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Dans L'Agro-Alimentaire

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Décembre 2006

Cahier n° 2006-03

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IP - Traceability and grains traders : ADM, Bunge, Cargill, Dreyfus¹

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Résumé: Ces dernières années, le commerce international de céréales et oléoprotéagineux, ainsi que leur première transformation, a connu un important processus de réorganisation. Résultat de ce processus, le commerce mondiale et la première transformation d'oléo protéagineux est actuellement concentré autour de quatre grandes multinationales, appelées ABCD : Archel Daniels Midland (ADM), Bunge, Cargill et Louis Dreyfus. Ces entreprises sont localisées tant dans les pays d'exportation que dans les principaux pays importateurs. Comme conséquence des problèmes associés à la qualité sanitaire des aliments, ces entreprises ont investi dans de systèmes de traçabilité, d'assurance - qualité, et dans de systèmes de type IP.

Abstract: In recent years, the cereals and oilseeds world trade, as well as the first processing industry, has been characterized by an increasing degree of reorganization. World grain trade is currently focused on the quartet called ABCD: Archel Daniels Midland (ADM), Bunge, Cargill and Louis Dreyfus. These multinational companies are located in production and consumption areas. In addition to the important role that these stakeholders play in the world grain trade management, they are the clear leaders in the first processing sectors. The problems associated with feed or food safety incidents, have sparked a rising concern for traceability. These events have brought to light the need for quality and food safety insurance programs. Indeed, companies like "ABCD" have decided to create IP systems to meet consumer demands.

Mots clés : Commerce International, sécurité des aliments, traçabilité, multinational, OGM

Key Words : World trade, food safety, traceability, multinational, GMO

Classification JEL: F1

¹ Co-extra (GM and Non-GM supply chain : their CO-EXistence and TRAceability) – Sixth EU Framework Programme – Priority 5 – Food Quality and Safety.

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Introduction

The food industry in recent years has been characterized by an increasing degree of reorganization. Many sectors have been subject to some kind of restructuring, such as international trade, food-industry or retailing. This process is carried out in the current trend towards increasing concentration and globalisation in the food industry, which is likely to exert an increasing influence on all economic activities.

Confirming the general tendency defined previously, in the last decade a reorganization of the sector stakeholders in the international trade of cereals and oilseeds has been undertaken. World grain trade is currently focused on the quartet called ABCD: Archel Daniels Midland (ADM), Bunge, Cargill and Louis Dreyfus.

These multinational companies are located in production and consumption areas, operating principally in the following countries: United States, Brazil, Argentina and Europe. Recently, they have spread to new consumption areas, including Asia (especially in China and India) and Eastern Europe.

In addition to the important role that these stakeholders play in the world grain trade management, they are the clear leaders in the first processing sectors (crushing and refining). Because of the fluctuating market conditions of grain trade, and consequently, a high risk level, most traders have simultaneously developed a first processing activity.

Moreover of the increasing practice of concentration, multinational companies have been operating strategic changes in their business activities. This forms part of a dual challenge. On the one hand, they have to create a competitive advantage developing high value-added activities, improve their sales department and optimize their production and logistics systems (specially the transport infrastructures in South America). On the other hand, not only do they have to fulfil their customers requirements for quality and traceability (European and Japanese distributors and food processors), but they also have to face changes in the importing countries legislation (European regulation about traceability).

Likewise, consumers, customers, and government demands are increasing the need for traceability. At the same time, the rapid development of new technologies is requiring greater integration of the food production chain. The problems associated with feed or food safety incidents, which occurred during the 1990s, have sparked a rising concern for traceability. These events have brought to light the need for quality and food safety insurance programs. However, this challenge has received a swift response from industry. Indeed, companies like “ABCD” have decided to create IP systems to meet consumer demands.

This paper examines the “ABCD” companies’ strategies, focusing the attention on the framework of traceability and Identity Preserved (IP) systems required to fulfil customer’s needs and the European regulation.

The purpose of this paper is to gather useful information to help the understanding of the articulation between the lawful requirements and the market practices for these four companies, and not to examine an exhaustive analysis of the ABCD's strategy.

This explains why our paper is structured as follows. In the first section, we set up a synthesis of the main reorganization operations which occurred during the last decade and lead to the current world grain trade organization around "ABCD". Then, we establish an "identity card" of these four traders as well as identifying their strategies. Our results show that these strategies can be rather similar to main activities, but can also appear very specific to the other ones. In the final section of this paper, some interesting implications around the linkages between companies strategies and traceability and IP systems are discussed.

It is noteworthy to mention that this work was mainly carried out with indirect information sources. Consequently, depending on the data published by the companies, the wealth of this information is relatively unequal.

I. Historical evolution of the world grain's trade market: toward the concentration of the stakeholders

The food industry has experienced for several decades a process of permanent reorganization. This has been observed in various sectors, like world trade, food industry or retail trade. This process concerns both large companies of this sector, as small and medium-sized businesses. Concerning cereals world trade, the last decade was marked by an important change in the stakeholders' organization with the gradual fade out of several giant players during the last years. We will begin by a presentation of these failed enterprises before the description of the market winners.

1. Ferruzzi's group: the world trade's shooting star (1993)

The Ferruzzi group was created in 1948 by Serafino Ferruzzi, to carry out trade operations of cereals inside the Italian market. It entered the sugar sector in 1968, by purchasing three Italian companies involved in this activity. From the 1980's, thanks to European assistances, the group widened its sugar activities in France, thanks to the acquisition of the group Eridania's shares (a sugar subsidiary of the Ferruzzi group in Italy) in the French sugar group Béghin Say. Ferruzzi realized in 1987 a large expansion, thanks to the purchase of two great American groups: the Central Soya group, as well as the starch branch of the CPC Company. By external growth, the group was also controlling 40% of the petro-chemical Italian Montedison company. The international growth of Ferruzzi's activities was the result of the orientation of Raul Gardini, who entered the direction of the group in 1980.

Towards the end of the 1990's, the Ferruzzi group was one of the largest soya world trade companies. It has also an influential place in the industrial sectors of glucids (starch and sugar), of lipids (oils, thanks to the acquisition of Lesieur in France and big investments in Spain), and of proteins (oil cakes and others soya derivatives). Its activities were based on three products: sugar, soya, and corn. The company was very active in Italy, France, United States, Spain, Argentina and Brazil. In spite of its leadership, the cost of the group's external growth operations got it into debt. This situation had already been mentioned in the financial press at the beginning of the 1990's.

In 1990, the bankruptcy of the group Enimont (which had repurchased the petrochemical group Montedison), increased the financial standing of the group and Raúl Gardini is thorough at the departure in 1991. This is followed-up to get fall of the activities of soya trade to Chicago Stock Exchange, as well as several financial problems with these activities in Argentina and in Brazil. In 1993, the Ferruzzi group couldn't leave any more this financial standing and gone broke. The situation has dramatic consequences, since Gabriele Cagliari, the old- president of the ENI and ex-leader of Montedison, like Raul Gardini will commit suicide in 1993.

The group was finally dismantled; the activities of Eridania - Béghin Say – were divided into four groups corresponding to its four branches: sugar, starch, oilseeds and

animal nutrition. The choice of the scission has been done to offer a better visibility to the investors, while creating value for the shareholders by reducing the inherent rebate in a holding. In France, the scission of Eridania Beghin Say was an opportunity for the American groups to place itself in fortress: Cargill purchased Cerestar and Bunge purchased Cereol, producer of Lesieur oil. Thus Bunge-Cereol became the first world oilseeds processor. Finally, in U.S, ADM purchased the American operations of Central Soja, Ferruzzi's processing subsidiary¹.

2. The failure of Continental Grain's grain merchandising business and its acquisition by Cargill (1999)

- **Continental Grain**

Created in 1813 in Arlon, Belgium, by Simon Fribourg, Continental Grain expanded on the international market one century later. In 1921, it opened its operations in the United States, establishing 'Continental Grain' in Chicago and then in New York. In 1928, Continental Grain bought a grain elevator in St. Louis, Missouri, the first of a group of seven that it went purchasing until 1935.

Continental excelled in very large volume bulk export trading but had not diversified enough into value-added processing to compete effectively in a market environment where export volumes have been sharply reduced between 1995 and 1999. Continental's storage capacity declined significantly over the 1990's while Cargill, ADM, and Peavey expanded. Their capital could be more productively employed in their other agricultural and financial businesses.

In 1999, after considerable problems with its world trade subdivision, Continental Grain decided to sell its Grain Merchandising Business division, included the whole of its world trade activities to Cargill. So, Continental grains changed its name and became ContiGroup.

¹ Vincenzo Benini '*Storia del Gruppo Ferruzzi*', Tesi di Laurea, Università degli Studi di Bologna, 1999.

Luigi Locatelli '*La saga dei Ferruzzi: Una vicenda che inquieta ancora l'Italia*', http://www.specchioeconomico.com/2004luglio_agosto/sama.html.
'*Gardini, i giorni del silenzio*' in <http://www.magrini.net/Parole/Gardini.html>.

ContiGroup Companies Inc. (CGC) in 2006

- With the sale of its Grain Merchandising Business division, ContiGroup turns its principal focus to meat proteins. Then, in 2000, ContiGroup sells its Animal Nutrition Division business.
- Employs more than 10,000 people worldwide--plus an additional 16,000 in joint-venture operations.
- Has offices and facilities in 9 countries.
- Operates 13 state-of-the-art poultry plants across the southeastern United States.
- Supplies fresh and further-processed poultry to restaurant chains, frozen food makers, and other retail companies throughout the world.
- Ranks as the sixth largest vertically integrated poultry processor in the U.S.
- Is a major producer of animal feed, wheat flour, and poultry in Latin America and the Far East.
- The company is also a leader in aquaculture and flour milling, and one of the largest animal feed and poultry producers in China.

- **Cargill**

Cargill expected this acquisition to contribute to its ability to compete effectively in a rapidly changing market environment. The acquisition will contribute to more effective knowledge acquisition and transfer from an expanded global presence. In addition, it will have a broader base of grain origination facilities in the countries where grain is produced.

Further, Cargill expected that it will be more able to reduce costs, not just by having fewer people, but by dedicating some facilities to specialized products and getting more efficiency in operations (shorter barge turnaround times, longer runs in elevator handling, etc.).

Cargill's joint venture with Monsanto (in 1999)², to market value-added grains and oilseeds specialties for the feed and processing industries, will require greater capacity to handle segregated grain flows throughout the domestic and export marketing system. Continental has had a significant presence in the identity-preserved grain market with half its international feed customers converted to high corn oil. They also plan to offer the farmers better services such as risk management, production advice, and financing.

In 1999, Cargill has grain merchandising offices and facilities in 43 countries. In the U.S., Cargill has 243 grain facilities; the industry leader ADM through ownership or joint ventures has 669 facilities, according to Milling and Baking News.

² According to: http://www.agribusinessaccountability.org/bin/view.fpl/1198/cms_category/1684.html; and <http://www.foodcircles.missouri.edu/cargill.pdf#search=%22cargill%20%2B%20monsanto%22>.

- **The acquisition**

The Cargill's purchase of Continental Grain's grain merchandising business joint the two largest grain and oilseed exporters of the world, with important storage capacity in the US.

Table 1 : Storage capacity of the ten largest U.S. Grain Elevator, Milling and Processing Companies in 1981 and 1999³

| Company | Total Capacity 1981(mil. bu.) | Company | Total capacity, 1999 (mil. bu.) |
|--------------------------|-------------------------------|----------------------------|---------------------------------|
| Cargill | 148 | ADM | 611 |
| Far-Mar-Co | 122 | Cargill | 463 |
| Continental Grain | 110 | ConAgra/Peavey | 198 |
| Union Equity Co-op | 67 | Farmland Grain Div. | 178 |
| Pillsbury | 54 | Bunge | 170 |
| Central Soya | 51 | Continental Grain | 169 |
| Bunge | 47 | Cenex Harvest States Coop. | 146 |
| The Andersons | 43 | Riceland Foods | 102 |
| Lincoln Grain | 39 | The Andersons | 80 |
| Indian Grain | 39 | General Mills | 72 |

Sources: Structural Change and Performance of the U.S. Grain Marketing Industry; Milling and Baking News Grain and Milling Annual, 1999, pp. 21-22

A major combination of two leading competitors in the U.S. and world grain merchandising industry certainly will prompt market power concerns by policy makers, the Secretary of Agriculture, etc., which will involve data submission to the relevant antitrust agencies. The review (and subsequent challenge or approval) has been done by the U.S. Department of Justice and similar agencies in other parts of the world where both companies extensively did business.

Cargill Inc. was the largest private food industry company in the Forbes magazine 1998 listing of private companies in the U.S., and Continental Grain Company was n° 5 on the list (Table2).

Table 2 : Cargill and Continental Grain Statistics, 1998

| | Cargill | Continental |
|---------------------------------|----------------|--------------------|
| Revenue (billion \$) | 51.4 | 15.0 |
| Net profits (million \$) | 468 | 100 (est.) |
| Employees (thousands) | 80.6 | 17.5 |

Source: Forbes magazine, 1998.

³ According to the table 1, only three of the largest grain companies in 1981 have shown up on the 1999 list. Three farmer cooperatives (ConAgra/Peavey, Farmland Grain Div., Cenex Harvest States Coop.) were in 1999 part of the top 10, versus two in 1981. Some regional cooperatives had grain merchandising joint ventures with other corporations. These datas include very large livestock production, feed company and financial operations for Continental Grain, and extensive livestock production and meat processing, feed, poultry, steel, shipping and other business subdivisions for Cargill.

Only the Continental grain storage, transportation, export and trading operations, with offices and facilities in 30 countries (in North and South America, Europe, the Middle East, Africa and Asia) are involved in the acquisition, with customers over 100 countries.

In the U.S., Cargill indicates that these assets include 83 grain handling facilities, which will add 73 new locations to their current 243, and 10 facilities where Continental and Cargill elevators currently coexist close to each other.

Cargill and Continental are significant in other parts of the world grain economy as well. For example, a Cargill Argentina press release indicates the combined operations would account, in 1999, for about 25 percent of Argentine corn wheat and soybean exports.

They are significant competitors in most areas of world grain production, along with such trading companies and merchandisers such as Peavey, ADM, Bunge, Louis Dreyfus, Zen Noh, Cenex Harvest States, Tradigrain, Farmland, AGP, Nidera, Mitsui, Marubeni, Mitsui, Mitsubishi, Kanematsu, Glencore, Oriac, Itochu, CAM, and Seaboard.

Cargill estimated that Cargill and Continental Grain accounted for 35 percent of U.S. grain and oilseed exports in 1999. Industry sources, using Department of Commerce (Pier Import Export Reporting Service) data from May, 1997 to October, 1998, calculate that Cargill and Continental Grain accounted for 14.5 and 13.1 percent, respectively, of export shipments of wheat, corn, soybeans, sorghum, barley and oats.

The Secretary of Agriculture estimated that the combined Cargill-Continental Grain operations accounted for 42 percent of corn export volume, 31 percent of soybeans, and 19 percent of wheat exports in fiscal 1998⁴.

3. André-SA's bankruptcy (2001)

Founded in 1877, the Swiss company André & Co SA is an international agricultural raw material trader. The Andre group is one of the three giants of the agricultural trade with Cargill and ADM. The head office that accounted for 1/3 of the total turnover of the world group (a little more than one billion Euros) announced in 2001 its discontinuance of business. The losses would exceed 200 millions dollars.

What are the reasons of this bankruptcy? In 1999, the Andre group prepared its fall with losses reaching more than 285 million Swiss francs in the year. Classified a long time among the first fifteen Swiss companies, the family company had just lost a hundred million dollars in Spain, 55 million in South America, 178 million in Italy and recovered painfully from the scandals *to* Russia.

⁴ M. Hayenga and R. Wisner 'Cargill's Acquisition of Continental Grain's Grain Merchandising Business', January, 1999, Staff paper #312, Department of Economics, Iowa State University.

The Andre group sought to solve its financial problems while investing in Iran, a difficult market, which four contracts will be signed with. The first, signed in April 1999, is a financial arrangement of 55 million dollars to produce bottles P.E.T. The second contract, five months later, is much more important. It is a question of set up in Switzerland a joint venture, called PetroFinco, with the National Petrochemical Company. The business is estimated at 1,3 billion dollar per year, until 2013. The third agreement envisages the supply of machines for 75 million dollars to the customers of the Export Development Bank of Iran. The last one, signed in January 2000 with the Iranian Ministry of Trade, relates to a credit of 300 millions dollars per year, extensible to 500 millions, over five years. Sales by advance of 100 millions dollars had been concluded besides at the time of the signature. All the projects were to be guaranteed by Export Guarantee Found of Iran, partner of Finco in the contract. In all, over the first five years, it is not less than 14,22 billion Swiss franks that André plans to gather for his Iranian projects. Two years after, in 2001, the assessment is very simple: the Andre group is unable to honour its contracts and the group fails.

Following the bankruptcy, the "grain" department was dismantled and several structures of trade were born. In particular, the Hong-kong's trader Noble and the Ameropa Company took again a part of the activities treated before by the Andre group, notably the wheat trade. Noble Group Limited (NOBL)⁵, world supplier of raw materials of industrial use and resources of transport registered with Singapore Stock Exchange, bought the international trade part of raw materials agricultural in André & Co SA, of Switzerland. Noble acquired mainly the Asian activities of André and Co. Noble will become purchaser of the companies realising a nominal sum. Within the framework of the agreement with André, Noble issued a payable guarantee of approximately 64 \$US millions at the creditor banks of the sixteen companies (the André companies in Asia) in order to support their basic current activities.

The André companies in Asia are especially occupied to provide goods like cereals and soya flour. Present in Singapore, in Australia, in Japan, in Indonesia, in Thailand, in India, in Pakistan, in Myanmar, in Vietnam and in Republic popular of China, the sixteen companies employed approximately 250 people. During only the accounting period 2000, the whole of these companies generated a total sales turnover of more than one billion dollars. The André companies of Asia will be gathered under the mark Noble Grain. And Bunge acquired in 2001, La Plata Cereal in Argentina⁶.

4. ADM's stake in Alfred C. Toepfer (1983, 1999 and 2002) and Glencore Grain Holding (1998), and Soules Caf (2005)

Another important operation of reorganization, with strong implications for world trade organization, was the evolution of the relationship between ADM and Toepfer.

Since 1919, the year when this Dutch company founded, Alfred C. Toepfer has been trading grains, oilseeds, and feedstuffs. Today the Toepfer group consists of the

⁵ According to : <http://www.rawmart.com/s/jsp/index.jsp> and <http://www.prnewswire.co.uk/cgi/news/release?id=6540>.

⁶ The New York Times 'American Soybean Exporter buys unit in Argentina', October 9, 2001

headquarters in Hamburg and 42 worldwide subsidiaries and offices, with approximately 1,600 employees achieving a sales volume of more than 40 million tons annually. Alfred C. Toepfer International (ACTI), founded in 1979, started with an equity of approximately 55.5 million €. Today, the equity amounts to more than 230 million €

In 1979, InTrade⁷, a holding company of 12 agricultural cooperatives from all around the world was formed to acquire ACTI, and the administration of the shares in ACTI.

Since 1983, ADM has been acquiring interests in Toepfer International. The cooperation among the shareholders of Toepfer International (ACTI) was improved further in 1999. ADM acquired shares in InTrade and vice versa.

In 2002, the European Commission authorized Archer Daniels Midland Company to acquire joint control of 60% in InTrade and increased its ownership to 80% in ACTI. The Commission's investigation showed that in the markets where the companies' activities overlap, a significant number of competitors exist. In particular this is the case in the crude seed oil and oilseed meal markets. Therefore the operation will not create or strengthen a dominant position.

Toepfer International and its shareholders ADM and InTrade cover the entire spectrum of the agricultural business from originating and processing in the producing countries to the delivery to the processor or consumer throughout the world. At the same time, Toepfer shareholders are major buyers of the commodities traded by Toepfer.

ADM and ACTI have overlapping activities in international trading and wholesaling of crude seed oil used by oil processing companies and of oilseed meal, a major component of feedstuff. But the combined market shares remain low and only exceed 15 percent in the markets for the sale of physical quantities of crude seed oil and oilseed meal (Feb /2002 - The European Commission).

ADM's trading group in Europe is Alfred C. Toepfer International (ACTI) who are the link between agricultural production, the processing operations of ADM and global markets. ACTI surpasses traditional functions of a trading company by building relationships with customers that focus on meeting their specific needs : multiple insurance coverage, tailored marketing products, grain marketing advisory services, a full line up of financial-related services, market news and analysis.

⁷ InTrade is the holding company for a number of significant agricultural cooperatives in the EU and the USA. InTrade has a presence in all major agricultural markets around the world. The member cooperatives achieve a sales level of US\$ 40 - 50 billion in 1999. They are the essential partners the farmers need when it comes to purchasing as well as selling. The member companies of the InTrade group have at their disposal silos, flour and oilseed mills, compound feed plants, transport capacities and elevators for handling products. InTrade: Cenex Harvest States – Invivo – Deutsche Raiffeisen Warenzentrale - Dansk Landbrugs Grovvarerelskab – Iris Agricultural Wholesale Society- RWA Raiffeisen Ware Austria AG - Svenska Lantmännen.

According to: Commission of the European Communities '**Archer Daniels Midland/Alfred C. Toepfer Merger**', COMP/M.134 [1999] ECTComm 100 (9 November 1999)

In 1998, ADM purchased Glencore Grain Holding with facilities in Paraguay and Brazil. ADM has also announced that it would purchase 58 owned or rented grain elevators in Brazil and Paraguay, two of them are port terminals, from a firm called Glencore Grain.

On the 22th December of 2005, the European Commission has cleared under the EU Merger Regulation the proposed joint acquisition of Soulès, a distributor of non-grain feed ingredients active in France, by InVivo⁸, a French union of cooperatives, and Alfred C. Toepfer International, an international trading company of agricultural commodities. After examining the operation, the Commission concluded that the transaction would not significantly impede effective competition in the European Economic Area (EEA) or any substantial part of it.

⁸ Union InVivo is an Union of cooperatives arising from the merger of UNCAA (l'Union des coopératives agricoles d'agrofournitures) and SIGMA (l'Union nationale de coopératives agricoles de collecte céréalière) on December 4, 2001. With 337 member cooperatives, Union InVivo is the leading European purchasing, sales and service entreprise in agriculture. The operation of Union *InVivo* is based on *results* and *complementarity*. By bringing together technical, logistical, industrial and commercial skills within the same, new company, Union *InVivo* confirms its vocation and its willingness to generate a lasting economic power for the *farmers*.

According to : <http://www.invivo-group.com/>.

II. The head quartet (ABCD):

Trading and processing (crushing and refining) are highly concentrated in the world market: Bunge, ADM, Cargill and Dreyfus are the four current leaders. The presence of these all big four companies in both Europe, North and South America allows them to balance their global presence to profit from whatever differences in price, demand, subsidy, tax breaks, labour or environmental standards existing between regions.



1. Archer Daniels Midland Company (ADM)

1.1 History:

Archer-Daniels-Midland Company (ADM) is one of the world's leading processors and distributors of agricultural products for food and animal feed, with additional activities in transportation and storage of such products. Its main operations are the processing of soybeans, corn, and wheat, the three largest crops in the United States. ADM also processes cocoa beans, milo, oats, barley, and peanuts.

1900's-1920's: ADM has its origins in the Daniels Linseed Company, which opened a flax processing plant in the American Mid West in 1902. In 1923 the company purchased the Midland Linseed Products Company and then incorporated as the Archer-Daniels-Midland Company, and soon moved into the operation of grain elevators and flourmills. During the 1920's, ADM started crushing soybeans and became a leader with the rapid development of soybeans in the USA.

1930's-1940's: The company underwent a period of expansion between 1930 and 1945. During this time, the company also discovered how to extract lecithin from soybean oil with solvent. The immediate postwar years from 1946 to 1949 showed dramatic growth: sales increased 287 percent, and net income increased 346 percent.

1950's-1960's: By the early 1950's the company had expanded outside the US, including joint ventures in Peru, Mexico, the Netherlands and Belgium. In 1965, ADM decided to develop soybeans and textured vegetable protein, by locating plants in Europe and South America during 1970's and 1980's. Textured vegetable protein was widely used in foodstuffs, and soybean oil became later the number one food and cooking oil in use. During the 1960's, ADM started to operate in the transportation sector and the construction of grain export terminals in Louisiana.

1970's-1980's: In 1972, ADM formed the American River Transportation. ADM continued its international growth, with the purchase of soybeans plants in Holland and Brazil and the creation of a new division business in Taiwan. At the end of the 1970's, during the Arab oil embargo, ADM started to develop his ethanol production. During the 1980's, ADM continued its expansion in Europe through the purchase of new plants in Germany and Holland. In 1983, ADM acquired interest in Alfred. C. Toepfer (German grain trader).

1990s and Beyond: During the second half of the 1990s, ADM experienced significant growth, with revenues increasing, but net earnings declined throughout this period. ADM blamed two coinciding phenomena for the declining results of the late 1990s : the Asian economic crisis, which later spread to Russia and Latin America, and record crop harvests. Archer-Daniels-Midland growth in the second half of the 1990s was pushed by the building of new plants, expanding existing ones, and making numerous acquisitions.

In 1994, ADM entered the vitamin E market, and the company is now the world's largest manufacturer of natural vitamin E. In the same year, ADM purchased Central Soya's animal feed operations. This acquisition consisted of commercial feed and premix operations in North America, Latin America and the Pacific region. In late 1995, ADM Animal Health and Nutrition was formed to provide producers with formulation products, to take advantage of the premix capacity of ADM's global network.

In 1997, ADM entered the chocolate and cocoa industry, by acquiring these branch activities from W.R. Grace & Co. for \$470 million. After this operation, the company quickly added six additional cocoa-processing plants, and organized the branch under its new ADM Cocoa Division. Later on, by purchasing two others facilities, Grace's cocoa holdings and purchasing ED&F Man's five cocoa processing plants (for \$223 million), ADM becomes the world's largest cocoa processor. Its processing capacity now exceeds 450,000 metric tonnes, and together with second-place Callubaut-Berry and third-place Cargill, the three processors control 40 percent of the world's cocoa processing capacity.

During the 1990's, ADM continued its expansion in Asia (Singapore and China through crushing plants), and in Brazil and Paraguay, through the purchase of Glencore's grain holding, including approximately 33 grain elevators and a fertilizer processing plant.

At the end of the 1990's, ADM met with legal difficulties; at the center of the collusion were two top ADM executives of the company's Corn Processing division. In late 1996, following guilty pleas by its partners in price fixing (including Ajinomoto Co. and Kyowa Hakko Kogyo, both of Japan), Archer-Daniels-Midland pleaded guilty to two counts of fixing prices for lysine, and for citric acid.

At the end of the 20th century, Archer-Daniels-Midland faced the challenge of overcoming the huge amounts of negative publicity that had resulted from the various price-fixing probes and suits. It appeared that it would take years before the aura of scandal would be removed from the ADM name⁹.

⁹ According to: <http://www.admworld.com/naen/about/history.asp>

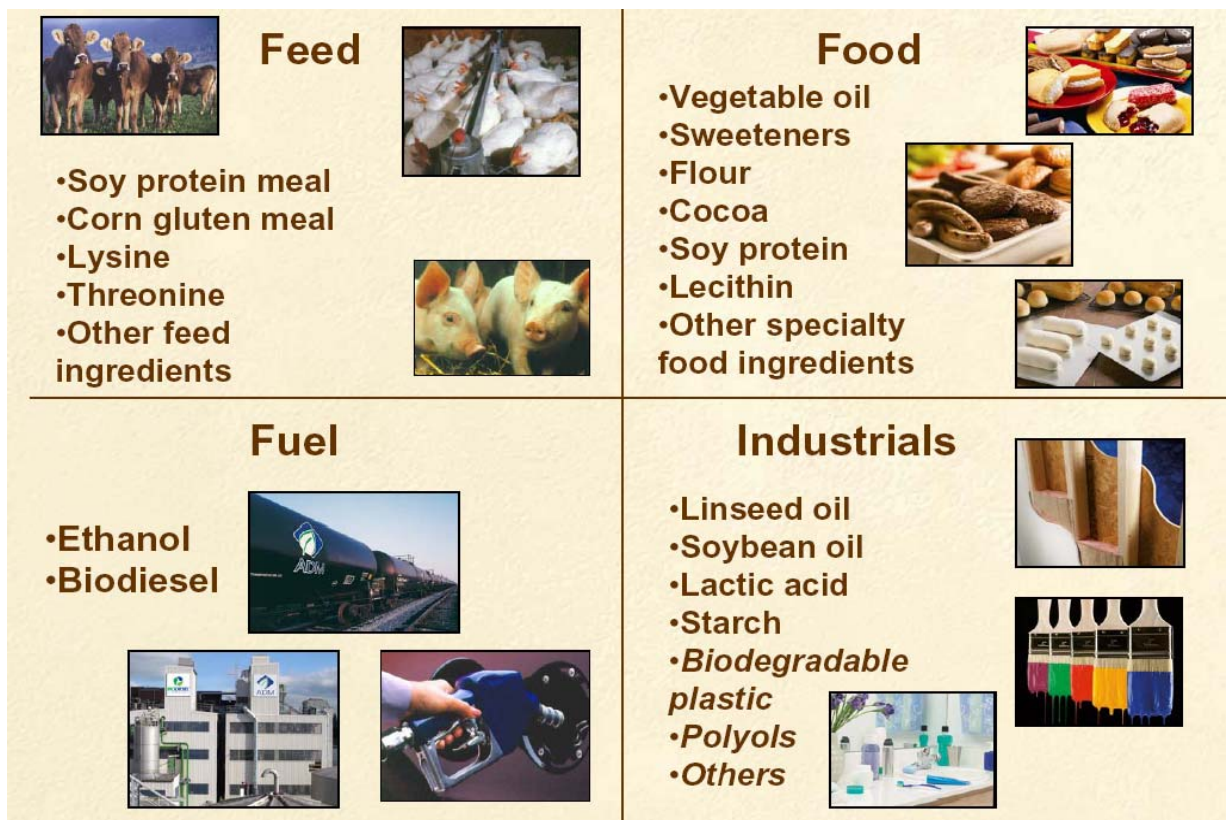
1.2 Main products and divisions:

1.2.1 Subdivisions

ADM is involved in the business of procuring, transporting, storing, processing and merchandising agricultural commodities and products. The company is one of the world's largest processor of oilseeds, corn and wheat, and also processes milo, oats, barley and peanuts. ADM subdivides its activities in four main markets as shown in the figure 1.

These four main markets are the result of the two main ADM's processing activities: corn processing and oilseeds processing.

Figure 1 : Subdivisions of ADM's business activities



Source: <http://www.admworld.com>

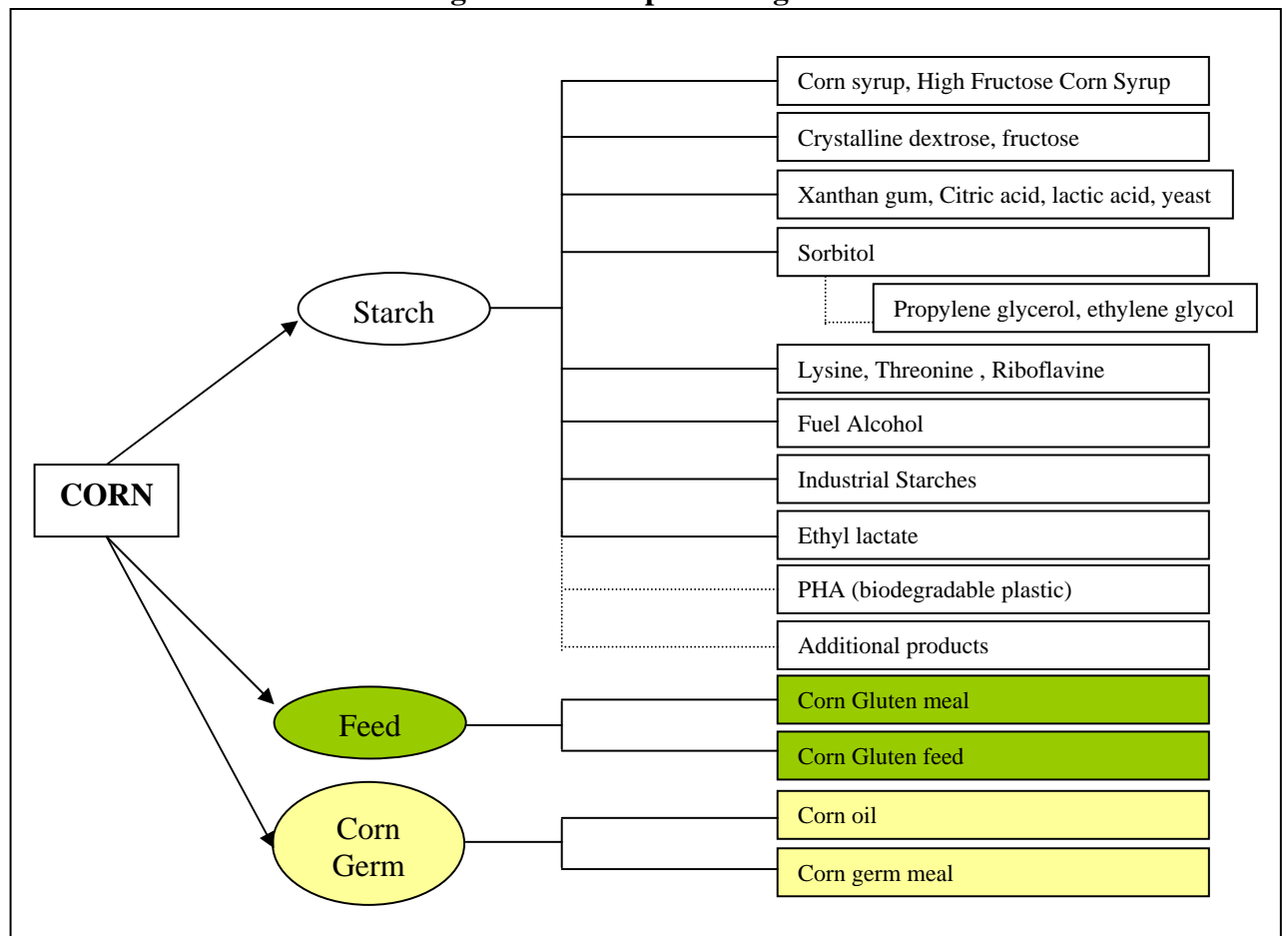
1.2.2. Corn and Oilseeds processing

- **Corn processing**

With 14 processing plants in US, 5 Joint Ventures plants in Eastern Europe and one in Mexico, ADM is the world's largest corn processor. The corn processing consists in dividing the starch, the germ and the feed into several products like high fructose syrup, amino acids, sorbitol, fuel alcohol, meal and oil, as shown in Figure 2.

The ADM's corn processing strategy consists of expanding the ethanol dry-milling capacity including cost-effective coal cogeneration, and increasing corn wet milling returns with new product options as opportunities are addressed in food, fuel and industrial markets.

Figure 2 : Corn processing



Source: according to data <http://www.admworld.com>

- **Oilseeds processing**

With 118 facilities worldwide (includes 23 of them in Joints Ventures), ADM’s oilseeds processing has a leading position.

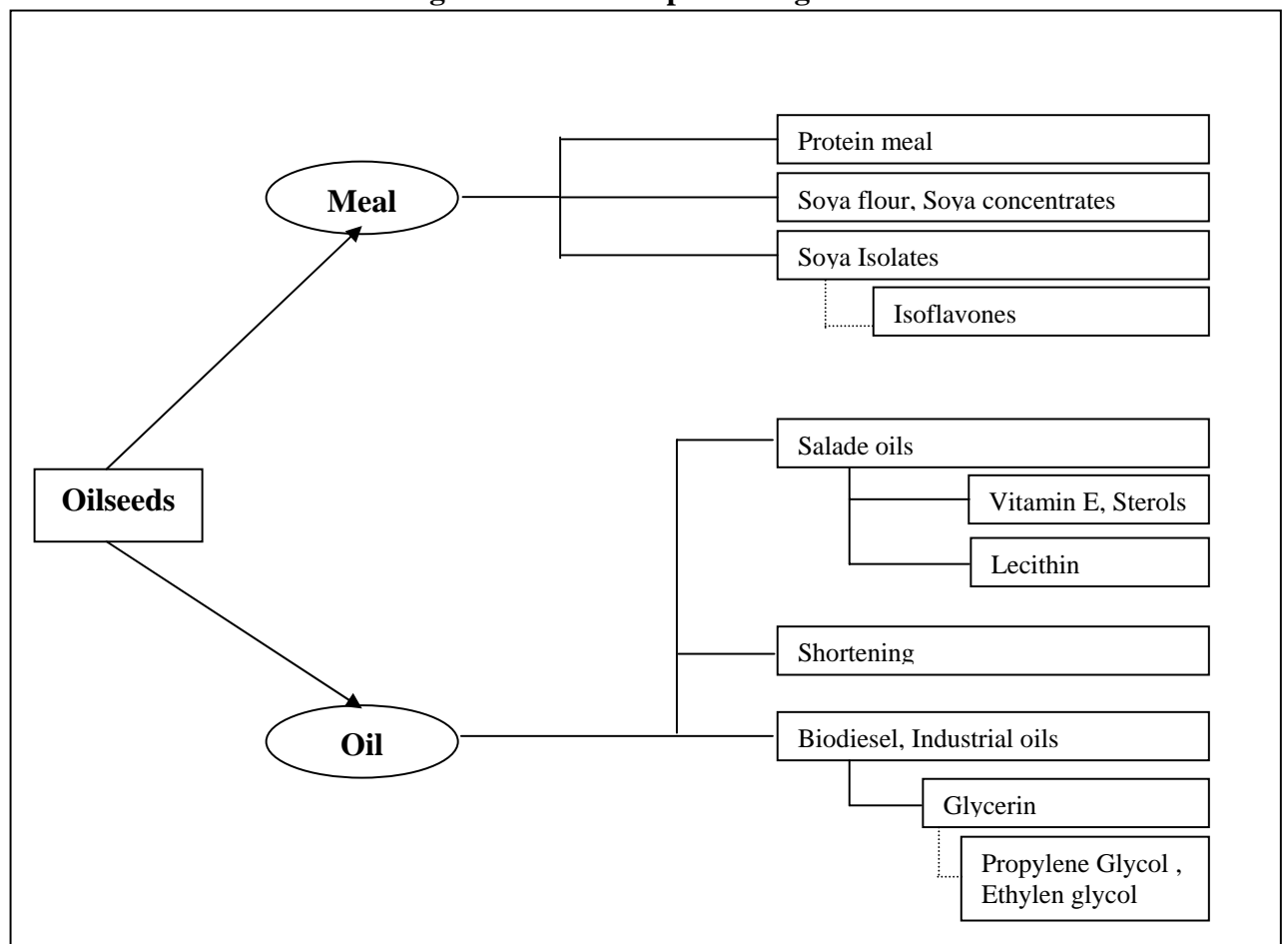
The core products of this processing are the protein meal and vegetable oil (Figure 3).

ADM is an integrated supplier of the seven main vegetable oils (soya, canola, sunflower, palm, corn, cotton, peanut), and is recognized for its innovation in technical process and products (NovaLipid, low transfat solutions). Now, it is working in biodiesel which will consist of an additional market for vegetable oil, potentially adding to crush margin values. Biodiesel capacity expansion adds flexibility, enhancing potential profit.

In 2005, the geographical distribution of its crush capacity is balanced between North America (36%), China (36%), Europe (18%) and South America (10%).

The ADM’s global oilseeds strategy consists of expanding biodiesel in Western Europe, North America and Asia which is growing with market opportunities in China, expanding activities in South America and global vegetable oil refining and packaging business.

Figure 3 : Oilseeds processing



Source: <http://www.admworld.com>

1.2.3 Products

- **Food ingredients**

Using the staple crops of agriculture as building blocks (humble soybean, kernel of corn, grain of wheat, cocoa bean), ADM has evolved towards a top-grade supplier, with nearly 1,000 quality food ingredients. Here's a quick overview of some of the products: acidulants, sweeteners, emulsifiers, texturants, stabilizers, nutrition ingredients, flours, protein products, oils and fats, cocoa products...

- **Feed ingredients**

ADM is a global leader in animal feeds, and offers a vast number of products for livestock, poultry, pet and specialty species. They leverage their core businesses of corn processing, oilseed crushing, wheat milling, and commodity merchandising as the foundation for a dependable supply of animal nutrition ingredients. Here's a quick overview of some of the products : Amino acids, corn processing co-products, feed additive drugs, milling co-products, vegetable protein products, vitamin and minerals, whole grains...

- **Fuels and industrials**

ADM is working with the abundant and renewable products of agriculture to develop nature-based alternatives to the world's finite stores of fossil fuels. Today, ADM is recognized as a leader in the production of cleaner-burning fuel ethanol. In addition, ADM is a leading producer of consistently reliable, high performing and naturally derived products for a diverse group of industries.

- **Human nutrition**

The nutrition field continues to rank among the fastest-growing market segments in the worldwide food industry. ADM has developed processing of main food crops, to identify and extract compounds that have proven health benefits : natural-source vitamin E, tocopherol antioxidants, plant sterols, soya isoflavones, soya proteins in almost every imaginable form, soluble fiber, and oils to help control body weight and reduce trans fats for heart health.

- **Agricultural services**

- **Agricultural transportation:** The export and distribution centers in North America, South America, Europe and the Far East enables the ADM network to reach the world's major agricultural markets. ADM and its subsidiaries own and operate more than 20,500 railcars, 2,300 tractor-trailers, 2,100 barges, 30 towboats and 29 line boats. ADM's multi-faceted fleet offers a capacity of transporting products over rivers, rails, oceans and land on a global scale.

- **Grain trading:** ADM's Grain Trading Group (ACTI) is the link between agricultural production, the processing operations of ADM and global destination markets. Unlike other trading entities, ADM supplies customers at both ends of the

supply pipeline of the broadest array of grain marketing alternatives, while maintaining the most competitive pricing.

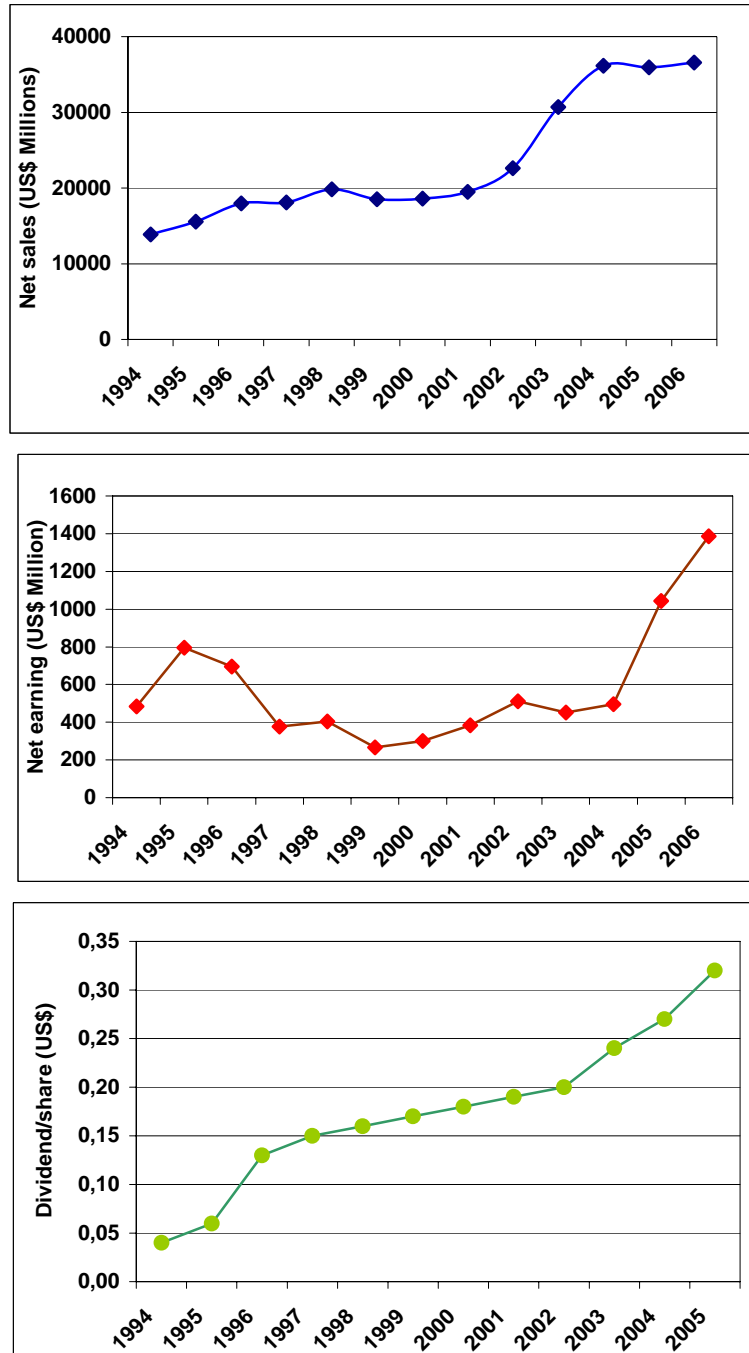
1.3 Financial summary

In 2005, ADM employed over 26,000 people, owned more than 250 processing plants and its net sales reached \$36.6 billion for the fiscal year ended June 30, 2006¹⁰. We can observe on the figure 4 the evolution of the net sales, net earnings and dividends by share between 1994 and 2006. During this period, ADM posted an average growth of 10% of its net sales, according to three phases: the first one between 1994 and 1998, with an average growth of 10% per year, the second one between 1998 and 2001 with a stagnation, and the third phase, after 2001, with the recovery of the growth (17% per year). Concerning the net earnings, considerable fluctuations can be observed year after year, but we can notice a significant growth since 2003.

¹⁰According to:

http://www.admworld.com/eufr/pressroom/newspopup.asp?id=407&name=Jansen_Named_PresidentGrain_Group

Figure 4 : Evolution of ADM's Net sales, Net earnings and Dividend/share between 1994 and 2006



Source: according to data from <http://www.admworld.com>

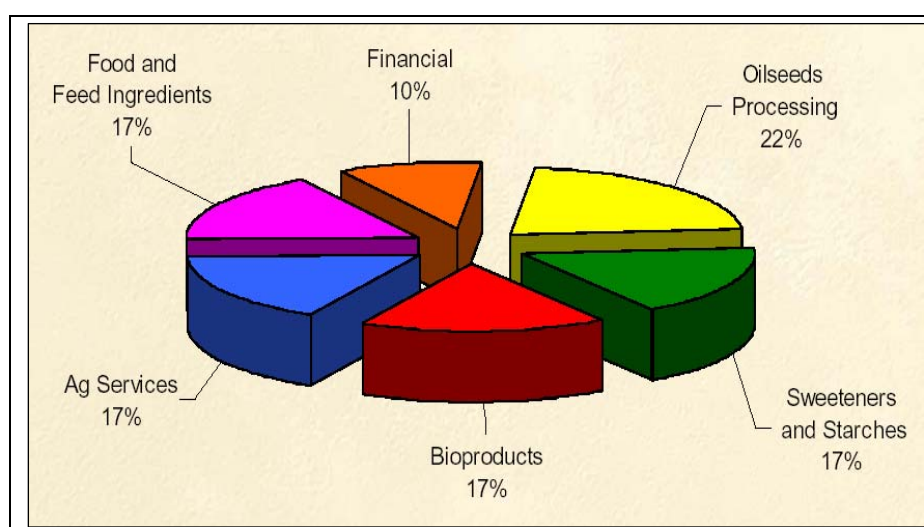
Through the table 3 and the figure 5, we can observe the evolution of the profits distribution between different divisions of ADM since 2003. Two important changes have to be mentioned: on the one hand, the considerable growth of the share of the «Agricultural Services » division between 2003 (9%) and 2004 (16%); on the other hand, the growth of the “Financial” division share between 2003 (1%) and 2004 (6%), and 2005 (10%).

Table 3 : 2005 ADM's profits per division (US\$ Million)

| | 2003 | 2004 | 2005 |
|----------------------------------|--------------|-------------|-------------|
| Corn processing (total) | 359 | 661 | 530 |
| • <i>Sweeteners & Starch</i> | | 318 | 271 |
| • <i>Bioproducts</i> | | 343 | 259 |
| Oilseeds processing | 337 | 291 | 345 |
| Agricultural services | 92 | 250 | 262 |
| Food/Feed Ingredients | 213 | 261 | 263 |
| Financial | 9 | 98 | 151 |
| Total Benefits | 1.009 | 1561 | 1551 |

Source: <http://www.admworld.com>

Figure 5 : ADM's Distribution of profits per division in 2005



Source: <http://www.admworld.com>

1.4 Corporate strategies:

1.4.1 ADM's strategy

ADM is the second world's largest company after Cargill in the global market of oilseed seeds and products. ADM is very large and efficient, and is a truly integrated operation, owning all the chains along the production process. In common with other companies, ADM has been moving into value-added areas such as refining and bottling, and the production of lecithin, soya protein and vitamine E. Since the 1970's, ADM has a strategy of overseas expansion through joint ventures, plants with local companies, purchases in Europe, Central and Latin America, Africa and Asia.

Moreover, the company constantly attempts to maintain higher crush volume in order to achieve the lowest production costs. Consequently, ADM has moved up through the processing chain by being more involved in refining, and entered many new

product areas such as soya protein and vitamin E. Finally, we can notice that ADM has fewer but larger plants than many of its competitors, and most of them are located near the raw material source in order to reduce the costs and have a better competitive advantage.

ADM's operations are strategically located to maximize operational efficiency. ADM operates a network of more than 350 grain elevators, in the United States, South America, Canada and other major global agricultural regions. The strong point of ADM's processing and elevator system is a group of modern export terminals. These terminal facilities handle and coordinate the worldwide export of agricultural commodities and processed products.

1.4.2 Locations

In 2005, ADM employed 26,000 people in its 260 processing plants (including those owned, leased, or operated in joint ventures) in the United States and 121 overseas. The main worldwide locations are described below:

USA: Headquartered in Decatur, Illinois, ADM has manufacturing, sales or distribution facilities in 40 states, along with a network of country elevators. ADM is the leader in crushing industry with an operational capacity of 60.000 tons per day (2003), which represents more than 30% of the total crushing capacity in the U.S. While ADM production plants operate in other parts of the world, facilities for the entire ADM product line from amino acids to sweeteners, from nutraceuticals to chocolate and more, can be found in the U.S.

Canada: ADM's alliance with Agricore United in Canada enhances the efficiency of the processing facilities there, as Agricore United is one of Canada's leading agribusinesses. Agricore United's operations include grain merchandising services, crop input marketing and distribution, livestock production services, and farm business communications.

Mercosur: In Argentina, ADM is present in the grain trade sector but not in the crushing industry. In 2002, ADM Argentina handled 11% of Argentina's wheat exports, 9% of the corn exports and 17% of the grain sorghum exports. ADM notes that its merchandising network is enhanced by its partnership with leading North American and European agricultural cooperatives in A.C. Toepfer International. Toepfer handles 20% of Argentina's wheat exports and 15% of the corn exports. In Brazil, ADM has 6 processing plants (2003), which crushes more than 12,500 tons/day (8,8% of the total crushing capacity in Brazil after Bunge and Cargill).

Other places in Latin America ADM has wheat milling and premix manufacturing facilities in Central America, along with soybean crushing plants, a network of elevators, and Atlantic coast export facilities as well as cocoa processing in South America. With its storage capacity in South America, ADM is one of the continent's largest operators in soybeans and grains. ADM produces sweeteners, starch, and wheat flour in facilities all over Mexico. In addition, the company is involved in numerous joint ventures in the category of corn flour.

Europe: ADM has several oilseed crushing facilities distributed throughout Europe. In the UK, the company owns flourmills and meat and dairy alternative production plants. In addition, it has a strong market position in biodiesel production in Germany and is one of the leaders in cocoa production in Europe. ADM has also a fermentation plant in Ireland as well as sales offices in the principal markets. ADM's merchandising network is enhanced by its partnership (since 1983) with A.C. Toepfer International.

Asia and Pacific Rim: ADM has facilities for cocoa bean processing, feed premixes, wheat milling, vegetable oil (palm oil) refining and packaging, corn processing and more throughout Asia and the Pacific Rim. In addition, a number of ADM sales offices are located in this region.

Africa: ADM's presence in Africa is currently limited to a cocoa bean processing facility in Ivory Coast. More growth is expected within this region in the near future¹¹.

1.4.3 ADM's strategy in France

ADM increased its market-share in the French grain trade market since January 2006 through its joint venture, called Soules Caf SAS, between Union Invivo (50%) and ACTI (50%).

Union In vivo is a French union of 311 cooperatives, active as a purchasing, sales and services company in agriculture, operating in areas such as seeds, agricultural supplies, storage, trading, animal nutrition and health. Union Invivo is the result of the merger in 2001 between two cooperatives, Union des coopératives agricoles d'agrofouritures (UNCAA) and Union nationale de coopératives agricoles de collecte céréalière (SIGMA). Union InVivo is a main grain elevator, with ten sites and a crushing capacity of 1,2 million tons. To facilitate its exports, the company owns interests in French port's elevators and has a subsidiary in logistic (MAGEFI Transports).

Soulès Caf is a French company active in the import and distribution (exclusively in France) of feedstuffs rich in protein, mostly soybean meal. This company works with the French distributor Carrefour for the supplying of the Carrefour's quality industries with Non-GM Brazil soymeal¹².

The table 4 describes the potential market-share of Soules Caf SAS in different sectors in relation to the leaders on the French market, Bunge and Cargill.

¹¹ According to: <http://www.admworld.com/asen/about/>

¹² According to: http://www.invivo-group.com/04_actu/comm55.htm; <http://www.invivo-group.com/> and Office for Official Publications of the European Communities L-2985 Luxembourg - Regulation (EC) No 139/2004 Merger Procedure 'Case No COMP/M.4042 - Toepfer / INVIVO / Soulès, in http://ec.europa.eu/comm/competition/mergers/cases/decisions/m4042_20051222_20310_en.pdf#search=%22soules%20caf%20adm%20toepfer%22

Table 4 : Potential market share of SOULES CAF SAS and its competitors in France (2006)

| Sectors | SOULES CAF SAS | BUNGE | CARGILL |
|-----------------------|-----------------------|--------------|----------------|
| Oilseeds | 25-30% | 10-20% | 30-40% |
| Oilseed meals | 30-35% | | |
| Soybean meals | 35-40% | 20-30% | 30-40% |
| Rapeseed meals | 10-15% | | |

*Source: Regulation (EC) No 139/2004 Merger Procedure 22/12/2005
Case No COMP/M.4042 – Toepfer / InVivo / Soulès*

2. Bunge



2.1 History :

Founded in 1818, Bunge is a leading agribusiness and food company with integrated operations that circle the globe stretching from the farm field in the producing countries to the retail shelf around the world. Bunge's 23,500 employees at over 450 facilities in 32 countries are dedicated to the global agribusiness and food production chain.

From the origins to the 1930's: In 1818, a German trader created the BUNGE & Co Company in Amsterdam. For thirty years, the company built its property with tropical product's trade (wood, cotton, rubber...), from the Dutch colonies predominantly.

Grain trade and the growth of Latin America's market: Quickly, the company became a main actor in Anvers, and began the grain's trade from Russia and America (US, Canada, Brazil and Argentina mainly). The prosperity of Bunge & Co and the profit from the grain trade allowed increasing considerably business activities.

In 1880, the company settled in Argentina through the founding of a commercial branch; in 1884 Bunge entered into partnership with a German trader Georges Born and they created together a world grain trade company: Bunge & Born. This company would operate at two levels: the sale of Argentinean supply on the world trade market with the collaboration of Bunge in Anvers, and the inputs' sale on the domestic market to increase the Argentinean grain production.

Between 1880 to 1900, Bunge & Born developed its activities in Africa and in Asia, through the development of ivory and rubber's trade, and the growth of rubber's production in South East Asia, in Malaysia and Indonesia.

The majority of its capital was used to build a trade network and develop the agricultural and industrial activities. The rest was indented for business activities in agricultural production.

In 1918, one century after its founding, Bunge began to trade commodities in North America, the world's largest agricultural market. The company set up Bunge North American Grain Corporation in 1923, to take advantage of the difference in seasons between northern and southern hemispheres. Bunge North America became Bunge Corporation in 1943, as the company continued its efforts to expand beyond trading to add grain production and value-added processing capabilities.

In Latin America, until the half of the 1930's, Bunge & Born built up a land's heritage in Argentina, and developed his downstream industrial activities from grain trade: founding of a flour mill in Argentina, in Brazil and in Uruguay.

Then, the company decided to diversify its activities in different sectors: cotton (grain, fibers and oil) and other oilseeds like sunflower, flax and peanut. So, in the 1930's, the company had founded its industrial empire in Latin America, through the diversification of its business and trade's activities on the Latin America's market.

The company in the 1930's: Located in about twenty countries around the world, the company controlled a few dozen financial, commercial and industrial firms and employed thousands of people. During the 1930's crisis, Bunge profited from the prices' fall of the transportation's infrastructures, and bought elevators, barges and reinforced its position in the U.S.

The industrial rise during the 1930's and the 1940's: During the 1930's, Bunge took advantage of the will of the Argentinean and Brazilian's states to develop their industry (milling, crushing, chemistry, textile industry) with a view to establish processing plants on the domestic markets. Bunge founded a subsidiary in Uruguay in 1936.

At the end of the 1930's, the growth of the cottonseeds crushing market allowed the company to develop his textile industry in Argentina. In Brazil, the company got more and more involved in the fertilizer market, and ultimately became South America's leader in the category.

From Porto Alegre, in 1945, the company dispatched its first export shipment of Brazilian soybeans. Bunge recognized the crucial role of logistics, and created Fertimport in 1947, a Brazilian company that managed raw materiel shipments.

1940's -1990's: Over the next 15 years after the founding of Bunge Corporation (1943), Bunge continued to pick up grain elevators across the United States, in the process growing into one of America's top grain handling and exporting firms. Bunge made an even greater commitment to its export business in the 1960's when it began to focus on the Mississippi River. And in 1961, Bunge opened its first export grain-handling elevator in the region. This elevator, the largest of its kind at the time, connected Bunge's domestic grain business to world market. In 1967, Bunge added to the facility its first soybean processing plant.

During the 1970's and 1980's, Bunge grew along the food production chain by acquiring and building grain origination, soya processing and food products businesses in North and South America. At that moment, Brazil became more attractive than Argentina for foreign investments, so the soya's market (farming and crushing) increased during the 1960's and the 1980's.

During the 1980's, the American began to consume more ready-to-eat food. Bunge acquired, in 1987, U.S-based Carlin Food Corp., adding a range of bakery products for sale to retail and wholesale outlets, as well as to food processors and foodservice companies.

1990's and Beyond: The company started business as a commodity trader, and over the following hundred years or so increased in scope and scale, while remaining privately owned, to encompass activities such as agribusiness, paints, chemicals and

information technology. The management of Bunge & Born initiated a major restructuring of the business in the 1990s¹³. In 1992, a decision was taken to radically alter the company, and to focus on food business in the Americas. As a result, most of the other activities have been disposed of between 1992 and 1995.

In 1995, Bunge Agribusiness Limited was founded. The year 1997 marks the beginning of a major expansion's period for Bunge in South America. The company acquired IAP, Brazilian fertilizer manufacturer, and CEVAL, the largest soya processor in Brazil and a leader in Argentina. Over the next seven years, further acquisitions and organic growth made of Bunge the largest fertilizer producer and soya processor in South America.

By 1998, however, Bunge decided to sell off its last consumer product businesses in Argentina, Australia, and Venezuela in order to concentrate on agribusiness areas as grain and oilseed origination, oilseed processing, export trading, feed, food ingredients, and fertilizers and phosphate-based nutrients.

In 1999, Bunge moved its global headquarters in New-York to be closer to world financial markets, and Bunge Agribusiness became Bunge limited.

In 2000, Bunge created a new international marketing group to trade bulk commodities and generate value through the integration of logistics and financial functions. The company opened a marketing office in China, and in less than three years, Bunge became the largest importer of soya complex commodities in this nation.

In 2001, Bunge entered the New-York Stock Exchange issuing 17.6 million shares at \$16 each. Bunge acquired La Plata Cereal, from André & Cie S.A., the Swiss agribusiness company and became the leading agribusiness company in Argentina.

The joint effort between Bunge's Brazilian and North American operations centralized research on improved food products.

In 2002, Bunge acquired Cereol SA in France, and became the world's largest soya processor and supplier of bottle oils to consumers. The acquisition made of Bunge a leader in Europe and marked the return of the company to the old continent¹⁴.

In 2003, Bunge entered into partnership with Dupont, creating an \$800 million specialty food ingredients joint venture named Solae L.L.C. The business, based in St. Louis, intended to be involved in the global production and distribution of specialty food ingredients, particularly Soya proteins and lecithins. Dupont, contributing its protein technologies food ingredients business, garnered a 72 percent stake in Solae, while Bunge received \$260 million in cash and a 28 percent minority interest in the new company in exchange for its soybean ingredients business. Furthermore, the deal

¹³ One of the managers Bunge recruited, Alberto Weisser, joined the company in 1993 as chief financial officer, became Bunge's chairman and chief executive officer. He was named as Bunge director in 1995, CEO in 1999, and ultimately rose to the chairmanship in 2001. Weisser was also instrumental in Bunge hiring other executives from outside the grain trade business.

According to : <http://www.fundinguniverse.com/company-histories/Bunge-Ltd-Company-History.html>

¹⁴ According to: <http://www.bungenorthamerica.com/about/history.htm>

required from Dupont and Bunge to use biotechnology to jointly develop and commercialize new strains of soybeans and other products for the farming industry.

Bunge continues to focus on growing markets with an Indian oils and fat business: India is now a key area of growth in edible oil consumption.

2.2 Main products and divisions:

Bunge sells products and services at numerous points along the food production chain, from farm to retail shelf. Each activity complements the next one, creating a logical progression (figure 6) in which they transform bulk commodities into a host of value-added products, while creating multifaceted, mutually beneficial relationships with customers.

Figure 6 : Bunge's value through integration



Source: According to <http://www.bunge.com>

Bunge manufactures fertilizers and crop nutrients for farmers, from whom they buy grains and oilseeds. They ship these commodities in bulk to customers around the world, or process them into refined products, such as meals and oils. They sell meal to animal feed and livestock producers (also provide feed nutrients by their fertilizer business), and oil to food processors. They use oil in their own production processes to make a variety of shortenings and edible oils for foodservice and consumer markets. Additionally, Bunge mill wheat and corn for food processors and bakers, and create non-food products, including biodiesel, which are derived from their primary commodities.

- **Fertilizer**

Bunge is the largest fertilizer manufacturer in South America. Their operations are concentrated in Brazil, but they also sell fertilizers in Argentina. In 2000, Bunge purchased the company Manah, and became the largest fertilizer business in Latin

America. Together with its established unit Serrana, Bunge, now, has a 28% share of the fertilizer market in Brazil.

Bunge produces and sells a full line of fertilizers, fertilizer services and animal feed nutrients. It markets some of Brazil's most well-known and trusted brands, including Serrana, Manah, IAP and OuroVerde. Their forty facilities are located in and around the country's primary agricultural areas to be close to their customers.

Its retail operations produce, distribute and sell blended NPK (nitrogen, phosphate and potassium) fertilizer formulas, mixed nutrients and liquid fertilizer products directly to farmers and retailers. They also produce a range of raw and intermediate materials used in fertilizer production.

Its precision agriculture unit incorporates GPS mapping techniques and a team of agronomists to create specialized fertilizer solutions for farmers. This service helps farmers to maximize yields and reduce the total amount of fertilizers needed per crop by tailoring nutrition to the hectare.

Through a partnership with DuPont, Bunge sells a range of crop chemicals and production agriculture products.

- **Agribusiness**

In the agribusiness division, Bunge purchases, processes, stores, transports and sells agricultural commodities, principally oilseed products. Profitability is mainly affected by the relative prices of oilseed products which are, in turn, influenced by global supply and demand for agricultural commodities and industry oilseed processing capacity utilization, and prices volatility of these products. Profitability is also affected by energy costs, as the company uses a substantial amount of energy in the operation of his facilities, and by the availability and cost of transportation and logistics services, including truck, barge and rail services. Availability of agricultural commodities is affected by weather conditions, governmental trade policies and agricultural growing patterns, including substitution by farmers of other agricultural commodities for soybeans and other oilseeds.

Grain and oilseeds: Bunge buys grains and oilseeds from farmers, and stores, blends and sells them to commodity customers. It handles soybeans, rapeseed, sunseed, canola, wheat, sorghum, corn and other products, and it manages an origination network of approximately 275 country elevators in North America, South America and Europe. The location of these facilities is chosen in order to maximize farmers' efficiency and to provide an easy distribution to end customers.

Bunge sells products over 90 countries. Its ability to originate crops across hemispheres and continents ensures a year-round supply for customers. It also offers product variety and the flexibility to ship around delays in public ports and transport networks.

The control of products from origination to destination ensures quality and consistency, and allows Bunge to supply customers also with segregated and identity-preserved products, such as GMO-free soya.

In addition to fulfilling product needs, Bunge creates financial solutions, including trade structured finance and risk management, to help commodity customers to control expenses and risks.

Oilseed processing: Bunge processes oilseeds (soybeans, canola, rapeseed, sunseed) into meal, oil and other byproducts.

Its processing facilities, approximately 50, are located in North America, South America, Europe and Asia. Their strategic locations offer an outstanding coverage of the domestic markets and an efficient access to the export trade. Bunge is a major supplier of the Caribbean, Asia, North Africa and the Middle East.

Bunge produces and sells a host of oilmeal products, with varying protein, fat and fiber content. They also produce a range of bulk edible oil products for sale to food processors and foodservice customers. Their oil products include crude, refined and emulsified oils, and liquid and solid shortenings. The other sold products include soybean hull pellets, which they sell as an animal feed additive, and biodiesel in Europe.

Shipment and transport: Bunge manages successfully - in terms of efficiency, customer services and risk management - a 150-ships fleet by integrating this timecharter fleet with the port and inland logistics network.



- **Food products**

Bunge's Food Products division is a major supplier of edible oils and shortenings to food processors and foodservice customers, and is a leading supplier of consumer

edible oils and related products in select markets. Their operations are located in the United States, Canada, Brazil, India and numerous European countries.

In the food products division, which consists of edible oil products and milling products segments, their operations are affected by competition, changes in eating habits and changes in general economic conditions in their main markets: Europe, the United States and Brazil, as well as the prices of raw materials such as crude vegetable oils and grains.

North America: Bunge supplies food processors and foodservice customers in the United States and Canada with a full line of bulk and packaged premium shortenings, oils and related products.

Brazil: Bunge supplies Brazilian consumers, food processors and foodservice providers with a wide variety of products, from edible oils to soya beverages. For food processors and foodservice customers, Bunge manufactures edible oils, shortenings, margarines and mayonnaise. For consumers, Bunge produces margarines, bottled oils, mayonnaise and other products.

India: In India, Bunge supplies the retail oil and commercial bakery markets. Bunge owns Dalda. It also creates specialized shortening and oil products for commercial bakeries and operates a bakery product development and customer training center.

Europe: Bunge is a leading seller of bottled oils to consumers, and bulk and packaged oils to food processors and foodservice customers. Their primary products, by country, are the following (table 5).

Table 5 : Which Bunge’s products in witch European country?

| | |
|---------------------------|---|
| Germany | Private label bulk and bottled oil |
| Austria | Bulk oil |
| Hungary | Retail bottled oils: Vénusz and Floriol |
| Poland | Private label; retail bottled oil: Kujawski; retail margarine |
| Romania | Retail bottled oils: Floriol and Unisol |
| Bulgaria | Bulk; retail bottled oils: Kaliakra |
| Russia and Ukraine | Retail bottled oil: Oleina and Ideal |
| France | Retail bottled oil: Lesieur |
| Italy | Private label bottled oil |

Source: According to <http://www.bunge.com>

- **Milling:**

Bunge mills wheat and corn in North America and Brazil. They supply food processors, foodservice customers and others with a range of nutritious and functional food products.

North America: From facilities in the U.S. and Canada, they supply “prime” products, including corn grits, flour, bran and meal, to many of the continent’s largest brewers, snack food and cereal companies. The corn dry milling process also creates

hominy feed, a popular animal feed additive, and bulk corn oil, a cholesterol-free food ingredient. Bunge creates a variety of bulgur wheat products for cereal manufacturers and other food processors in the U.S. and Mexico.

South America: In Brazil, Bunge is a significant producer of wheat-based products for food processors, foodservice customers and specialty bakeries. They market some of the country's most trusted brands. Specifically, Bunge produces and sells industrial wheat flours and flour and mixes for commercial bakeries. Bunge operates wheat mills in Brazil's largest population centers.

2.3 Financial summary

With its corporate headquarters located in New York, Bunge Ltd. is a global agribusiness and food company divided into three segments.

The agribusiness division, which accounts for 42 percent of the company's operating profit in 2004, is comprised of three business lines: grain origination, oilseed processing, and international marketing. Bunge is a leading global soybean exporter.

The fertilizer division, which accounts for 44 percent of the company's operating profit in 2004, supplies the South American market, primarily Brazil, where Bunge is the only integrated fertilizer producer.

The food products division accounts for 14 percent of the company's operating profit in 2004. It takes advantage of the raw materials-soybeans, crude vegetable oils, wheat, and corn-available through the company's agribusiness operation, to engage in four business lines: edible oil products, wheat milling and bakery products, soya ingredients, and corn products.

In 2005, Bunge's main problems stemmed from a weak operating environment in Brazil. Farm economics deteriorated because of drought, lower soybean prices and a steadily appreciating Brazilian real.

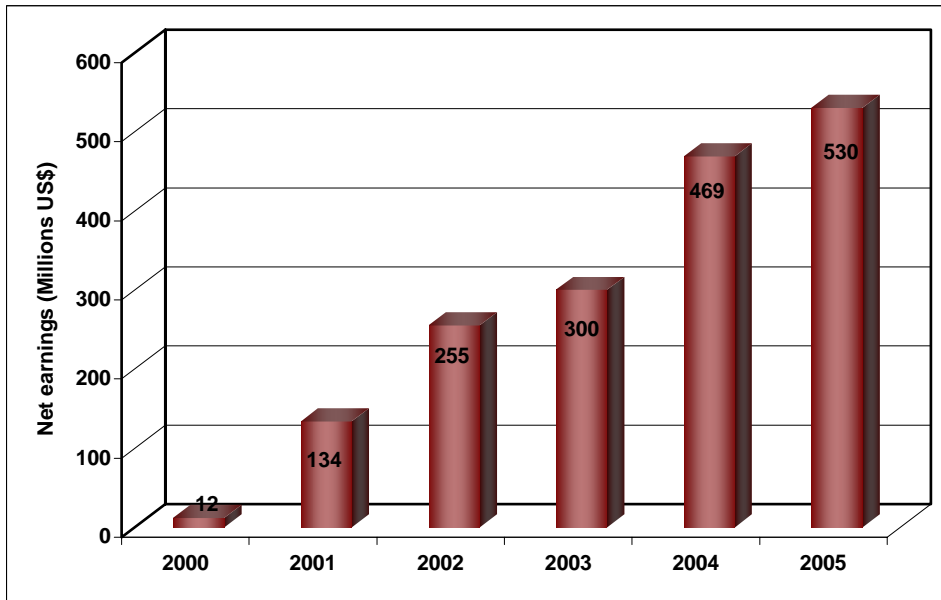
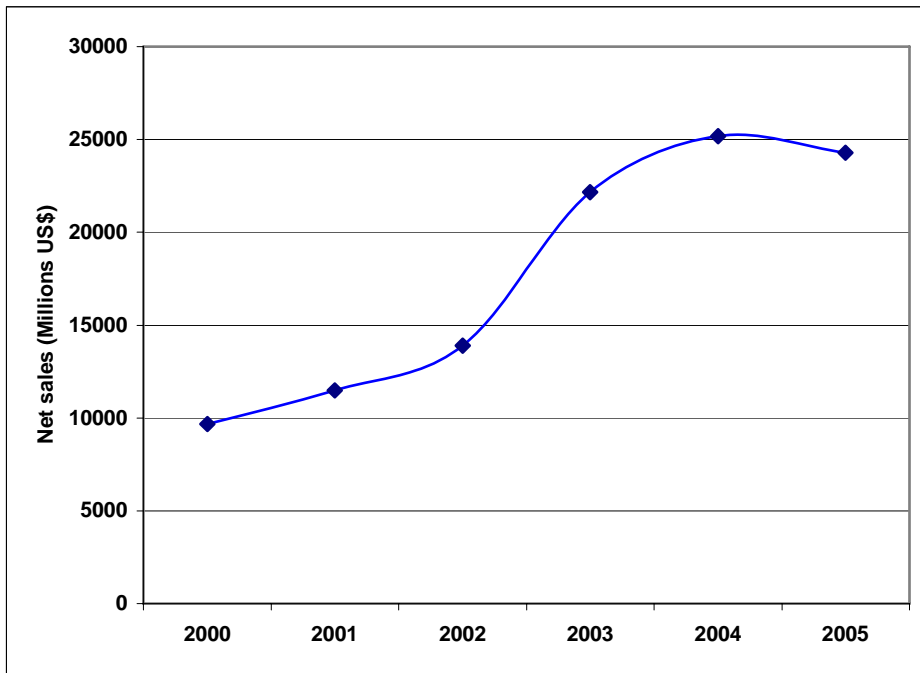
The figure 7 and the table 6 show the constant growth of net sales and net earnings since 2000, with an increase of approximately 60% of the net sales between 2002 and 2003, and the same growth of net earnings between 2003 and 2004.

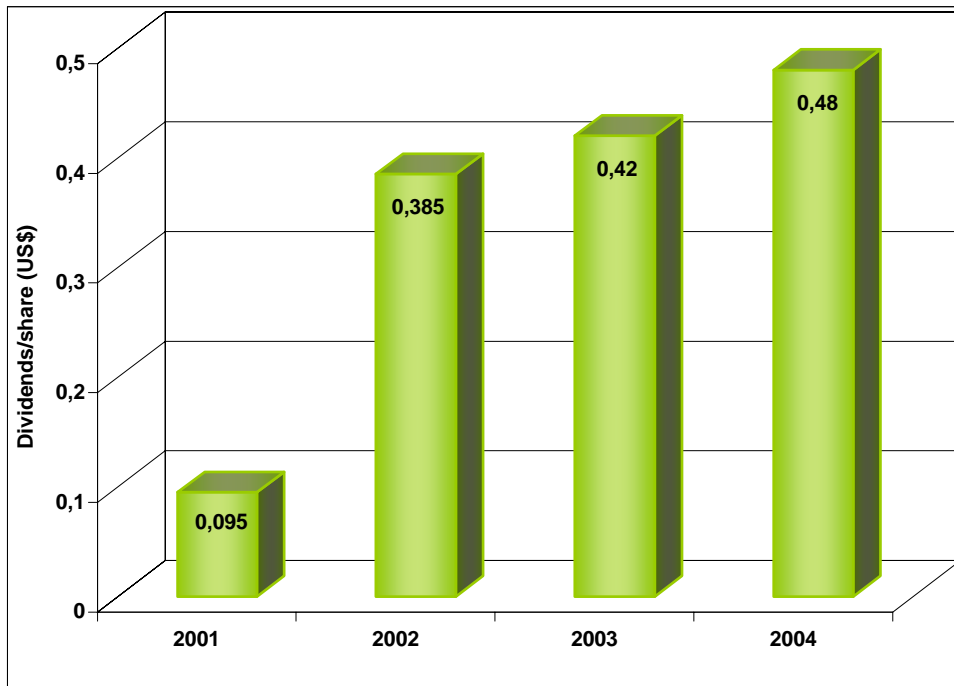
Table 6 : Annual Bunge's growth per year of net sales and net earnings between 2001 and 2005

| | 2001-2002 | 2002-2003 | 2004-2005 |
|---|------------------|------------------|------------------|
| Net sales and other operating income | 21% | 60% | 14% |
| Net earnings | 90% | 18% | 56% |

Source: according to data <http://www.bunge.com>

Figure 7 : Evolution of Bunge's Net sales and Net earnings and Dividend/share between 2000 and 2005

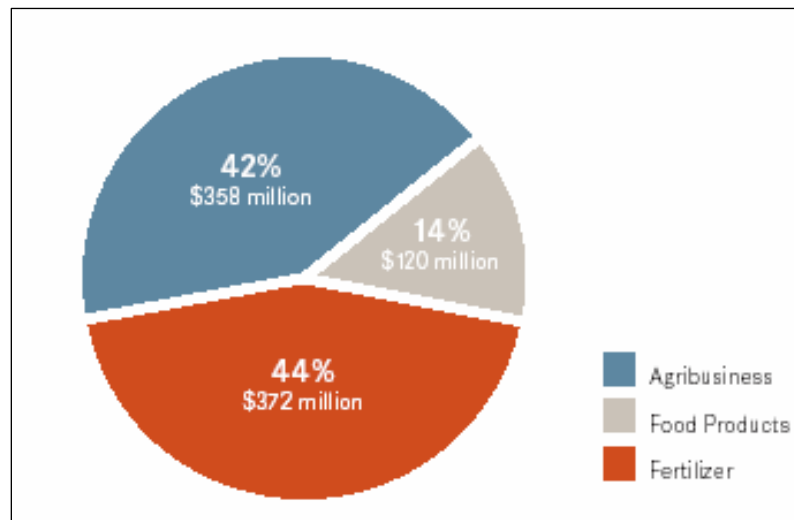




Source: <http://www.bunge.com>

The profits' distribution per division in 2005 is illustrated through the figure 8.

Figure 8 : Bunge's operating profits by division in 2004



Source: <http://www.bunge.com>

Agribusiness Segment: In 2004, the net sales increased by 10% due to higher average selling prices for soya commodity products and a 2% increase in volumes. Mainly higher origination volumes in North America and South America lead to volume increases.

Fertilizer Segment: In 2004, the net sales increased by 32% due to higher average selling prices. Selling prices benefited from higher international prices for imported fertilizers and raw materials, which helped increase local sales prices, as local fertilizer products are priced to import parity. Cost of goods sold increased by 25% due to higher imported raw material costs, mitigated in part by lower local production costs, as the group is able to source much of its raw materials from its own mines.

Edible Oil Products Segment: The results for 2003 include the results of Lesieur, a French bottled oil producer, which Bunge sold to their joint venture Saipol in July 2003. In 2004, the net sales, excluding Lesieur, increased by 33% primarily due to a 23% increase of sales volumes and higher average selling prices. Gross profit, excluding Lesieur, increased 3% primarily due to increases in sales volumes and margin expansion in Eastern Europe and Canada as a result of the higher average selling prices. In Europe and Canada, softseed product selling prices grew in response to higher soya commodity prices.

In 2005, the edible oil segment results declined primarily because of a weak performance in Europe. Improved results in Ukraine and Hungary were more than offset by lower volumes and margins in Romania, higher advertising expenses for a new margarine brand in Poland, and higher costs in Russia. In North America, the strong demand for canola oil and trans fatty acid replacement products benefited good results, although energy and transport costs were rising in the U.S. In Brazil, a stronger performance in margarine and specialty oil has been offset by lower margins and volumes in packaged oil. Indeed, costs were rising because of the appreciation of the Brazilian real and higher marketing expenses for a repositioned margarine brand.

Milling Products Segment: In 2004, the net sales increased by 7%, primarily due to a 15% increase in sales volumes. Corn milling volumes increased because of higher sales to U.S commercial customers. The growth of wheat milling volumes was first due to the addition of their industrial flour business which resulted from the asset exchange transaction with J. Macêdo S.A. Indeed, Bunge exchanged its Brazilian retail flour assets for J. Macêdo S.A.'s industrial flour assets and \$7 million in cash in March 2004.

In 2005, the wheat milling results benefited from higher volumes and improved product mix, but were offset by margin declines in maize milling.

2.4 Corporate strategies:

2.4.1 Locations

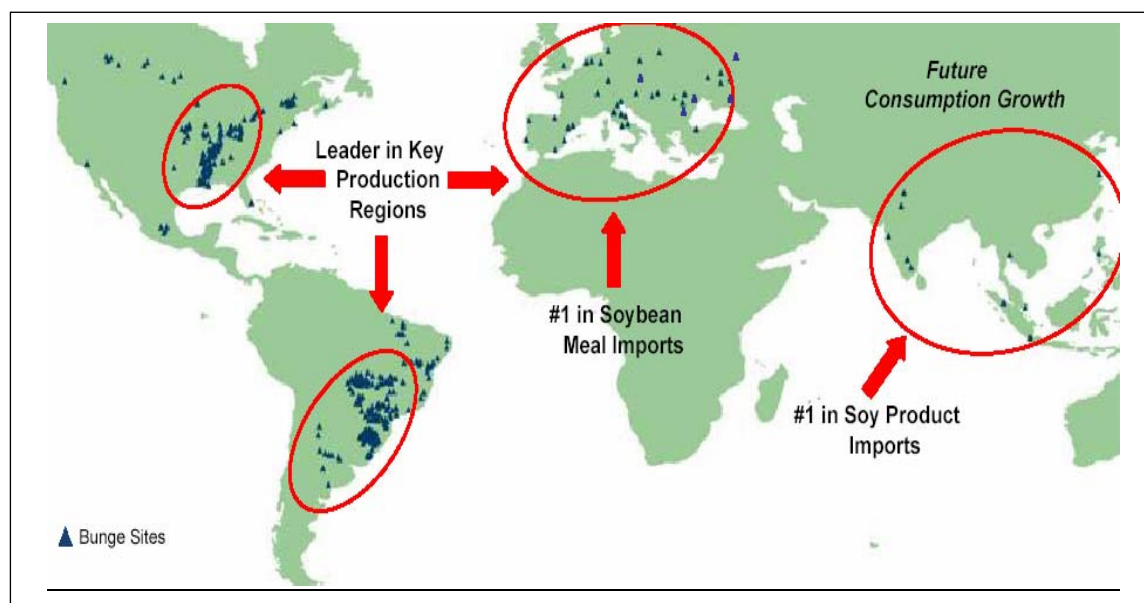
The 450 facilities are located in 32 countries across four continents as shown in the figure 9. We notice that the density of Bunge's facilities is higher in Mercosur (Brazil

and Argentina) and in U.S. However, Bunge starts funding facilities in Eastern Europe and in Asia. The main worldwide locations are described below:

- **Brazil:**

In Brazil, Bunge operates in three sectors: fertilizer, food ingredients and transportation.

Figure 9 : Bunge's locations in 2005



Source: <http://www.bunge.com>

Bunge Fertilizantes: The history of Bunge Fertilizantes is connected with the history of Brazil's fertilizer industry. Bunge started its activities in Brazil in 1938, when the first branch of its company appeared in this segment: Serrana.

In the 1960's, Bunge invested in research and developed one pioneering technique in the whole world - the flotação - used to separate the fosfato from the calcareous rock, increasing the pureness degree of ore.

In 2000, Bunge purchased another company, called Manah, making of it the largest fertilizer business in Latin America. Together with its established unit Serrana, Bunge now owns a 28% share of the fertilizer market in Brazil.

With more than 3,000 employees, 250 agronomists and 60000 customers, Bunge Fertilizantes is present in all the stages of the fertilizer production. Its brands IAP, Manah, Gold Verde and Serrana compose the most complete portfolio of products and services, allowing the firm to take all kind of demand of the Brazilian farmers into account.

Fertimport: Fertimport began its activities in 1947 to meet the logistics needs of Bunge's Brazilian operations. In 1996, Fertimport became the first Brazilian ship

agency to be accredited with ISO 9002 certification. Today it is the sole Brazilian shipping agency with quality accreditation throughout the entire foreign-trade support service chain.

Fertimport is a leader in grain and fertilizer handling in Brazil, with 11 units in this country (10 at ports) and 4 units in Argentina, more than 450 employees and over 200 customers of all economic sectors.

Bunge Ingrédients: Bunge is the leader on the domestic market of vegetable oils, margarines, vegetable fats, industrial flours and premix for bread making (Table 7). Thus, to achieve this goal, Bunge has developed its crushing capacity, which exceeded 29000 tons/day in 2003 and represented 24.8 percent of the total crushing capacity in Brazil. Bunge is also the leader in crushing industry before Cargill and ADM.

Moreover, to improve its profitability and to reduce its transportation costs, Bunge created a long-term relationship with América Latina Logística, ALL, a railroad that covers the southern part of the country. This agreement is important because it helps Bunge reduce its use of truck freight. Rail is more reliable and more environmentally friendly than trucks. It is also about 15 percent cheaper. Under the agreement, the company makes volume commitments to ALL, which guarantees future rail capacity at competitive rates. ALL uses the volume commitments to secure financing, which helps it to expand its network.

Table 7 : Bunge’s main products developed on Brazilian market

| Subsidiaries | Products and brands |
|---|---|
| Food industry | - Refined vegetable oils: <i>Soya (soja) Primor (soja), Salada</i> - Olive oil: <i>Salada (pure et extra vierge)</i> - Margarine: <i>Delicia, Primor, Mila, Soya et Cyclus</i> |
| Food products: Bread making and Food Service | - Pré-mix: <i>Bunge Pró</i> and <i>Bentamix</i> - Margarine: <i>Soya</i> and <i>Primor</i> - Mayonnaise: <i>Soya</i> and <i>Primor</i> - Wheat mill: <i>Bunge Pró</i> - Soya mill: <i>Prosan</i> - Textured proteins: <i>Soya Maxten</i> |
| Speciality in food industry | - Unrefined soy oil - Tocophenol - Vegetable fats - Lecithin - Fat acids |
| Feed industry | - Soyameals - Cotonmeals - Corngrains - Soya mill - Wheat grits - Rations animals: <i>Vitosan et Sano</i> |

Source : <http://www.bunge.com.br>

- **Argentina:**

In Argentina, in the 1990's, the multinationals were largely involved in the grains and oilseeds crushing industry, and in parallel, built port terminals to promote exports. Thus, in 2003, Argentina had reached an oilseeds crushing capacity of 154,000 tons per day, which 48% are made by the multinationals, lead by Bunge. Bunge Argentina is a now a subsidiary of Bunge Limited.

Bunge established in Argentina in 1884, and began trade activities with cereals through the company Bunge & Born. Between 1900 and 1950, the company initiated several industrial activities such as wheat crushing, oils and raw materials for human consumption, tinplate production, paints, textile industry, and agrochemicals.

Then, from the 60's until the 80's, insurance activities, computing, property business, were also part of this group. But towards the end of the 80's and beginning of the 90's, Bunge & Born sold their non-core businesses and focused on agribusiness, including fertilizers, grain and oilseeds origination, and by-products manufacturing, for exports. In 1999, its portfolio, properties, assets and liabilities were acquired by Bunge Argentina.

Today, Bunge Argentina through sustained growth and consecutive mergers and acquisitions, is the result of a combination of several businesses, which are not only involved in grain trade, but also in the agroindustrial sector.

Bunge is present along the grain & oilseeds supply chain. The company carries out the reception, storage, handling and commercialization of grains and oilseeds such as wheat, peanuts, corn, sunflower, and soybean.

Fertilizers: Bunge Fertilizers is the most recent business unit. The company is involved in each step of the fertilizer production chain through its 8 plants. Bunge Fertilizers is a leader brand in fertilizers production and trade; it has a significant and growing presence in Argentina.

Cereals and oilseeds trade: More than 30,000 tons of cereals and oilseed grains are negotiated daily-thus, ranking the company among the top business leaders. The business and administrative support is located in 8 commercial offices around Argentina.

Processing: Bunge processes oilseeds into meal to be used in animal feed and into vegetable oils, crude oil for industrial use and refined oil destined for human consumption.

By purchasing La Plata Cereal in 2002, Bunge Argentina became the leader processor of oilseeds in the world. In 2003, its crushing capacity was 27,400 tons per day, which represented 18 % of the total crush capacity in Argentina. Bunge owns three industrialized complex strategically located throughout the national territory.

Logistic and elevator: In Argentina, the companies try to locate their infrastructures near the ports, that are also near the production area, which is the best way of making scale economies and increasing profit margins. The strategy is the same for storage: the companies invest in the ports and not in the production area. The trucks become "traveling silos". Bunge owns 7 country elevators and 3 port terminals located throughout the national territory.

- **USA**

In 1918, Bunge established in the United States to trade raw agricultural commodities. In 1923, Bunge North American Grain Corporation was incorporated in New York as a privately held company. And in 1935, Bunge North American Grain Corporation purchased its first sizeable grain facility. Currently, Bunge is the second larger soya processor and a major manufacturer of premium edible oils and shortenings for the U.S foodservice and food processing industries. Its extensive network of grain elevators and barges along the Mississippi river enables it to be the leading exporter of soybeans, corn, wheat and sorghum on international markets.

2.4.2 Bunge's strategy in France

Bunge is present on the French market through its two subsidiaries, Céréol, a company purchased in 2002, and Diester Industrie International, created in 2005.

- **Cereol**

Bunge's global aspirations were greatly enhanced in 2002 when the company purchased a 55% controlling interest in Cereol SA, a French agribusiness competitor. Bunge paid approximately \$830 million to the Italian energy company Edison SpA assuming also about \$700 million in debt. In April 2003, Bunge (through its subsidiary Bunge Investments France S.A.S 100% Bunge Limited) acquired all the outstanding shares to become a 100 percent owner of Cereol. As a result, Bunge highly increased its capacity to process soybeans in Europe.

The world's top soybeans importer Bunge would be able to process soybeans at Cereol-owned crushing facilities in Spain and Italy, rather than ship soybean by-products to the region. Bunge also gained a strong presence in Central and Eastern Europe through the Cereol transaction.

Overall, the acquisition was important on other levels. It provided more vertical integration, offering efficiencies and cost savings. By adding European markets to its traditional strongholds in North and South America, Bunge was also able to spread some of its risks, an important factor in light of South America's history of political instability. In addition, Cereol assets enabled Bunge to reach a size necessary to compete globally with the other global leaders, like Archer Daniels Midland and Cargill Inc.

In a conference call conducted shortly after the deal was announced, Weisser, CEO of Bunge, commented:

“This transaction changes the industry landscape quite dramatically. By increasing our oilseed processing capacity from 20 million tons to nearly 32 million tons, we move ahead of Archer Daniels Midland Company (ADM) and Cargill. We will immediately become the market leader in regions such as Canada and Eastern Europe where we have no presence, while our position will be enhanced in countries where we already have operations, such as the US.”¹⁵

Although it remained open to additional acquisitions, Bunge made it clear that its top priority in the short term was to successfully integrate the Cereol operations.¹⁶

- **Diester Industrie International**

Diester Industrie International (DII) was founded in 2005. DII is a subsidiary of Sofiproteol (60%) and Bunge (40%). This company's aim is to develop the biodiesel activities in UE in relation with the European Directive, which fixes the minimum level of the biodiesel incorporation at 5,75 % in 2010.

This company owns:

- 50% of new activities in Marl in Germany (250,000 tons),
- 100% of Novaol's capital in Italy,
- a processing plant in Italy (160,000 tons),
- a processing plant in Austria (30,000 tons).

Furthermore, DII decided to build a processing plant for esterification in Germany, which will produce ester of vegetable oils for biodiesel. This processing plant will start its activities in August 2006. Its planned capacity is 120,000 tons, and will grow up until 250,000 tonnes¹⁷.

¹⁵ New Release, 22 July 2002 '**Bunge Limited acquiert le controle de Cereol**', in <http://www.prnewswire.co.uk/cgi/news/release?id=88395>

¹⁶ New York Times, '**Bunge in talks to buy Cereol, a food oil Company**', June 25, 2002. <http://www.fundinguniverse.com/company-histories/Bunge-Ltd-Company-History.html>

¹⁷ According to <http://www.bunge.com/about-bunge.html> and <http://www.prolea.com/index.php?id=3143>



2. Cargill

3.1 History:

This American family company was founded in 1865 by William Cargill, Cargill is an international supplier of products and services in the agricultural and food industry sector. In 2005, Cargill, whose head office is in Minneapolis, Minnesota (United States), accounts 124,000 collaborators in 59 countries including 15,000 in Europe where the company is established since 1953.

Cargill remain a non quoted private company and held by family shareholders (families CARGILL and MAC MILLAN, foundation CARGILL and principal leader). The power of this firm comes from its presence at all the stages of the grain trade and processing, while maximizing the profits at each level. Through more than 130 years of service, Cargill has become an international expert in commodity trading, handling and transportation, and risk management.

Origins to 1900: Between 1865 and 1875, the Cargill family acquired many warehouses, grain elevators, and mills in Iowa. Twenty-five years after the first acquisition of William, the company of the Cargill brothers counted 71 grain elevators, 28 coal sheds and some real estates. The year 1889 celebrated the beginning of the shipping activity of the company when Cargill bought a vessel for cereals transportation.

1900-1920's : At the beginning of the 20th century, the competition in the sector of cereals increased: the margins and the profits fell off. Facing this situation, the Cargill family showed her ingeniousness and her competence in trade and risk management related to the price fluctuations of the raw materials. After undergoing financial problems, Cargill split its activities in 1912 , and the non-related grain trade business is gathered in Cargill Securities Company. In addition of the growing number of elevators, the company was involved in insurance, flour milling, coal, farming, real estate, lumber, and railroad.

A growth maintained during the 1930's crisis: Efforts on the wages and some offices' sale enabled Cargill to continue its growth during the economic crisis of the 1930's. New silos, always more innovating, were built in several large American cities. The resumption of the world economy during the war gave new impulses to the activities of Cargill, which could use its competences and its know-how in new fields. Thus, by the 1940's, Cargill had diversified into feed, soybean processing, seed and vegetable oil.

Development of its shipping activities during the 1930's : Like others businesses, Cargill noticed the growing importance of the geographical location of its facilities, where they could better take advantage of alternative transportation modes. The role of subterminal facilities became larger, in this way. Important new Cargill locations emerged in places as Memphis and in West Coast cities such as Portland, Seattle and San Francisco.

But the most significant development of the decade for the company was a direct involvement as a ship owner and operator. The company purchased its first vessels and launched a long standing program of boat building and waterway innovation.

The development of its shipping activities and the building of a harbour terminal on the Mississippi river, enabled Cargill to develop its cereal trade with Europe between 1920 and 1945.

During the second world war: Cargill launched out successfully in the shipbuilding to become a major actor of the sector: initially, with the construction of tankers intended for US Navy, then by producing tugboats and barges for river navigation. After the war, the company used its river fleet for its first activities, it is to say the transportation of cereals from north to the south of the Mississippi, towards the Gulf of Mexico. On the way back, the ships were charged with salt in order to reduce the total transport costs. At this time, the family business took the scope of a large modern company. It captured the European and South American markets and diversified its activities to the resins, the seeds and the oilseeds processing.

The after war: In the 1950's, Cargill emerged as a major international merchandiser and processor of agricultural and other commodities. Cargill began global initiatives with grain and oilseed exports and the development of transportation (and grain elevator system that enabled it) to meet worldwide demand for basic agricultural products.

During this period, Cargill began its international development. The first trading headquarters for its new operations was in Montreal. But it soon appeared that success in the large postwar markets requested a European presence. Thus, in 1953, the headquarters shifted formally to Geneva, Switzerland, where Tradax International was to become one of the world's leading trading entities. The new company offered many new valuable areas, notably in ocean freight.

In the 1960's and 1970's, the company strengthened its presence in new sectors, always using its traditional know-how: flour milling, steel processing, and carved meat distribution.

By the end of the 20th century, Cargill differed a lot from its beginning as a grain trader. It had developed its fundamental skills in trading, processing, managing risk and supply chain logistics, and used them in several new businesses around the world like the trading of energy, futures and financial instruments. But because of changes in the food industry, including consolidation and tightening commodity margins, Cargill could not prosper if it kept commodity transactions as the center of its business¹⁸.

Cargill moved even further up on the value chain. The company evolved from soybeans trading, to soybeans processing into meal and oil, to produce high-value vitamin E from a soybean by-product. And it moved from trading corn, to corn

¹⁸ According to : <http://www.cargill.com/about/history/history.htm>

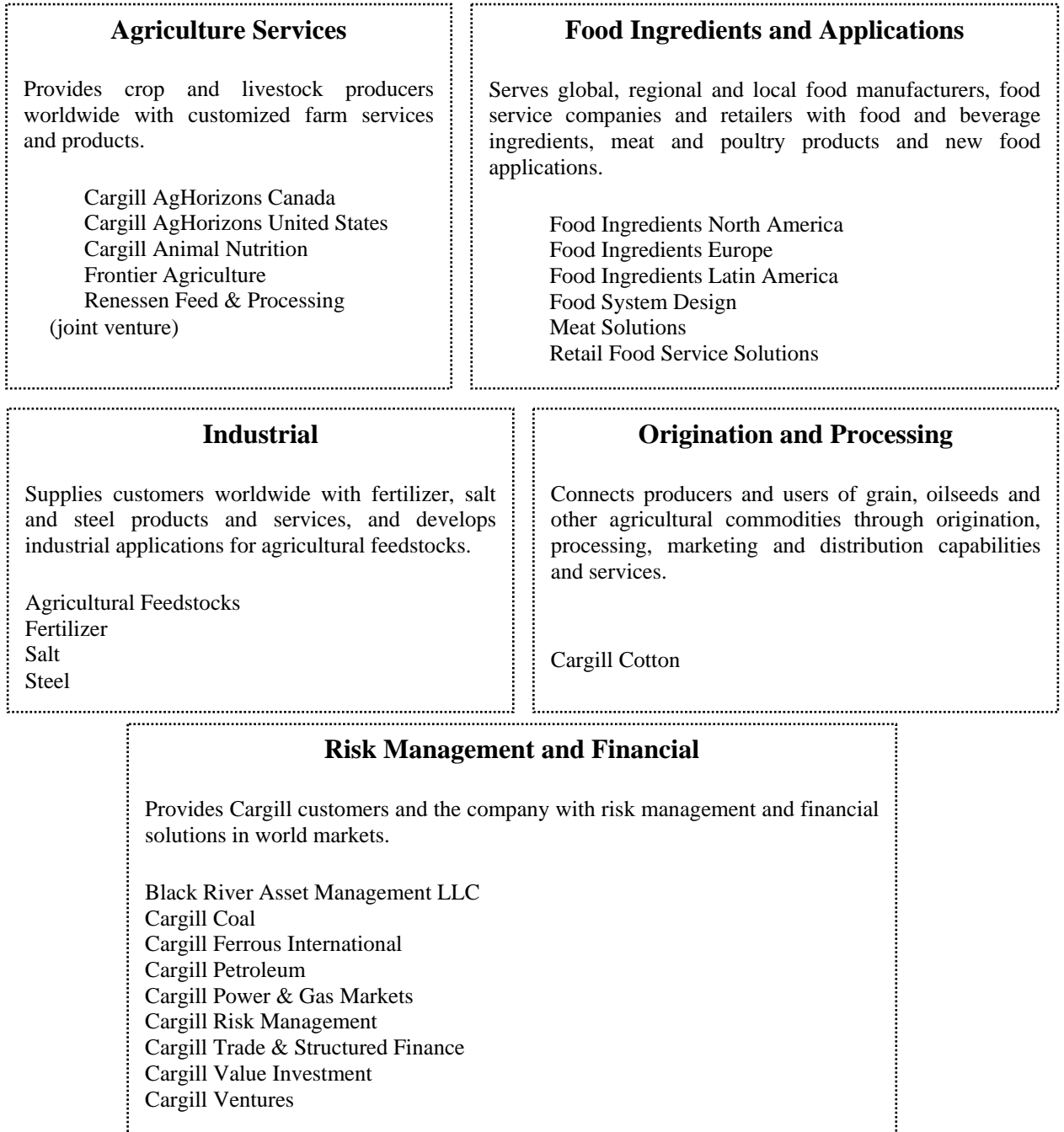
processing into ethanol and fructose, until creating a whole new family of renewable products made from corn.

3.2 Main products and divisions:

3.2.1 Subdivisions

The activities of Cargill company can be gathered in five subdivisions as shown in the figure10.

Figure 10 : Cargill’s subdivisions



Source : According to <http://www.cargill.com>

3.2.2 Products and services

Cargill is an international provider of food, agricultural and risk management products and services. The five subdivisions manufacture a several range of products, that could be classify like below:

- **Crop & Livestock:** Providing products and services for farmers, livestock producers and animal feeders.
 - **Agricultural commodity trading:** Cargill is a worldwide trader of oilseeds, grain and many other agricultural products. The company has developed a network of trading offices in the US, South America, Europe, Africa, Asia and the Pacific area. In order to transport products around the world, Cargill has owned a fleet of bulk carrier ships, inland waterway barges and a fleet of rail freight cars in the US.
 - **Crop production:** Grain marketing assistance, crop inputs and consulting to community development.
 - **Livestock:** Cargill offers a range of services to the livestock industry including feed mill management consulting, feed formulation and analysis, laboratory services, training, operational auditing, and risk management. Cargill also manufactures high quality grains, supplements, and specialty products to livestock producers.
 - **Health & Pharmaceutical:** Providing products and services for pharmaceutical companies and food manufacturers.
 - **Health, nutrition & organic:** Cargill businesses provide products and services to food manufacturing companies that create safe, economical food with great taste and healthy nutrition customers look for.
 - **Pharmaceuticals:** Cargill works with food and pharma customers to develop ingredient systems and excipient solutions for affordable, healthy and convenient products.
- **Industrial**
 - **Biofuels:** Cargill customized services ranging from capital financing, grain origination and energy risk management, to the marketing of ethanol, biodiesel and grain distillation.
 - **Deicing products & surface overlays:** It offers bulk deicing salt and enhanced deicers from Cargill Deicing Technology and ice prevention overlay from Cargill SafeLane™.
 - **Fermentation solutions**
 - **Oils & lubricants:** These Environmentally advantaged products for industrial and commercial uses serve a wide range of industries including, paints and coatings, lubricants, pharmaceutical and specialty chemicals.
 - **Power & gas:** It is specialized in the marketing and trading of electricity, and providing risk management solutions to a variety of customers.
 - **Salt:** It offers high quality salt products for a variety of applications ranging from manufacturing to cleaning and dyeing.
 - **Starches and derivatives:** These are broad range of native and modified environmentally sound starches and derivatives such as dextrans, lecithin, polyols and xanthan gum for a wide variety of applications in the paper, biochemical, adhesive, agrochemical, detergent, and oilfield industries.
 - **Steel**

- **Food: Cargill offers a range of food ingredients and value-added services for food manufacturers:**

- **Baking & cereals:** a kind of food products for baking mixes, croissants, tortillas, pasta, corn flakes and energy bars.
- **Beverages**
- **Chocolates & confections**
- **Dairy products**
- **Health, nutrition & organic**
- **Meat & poultry:** a range of meat products including beef, pork and turkey.
- **Prepared foods**
- **Salt**
- **Snacks:** Ingredients to enhance the quality, stability and shelf-life of snacks (from chips and popcorn to cookies and crackers).

- **Financial & Risk Management :**

- **Risk management:** Hedging products, and risk management tools to assist customers in mitigating price exposures and protect operating margins.
- **Investment:** Cargill provides equity and debt across a range of asset classes, including real estate, credit-intensive assets and venture capital.

3.2.3 Focus on Cargill Grain & oilseed supply chain

Cargill Grain & Oilseed Supply Chain consists of 11 business units that operate on an integrated global basis. The group operate on the sources, the internal and external trades, the processing and distribution of grains and oilseeds. The main bulk handled products are wheat, corn, oilseeds, barley and sorghum, as well as vegetable oils and meals. The activities of the group also includes Cargill's ocean freight and logistics business. It coordinates all of Cargill's ocean freight needs and a growing volume of other companies' coal and mineral freights. Grain & Oilseed Supply Chain employs 9,600 people in 50 countries. It operates 255 interior silos, 37 import/export elevators, 54 crushing plants in 17 countries and a 25,000-hectares palm oil plantation in Indonesia. It also encompasses 18 joint ventures.

At the end of the 1990's, Cargill disengaged from the seeds sector, because it estimated not to have the whole of the assets necessary to the success in this sector, it is to say excellent seeds, a broad distribution network and a biotechnological expertise. Thus, in 1998, Cargill sold Cargill Hybrid Seeds to the German company AgroEvo for its activities in the United States (4% of the American market concerning the corn seeds). The company also sold the international activities to the Monsanto leader.

Concerning the trade sector, Cargill is the world leader of the sector of cereals trade (with 25% of the world trade), the number two being ADM.

3.3 Financial summary

Cargill has subsidiaries which operate in a variety of industries, ranging from meatpacking and commodity production, to corn plastics, and the company plays a major role in the realm of genetically engineered products.

In 2004, Cargill's net earnings brought to \$1.33 billion, an increase of 30 percent compared with \$1.03 billion a year ago. Its net sales rose by 16 percent to \$62.9 billion. For the 2005 fiscal year, the company earned \$2.1 billion and its revenues for the full year rose by 13 percent to \$71.1 billion. Thus, between 2003 and 2005, the net sales and the net earnings of Cargill's company increased by 31 % and 104 % respectively (Table 8).

Table 8 : Cargill's evolution of net sales and net earnings during 2003 and 2005.

| Financial results (Billion US\$) | 2003 | 2004 | 2005 | Evolution Between 2003- 2005 |
|---|-------------|-------------|-------------|---|
| Net sales and other operating income | 54.2 | 62.9 | 71.1 | 31% |
| Net earnings | 1.03 | 1.33 | 2.1 | 104% |

Source : <http://www.cargill.com>

Among the contributors to Cargill's earnings for the period (2003-2005) were its animal nutrition, beef, egg product, pork and poultry businesses worldwide; the food ingredients; the risk management and financial segment; the global supply chain management network which includes grain, oilseeds and other commodities and ocean shipping services; food ingredients in Europe; the U.S.- and Latin American-based salt businesses, which manufacture products for food, road deicing and other uses; and the U.S.- and Canadian-based agriculture services units, which offer an expanding family of grain marketing products that help farmers manage their price risk. Finally, prior to its sale in November 2004, the company's steel operations contributed significantly to operating earnings.

2004 and 2005 were years of expansion for Cargill, especially on emerging markets through acquisitions and alliances:

- In January 2004, Cargill and IMC Global announced an agreement to combine their **crop nutrition businesses** into a new, publicly traded company, named The Mosaic Company. It is expected to benefit from a stronger global presence and product mix, and to improve financial flexibility and cost-saving opportunities.
- In 2004, the company improved its **origination capabilities** in Eastern Europe and Latin America, and added oilseed processing facilities in China and India. Then, in 2005, the company invested to improve its oilseeds operations in Argentina, Brazil, China, India, Romania, Russia and Ukraine.

- In 2004 in the **animal nutrition sector**, Cargill expanded its dairy offerings by acquiring the Agridea feed brand in Italy, the New York- and Pennsylvania-based assets of Agway Feed & Nutrition and two West Coast dairy feed firms. It also purchased the assets of a Louisiana-based firm specializing in aquaculture feeds.
- In 2005, in the **meat sector**, Cargill purchased Seara, a leading poultry and pork business in Brazil, and became the sole owner of Finexcor, an Argentine beef processor and exporter. In Canada, it bought Caravelle Foods, a supplier of frozen beef patties to the country's quick-service restaurant industry.
- In 2003, Cargill increased its **food ingredient** capabilities by acquiring OCG Cacao, a leading European maker of industrial chocolate, and UK-based The Duckworth Group, which creates and sells flavor systems for food and beverage makers. It also introduced a number of ingredients and ingredient systems that food manufacturers can use to add taste, convenience and health-promoting benefits to new food and beverage applications. After this operation in 2005, the company purchased **cocoa processing facilities** in England and Germany, and a chocolate plant in Germany, which will expand services to confectioners and other food makers in Europe and eastward. Cargill also acquired a **pectin business** that makes citrus-based texturizers for food and beverage applications.

The financial results of these last years show that Cargill is currently under full development. Its various activities enable it to ensure growing benefits even if the trade of cereals and other raw materials (cocoa, coffee, cotton...) is a fluctuating sector. Moreover, its international positioning also allows it to balance financial risks for different kinds of product.

However, while seizing investment opportunities, Cargill move more and more away from the sector of the grain trade and its core business. Its new activities require also strong competences that are not necessarily aquired by the company. But it reacts choosing its main activities and, at the same time, parting with some activities, like seeds, that require great competences to face leaders like Monsanto. While diversifying to ensure a stable average growth, Cargill takes care not to scatter and lose its effectiveness.

3.4 Corporate strategies

3.4.1 Cargill's strategy

Cargill aims to double its net worth every five to seven years and continues to give high priority to invest in new capital projects and acquisitions, and overseas expansion as a high priority area, in particular in emerging markets such as Asia and Eastern Europe.

Three large strategic axes of the company evolution can be identified: the international development, a strong vertical integration and diversification.

International development: The Cargill company developed its activities abroad very early by carrying out partnerships with foreign companies (examples: joint-venture with Dow chemical for the creation of a site to produce green plastic,..), but also by external growth (example: purchase of exporting cocoa company in Ivory-coast).¹⁹

The vertical integration: For cereals, feed and cocoa in particular, Cargill developed all the spheres of activity located upstream and downstream from the activity of trade.

The diversification: During the 1990's, a strategic decision was taken to move « up the food chain » into higher value-added food processing. Then, Cargill went on with a strategy of diversification to reduce dependence on commodity trading, and to move up the food chain.

In the oilseed sector, the company has made a decision to invest in oleo chemicals expansion, and also in high margin activities such as soya protein and natural source of vitamin E. In addition, Cargill has moved into higher value added refined and branded edible oils. By investing in palm oil in Indonesia, the company will be able to secure a competitive advantage by being protected against world price fluctuations.

Table 9 : History of Cargill's internationalization in Europe, Asia and Pacific area, North and Latin America

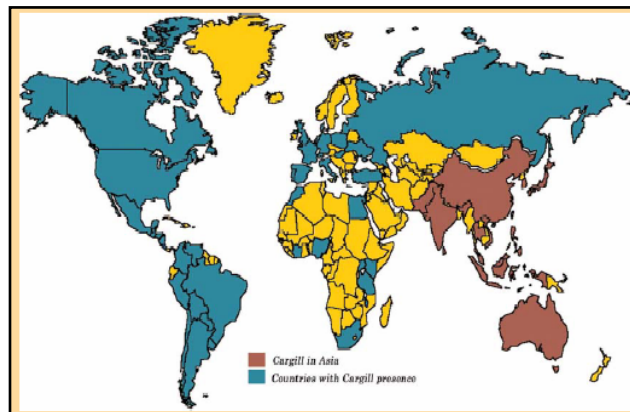
| Cargill's Area | Events |
|--|--|
| North America 3 countries | USA : 1865 (Cargill's founding) Canadá : 1928 México : 1920's Cargill's mexico :1972 |
| Latin America 13 countries | 1940's: Argentina 1960's: Honduras, Brazil 1970's: Chile, Paraguay |
| Europe 20 countries | 1950's-1960's: Belgium, Greece, Germany, UK, Switzerland, Portugal, Spain, Turkey, Italia, France. 1980's-1990's: Sweden, Finland, Austria, Russia, Poland, Ukraine, Hungary, Romania 2000's: Ireland, Lithuania |
| Asia 14 countries | 1950's: Japan 1960's-1970's: China, Singapore, Australia 1980's-1990's: Pakistan, Kazakhstan, Malaysia |
| Africa & Middle East 7 countries | 1994:Egypt 1980's-1990's: Nigeria, Kenya, South Africa, Ivory-Coast, Morocco, Tanzania, Zimbabwe |

Source : According to <http://www.cargill.com>

3.4.2 Locations

As we saw in the previous chapter, Cargill has been developing a strategy of internationalization since the 1940's when it went to South America, later to Europe and finally to Asia and Africa. Currently, Cargill is present in the whole North and South America, in 20 countries of Europe, 14 countries of Asia and 7 countries of Africa (Figure 10).

Figure 11 : Cargill's worldwide locations in 2006



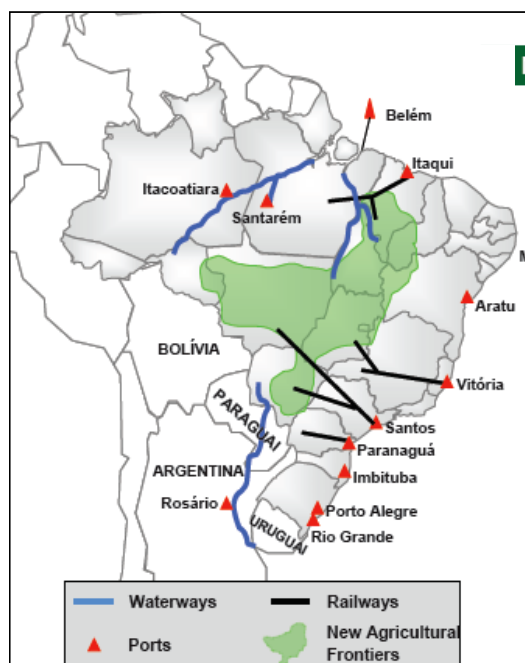
Source: <http://www.cargill.com>

We will focus on the role of Cargill in Mercosur and more particularly in Brazil and in Argentina.

- **Brazil**

Present in Brazil since 1965, Cargill provides solutions adapted to the agricultural, food, financial and industrial markets. The company has its main office in São Paulo and industrial plants, port terminals, warehouses, farms and branch offices throughout the country (Figure 11). The key markets of Cargill in Brazil are the industrial oils (paints, resins, plasticizing additives, pesticides, etc...), industrial lubricants (steel and machining industries) and Synthetics (hydraulic fluids and synthetic lubricants in general).

Figure 12 : Cargill's locations in Brazil in 2006



Source: "Dynamics of the Global Soybean Complex: Health, Nutrition and Fuel –Who will add value?" PENSA; FEA ; 2006

Food subdivision: Cargill produces and sells cooking oil, olive oil and blended cooking oil. The company sells these products under the Liza® brand name, for cooking oil and salad dressing, Purilev®, for canola oil, Purilev Light®, for salad dressing, Mazola®, for corn oil, Veleiro®, for soybean oil, La Española®, Quinta dos Olivais e Gallo®, for olive oil, and Olívia®, for blended cooking oils.

Grain and Oilseed Supply Chain

In Brazil, each company has its own storage and export structures but those are still not enough to face flows. The productions of the South of the country run out in priority via the seaports of Paranaguá and Santos (Figure12). Instead, for soya produced in Mato Grosso and in Maranhão, charges are high to reach these ports of the South (through thousands of kilometres), which justifies the strategic stake to build river ports in North on the Amazonian basin.

For example, Cargill has built a storage capacity of 800,000 tons on the port of Santarém, at the edge of the Amazon. In 2000, the firm had grain elevators of 133,700 tons on the port of Santa Fe, of 381,725 tons on the port of San Lorenzo/ San Martín and of 69,250 tons on the seaport of Bahia. These equipments gave to Cargill a very high-performance logistic infrastructures, which enabled it to become the Brazil's largest soybean exporter.

Cargill originates, processes and sells grain and oilseeds. It is the second-largest processor in Brazil with 7 plants located throughout the national territory. It crushes 15,700 tons of grains and oilseeds per day (2003). Cargill's grain processing structure includes port terminals, warehouses and origination offices in the country's most important soybean growing regions. These 130 origination offices nationwide buy grain which is processed in Cargill plants or exported through company terminals.

Sugar: Cargill is a leading exporter of Brazilian sugar. It is the largest operator of this commodity, both in terms of Brazilian sugar origination and export sales as well as in global sugar trading.

Cocoa: Leader in the processing of cocoa products in the Brazilian market, Cargill produces cocoa liquor, cakes, butter and powder. The company sells to domestic and international markets. Cargill has well-distributed cocoa origination offices throughout the main cocoa producing regions, sorting and storing products with the strictest standards of quality. Trading activities take place at Cargill's main office, in São Paulo.

Flour: Cargill's wheat processing activities in Mercosur include milling in Argentina, Paraguay and Brazil. Flour and premixes for bread and dough are sold in the local market using the following structure: Molinos Harineros de Paraguay (Paraguay), Moinho São Valentin (Brazil) and Trigalia, a joint venture between Cargill and Molinos Río de la Plata (Argentina). Raw material is purchased jointly in the region.

In Brazil, Moinho São Valentin is the only mill capable of processing durum wheat (a type of wheat which is used to make pasta), used to prepare Italian-style pasta. Cargill sells meals and premixes in the local market.

Industrial subdivisions: Acidulants; Cargill sells citric acid and citrates in the Latin American market. It operates the largest citric acid and citrate production facilities outside the USA. Extracted from sugar cane and corn, citric acid and citrates are widely used as acidulants and aroma stimulants in soft drinks, fruit juices, jams, preserves, sweets, and dairy products. They also have applications in the pharmaceutical, cosmetics and biodegradable detergent industries, and in the manufacturing of plastics. The large-scale production is channelled not only to the domestic market but also to a burgeoning Latin American demand and broad international requirements.

Starches and Sweeteners: Cargill sells starches and sweeteners made from corn and tapioca in the local and international market. In 2001, Cargill brought innovations to the Brazilian market by introducing two large families of raw materials comprised of natural and modified natural tapioca starch as well as corn and tapioca malt dextrin.

Industrial oils and lubricants: The Industrial Oils and Lubricants Business Unit has been operating in Brazil since August 2000, in the non-food vegetable oil and lubricant markets.

Financial and risk management: Cargill Ferrous International is in charge of the group's steel business and is divided into departments: Cargill Steel and Wire is

active only in the United States market, offering flat rolled and other types of steel; North Star Steel manufactures flat-rolled and bar steel in the same market; Cargill Ferrous International has been operating for more than 20 years in many countries, including Brazil.

In Brazil most of the activity is centred on buying steel from large mills to meet the needs of customers abroad. This business unit has just set up a joint venture with Tecno Logos Desenvolvimento Tecnológico, in Rio de Janeiro, to produce pig iron using an innovative self-reduction technology.

Black River Asset Management (BRAM): Black River Asset Management (BRAM) Business Unit has worldwide operations in local and international financial markets.

In Brazil it has been acting as a local and foreign investor for ten years. Following the creation of Banco Cargill in January 2000, BRAM has been experiencing solid growth in the Brazilian foreign-exchange market. BRAM is particularly active in the derivative market, especially in São Paulo's futures and commodities exchange (BM&F), investing in federal government bonds and local capital market.

Trade and Structured Finance (TSF): Trade and Structured Finance (TSF) was set up in 1993 and its work is basically geared to financial activities. TSF is in charge of planning Cargill's global financial strategy. In this particular aspect, TSF oversees funding activities around the world, including emerging-markets funding, working jointly with the tax and legal areas of the company. An important aspect of TSF's business is to manage and draw value from Cargill's worldwide import and export flows. All these financial structures are negotiating with Cargill Business Units as well as with other partners.

Cargill Value Investment: Cargill is involved in many different activities. Since 1990 the company has been extending its activities to the investment area through its Cargill Value Investment (CVI) division. Cargill Value Investment has operated in asset investment financing, high-yield bonds and real estate. In South America, the CVI Business Unit has two offices, one in São Paulo, Brazil, and the other in Buenos Aires, Argentina.

- **Argentina**

Cargill began its operations in Argentina in 1947 with a seed research operation in the corn belt of the country. Five decades later, that operation became one of the largest agribusiness complexes in Argentina, involving production and distribution of farm inputs, processing and merchandising of raw materials and food ingredients, and providing related services.

With headquarters located in Buenos Aires city, Cargill has operations in 40 locations throughout the country, which include processing plants, ports, grain elevators and operating units, and employs more than 1,800 people.

Over 80% of its production is exported to the following countries: Brazil, Chile, China, India, Indonesia, Italy, Peru, Malaysia, Morocco, Germany, Dominican Republic, Thailand, Venezuela, Taiwan and Tunisia.

Cargill in Argentina develops process, export and import fertilizers activities, and also provides customer services and solutions. The Company's main products and services are the following:



Grain and oilseeds: Operating in all major grain ports, particularly through its own terminal elevators in the ports of Puerto San Martín (North of Rosario) and Bahía Blanca (Southeastern region of Buenos Aires province), Cargill exports cereals, oilseeds, oils, protein meals, and specialty food ingredients such as malt and maize for corn flakes.

As the largest worldwide oilseeds crusher, Cargill decided to be involved in the development and expansion of the Argentine oilseeds crushing industry since the early '80s. Its role in this process has ranked Cargill as the leading Argentine exporter of vegetable oils and protein meals.

With its modern crushing plants, Cargill became the second largest crusher in Argentina with a crushing capacity of 25,700 tons per day in 2003 (16,7% of total crushing capacity in Argentina) after Bunge, and the first Argentinean agribusiness company to obtain the ISO 9002 Certificate for its plants, processes and products.

Flour Milling: Trigalia S.A. was born when the flour market of Cargill and Molinos Río de la Plata merged, two major companies baselines of the Argentine food industry. Trigalia is leader in milling and sales in the Argentinean market and one of the main exporters of flour in the Mercosur. Its assets consist of 8 mills strategically distributed all along the country and it provides more than 6,000 products and services through being their main distribution channels: bakeries, distributors and industries in the market.

High value-added products: Renessen, another subsidiary, is a leading innovator in developing improved ingredients/inputs for the feed and processing industry. Renessen uses biotechnology and breeding to produce corn and soybeans with higher levels of nutrients such as oil, protein, and amino acids that are essential in animals feeding and grain processing.

Malt: Cargill Malt, one of the world's leading malt producers, has been present in Latin America as a high quality malt supplier since June 1998, when the Bahía Blanca Malt Plant (Argentina) became operational. In the domestic market, Cargill Malt meets the needs of the Argentine market as the only independent malt producer that is not involved in the production of beer.

Country Stations: This network, which currently covers more than 15 locations in the main grain area of Argentina, was born in the mid-60's as a key tool to supply the raw materials demanded by its foreign customers. Later, it evolved to include the supply of grains and oilseeds required by the processing and export facilities as well as to complement the commercial network for distribution of farm inputs.

Financial Services: The financial area of the company involves three business units: VIG (Value Investment Group), presented in Argentina through its Real Estate market investments; See Andean Asset Management S.A. site, and the Treasury in charge of the company's funds administration. It provides services to all business units through funds management, definition of the best funding strategies and surplus funds investments. The Insurance Area is in charge of setting up policies and providing coverage for all the business units according to their needs to limit the equity impact of any possible events related to assets of the company.

3.4.3 Cargill's strategy in France

Cargill began its activities in France in 1964 through its first operations of soya, corn and fish flour trade in Saint Nazaire. Currently, Cargill-France employs 2,300 employees in 16 plants and its turnover rose to 2 billions euros in 2005.

The main activity of Cargill in France is the cereal trade. In the 1970's, Cargill developed its crushing activities by opening two crushing plants: in 1970 in Saint-Nazaire and in 1976 in Brest. Then, the malt division established in France in the 1980's after the acquisition in 1979 of the factory of Laurent, near Lille, and the opening of a new malt factory in Strasbourg in 1989.

In 1990, Cargill diversified its activities into the brokerage of financial instruments (MATIF). In 1991, Cargill launched out into the construction of a poultry meat processing plant near Orleans. In 1992, the purchase of the factory of bottling "Huilerie Félix Marchand" in Château Gontier, added to the creation in 1993 of a vegetable oil refinery in Saint-Nazaire, placed Cargill France on a new market: the market of the great consumption products. In 1999, Cargill-France set up a joint venture with the Vandemoortele company to operate the bottling plant of Château Gontier "Associated Oil Packers".

In Europe, Cargill is the largest oilseeds crusher. Its market share is ranging between 25% and 35%. Cargill buys between 10 and 15% of the French cereals and oilseeds collection, to meet the needs of its food-industry plants in France and Europe. It represents a volume ranging between 8 and 10 million tons per year.

It supplies partly the plants of Amsterdam and Antwerpen with oilseeds (colza/sunflower), and the plants of Tilbury and Bergen op Zoom with cereals (corn/wheat). Cargill France also provides canola, sunflower, wheat, barley, corn, feed industry and the industrialists of the principal partners of the European Union. Finally, Cargill exports the same products according to world markets needs.

In France, the establishments of Cargill are the following (Figure 12):

- Oilseeds Crushing and vegetable oils refining:
 - Crushing and oils refining (St-Nazaire and Brest),
 - Vegetables' proteins Distribution (St-Nazaire / Montoir),
 - Cereals trade (St-Germain-en-Laye, Yvelines);
- Cocoa Manufacturing: OCG (Le Grand Quevilly, Seine-Maritime);
- Oils bottling : BOE (Château-Gontier, Mayenne) ;
- Poultry meat manufacturing: Cargill Foods France (Orléans);
- Starch milling: Cerestar France (Haubourdin, Nord);
- Malt: Cargill France Eurasia (Strasbourg);

Figure 13 : Cargill's locations in France in 2006



Source: According to <http://www.cargill.com>

Cargill-France is present on two great sectors primarily:

- **Cereals and oilseeds trade:** The office of St Germain-en-Laye is in charge of the purchase, logistics and the supplying of cereals and oilseeds for the Cargill's plants network in Europe and takes part in the European cereals exports towards third countries. Cargill France buys raw materials (corn, barley, corn, sunflower and canola seeds) from the French cooperatives and traders. It ensures the supplying by trucks, trains, barges and ships to its customers and to the crushing plants of Cargill in Europe. Cargill France supplies the industrialists of malt industry, starch industry, Flour-milling and the animal nutrition in France and in Europe. Trade is the main activity of Cargill-France.
- **Crushing of oilseeds into oils and meals:** The plants in St Nazaire and Brest are in charge of oilseeds crushing into meals and oils. Oils are intended for refining and bottling but also for esterification for the production of biocarburants. The meals are supplied to industrialists of the animal nutrition.

The plant in Brest is dedicated to the animal nutrition and the biodiesels, by transforming canola and soya.

The factory in Saint-Nazaire includes a manufacturing plant of oil refining dedicated to sunflower oils and certified ISO 9001. The produced sunflower oils are intended for the European food industries as well as technical industries. This plant produces half of the national sunflower oil production. The segments Cargill supplies with are: the bottling, the margarine, the mayonnaise, the crackling, the infantile food and the prepared dishes. This plant also develops new segments of technical industry such as industrial lubricants, and coordinates the soya proteins imports and distribution.

Cargill France plans to invest more than 50 millions euros in the building of a crushing plant of canola's oil on its site in Montoir. This new industrial tool will allow the company and its partner Diester Industry to meet the new quotas of biodiesels granted by the government. Cargill should finance the majority of the building and the complement will be brought by Sofiprotéol, which will hold a minority interest in the company created for this purpose.

This future plant will be able to crush 600,000 tons of canola per year in the long term, mainly supplied with crops from the western regions of France (Bretagne, Pays de la Loire, Poitou-Charentes and Centre). The production of canola's oil, used to manufacture biodiesel, would rise to around 250,000 tons per year. It will mainly supply the plant of Diester Industry by pipeline. Cargill would market the production of approximately 350,000 tons of canola meals for animal feed, also resulting from seeds crushing.

In 2008, theoretical date of delivery of this site, Cargill plans to crush 1,750,000 tons of oleaginous seeds (canola, sunflower and soya) on its three plants.

With this new crushing plant in Montoir, Cargill would reinforce its partnership with the French biodiesels industry. The opening of this factory will also reinforce the economic role of Cargill in the West regions of France. First food industrial operator on the port of Nantes/Saint-Nazaire, the company constitutes an important source of outlets for the regional agricultural productions. Today, more of half of the canola and sunflower crops in Bretagne, Pays de la Loire and Poitou-Charentes is crushed, developed and marketed on the Cargill's plants. In term of employment, the operation of this new plant should create about thirty new posts. They will have to be added to the 500 of direct and indirect employments, generated by the current activity of Cargill in the basin of Montoir/Saint-Nazaire.

3. Louis Dreyfus



4.1 History :

The Louis Dreyfus Group is a worldwide organisation of companies, which are all owned by Louis Dreyfus & Cie. S.A., the French parent company headquartered in Paris.

The Louis Dreyfus Group has been involved in shipping activities for over 100 years and is today one of the world's ten leaders of the bulk carrier industry. Paris-based Louis Dreyfus Armateurs heads the shipping activities of the Group. It began chartering cargo vessels in the Black Sea in the late 1800's. In 1903, Louis Dreyfus commissioned its first vessel, the steamship Carol 1.

The Louis Dreyfus Group has been in business since 1850 and is still owned by the Louis-Dreyfus family except for two subsidiaries that are listed on the Paris Exchange. The other main activities of the Louis Dreyfus Group comprise international trading and merchandising of various agricultural and industrial commodities, oil refining, petroleum products and natural gas marketing and distribution, telecommunications infrastructures operations, manufacturing operations and real estate development.

In 1851, Léopold Louis-Dreyfus began going from one small town to another in his native Alsace buying wheat for resale in the Basel (Switzerland) market. In the 1860's, Louis Dreyfus purchased wheat in the Danube basin and in Russia to meet the increasing demand of industrialized cities in Western Europe. His business grew throughout Europe, and by the 1870's Léopold had established his world headquarters in Paris, where they remain to this day.

By 1905, Louis Dreyfus owned a significant commercial maritime fleet and had established a commercial bank to facilitate the company's financial operations in grain markets. The Group had opened an international network of offices in Europe, North and South America, Algeria, South Africa, India, Indo-China, China, Australia and especially in Russia, where 114 offices were listed in 1906. Its first office in America was opened in 1909, and the Group expanded its presence in the United States with the outbreak of World War I. In 1911, Louis Dreyfus's activities extend to Brazil, where it enters the cotton market.

New opportunities in a variety of markets allowed the growth of the company through the 20th century: in 1960, Sofecia was established in Paris to specialize in the trade, storage and distribution of ethyl alcohol in international markets; in 1969, Gérard Louis-Dreyfus redirected the Group's trading activities to capitalize on arbitrage opportunities in a variety of commodity markets, including government bonds, rice, cotton and natural gas; in 1971, as part of a program to pursue diversified investments, Louis Dreyfus Property Group was established in order to own, develop

and manage real estate properties in North America and Europe; in 1986, Louis Dreyfus began trading energy products, including natural gas and crude oil. It purchased an oil refinery in Germany; in 1988, the group entered the citrus market with the acquisition of a processing plant in Matão (Brazil); in 1999, Louis Dreyfus entered into an agreement with Electricité de France to create an energy trading company²⁰.

Louis Dreyfus companies are present in over 53 countries, with major offices in Beijing, Buenos Aires, London, Paris, São Paulo, Wilton (Connecticut) and Memphis (Tennessee). The average annual net sales of the Group exceeded \$ 20 billion in the recent years. Today, Louis Dreyfus has more than 10,000 employees engaged in diversified activities.²¹

4.2 Main products and divisions:

4.2.1 Agricultural commodity trading and processing

The Group has been merchandising and trading bulk agricultural commodities in international markets since 1851. Louis Dreyfus conducts its activities through various subsidiaries in cities around the world.

- **Grains and Oilseeds**

The group handles wheat, rice, corn, sorghum, barley, rye, oats, oilseeds and oilseed products, including soybeans, canola, rapeseed, sunflower, flax and cotton. It also merchandises agricultural by-products derived from processing. The division's activities include reception and aggregation for export in primary agricultural production centers and the shipment, import and domestic distribution in local consumption markets throughout the world.

Louis Dreyfus is present in all of the major grain and oilseed production regions in the world, including the United States, Canada, Brazil, Argentina, Europe, South Africa and the states of the former Soviet Union. In addition to these origination activities, the Group is engaged in a large distribution network in Europe, Asia, Africa, the Middle East and the former Soviet Union. Offices in Paris, Singapore and Wilton (Connecticut) serve as hubs to coordinate the merchandising activities of over 30 local offices.

The company owns or operates many strategic assets around the world to conduct its global trading and merchandising activities. Louis Dreyfus operates large export elevators in the United States and Canada. It also owns elevators along the Illinois River and has built a series of new high-speed elevators in the Canadian interior that serve as origination facilities to support export operations. In total, Louis Dreyfus has

²⁰ According to :

<http://www.louisdreyfus.com/content.cfm?page=ldhistory.cfm&gbus=8&rightmenu=default>

²¹ According to: <http://www.ldnegoce.com/fr/historique.htm>

a daily crushing capacity of over 23,000 tons and refining capacity of over 900 tons per day in South America, where it's the third largest oilseed processor.

Louis Dreyfus consistently ranks among the largest trader of grains and oilseeds in the world, and its annual volume has represented approximately 15 % of total world trade.

- **Citrus**

Louis Dreyfus is one of the three largest producers of orange juice in the world with a 12% share of the global market. The Group operates processing facilities in Brazil and Florida that have a combined annual capacity of 83 million boxes of oranges, producing 250,000 tons of orange juice concentrate.

- **Cotton**

Louis Dreyfus is one of the largest traders and merchandisers of raw cotton in the world. The Group originates cotton in more than 20 different producing nations and exports to over 40 countries worldwide. In the United States, Louis Dreyfus is a major supplier to domestic textile mills, supplying 15 to 20% of cotton consumption, and operates over five million square feet of warehouse space.

- **Sugar**

Louis Dreyfus ranks as one of the top three sugar traders in the world, trading both raw and white sugar. Louis Dreyfus owns three Brazilian sugar mills that produce 450,000 tons of sugar and 150,000 cubic meters of alcohol annually.

- **Coffee**

Louis Dreyfus is a leading trader of coffee, handling both arabicas and robustas. Similar to its activities in sugar, the Group participates in origination in numerous countries in Central and South America, Africa and the Far East.

- **Non-Ferrous Metals and Raw Materials**

Louis Dreyfus entered the global non-ferrous metals and raw materials trading market in 2005. With headquarters in London, its business activities include copper, lead and zinc metal and concentrates, aluminum and alumina as well as other minor metals and by-products.

4.2.2 Energy trading and processing

Louis Dreyfus is active in the merchandising and trading of crude oil and petroleum products, natural gas, natural gas liquids, electricity, petrochemicals and plastic resins.

Louis Dreyfus Energy Services is a major North American energy merchant active in the processing, trading, marketing and transporting of a wide range of energy products. The company supports its energy activities with a diversified gas

processing, pipeline and storage asset base operated to provide bundled commodity and logistics services to the energy industry.

4.2.3 Real estate

Since it was organized in 1971, Louis Dreyfus Property Group has acquired and developed over eight million square feet of office space in North America and Europe. Current office buildings and development sites in the portfolio, some of which are held in joint ventures with other parties. Louis Dreyfus is building and developing for ownership a number of hotels in partnership with Four Seasons Hotels and Resorts.

4.2.4 Telecommunications

Neuf cegetel, a French subsidiary based in Paris, was formed in 1998 in response to opportunities provided by the deregulation of European telecommunications markets. Through strong internal growth and several large acquisitions, neuf cegetel has become the second largest private telecommunications company in France.

4.2.5 Shipping

Shipping is the most naturally activity related to trading, the business on which Louis Dreyfus was founded.

In addition to traditional deep sea dry and gas bulk shipping activities, Louis Dreyfus Armateurs has developed into integrated logistics, project and heavy lift transportation, seismic research, cable laying and maintenance vessels and more recently Roll on/Roll off vessels. Altogether, Louis Dreyfus Armateurs directs a fleet of 40 ships, 10 floating cranes, 12 tugs and 8 barges.

The Louis Dreyfus Group is one of the largest chartering entities in the world in support of its worldwide commodities trading activities, a significant portion of which is concentrated in the area of grain transport. Louis Dreyfus has three main offices responsible for its grain chartering operations that are located in Paris, Wilton (Connecticut) and Beijing (China).

4.3 Financial summary

In 1999, the private company generated \$18 billion in revenue and it rose to \$27 billion in 2005. The subsidiary L.D Commodities remains the most important of the Group with a turn over of \$15 billion in 2005 and 6,000 employees.

4.4 Corporate strategies

4.4.1 Locations

Since its founding in 1851 in France, Louis Dreyfus developed an international strategy and opened a lot of subsidiaries worldwide located as shown in table 10.

Table 10 : Locations of Louis Dreyfus's subsidiaries

| Division | Subsidiary | |
|---|--|-----------------------------|
| Commodities | L.D Négoce (France) | LD Africa Co. (1924) |
| | Sesos Istanbul (1989) | LD Asia (1994) |
| | L.D Australia (1983) | LD Germany |
| | LD Italia (1994) | L.D Corporation (U.S.) |
| | L.D Canada (1941) | L.D Argentina (1925) |
| | L.D Brazil (1911) | |
| Shipping | L.D Armateurs (France) | L.D Travocean (France) |
| Energy | L.D Polymers (China, Singapur, U.K, U.S) | |
| Agricultural financial Risk management | Australia, U.K, U.S | |
| Real estate | L.D Property Group (U.S) | |
| Telecommunication | L.D Collectivities (France) | Neuf cegetel (1998, France) |

Source: according to <http://www.louisdreyfus.com>

- **Argentina**

Through **SACEIF Louis Dreyfus & Cia.**, its Argentine subsidiary since 1925, the group owns and operates the General Lagos crushing plant and port facilities on the Parana River with deep-water access for large export-bound, ocean-going vessels. With a crushing capacity of 12,000 tons a day, a storage capacity of 1,1 million tons and a transportation capacity of 35,000 ton/day, it is one of the largest and most efficient plants in the world. The company has another crushing plant, and its total crushing capacity in Argentina exceeds 20,000 tons/day in 2003 (13% of total Argentinean crushing capacity).

The company trades soybeans and other oilseeds and their by-products, feed grains (corn), wheat, rice, meat and cotton. In 2006, Louis Dreyfus Argentine is the third grains and oilseeds exporter in Argentina, after Cargill and Bunge & Born.

Through its Argentinean subsidiary **Marifran Internacional**, Louis Dreyfus Armateurs became one of the major operators in South America. Originally it was specialized in double way transport (grain to Brazil and minerals ores to Argentina). Marifran Internacional considerably developed its activities, particularly in establishing regular connections between Argentina and Europe on the one hand and Argentina and the Far East on the other hand. Finally, Louis Dreyfus sold its interests in Marifran International in July 2000.

- **Brazil**

The Louis Dreyfus Group has been active in Brazil since 1911 and conducts various diversified activities through Coinbra, a wholly owned subsidiary. With five soybean and two cottonseed crushing facilities, its can crush more than 11,000 tons/day (2003) which represents 7,7% of the total Brazilian crushing capacity.

Coinbra is also a significant exporter of coffee and a trader of various commodities, including sugar, corn, rice and wheat. The company is actively involved in alcohol and sugar production industry in Brazil, working in association with the parent Louis Dreyfus and Sofecia.

Through Coinbra, Louis Dreyfus is active in all coffee growing regions in Brazil. With access to coffee beans from diverse areas, Coinbra is able to provide various blends of the finest coffee produced in the country to the world market. Coinbra operates the Silocaf facility in Vitória (Espírito Santo). This efficient coffee storage and processing facility has sophisticated equipment to stock, clean, classify and select coffee according to quality and taste.

The group is also present on the citrus market fruits through its subsidiary LD citrus, Coinbra Frutesp, and is the third orange juice manufacturer in the world. LD Citrus has its operations centre in the state of San Pablo, which benefits from excellent climatic conditions and the smaller costs in the world. This region provides 80 % of export orange juice concentrated.

4.4.2 Louis Dreyfus's strategy in France

In France, shipping, grains trading, oil, alcohol and meat, as well as telecommunications is particularly developed.

➤ **Louis Dreyfus Négoce S.A.S**

In its headquarters in Paris, Louis Dreyfus Négoce combines a good knowledge of grains and oilseeds with detailed information on many countries and areas involved in trading of agricultural commodities. This synergy of talents enables the company to control its markets and to provide both purchasers and sellers with optimal opportunities.

In Europe, Louis Dreyfus Négoce controls both its own grain and oilseed operations and those of the Group. With subsidiaries in the major countries of the European Union, Louis Dreyfus Négoce has a comprehensive view of the Common Market. It participates actively in inter-EU exchanges, especially from France, the country where its head office is and Europe's leading exporter of agricultural products.

Louis Dreyfus Négoce is active in exports from EU countries to non-European Union destinations. Through its marketing activities in those countries, the company works

to develop a close relationship with local operators. To provide additional global sourcing and selling advantages, Louis Dreyfus Négoce has opened origination and trading offices in Eastern Europe, particularly in Bulgaria, Poland and Romania, and more recently in the Russian Federation, Ukraine and Uzbekistan.

Louis Dreyfus Négoce also oversees operations to the following destinations:

- Near and Middle East, through offices in Turkey, Egypt, Israel, Jordan and Irak;
- Maghreb;
- South and East Africa, through offices in Johannesburg and Mombasa;
- Asia, through offices in Singapore, India and China.

➤ **Louis Dreyfus Armateurs and Louis Dreyfus Travocean**

Louis Dreyfus Armateurs



From the drawing board to the commercial management of vessels, whether under its own name or through its subsidiaries - Cetrappa (Paris), LD Lines (Paris), FRET S.A. (Paris), Methane Transport (Paris), Sismique SA (Paris), Alda Marine (Paris), LD Travocean (Marseille), LD Marine (Wilton), Flumar (Rio de Janiero), Orchard Maritime Services (Singapore) and Buries Markes (London) - Louis Dreyfus Armateurs offers a highly diversified range of services and handles annually approximately 45 million tons of various types of cargo and four million cubic meters of liquefied natural gas over the main shipping routes.

Dry bulk transport has always been the principal maritime activity of Louis Dreyfus Armateurs. With 22 million tons carried around the world every year and 16 cape-size bulk carriers with an overall capacity of 2.6 million tons, Cetrappa, a wholly owned subsidiary, is one of the leading operators in the large tonnage dry bulk market.

Cetrappa is dedicated to developing long-term partnerships with each of its customers based on a principle of confidence and efficiency. Extremely close attention is given to the customer's expectations, thus enabling the company to provide solutions that are increasingly well adapted to needs and often even in advance of what is asked for. This policy has enabled Cetrappa to develop a portfolio of long-term contracts with major international users and ensure they get the ships best suited to their needs, whenever and wherever required.

Cetrappa has established a solid reputation for the quality and safety of the services it provides and is certified ISO 9002 by B.V.Q.I. This certification emphasizes constant efforts to provide perfectly maintained vessels and highly skilled crews.²²

Louis Dreyfus Travocean



LD Travocean was incorporated in 1977 to meet the demand for maritime engineering projects. These were principally undersea power or telecommunication cables for the offshore oil and gas industry and for national utilities requiring linkups between the mainland and islands. LD Travocean has an international reputation for submarine cable installation, whether power cable, telecom cable or defense systems and has worked in such countries as the Arabian Gulf, Canada, the United Kingdom (North Sea and Irish Sea), China, France, several countries in West Africa, New Zealand, Thailand, South Korea and Belize.

LD Travocean has the experience and the capability to provide flexible and comprehensive service that meets virtually all subsea cable laying and protection requirements. For certain technical aspects of a project, the company can call on the expertise of major organizations such as France Telecom for optical fibre submarine systems and Electricité de France for power cables. Similarly, strong working relationships between LD Travocean and leading cable manufacturers guarantee the workmanship and quality of repairs.²³

➤ Neuf Cegetel

Neuf cegetel is the leading alternative operator in France. The group operates its own national long distance network, comprising 44,800 kilometers of optical fibers and has invested heavily in the rollout of its DSL access network. This means that neuf cegetel is in a position to produce its own broadband services, control the costs and quality of its services and sell them directly to 70 percent of the French population.

Neuf cegetel is the leading unbundled line operator in Europe with 1.4 million unbundled lines as of August 2005 and a presence in all segments of the market. The company provides a wide range of all-IP services to more than 3 million residential

²²According to :

<http://www.louisdreyfus.com/content.cfm?page=cape.cfm&gbus=26&rightmenu=default>

²³According to :

<http://www.louisdreyfus.com/content.cfm?page=travocean.cfm&gbus=26&rightmenu=default>

customers, including 1 million broadband customers, 80,000 business customer sites and 200 telecoms and Internet service providers. Neuf cegetel, whose two key shareholders are the Louis Dreyfus and SFR Groups, reported revenues of more than 2.5 billion euros in 2004.²⁴

²⁴ According to :
<http://www.louisdreyfus.com/content.cfm?page=ldcomm.cfm&gbus=7&rightmenu=default>

III.Traceability’s strategy of ABCD

The most important objectives of international traders is increasing their market-shares and massificate their operations. Given this strategy, they can create economies of scale in various activities: trade, logistic and processing.

These large-scale operations are characterized by weak margins on a market where the short-term price changes remains important. To achieve their objective, companies have contributed to risk management as well as permanent research, looking for improving logistic management in storage and transportation (mainly maritime) in the trader’s core business.

The second great activity of traders (first trade itself) is the first step in oilseeds processing, which also corresponds to a weak-margin activity. For all these reasons, in addition to investment in highly massificated operations, traders try to shift to higher-margin markets.

Not only do these markets correspond to high value-added products (e.g. vitamin E), but also to a range of specific services whose aim is to meet customer needs, such as the installation of systems of Identity Preserved and Traceability.

There is a large number of examples of high value-added products and systems of traceability developed by ADM, Bunge, Cargill and Dreyfus. Although these examples are not exhaustive, we will include them in order to allow a better understanding of their strategic orientation.

It is noteworthy that companies should set up segregation systems and Identity Preserved systems in the majority of high value-added products development strategies in order to acquire new business markets and meet increasingly customer needs.

Moreover, not only do traders set up IP systems associated with their high value-added processing, but also they set up an IP system for basic products required by consumers.

1. ADM

ADM has always developed a strategy of specialties to evolve towards high value-added productions. Thus, this company currently plays an active role in the food ingredients industry.

The position of ADM concerning the IP systems for Non-GM products met a major turning point since 1999. Indeed, ADM required that its grain suppliers set up a

process to segregate genetically modified (GM) corn, soybeans and other crops from conventional crops. This position is just the answer to the needs of European and Japan customers.

While ADM wants to gain extra profit from GMO's in the long-term, its emphasis on adding value lead it to seize new opportunities in selling Non-GM crops at a premium (over GM crops)- hence the 1999 announcement to suppliers.

1.1 ADM Specialty and Identity Preserved Grain Program

Since 1999, ADM Agricultural Services launched the ADM Specialty and Identity Preserved Grains Program. Three export elevators operating ocean vessel loading facilities under centralized management from the Gulf Operations main office (Ama Export Elevator, Destrehan Export Elevator and Reserve Export Elevator) have taken part in this program.

This program for specialty grains consists of the following "process points"²⁵:

- 1) Grower and elevator certified product sourcing that meets customer contracted requirements with subsequent receiving, handling, **Identity Preservation**, and shipment in Ocean Vessels via the Gulf Operations.
- 2) Sale by Decatur Specialty Grains Group of Ocean Vessels from the Gulf Operations of specialty grains that are certified to be segregated and **delivered in an identity preserved manner** to barge or rail by a signed certificate from an approved Rail or Barge Terminal Supplier.
- 3) Ocean vessel product **traceability certified** by a pool of signed farmer and elevator supplier certificates.
- 4) Sale by Decatur Specialty Grains Group of containers from Ottawa, Illinois that meet customer **contracted specifications**.
- 5) Trait testing of inbound specialty grains that are identity preserved into vessel or container shipments.
- 6) Collection of signed farmer and elevator suppliers certificates warranting: post harvest chemical free, growing, handling, and harvesting practices, variety information, and non-commingling.
- 7) Farmer and elevator supplier certificates available to customers electronically or as the signed document.
- 8) Trait testing or other tests per customer requirements of outbound specialty grains shipments. Analysis provided by ADM **contracted third party laboratory**, customer contracted laboratory, and/or State and Federal Agencies.

²⁵ According to <http://archive.gipsa.usda.gov/programsfgis/inspwgh/pvp/ADMinfo.pdf>

9) Origination and shipment of Non-GM Food Grade and Distiller Grade Corn under the Newman Elevator Program in Newman, Illinois. This program includes:

- a) Sourcing of Non-GM Food Grade corn varieties and Distiller Grade Corn Varieties that provide customer preferred characteristic(s),
- b) Handling, storage, segregation and loading of product to prevent commingling with other products that do not have specialty trait(s),
- c) Testing and documentation of each outbound shipment as required by customer contract and ADM's internal system that ensures customer satisfaction.

In September 2005, the USDA has certified ADM under the **Process Verified Program (PVP)** certification for its specialty feed and food grains programs. This certification provides ADM's specialty and identity preserved grain programs with an enhanced level of independent certification that its products meet the highest standards of Identity Preservation. Through this certification, ADM's specialty feed and food grains customers are assured of receiving products handled within a system designed to provide an unbroken chain of traceability and product control.

USDA's Process Verified Program ²⁶

USDA's Process Verified Program provides suppliers of agricultural products or services with a certification assuring customers of their ability to provide consistent quality products or services. This is accomplished by having their documented production, manufacturing or services delivery processes verified through independent, third party location audits.

The PVP uses the International Organization for Standardization's ISO 9000 series standards for documented quality management systems as a format for evaluating program documentation to ensure consistent auditing practices and promote international recognition of audit results. USDA also verifies, as a part of the auditing process, specific "**Verification Points**" identified by program participants regarding their activities that add value to their products. This could include **traceability**, manufacturing, service provision or any other activity that distinguishes their product from the competition.

(According to: <http://processverified.usda.gov/>)

ADM works closely with its suppliers and end use customers to provide a program designed to supply the documentation and certification to guarantee traceability. This Food Grains Process Verified Program allowed ADM to meet the main needs of its customers, like the Japanese company Marubeni.

²⁶

http://www.admworld.com/naen/pressroom/newspopup.asp?id=352&name=ADM_Certified_by_USDA's_PVP

Marubeni is a leading grain trading and feed milling company in Japan. The grain activities of Marubeni are handled mainly through its Pacific Grain Center. Marubeni is also one of the major shareholders of the Nisshin Oillio group, the leader crushing company in Japan, and Marubeni Nisshin Feed Co. Ltd., the leader private feed company in Japan.

In January 2004, ADM and Marubeni announced an agreement jointly to seek new business development in specialty grains and oilseeds for the Japanese market. Under the terms of the Agreement, ADM will be responsible for exporting specialty grains and oilseeds from U.S. growers to Marubeni, who will then market the products in Japan²⁷.

With the Japanese government's implementation of the Food Hygiene Law & Feed Security Legislation, effective July, 2003, there has been a strong demand for products that meet the high standards of Identity Preservation as well as food and feed safety. This will utilise the strength of ADM's infrastructure to meet the strict standards of Identity Preservation required by consumers in Japan.

1.2 ADM Identity preserved Non-GM Program for Vitamin E

ADM developed since few years high value-added products like tocopherols or vitamin E, which required the installation of Identity preserved systems.

Thus, ADM launched the ADM Identity Preserved Non-GM Program for Vitamin E, Mixed Tocopherols, and Phytosterol Products. It has received in June 2005 independent confirmation of compliance with European regulations concerning traceability and labelling of Genetically Modified Organisms by Eurofins - GeneScan, the world leader in GMO detection, Non-GM verification and certification.

This validation confirms that the above-mentioned products have been manufactured through a Non-GM program that has implemented measures to effectively control the presence of GM material and is being maintained in accordance with the European requirements for labelling and traceability.

As part of its Identity Preservation Verification program, Eurofins-GeneScan conducts audits to provide independent assessments of the risk management practices of companies that manufacture, handle, or store Non-GM products. To obtain a satisfactory assessment, a company must demonstrate its commitment to achieving high operational standards and maintaining organization and physical processes to ensure that quality system objectives are being met.

Some of the key criteria used in evaluation are the appropriate implementation of systematic risk assessments, documentation, training procedures, adverse event management, segregation measures, verification of suppliers, traceability, sampling protocols, and analysis.

²⁷ According to: <http://www.seedquest.com/News/releases/2004/january/7614.htm>

In 2005, ADM's IP Non-GM Program underwent comprehensive audits that included the review of program specific documentation encompassing all procedures from the sourcing of Non-GM grain to the manufacture of the final product. In addition, Eurofins-GeneScan also conducted on-site assessments of facilities involved in the production of Deodorizer Distillate as well as Vitamin E, mixed tocopherols, and phytosterols. The scope of this program is international as it includes grain suppliers, crushing facilities, and end production facilities located in South America, Europe as well as in the US.

The successful verification of this system demonstrates that the Non-GM program is operating in a sound manner consistent with relevant quality standards and shows ADM's commitment to its Non-GM customer base. This follows last year's successful program certification by Eurofins-GeneScan of ADM's Documented IP Program for Soya Ingredients that covers the manufacture of flours, concentrates, isolates, isoflavones, and other products derived from Identity Preserved Non-GM soybeans²⁸.

²⁸ GenesCan VIP Verified – Eurofins ‘ **ADM IP Non-GM vitamin E production verified compliant to European regulations by Eutopefins – Genescan**’, June 27, 2005.

According to :

<http://www.gmotesting.com/docs/GSADM%20Vitamin%20E%20%202005.pdf#search=%22ADM%20Identity%20Preserved%20Non-GM%20Program%20for%20Vitamin%20E%22>

Eurofins – GeneScan (2005)²⁹

GeneScan USA located in Metairie, LA. is a subsidiary of GeneScan Europe AG, a member of the Eurofins Group. GeneScan operates in the area of quality and identity control of food and animal feed. The focus of these activities is the detection of allergens and detection of genetically modified organisms (GMO) in seeds, agricultural commodities, semi-finished and finished products. The company meets its customers' global requirements by operating its own analysis laboratories in Europe, North and South America and by establishing networks of strategic partners and licenses. In addition to carrying out service analyses, GeneScan also offers the corresponding diagnostics kits to third party laboratories. The Group's portfolio includes design, implementation and certification of customized control programs and Identity Preservation systems along the entire production chain. The Group specializes in delivering analytical testing services to customers from a wide range of industries including the pharmaceutical, food and environmental sectors. Through R&D, in licensing and acquisitions, the Group draws on the latest developments in the field to offer its clients unparalleled analytical solutions. With over 2,000 staff in more than 40 laboratories across 15 countries and a portfolio of over 10,000 analytical methods for proving the authenticity, origin, safety, identity, and purity of biological substances.

1.3 Increasing ensilage capacity on system IP

Currently, ADM continues to increase its capacity of ensilage on system IP. Thus, in May 2006 the company signed with Gold Kist company a joint venture involving ownership of three grain elevators in the Midwest. It would potentially give Gold Kist the ability to engage in the Identity Preservation of corn for its broiler feed. The joint venture provides for each company to own a 50% interest in the three grain elevators. Corn from these elevators is expected to supply a large percentage of the corn needs for Gold Kist feed mills. Gold Kist indicated its company's more immediate motivation was securing a constant and reliable source of corn.

2. Bunge

At the time of the discussion between the traders in 1999, concerning the problem of segregation or not of GMO products, the position of Bunge was rather neutral. Bunge remains committed to respond to the needs of growers, food processors and consumers and will undertake all practical and economically reasonable measures to assure that these needs are met. Bunge has adopted a strategy that devolves responsibility for handling GMO's to each operating division so as to effectively meet the demands of various markets³⁰.

²⁹ <http://www.gmotesting.com/>

³⁰ According to: Bunge Corporation, 4/02/2000, statement on GMOs, www.bunge.com/000204.htm.

Like the other trade companies, Bunge will progressively set up the systems of IP. The Bunge's position is an example of the company's decentralised management style, which it is very proud of. On the one hand, the group develops strategies according to the request of its customers, on the other hand, it establishes strategic alliances to improve its technical solutions answers on new markets.

*'Bunge developed its strategy according to the principle that the demands of consumers, customers and government are increasing the need for traceability, and the development of new technologies is requiring greater integration of the food production chain. Food and feed safety has been, is, and will be a key concern for our industry. Consumers are already attuned to where and how their food is produced. There is no reason to believe that their attention will lesson in coming years. Part of this awareness is driven by an NGO community that is focused on every part of our industry, from farming to safety to nutrition. For the supply chain, all of this means a need for greater traceability. The various feed-related food safety incidents that occurred in the 1990's, including dioxin contamination in citrus pellets and Mad Cow disease, helped spark a trend toward traceability. These events underscored the need for quality and feed safety assurance programs. The industry's response to this challenge was swift and I think effective. Open discussion between supplier and customer about how to best transform production processes to improve control and traceability led to HACCP, ISO9000, GMP plus, and more recently TrusQ. The effect is a higher level of food and feed safety that protects the industry, raises confidence and helps sell products. Working with its customers, Bunge created IP systems to deliver the product. Bunge effort was a great example of how the industry can enhance traceability and integration to meet consumer demands.'*³¹

Concern Bunge's food and feed safety, is increasing the need for reliable and traceable supply chains; New premium products are creating independent markets that can stretch from farm to consumer. In Brazil, where Bunge is the largest fertilizer manufacturer, Bunge supply farmers with a full portfolio of products and services, including crop nutrients and chemicals, agronomic services and financing. For commodity customers, Bunge creates long-term supply arrangements that can include trade structured financing and risk management services. Bunge also operate Identity Preservation (IP) systems.

2.1 Examples of Bunge's IP system set up at the request of the customers

ZEN-NOH

The first experience for Bunge in the IP system was to answer to the request of the Japanese customers. Bunge has entered into joint export operating and marketing

<http://archive.corporatewatch.org.uk/publications/GEBriefings/controlfreaks/controlfreaks3.html>

³¹ Alberto Weisser, June 2005. According to :

<http://www.bunge.com/US/en/media/AgvisionsSpeechWeb.pdf>

agreements in 1998 with Zen-Noh, which are likely to involve some Non-GM grain and soybeans³².

TESCO

In 2000-2001, according to the agreement with the request of the British distributor Tesco, Bunge set up another type of IP system. Indeed, since 1999, Tesco has been declaring that its goal would be the complete elimination of GM ingredients from animal feed. Tesco has been working hard over the last two years to find ways to reduce and eliminate GM ingredients from the rations fed to its livestock without passing on any cost to customers or farmers³³.

Consequently, Bunge (supplier of Tesco) had to adapt its systems of supplying to meet Tesco demand.

Under the underlying principle of its strategy, «What the customer wanted was what we provided», Bunge sold products derived from biotech crops all over the world. Nevertheless, there also were customers who requested non-biotech soybean meal. To meet this demand, in addition to being a new marketing opportunity, Bunge created a SGS-certified, identity preserved production and distribution chain in Brazil.

In 2001, retailers of the United Kingdom began to request poultry feed with non-biotech soybean meal. In response to this strategy, Bunge created a hard-IP system that delivers nonbiotech meal from Brazil to Bunge warehouse in Tilbury (England), characterized by complete security and traceability. Since its inception, Bunge has more than doubled the annual volume of product sold through this system.

2.2 Strategic alliances

Within the framework of the progressive set up of IP system, Bunge carried out strategic alliances with different companies.

➤ *Leblanc & Lafrance Inc.*

To improve its Canadian IP system, Bunge signed an agreement of partnership with Leblanc & Lafrance Inc in 2003 . It concerned Bunge's Quebec elevators: L & L St-Hyacinthe, Élévateurs Ste-Madeleine, Séchage Bermic, L & L St-Lambert and Port of Québec.

These elevators generates a total of 1.4 million tons sold annually, 70% for local market sales and 30% export sales. Only 120,000 metric tons of Non-GM are concerned with a system of Traceability and Certification for the Soybeans. This system has being certified by the Canadian Grain Commission under its Canadian Identity Preserved Recognition System (CIPRS).

³² According to: Bunge Corporation, press release, 21/10/98, 'Bunge and Zen-Noh Grain enter into joint export operating and marketing agreements', www.bungecorp.com/981021.htm

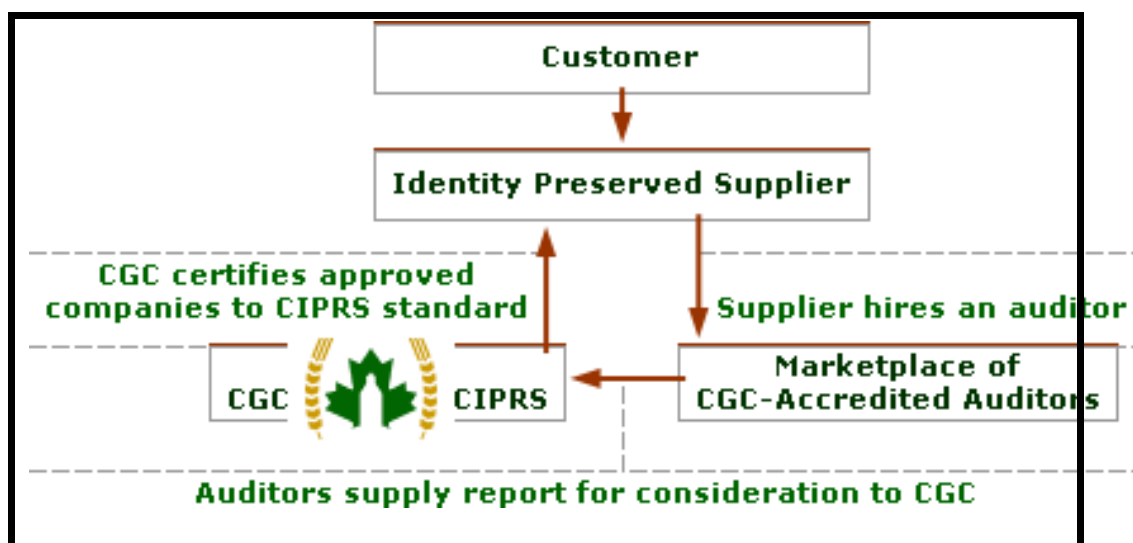
³³ <http://archive.corporatewatch.org.uk/publications/GEBriefings/controlfreaks/controlfreaks3.html>

³³ <http://archive.corporatewatch.org.uk/publications/GEBriefings/controlfreaks/controlfreaks.pdf>

Canadian Identity Preserved Recognition System (CIPRS)

Canada has maintained an enviable reputation for supplying domestic and world markets with safe, high quality grains, oilseeds, and pulses. In a marketplace with ever increasing demands for unique product specifications and traceability, there are many new opportunities for agricultural products. A key factor in capitalizing on these opportunities is industry's ability to deliver products with better quality assurance systems. Although industry is taking the lead in implementing these systems, the Canadian Grain Commission has developed a new voluntary pilot program to oversee and officially recognize those programs in order to maximize their acceptance in global markets. The Canadian Identity Preserved Recognition System is a new tool the industry can use to provide third party with assurance of the processes they are using to deliver the specific quality attributes their domestic and international buyers are demanding.

Figure 14 : CIPRS Flow Chart



Source: <http://grainscanada.gc.ca/Prodser/ciprs/ciprs2-e.asp>

➤ **Procter & Gamble**

Bunge carried out a strategic alliance with Procter & Gamble and Peter Cremer North America to produce phytosterols, ingredients that help to reduce cholesterol in foods. As other high value-added products, the phytosterol market is relatively small but it is a sector to be occupied³⁴.

➤ **DuPont Biotech**

Bunge carried out a strategic alliance with DuPont Biotech. The alliance, signed in 2003, creates an integrated chain. DuPont brings science and seeds, and Bunge brings processing capabilities, marketing expertise and customer base. Both companies bring strong grower connections. DuPont and Bunge are putting the model to work right now in the North American edible oil market, where trans fatty acids are creating challenges for food processors and food service companies. To that end, Bunge and DuPont are working to commercialize low-linolenic soybean oil, which will be marketed under the NUTRIUM™ brand. NUTRIUM does not require partial hydrogenation when used for frying so it virtually eliminates trans fats. Since it is still soybean oil, NUTRIUM should be functionally easier to use as a replacement for partially hydrogenated soy oil.

As demand for NUTRIUM increases, Bunge will expand this specialized chain to accommodate more volume and more customers. As other oils are developed, and as new, specialized meal traits are commercialized, the industry as a whole will develop similar chains to meet demand. In the near future, Bunge think there could be numerous identity-preserved, value-added production chains throughout North America, delivering specialized products to specific markets³⁵.

³⁴Bunge Financial Announcement 'Bunge Limited Forms Alliance With Procter & Gamble and Peter Cremer to Produce and Sell Phytosterol Ingredients for Foods and Pharmaceuticals' White Plains, N.Y., Nov 10, 2004.

³⁵ Alberto Weisser, American Seed Trade Association, June 2005.
http://www.bunge.com/US/en/media/ASTA_Draft_FINAL_Web.pdf

➤ *Strategic alliances to improve is storage capacity*

The first example is a strategic alliance in 2004 with the Owensboro, Kentucky grain elevator of Miles Farm Supply, LLC. The elevator currently handles only specialty grains, but with the agreement, Bunge and Miles will be able to use excess capacity to originate a wider variety of grains. Announcing the agreement, Tim Gallagher, senior vice president and general manager of Bunge North America's Grain Division, noted, "Operating this elevator allows us to expand our presence along the Ohio River and to increase our ability to handle specialty grains such as Non-GM soybeans and trait-specific varieties of corn³⁶".

The second is the agreement carried out in 2005 with Gold Kist companies to supply with 15 barges of corn IP every week.



3. Cargill

Contrary to ADM, Cargill has always followed a deliberate strategy focused on scale. Cargill had for a long time reluctances concerning the system of IP.

Indeed, its position concerning this topic was clearly defined in a subjected memorandum submitted to the United Kingdom Parliament, in 1999:

"Segregation of crops and the products of first-stage processing has been a topic of discussion since 1996, but it is often ill-defined. Segregation often appears to imply a separation of the normal bulk commodity flow, perhaps government imposed, which is not end-user specific. It suggests two or more supply chains in place, each with unspecified volumes, and with additional costs somehow integrated into both chains, without any clarity as to who bears such costs. In our view such segregation is a misleading focus for debate. No separation requirement exists for conventional crops, even when they are known to be toxic to humans (as is the case with high erucic acid rapeseed grown for technical uses). A separation requirement would seem absurd for genetically modified crops that have been authorised as safe to consume. Some customers, such as baby-food manufacturers, demand much greater degrees of control over their raw materials than others. Governments cannot legislate for this without discriminating amongst customers. Government's role is surely to ensure that what is marketed is safe in health terms; and what is grown in their country is safe in environmental terms. Since both GM and Non-GM soya and maize crops currently on the market have been authorised, the question of separation is not a safety one but a marketing one, concerning the provision of consumer choice. In this context using the terminology "Identity Preservation" seems more useful. Many conventional crops are already identity-preserved because the customers for those crops find there is a value in doing so. Identity-preserved supplies serve specified customer needs alongside the bulk commodity market. Identity-

³⁶ http://www.bungenorthamerica.com/news/04_01_26.htm

*preservation is **customer driven** and begins on the farm at the time of planting. Where the product is identity-preserved is still a bulk product that can fill an ocean-going vessel (or several), then **the additional costs may be only 5-10 per cent**, but for smaller quantities these costs increase significantly. Identity-preservation of a crop should be considered as provision for a specialist market, where the economies of scale of commodity buying and bulk transport and storage no longer apply.”³⁷*

In spite of a relative reserve of Cargill to the diffusion of IP systems at the beginning, the group will advance in a rather significant way, currently having its own systems: “**Cargill InnovaSure™ IDP System**³⁸” and “**Cargill Canola IP**”.

3.1 Cargill InnovaSure™ IDP System

From seed selection to doorstep, the InnovaSure IDP services utilizes leading-edge technologies and stringent IdP protocols to provide customers with the ingredients they want.

The different steps of the InnovaSure™ IDP System are described below:

3.1.1 InnovaSure™ Corn Seed Selection

Careful seed selection is the first step in the process. Each year, Cargill evaluates all commercially available varieties to develop a list of approved seeds that will deliver the best performance in its customers' applications:

- Only non-genetically enhanced varieties are currently included on the approved hybrid list used in Cargill Indiana mill location. Genetically enhanced varieties with specific starch properties are included on the approved hybrid list for Cargill Illinois mill location.
- When selecting hybrids, Cargill matches the starch properties of the corn with the functional applications of its customers, using its laboratories to conduct the evaluations.
- All hybrids come from seed suppliers who have demonstrated that they meet Cargill stringent IdP protocols.
- The firm performs PCR testing on seed lots utilized in Cargill Indiana mill to maximize the integrity of the hybrids.

3.1.2. InnovaSure™ Grower Network

Cargill have its own network of growers to bring customers high quality products. Its professional growers are located in the most fertile, corn-producing area of the US Midwest Corn Belt. They agree to follow its strict IdP processes for planting, harvesting and storage, and the group verify the growers' receipt of approved hybrids.

³⁷ According to :

<http://www.publications.parliament.uk/pa/cm199900/cmselect/cmagric/71/9113012.htm>

³⁸ <http://www.cargilldci.com/innovasure/index.shtm>

3.1.3 InnovaSure™ Storage & Handling

Careful handling techniques are critical to ensuring the reliability of InnovaSure identity preserved products throughout the supply chain. The InnovaSure system includes detailed measures for maintaining the grain integrity, during storage, handling and transportation :

- Cargill growers use separate storage bins for all identity preserved grain. These bins are carefully cleaned between crops to minimize the possibility of carry-over from a previous crop.
- Cargill operate its own elevators dedicated exclusively to the handling and storage of identity preserved grains. They are managed by professional staff, which has extensive experience in the latest Identity Preservation techniques. At Cargill elevators and mills the deliveries of corn are tested, including tests for genetic enhancement at Cargill Indiana mill location.
- The grain is tested again when it reaches mills. Cargill also tests deliveries for foreign material and food grade traits.

3.1.4 . InnovaSure™ Processing

As part of the InnovaSure services, Cargill use several control protocols in its mills to ensure high IdP integrity:

- To confirm quality, Cargill take frequent samples and conduct rigorous testing of whole corn, yellow goods and masa products while in process.
- Cargill tests for a number of quality criteria, such as granulation size, fat content and foreign material.
- All of Cargill's mills process only InnovaSure IdP corn.

3.1.5. InnovaSure™ Distribution

Distribution of InnovaSure products follows strict identity preserved protocols to ensure high integrity:

- Trucks and rail cars are cleaned and inspected before InnovaSure products are loaded.
- Cargill grades the contents and test for genetic enhancement if required by customer.
- Pending test results, cars are sealed and products are shipped.
- Cargill includes a certificate of analysis, plus a statement confirming the product's identity.

Innovasure, the Non-GM operation at Cargill, allowed to reassure buyers that its products won't be GMO contaminated. Innovasure says it will go to "excruciating lengths" to supply Non-GM corn. In 2000, Cargill contracted with 400 growers before publicly announcing Innovasure. The brand has a website, www.innovasure.com, that explains the basics of their IP system to potential customers. Innovasure will use mills in Paris, Illinois, Indianapolis, Indiana, and Liverpool, UK.

3.2 Cargill Canola IP

Another important experiment for Cargill was "**Cargill Canola IP**". The Cargill Specialty Canola Oils (CSCO) program is built on the strength of VictoryT hybrids as well as high per acre returns to growers for their role in supplying an oil that is in high demanded.

The key features of the 2006 CSCO grower agreements are the followings:

- **Prime Basis Agreement:** an attractive basis that includes the premium is locked in when growers sign. When they sign the agreement, they only need to set their futures and the Prime Basis provides the opportunity for high returns.
- **Risk-Free Price Hedge:** Lock in a futures price for growers' first 10 bushels per acre until August 31, 2006.
- **Simplicity:** The CSCO program was designed with simplicity in mind, in two important ways. Cargill Specialty Canola Oils canolas are grown under straight-forward identity preserved (IP) contracts. The requirements for growing high quality canola oil are not all that different from usual canola growing practices³⁹.

4. Louis Dreyfus Nature



The Louis Dreyfus's company built a new tool in charge of answering to its customers' concerns in these fields by creating the company Louis Dreyfus Nature, at the beginning of 2001.

The role of Louis Dreyfus Nature is to count, set up if required and to manage the whole of the procedures related to the traceability, the quality and the safety of the goods treated by Louis Dreyfus Négoce in order to meet its customers' needs and to provide them with healthy food and in conformity with the lawful requirements of the importing countries.

Louis Dreyfus Nature follows closely the installation and the follow-up of the procedures of traceability of products (Good Manufacturing Practice, HACCP, ISO 9000, etc.) intended to guarantee the quality and the origin of the goods throughout the various specific commercial dies to each product treated by Louis Dreyfus Négoce and its subsidiaries.

In order to satisfy consumers' environmental concerns, Louis Dreyfus Nature is also interested in the products coming from *raisonnée* and organic agriculture known as, both on the production and marketing levels.

Louis Dreyfus Nature takes part in the Research & Development activities as well as Marketing of various food divisions of the Louis Dreyfus's company. It also follows closely the evolution of the request of consumers as well as transformers or

³⁹ According to : <http://www.cargilldci.com/innovasure/index.shtm>

distributors for new products which would be better adapted to new standards of quality and safety installation by the customer or the legislator⁴⁰.

Conclusion

In recent years, the cereals and oilseeds world trade, as well as the first processing industry, has been characterized by an increasing degree of reorganization. Many companies' mergers, acquisitions and bankruptcies have developed the current landscape of this sector. The companies' quartet Archer Daniels Midland (ADM), Bunge, Cargill and Louis Dreyfus lead the cereals and oilseeds world trade and the first processing market. In 2003, more than half of the first processing market was approximately under control of these four multinational companies. Likewise, their presence was even more significantly in the U.S where they control three quarters of the market. Consequently, ADM, Bunge and Cargill had each one on average between 16 and 19% of the world market shares of the first processing sector in 2003 (Dreyfus controlled only 7% of them).

This study enabled us to identify the similarities and differences among multinational companies' strategic trends.

The first similarity between these companies is the fast development in their first processing activities after their grain trade activities, which are highly together associated.

The second one is the greater relevance of financial tools, like "risk management", with the aim to specialize in financial risk management related to trade activities. This requires high financial skills and a strong international establishment.

During their expansion, all companies early set up an internationalization strategy, but implementing subdivisions in production areas as well as in consumption areas. These locations are usually the result of regional companies' purchases, joint ventures, processing plants building or business offices.

Whatever their origin country, these multinational companies are now located in cereals and oilseeds production areas such as Argentina, Brazil and U.S., but also in consumption areas such as Europe, the U.S and Asia. Although Asian investment (mainly Japan, China and India) is the most recent, it increases very quickly. Indeed, these countries represent an important demographic potential that will contribute to the improvement of this sector. With the building of main crushing plants, these countries have shifted from large processed products importers (meals and oils) to large raw materials importers. Hence, multinational companies have developed industrial infrastructures and distribution networks in these areas.

At the same time, all large traders have developed diversification strategies to shift towards high value-added activities. For example, the vitamins and amino acids markets were created by ADM for the most part. Another one is the bottle-oils sector with specific nutritional qualities, which is dominated by Bunge.

⁴⁰ According to: <http://www.ldnegoce.com/fr/ldnature.htm>

Moreover, consistent with the current context of oil crisis, all companies (particularly ADM, Bunge and Cargill) have started the bio ethanol production, a great future market.

As it is expected, the demand for high value-added products has raised qualitative requirements. This increasing concern for high specifications, in addition to strict European regulation, have convinced all traders that they need to set up IP systems and to ensure consumers complete traceability of their products.

Likewise, each multinational company has created its own competitive asset to become the leader in a specific sector.

In particular, ADM has developed a “specialties” strategy, which its activities are focused on, especially on the first and second processing industry. This company was the first in the IP systems setting-up according to the European and Japan customers’ needs. Now, this company is leader in the high value-added products sector. For example, the noteworthy setting up of the “ADM Specialty and Identity Preserved Grains Program” in 1999 and six years later the “ADM Identity Preserved Non-GM Program for Vitamin E, Mixed Tocopherols, and Phytosterol Products”.

ADM, strongly established in the U.S, has adopted a “partnership” strategy with American cooperatives. This strategy was also developed in Europe in association with large cooperatives from big countries (for example, Soulès caf SAS in France is the result of a joint venture between ACTI and Union in Vivo).

Bunge has preferred using its regional establishment in Brazil, whose objective is to specialize in fertilizer trade. It has led Bunge to become the leader in Brazil fertilizer market and also in others main markets in Brazil and South America .

Cargill has always followed a deliberate strategy focused on scale in all its activities with a vertical integration strategy. Indeed, Cargill has hugely diversified its business activities since its first trade activities. At the present time it is the leader in several markets such as steel, cotton, cocoa and meat industries. Moreover, it has developed skills in services sector like “Agricultural services” or “risk management & financial”.

Finally, the Dreyfus Company, with several establishments in shipping transport sector, has invested in the bulk shipping transport for itself but also for the other traders companies.

Then, can we expect others stakeholders to take part in the world market in spite of the strong presence of these last four traders? Our intuition is that small and medium companies and cooperatives could trade activities under certain conditions. However, we think they would generate relatively limited volumes and require bilateral business relations to optimize the risk management.

Given that the tendency to reorganization in this sector will continue, we find it essential to follow this evolution by national importer or exporter stakeholders.

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