01-3.

7. Consolidation of a new standard of rural financing - With stronger participation of stock markets, private banks, institutional investors and pension funds after the social security reform. The use of futures and derivatives contracts will expand, as interest rates fall and rescheduling of asset operations stay on the fast-growth track.

8- Implementation of a new system of agricultural insurance - With the participation of Government in the provision of resources to create a fund against catastrophes and a partial subsidy for the premium to be paid by small producers.

9- Introduction of a broad program to add value in agricultural production and exports - Developing strategies oriented to market niches, such as identity preserved products and organic products.

10. Redefinition of the Government's role - the Government will not be a market player anymore, instead, it will concentrate its efforts on the generation of public goods; such as, education and training, information of prices and weather forecasts, research and technological development, sanitary controls, environmental conservation, tax and financial incentives for energy and transportation infrastructure projects and implementation of a social network for protection of low income small producers.

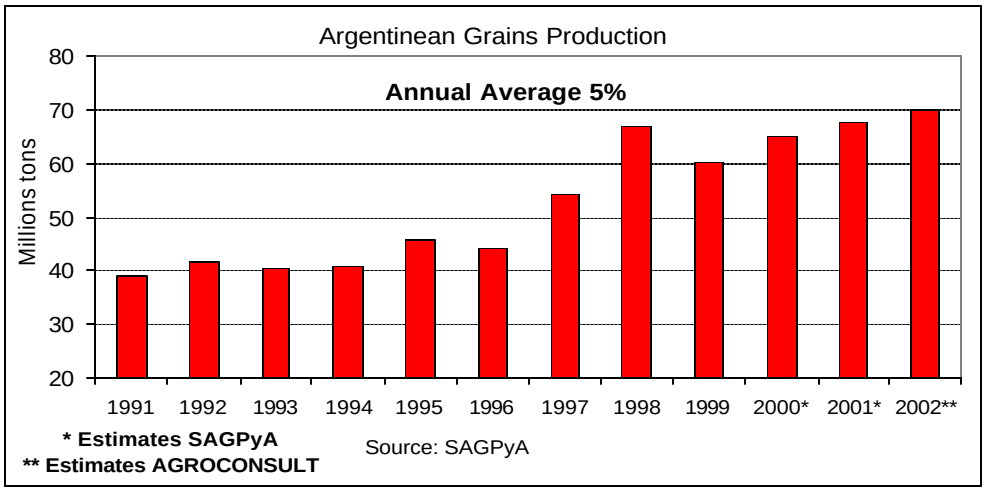
11- Reorganization of the warehousing system - stimulated by the change in the Government's role from principal executor of commercialization and stocks to monitoring actions undertaken by the private sector. The introduction of the new Warehousing Law and the possibility of resurgence of the market of certified deposits/warrants will create a favorable environment to invest in storage structures and warehouses by specialized companies which will not only store agricultural products but also supply a broad range of finance services for risk management of commercialization.

12. Brazil will become more and more aggressive in the international arena, in favor of the reduction of agricultural protectionism in developed nations - Brazil will assume a role of leadership from the developing countries perspective in all fronts: The WTO Development Agenda after-Doha, the Free Trade Area of the Americas, the FTA between Mercosur and the European Union, and the revitalization of Mercosur.

2.3. Recent Evolution of Argentina's Agriculture

As Brazil, Argentina showed spectacular performance in agricultural production during the 1990's. In the crop season of 90/91, Argentina's production of grains was 39 million tons. In the crop season 2000/01, the harvest of grains reached 68 million tons. This performance was due to structural changes in Argentina's economy (Plan of Convertibility and open access to markets), as well as in sectorial policies. Agriculture experienced the reduction of state interventionism, which enabled a friendly environment to private investments targeted to increase the sector's competitiveness. Below are highlights of the major changes that have positively affected the agricultural sector in Argentina:

Figure 9 – Evolution of Argentinean Grain Production.



1 – Removal of taxes on exports - In 1991, all taxes on agricultural exports were removed. They historically constituted an important factor reducing competitiveness. In 1992, the Argentinean government instituted a system of compensation for the VAT on agricultural inputs. For example, when producers exported corn, wheat, sorghum and oil seeds (soybean and sunflower), they received a premium equivalent to 2.5 percent of the FOB price. This compensation scheme was called ***reintegro*.** Nowadays, only soybean and soybean meal are excluded from the *reintegro*. The soybean oil receives a premium equivalent to 1.4% of FOB price, and the other products keep the premium equivalent to 2.5%.

2 - Reduction on tariffs and removal of import quotas for agricultural inputs – Most quantitative restrictions on imports of agricultural inputs have been eliminated. In addition, import tariffs on agricultural have been reduced to a maximum of 15.0 percent of CIF price. In the past, tariffs on imports of fertilizers and agrochemicals were as high as 60.0 percent. All inputs classified as capital goods have been exempted from import tariffs (those inputs which use extends all over the productive cycle), tractors, for example.

3 - Breaking the Government's monopoly in exports of commodities - The government extinguished many governmental agencies that were responsible for exporting commodities, such as meat, sugar, tobacco and grains. After this initiative, many trading companies came to Argentina, and the futures markets developed. This change induced a significant increase in efficiency of exporting grains and increased the profitability of producers.

4 - Privatization of the storage system and transportation - The Argentinean government sold the public system of grain storage (elevators), the grain terminals in the ports and railways to the private sector. These sectors have received a great volume of investments in recent years reducing substantially the transportation costs between the grain terminals and the ports. In addition to trade liberalization, the privatization of the storage system stimulated new risk takers in the commercialization system and financed the Argentinean agriculture, thus stimulating efficiency.

5 – Enlargement and modernization of the industrial sector - the macroeconomic and sectorial reforms of the last decade have contributed to the enlargement of the installed capacity of the milling industry (soybean and wheat) and input industry (fertilizers and agrochemicals). The stronger presence of multinationals in these sectors has generated more credit opportunities to producers, particularly swap mechanisms of future production for inputs (called *canje*), which has contributed significantly to the use of more technology. The export added value through the industrialization of raw products and greater availability of inputs to the domestic market has contributed to the increase in Argentinean agricultural productivity**.**

6. Use of GMO's - The widespread use of modern inputs and the introduction of genetically modified organisms (GMO's) has decisively contributed to generate high levels of productivity in recent years. The eminence is GMO soybean, which occupies 90 percent of the cropped area and has lowered production costs by US$ 40/ton. The fact that Argentinean producers are not obliged to pay fees for the use of biotechnological products (as charged in the U.S) and allowed to collect seeds for future crop seasons, are significant competitive advantages.

7 - Stabilization of the economy – After a long period of macroeconomic crises, hyperinflation, high instability of the exchange rate (almost always with overvaluation of the domestic currency, the Peso) and high external debt, Argentina re-entered the path of economic growth by resetting the credit systems and attracting external investments. The agricultural sector, favored by the new macroeconomic environment, turned out to be an attractive sector to invest. However, it must be pointed out that if the macroeconomic reforms favored the competitiveness of the agricultural export sector, it has been a restrictive factor for the good performance of the Argentine exports, due to the overvaluation of the exchange rate.

2.4. Argentina' Agriculture in Perspective

Any evaluation on the performance of the agricultural sector in Argentina in the next years has to include the unfolding of the deep economic crises that the country has been through in last the 4 years, which resulted in a political crisis and the extinction of the convertibility regimen that lasted 11 years. The introduction of the free-floating regimen of exchange rate and the "pesificación" of the economy have consequences on the future competitiveness of Argentinean agriculture, which will be analyzed below:

1. *Peso* Devaluation – it will have a direct impact on Argentinean agricultural exports, increasing its competitiveness. Recent studies from INTA (National Institute of Agricultural Technology of Argentina) point out that farms will be affected differently, depending on the degree of use of inputs (which also has prices increased in Pesos) and the type of the system of production adopted. This study also points that by increasing its competitiveness the exporting agricultural sector will contribute significantly to the balance of payments of the country. The equilibrium level of the exchange rate and the necessary time to achieve it will be of basic importance for the definition of the scene of the competitiveness of the Argentine exports. Currently, the exchange rate is close to two Pesos per dollar, but probably this rate is associated with a very low liquidity faced by the Argentinean economy. Most of the Argentinean monetary base is retained in the banks through the system known as *corralito*. The market expects that as people gain access to the deposits the demand for dollar will keep increasing

supported by the distrust individuals and companies have on the financial system. Thus, the equilibrium exchange rate is expected to go as high as three Pesos per dollar this year, and four Pesos per dollar, next year. As devaluation increases, the higher will be the gains of competitiveness for Argentinean products. However, the longer the devaluation process takes, producers will delay commercialization of products while waiting for a better and higher exchange rate.

2. Conversion of the debts into *Pesos* (*pesificación)* - Another measure adopted by the Argentinean government was the total conversion of debts contracted in dollar for debts in Pesos, by the rate of 1 dollar to 1 peso. Since the Argentinean agricultural sector has a debt of about US$ 10 billion, of which US$ 6.5 billion belongs to banks and US$ 3.5 billion to the companies of agricultural inputs, the conversion to Pesos will mean a significant reduction of the liabilities of the sector, alleviating the cash flow of producers. On the other hand, the conversion to Pesos transfers great losses to the banks and agricultural inputs sector, threatening all the production financing system established in the last decade.

3. Re-introduction of taxes on agricultural exports - Historically, when the exchange rate devalued the Argentinean government applied taxes on agricultural exports. Taking into account that agricultural exports will gain competitiveness due to devaluation, and that Government will need to increase tax collection, it is very likely that Government will use this instrument again. This will not happen immediately because of politics timing.

In general, one can expect that Argentina will increase its grain production in the next years, and consequently increase its market-share. Looking at the short-term, however, it may face some problems related to the financial system and the reestablishment of the flow of payments.

Part III – Conclusion: Long-term Perspectives for South American Performance in Grain Markets

When one analyzes the long-term perspectives for South American competitiveness in the World grain markets, one should take into account the tremendous impact liberalization and market deregulation has had on relative prices and competitiveness in the region. Contrary to what happened in the U.S., Mercosur countries faced a fast and intense opening[11] of its rural economy, the elimination of all price support mechanisms and a progressive phasing-out of the main commercial agriculture policies. In consequence, those countries are now in a position of *demandeurs* in all international, multilateral, regional and bilateral agricultural negotiations, aiming at substantial progress in redressing the inequalities from the Uruguay Round Agreement on Agriculture.

The process of gaining competitive advantage in the agribusiness sector will be intensified in the coming years, especially in the transport and warehousing industries, due to expected lower interest rates and more efficient risk management supported by capital markets. In some parts of

[11]. Brazil did a unilateral reduction of more than 40 points on its mean tariff in the last 15 years, from 55% in 1987 to 14,3% in 2001.

its vast territory, Brazil is facing a fast improvement in agro infrastructure very similar to what happened at the turn of the century in the U.S. In the case of Argentina, despite its short-term crisis and credit constraints, the country will be favored by a weaker *Peso* re-establishing its competitiveness in the world market.

Therefore, one can expect the increase of both countries market-share in grain markets, at the expense of that of the United States. The table below compares the current production costs for soy in the U.S., Brazil and Argentina, where the competitive advantage of South American countries is clear.

Table 7 – Soybean Production Costs

	USA	Brazil[1]		Argentina[2]
Soybean	**Heartland 2000/01**	**Paraná 2001/02**	**Mato Grosso 2001/02**	**N-BA / S-SF 1998/99**
Variable Cost:				
Seed	18.30	5.66	4.53	N/A
Fertilizers	8.31	15.96	33.24	N/A
Chemicals	22.58	24.51	27.13	N/A
Machine operation / repair	23.11	18.77	15.40	N/A
Interest on capital	2.08	3.96	5.09	N/A
Hired labor	1.35	6.21	3.77	N/A
Miscellaneous	--	1.33	1.62	N/A
Total Variable Costs	**75.73**	**76.39**	**90.76**	**96.29**
Fixed Costs:				
Depreciation of machinery/equipment	50.96	14.08	16.55	19.08
Land Costs (rental rate)	90.65	12.09	2.86	62.72
Taxes and insurance	7.04	3.15	3.53	
Farm Overhead	14.94	14.58	12.32	20.67
Total fixed Costs	**163.59**	**43.89**	**35.26**	**102.47**
Total Production Costs	**239.32**	**120.29**	**126.02**	**198.76**
Yield (bushel/acre)	**45.00**	**40.15**	**44.61**	**50.60**
Variable cost per bushel	1.68	1.90	2.03	1.90
Fixed cost per bushel	3.64	1.09	0.79	1.90
Total cost per bushel	**5.32**	**3.00**	**2.83**	**3.93**

(2) CONAB production costs, using data from May/2001 when the exchange rate was R$ 2.36 per dollar.
(3) N-BA (North of Buenos Aires) and S-SF (South of Santa Fé).
Source: CONAB and USDA [12]. Elaboration: AGROCONSULT

We expect that soy production in South America will be larger than the U.S.' for the first time in the 2002-03 crop. The U.S. had already lost its number one position in exports in the 2001-02 crop. In the case of corn, Brazil became a net exporting country, and its large market share in the meat sector (reducing global demand for the U.S. corn) together with excess capacity in Argentina should set a path of future difficulties for the U.S. producers. We also expect Argentina to increase its production of wheat, and Brazil to require fewer imports in the upcoming years.

[12]. See Schnepf, Dohlman and Bolling, op. cit.

The issue is to know the speed in which the process of increased South American market-share will take place. According to our analysis two variables will set the pace for this process: the next U.S. Farm Bill, and the results of the international trade negotiations at multilateral and regional levels.

In the context of the upcoming U.S. Farm Bill, the main issue for South American countries is the future level of U.S. domestic support prices for soy and its related crops (wheat and corn). There are three specific programs that will affect soy markets: a) the new Loan Rate (LDP); b) the new fixed decoupled payments (PFC) elevating soybean and minor oilseeds to program crop status; and c) the new "counter cyclical payments" established under both versions of the Bill (namely the House "Target Price" and the Senate "Income Protection Price).

In fact, the soy case illustrates very well how protectionist domestic policies can distort trade. Since 1998, and following a political decision of the Secretary of Agriculture, the U.S. loan rate for soybean was artificially set at $5.26 per bushel, well above the producer's market price. In 1999, the U.S. government spent $2.9 billion to ensure the loan rate for soy producers, after the drop in world market prices (unlike other grains, soy was not subject to high loan rates before 1997). Soy subsidies reached US$ 3.1 billion in 2000 and US$ 3.4 billion in 2001. For the 2002 crop an all-time record level of subsidies of US$ 3.57 billion is forecasted, equivalent to more than two-thirds of the value of Brazilian soy complex exports, even though soybean ranks first on Brazil's export list.

Brazilian producers are especially worried about the relative prices that will be artificially fixed in the next Farm Bill, namely the "loan rates" and the "target prices" for soy, wheat, corn and cotton. The current state of these loans clearly favors the production of soy and the question is whether those price distortions will continue.

The position taken by both Brazil and Argentina is that all forms of trade-distorting subsidies should be completely phased-out by all countries in the next WTO Round. This includes all domestic and export distorting subsidies notified in WTO, the officially supported export credits on agriculture (such as the U.S. GSM programs), the abuse of international food aid programs, the use of State Trading Enterprises (STE), the imposition of export restrictions (e.g., taxes), and all forms of revenue pooling arrangements.

It is easy to state that if the U.S. market support prices end, the trend of increased land value in the U.S. would be reverted. The value of land would be more directly linked with its real profitability. Lets take as an example a typical Heartland farm, with 50% of its land planting soy and the other half planting corn. Using USDA data for costs, the price of land would be U$ 1,530/acre if it wants to break-even at U$5 per bushel of soy. This would represent a 15% reduction on today's price. Along the same lines, with soy at U$4.44 per bushel, as in the 2000-01 crop, the price of land would be U$1,020 per acre to break-even. This means a decrease of 44% from today's price of U$ 1,815 per acre. Interestingly, if we take production costs of Brazil and Argentina, at approximately U$ 3.00 per bushel, the break-even point would never be

attained in the US. This shows that the competitive advantage of South America is not only dependent on a devalued exchange rate and cheap land[13].

Nevertheless, we should acknowledge the weakness of these calculations and the fact that export performance is not restricted to production costs but also includes the capacity to market and transport competitively. It is evident however, that the difference of production costs affords a great competitive advantage to Brazil and Argentina. Until the 1998-99 crop, moments prior to the comparative study made by the USDA economists Schnepf, Dohlman & Bolling (*Agriculture in Brazil and Argentina: Developments and Prospects for Major Field Crops)*, the competitive advantage of the Brazilian soy when compared with the American was between 5 and 10%, depending on the producing region. The Argentine soy had an advantage of 15% over the US. When compared with CIF price in Rotterdam the Brazilian advantage was of 5% or even disappeared depending on the region, while Argentina maintained a 10% advantage.

When we analyze the soy production cost data in the U.S. during the 2000-01 crop and in Brazil for the 2001-02 crop and considering the stable costs of marketing and domestic transport from 1998-99, we can conclude that the Brazilian FOB price advantage widened to 32 to 38% range; depending on the production region and to a range of 19% to 32% in terms of CIF price Rotterdam (See Annex A). In Argentina it is still hard to estimate gains from the currency devaluation, or even anticipate any new taxes on exports. Nevertheless, we can certainly say that the competitive advantages will be enhanced at the beginning of 2002.

This data suggests a major review in market-share forecast for the top 3 exporters of soy and its by-products, with a rapid expected growth of exported volumes from Brazil and Argentina. We may also conclude that the margins will increase for both producers and processors in South America.

Brazil and Argentina initiated a broad reform process in agriculture during the 1990's, which has already resulted in increased competitiveness. These processes will continue to take place in the coming years. Both countries changed their exchange rate systems, getting rid of mechanisms that allowed over-valued currencies and reduced the ability to compete. These changes mean an accelerated pace of new fertile land usage, enlarging production and exports.

The changes that have been taking place and those in the process compensate, even partially, the distortions of protectionist policies in the U.S., which generated excess production from highly subsidized farms. We expect a strong reduction in U.S. subsidies as a result of a voluntary decision for the next Farm Bill, by the end of this decade, or as a result of the international WTO negotiations. It is possible however, that policymakers in developed countries prefer the path of more protectionism of their markets and producers. Although not likely or acceptable, this decision will press for the consolidation of even more competitive advantages in South America producers, at the same time that the stronger "subsidy umbrella" transform farmers in rich countries in true government employees.

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[13]. In the case of corn, if we consider a price of U$ 1.75 per bushel – as received by US producers in the 2000-01 crop – the price of land would be U$ 220 per acre, representing a 88% decrease of today's value of U$ 1,815. It is worth noting that both Brazil and Argentina are profitable at U$ 1.75 per bushel in Chicago.

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Annex A

Soybean: Competitiveness between U.S., Brazil and Argentina

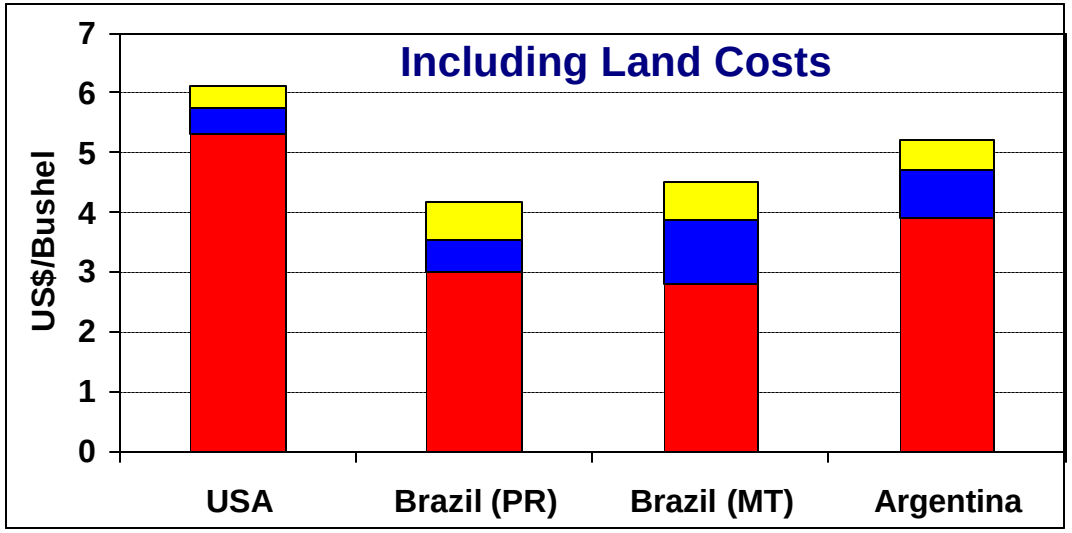
EXPORT COSTS COMPARISON

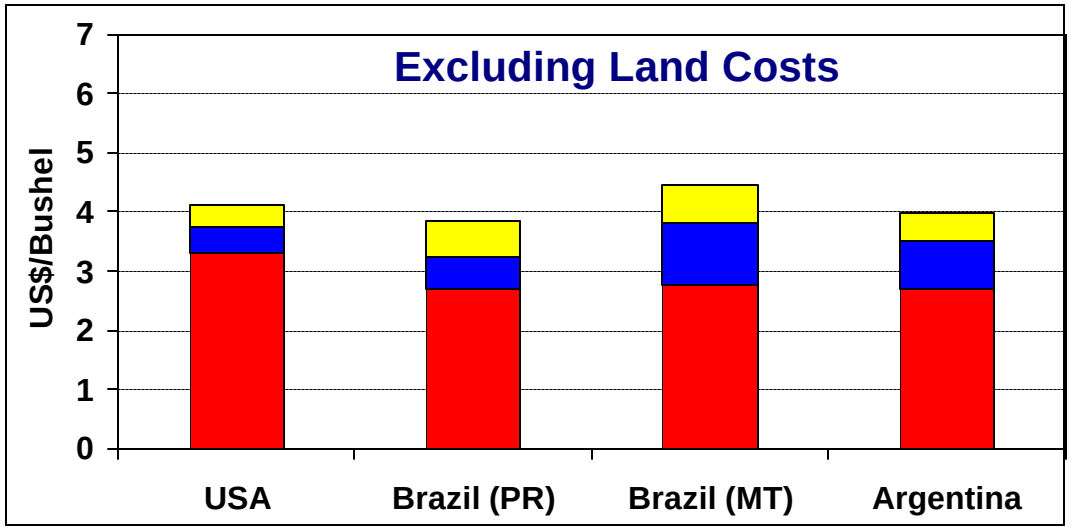
Cost item	USA Heartland 2000/01 US$/bu.	Brazil Paraná 2001/02 US$/bu.	% of U.S. cost	Mato Grosso 2001/02 US$/bu.	% of U.S. cost	Argentina Buenos Aires 1998/99 US$/bu.	% U.S. cost
Production costs:							
Variable costs	1.68	1.90		2.03		1.90	
Fixed costs	3.64	1.09		0.79		2.02	
Fixed costs without land costs	1.63	0.79		0.73		0.79	
Total production costs	**5.32**	**3.00**	**56**	**2.82**	**53**	**3.92**	**74**
Total prod costs with out land costs	**3.31**	**2.69**	**81**	**2.76**	**83**	**2.69**	**81**
Internal transport & marketing	0.43	0.55		1.06		0.81	
Cost at border	**5.75**	**3.55**	**62**	**3.88**	**68**	**4.73**	**82**
Cost at border, excluding land costs	**3.74**	**3.24**	**87**	**3.82**	**102**	**3.50**	**94**
Freight costs to Rotterdam	0.38	0.62		0.62		0.49	
Price at Rotterdam	**6.13**	**4.17**	**68**	**4.94**	**81**	**5.22**	**85**
Price at Rotterdam. excluding land costs	**4.12**	**3.86**	**94**	**4.44**	**108**	**3.99**	**97**

Sources: USDA e CONAB. Elaboration: AGROCON SULT

Note: Based on Schnepf, R.D., Erik Dohlman and Christine Bolling. "Agriculture in Brazil and Argentina: Developments and Prospects for Major Field Crops," USDA, Market and Trade Economic Division, Economic Research Service, Agriculture and Trade Report. WRS-01-3.

Soybeans: Export Costs Comparison





- Freight Costs to Rotterdam
- Internal Transport & Marketing
- Production Costs (Farmgate Level)