

Limitations for competitiveness in Argentinian sunflower agrifood chain

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1. Introduction

Soybean cultivation, which emerged in Argentina at the beginning of the seventies, partially replaced grains by oilseeds, as well as introducing a pattern change in the composition of whole oilseed produced to that moment (Casaburi et al., 1998).

With the growth of soybean crop and sunflower expansion, a processing sub sector evolved for being one of the most competitive of Argentina. In the seventies this industry was constituted mainly by medium-size national firms, with a productive scale lower than international competitors. The high rentability period which was the cause of the initial fast growth stage changed market structure, stimulating the entrance of multinational grain trade firms in this business. Firms significantly increased their productivity and average plant size, focusing their activity towards exportation. In this process, the industries concentrated in two products: soybean and sunflower, which today represent 52 and 30% of the oilseed milling, respectively.

At present, Argentina is the first sunflower oil producer and exporter. Approximately 90% of harvested sunflower is processed in oil extracting factories. From the total oil production, 25% is destined to domestic market and the rest is exported. In the last years, considerable investments were made in order to increase the milling capacity and storage and to improve port facilities. Local oilseed industry of high technology has the higher growth index among the main oilseed world producers.

Oilseed complex is basically a commodity exportation

Abstract

Argentina is today the first sunflower oil producer and exporter. Its competitiveness relies on being highly efficient in the primary production and industrialization stages. However, this sector is threatened by several implemented mechanisms that distorted the international market. This paper presents an updated overview of Argentinian sunflower agrifood chain situation, describing primary production, industry, commercialization and main mechanisms that limit its competitiveness.

Résumé

L'Argentine est actuellement le principal producteur et exportateur d'huile de tournesol. Sa capacité de compétition est basée sur la grande efficacité de sa production primaire et son industrie. Pourtant, le secteur se trouve menacé par l'existence de mécanismes divers qui compliquent le marché international. Dans ce travail on présente une analyse actuelle de la chaîne agroalimentaire du tournesol en Argentine, et on décrit les aspects concernant la production primaire, l'industrialisation, la commercialisation et les principaux mécanismes qui limitent sa capacité de compétition.

system, consequently suffering the effects of global changes. It is directly affected by several factors like world sunflower oil stocks or its substitutes, international prices, protection barriers and import taxes utilized by many countries. Today the oilseed sector, which is the main value creating sector of Argentinian trade, faces the challenge of maintaining its share

in an international market distorted by a series of mechanisms that difficult an efficient functioning of worldwide trade (Lattuada, et al., 1999).

The paper is organized as follows: firstly we present an overview of main productive aspects. Then, we describe the industry situation and some commercial issues. Next a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis was performed in order to study the Argentinian competitiveness. Finally, we analyze some distortive mechanisms that affect Argentinian sunflower agrifood chain competitiveness.

2. Productive Aspects

Total grain area sowed in Argentina for the period 2000–2001 was approximately 25.5 millions hectares, 53% of them corresponding to oilseeds and the rest 47% to cereals. Among the formers, soybean represents the 41.8% while sunflower the 7.8%. Considering only the area planted with oilseeds (13.3 million hectares) the percentages changes to 79.3 and 14.8%, respectively. Figure 1 shows the changes for total planted and production of sunflower. It can be appreciated the yield increase in the last thirty years.

Sunflower is cultivated all around Pampean Region, extending to the Chaco Province. It adapts to many soil and

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agroecological conditions, and for that reasons is displaced to zones with lower productive conditions, leaving the better soils for corn and soybean production, which frequently has higher rentabilities. Figure 2 shows a map of Argentina with the main sunflower sowed area.

Sunflower has a spring-summer cycle, changing sowing time according to productive region. For example, for Chaco and North Santa Fe, sowing fluctuates from the second half of August and the first of September. For North Pampean Region, that comprises the east of Cordoba, centre and south of Santa Fe and Entre Rios and center and north of Buenos Aires, the optimal sowing date is between September and October. For the case of South and Western Pampean Region, east of La Pampa and San Luis and center and southeast Cordoba the sowing schedule begins in October with the aim of avoiding freeze.

In general terms, the optimal sowing density ranges from 40.000 to 70.000 plants/ha, with maximum yields which rarely overcomes 3.000 kg/ha. It is considered as a threshold yield a value of 42% of oil, lower yields suffers a price reduction, while higher values gets bonus payments. This considerations account solely for standard sunflower, which is the most cultivated, as for high oleic sunflower the situation is different.

The factors that affects sunflower cultivation are diverse, including climatic originated

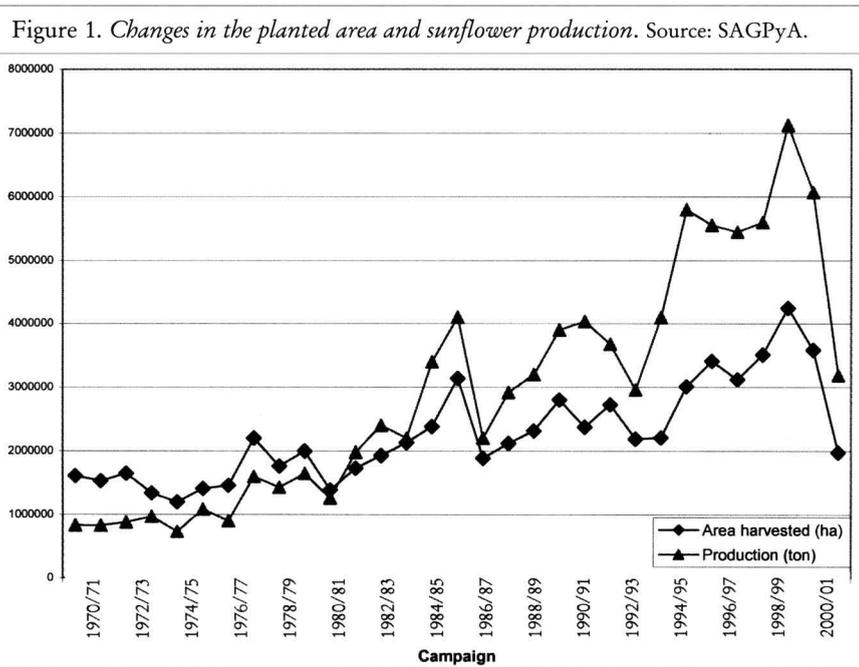
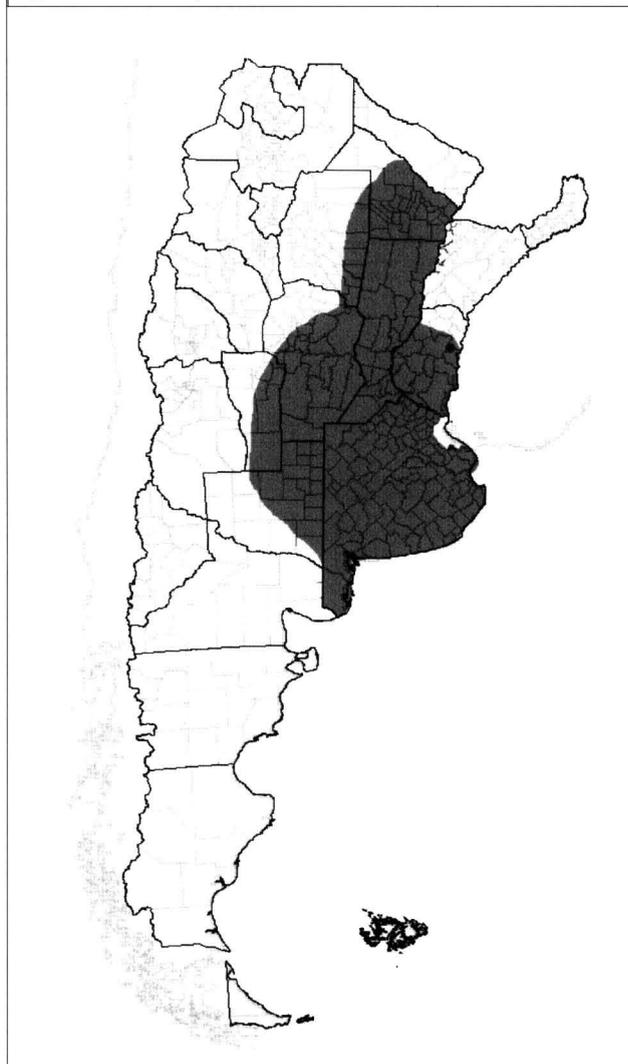


Figure 2. *Main sunflower sowed area*



factors such as hail-stone, strong winds and freeze; biological factors like pests, birds, hares and insects, and other cultural practices related to inefficient mechanical harvesting and erroneous harvest planning.

Although sunflower is not the main oilseed cultivated in Argentina, the country is the main world seed producer, with a total of 3.187.943 metric tons in the 2000–2001 campaign,

constituting the 13,8% of world production. This fact suggests that Argentina should have a strong influence in seed price formation. However, this does not occur, as 90% is industrialized for obtaining by-products such as proteic meals and vegetable oil, which are commercialized as commodities in direct competition with other oilseeds like palm and soybean. Figure 3 depicts the evolution of world sunflower, soybean and palm oil production in the latest years. It is evident that while soybean and palm oil production has increased, sunflower maintained its level, which means that in relative terms sunflower oil has lost importance.

3. Industrialization

Oilseed industry has evolved since the seventies according to the rate of raw material availability, since it represents 80% of by-products production costs. During the first years the growth was led by the primary sector, and only at the end of the eighties the milling capacity was sufficient for processing

the huge grain volume that is produced nowadays.

The majority of the processing facilities are nearby productive zones and ports, reducing in this way transportation costs. This fact constitutes an advantage that the subsector has maximized, as it currently controls the transport and storage stages, from grain reception to on board loading, optimizing logistics operation.

Today there are 24 processing sunflower plants in active functioning, being many of these multipurpose facilities, capables of milling sunflower, soybean or corn adapting to different harvest time. From that plants, 10 uses solvent extraction and 14 a combination of both solvent extraction and continuous press systems.

Final products are vegetable oil and proteic meals. In the last three decades, more than 90% of total production was destined to milling, being the rest used as seed or exported. During 2000, 22.209.588 oilseed tons were processed, being 5.060.055 (23%) tons sunflower, preceded by 16.951.952 (76%) tons of soybean, and the rest corresponding to peanuts, cotton, linen, safflower and rapeseed oil. As a result of this processing, 2.117.190 tons of sunflower oil were obtained and 2.079.286 tons of sunflower meals. Figure 4 indicates sunflower oil and meals production in the last 30 years.

Figure 3. World sunflower, soybean and palm vegetable oil production. Source: FAO

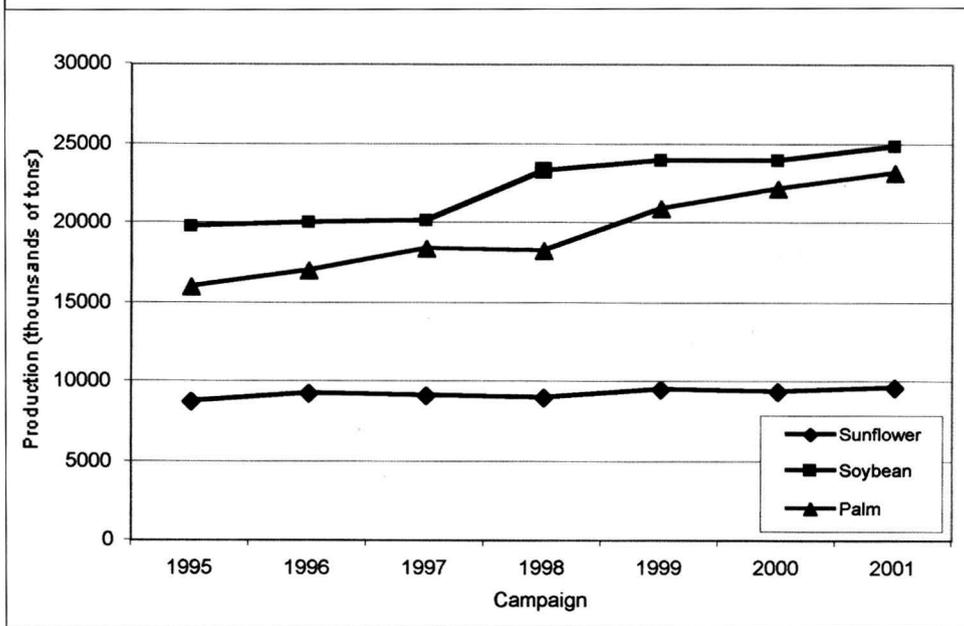
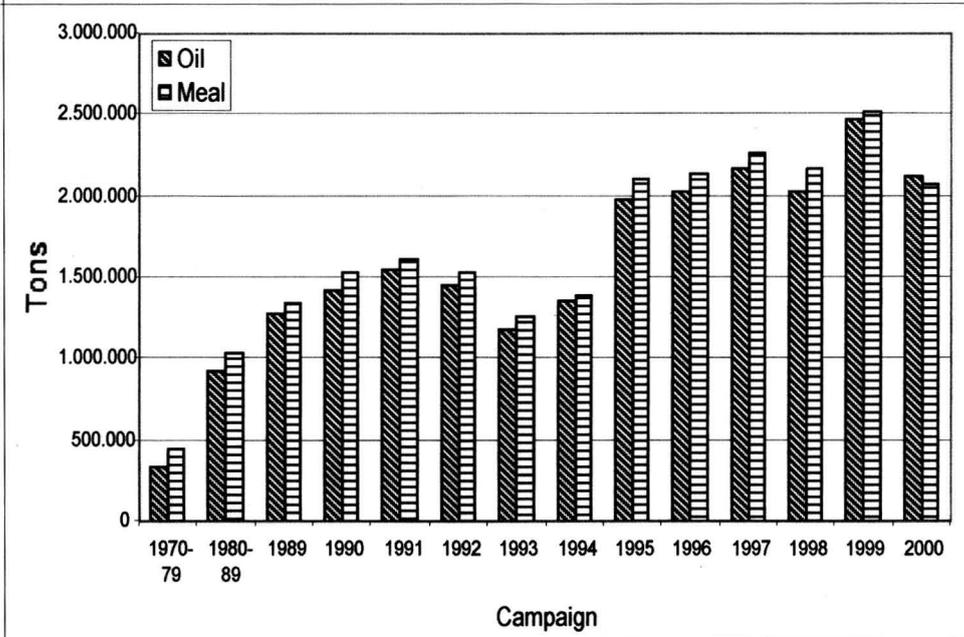


Figure 4. Sunflower oil and meal production. Source: CIARA



4. Commercialization

Once the raw material is processed the manufactured by-products are stored until distribution and final sale. These activities are done by industrial plants, including the delivery to port, onboard loading and other operative export stages. In 1999, 771 and 128 million dollars sunflower oil and meal were exported to varied destinies, respectively. Between 1994 and 1999, 77 countries imported at least once crude or refined sunflower oil from Argentina. During 2000 1.556.258 sunflower oil tons were exported to 68 countries. However, 68% were destined only to six countries: India (32%), Iran (14%), Benelux

(6%), South Africa (6%), Russia (6%) and Brazil (4%). It is important to stress that the main import countries have changed considerably in the last years. Argentina has lost important markets like Mexico, Venezuela and the United States, and won others such as India, that in 1994 was not a buyer and during 2000 converted into the main crude sunflower Argentinian oil importer.

5. Competitiveness analysis of sunflower agrifood chain

An analysis of strengths, weaknesses, opportunities and

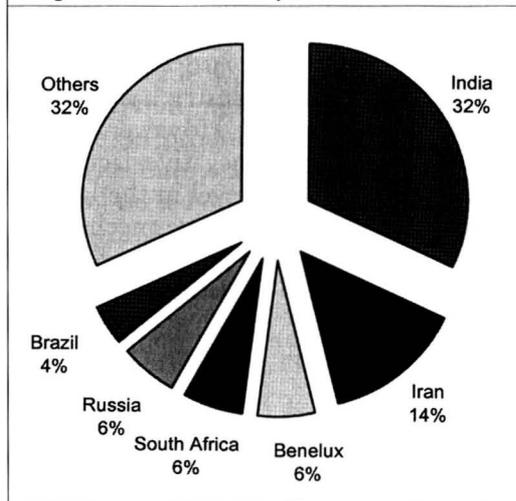
threats (SWOT analysis) has been performed for the sunflower agrifood chain. This study divides the analysis in two parts: an inner part, that comprises primary production, industry and commercialization, and an outer part: the environment where the chain is embedded. Table I summarizes the main items that are involved in the analysis.

In the inner part we found the strengths and weaknesses, and in the outer part, composed by the world market and trading countries, opportunities and threats that affect sunflower agrifood chain are presented. This analysis allows to elucidate the actual situation of the chain into the world context.

With respect to the strengths, the natural resources and climate makes that material for the industry to be abundant in Argentina, and these facts provide a solid base for sustaining the next steps of the chain. In turn, industry locates the plants near to the primary production areas, and ports, optimizing logistics operations and lowering transportation costs. Furthermore, Argentinian industry is one of the most efficient in the world, having the best technology available, with commercialization and shipping stages vertically integrated. Also, the oil produced has high quality.

Referring to weaknesses, the low efficiency in commercial stages due to the critical financial situation is a serious problem. The poor regulatory function of the Argentinian state causes high indirect and structural costs in all transactions along the chain. In spite of the importance of the oilseed sector in Argentina, there are only few advances in research and development, due to the scarce resources destined to such activ-

Figure 5. Principal importers from Argentina during 2000. Source: SAGPyA



ities. This fact determines an almost null increment in crop productivity. In the primary production stage, there is a low risk management. Another weakness is that the sunflower oil is limited to alimentary usage, without diversification. Besides, there is no promotion of Argentinian sunflower oil in international markets.

The availability of new hybrid developments like seeds with different fatty acid concentrations gives a good opportunity to expand the sunflower oil uses to several areas such as cosmetic and lubricants. Another promising perspective is the use of sunflower oil in biodiesel production. The implementation of

national and international marketing policies gives a good opportunity for accessing to new markets with refined and packaged oil. Another opportunities come from the by-products development like margarine, mayonnaise and food products, and from the use of soybean oil for biodiesel production, generating a space for sunflower oil penetration.

The main threat that faces the sunflower agrifood chain is the artificial competition due to protective mechanisms implemented by trading countries. The international prices are at the lowest level in the last twenty-three years, reducing the benefits of all chain components. The palm

Table 1. SWOT analysis of Argentinian sunflower agrifood chain

Inner	Outer
<p>Strengths:</p> <ul style="list-style-type: none"> ▪ Comparative advantages derived from natural resources. ▪ High quality of sunflower oil. ▪ Optimal location of industrial plants. ▪ High efficiency of Argentinian industry. ▪ Efficiency in commercialization and onboard loading stages. ▪ Permanent technological updates in industry. ▪ Strong positioning of "Argentinian Sunflower Oil" mark. 	<p>Opportunities:</p> <ul style="list-style-type: none"> ▪ Availability of new hybrid development with different fatty acid concentrations. ▪ Use of soybean oil for biodiesel production. ▪ Access to new markets with refined and envased oil. ▪ World's demand growth of vegetable oils and by-products developments.
<p>Weaknesses:</p> <ul style="list-style-type: none"> ▪ Low efficiency in commercial stage. ▪ Insufficient resources destined to research and development activities. ▪ Oil usage in food industry almost only. ▪ High structural and indirect costs in productive and industry sectors. ▪ Almost null increment in crop productivity. ▪ Low risk coverage. ▪ Absence of sunflower oil's promotion in international markets. 	<p>Threats:</p> <ul style="list-style-type: none"> ▪ Decreasing tendency of international prices. ▪ High impact of subsidies and tariff systems in Argentinian sunflower agrichain competitiveness. ▪ Strong competitiveness of palm oil. ▪ Inefficiency of domestic tax system. ▪ Productivity growth in soybean crop. ▪ Insufficient depth of the ports. ▪ Aggressive commercial policies of competitor countries.

oil production growth represents a strong competition for sunflower oil, and also competitor countries implement aggressive commercial policies. In the local context, the productivity growth of soybean crop is the cause for its preference among producers. The depth of the ports is insufficient and the domestic tax system is inefficient. These facts constitute important threats that affect chain competitiveness.

6. Limitations to competitiveness

Comparative advantages derived from natural resources are the key issues that construct the Argentinian high competitiveness, having the higher yield per hectare in the world. Cost per hectare in Argentina is 25% lesser than in the United States and 20% lower than in Brazil

(Ketelhöhn et. al, 1998). Besides, the oilseed complex has lower transportation cost due to the nearness of ports, high technology, even superior to its main competitors, advantages derived from scale economies and vertical forward coordination. As a result, Argentinian oilseed industry has a maximal efficiency in the worldwide scale.

However, the sector faces today two main exogenous negative factors: international prices fall (to the lowest level in the latest 23 years) and the full activation of protective mechanisms in the world trade community. Distorted mechanisms promotes importation of oilseed grains and increase vegetable oil costs of purchasing. This reality favours "artificial competitors" to the detriment of natural efficient producers. Approximately 30% of sunflower oil is generated by producers supported by public policies (M&S Consultores, 2000). High protection levels,

in the form of tariffs, continued to be the major restrictive factor for agricultural international trade. The main difference between the mean average of these tariffs makes that, while producers are benefited in protective countries, the ones belonging to non-protective countries experiment income reductions because of the minor resulting prices (Burfisher et al., 2001).

Figure 6 shows the FOB sunflower seed prices changes in Argentinian ports and FAS changes in Buenos Aires port and Figure 7, FOB prices in Argentinian ports and CIF prices in Rotterdam.

It can be observed that the trend is similar in both cases, because the 80% of sunflower oil production costs correspond to the main raw material, which is the seed. There are many factors that converge to produce this price fall, among them the stock/consumption ratio and benefit implementation for production. Another factor that contributed to the current low price levels is the significant growth of palm oil production during the nineties, mainly in Malaysia and Indonesia.

Respect to protective actions, these mechanisms are implement both in the main producers (United States, European Union, Brazil, Hungary, Rumania, etc.), in the main importers (China, Iran, Egypt, India, Iran, European Union, Japan, etc.) and in many others like Mexico, Chile, Eastern Europe countries, etc. in the form of direct benefits to production, highly effective protective systems, import quotas and even price bands. This

Figure 6. Evolution of FOB (Argentinian ports) and FAS (Buenos Aires port) prices of sunflower seed. Source: Márgenes Agropecuarios (2001)

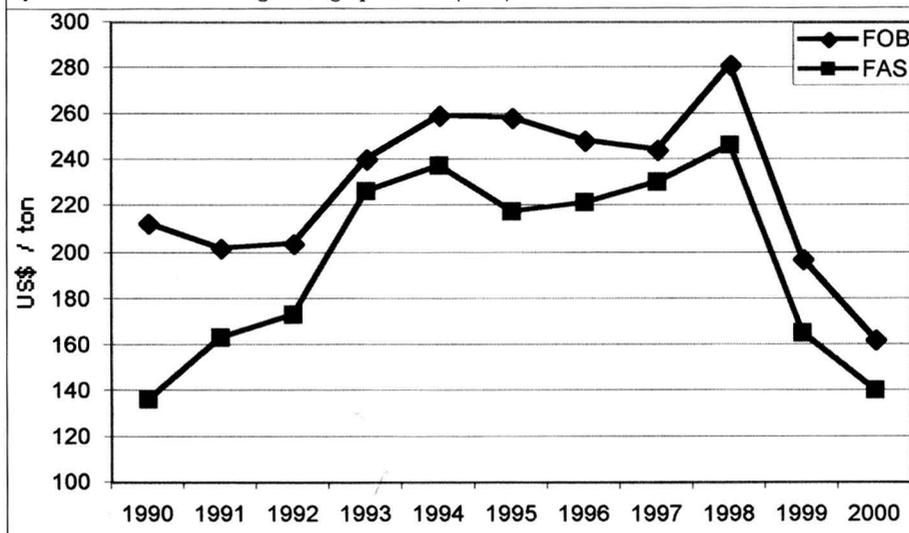
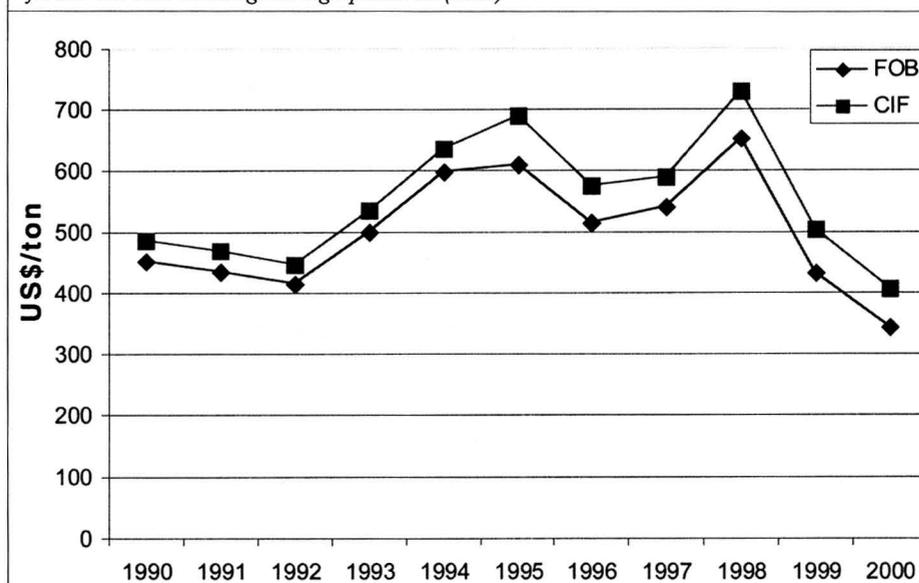


Figure 7. Evolution of FOB prices in Argentinian ports and CIF Rotterdam prices of sunflower oil. Source: Márgenes Agropecuarios (2001)



interventionism alter the market natural adjustment, leading to a world supply excess of products derived from the oilseed complex, within a frame of prices and rentability crisis.

In the case of sunflower oil, the eighties decade was more dynamic than the nineties, when the rhythm moderated. The growth promoters for vegetable oil production were Turkey and India in Asia, and the European Area. The artificial competition generated by these countries currently constitute more than 30% of world supply, surpassing the supply of Argentinian industry (24%).

World market dependence and its present distorted structure creates big difficulties for the Argentinian industry. Reduction in crude and refined sunflower oil ex-

portations, the lesser value adding and the market loss places the oilseed complex in an emergency situation. In Figure 8 it can be appreciated that in spite of the increase of total crude sunflower oil exportation (in tons), the value creation decreased because of the international prices fall.

In the case of refined sunflower oil, the trend is different than for crude oil, as not only the value creation decreased but also the export quantities were lower as well. This fact is shown in Figure 9.

A clear example of protective measures implementations is the United State case. This country has maintained a complex system of benefits and support mechanisms for agriculture and related industries. The applica-

tions of marketing loans and loan deficiency payments makes that the sowing decisions favour soybean over cereals. This important fact directly affects sunflower as in the end the final product is a commodity: vegetable oil.

Another case to highlight is the European situation, where since 1962, with the application of Common Agricultural Policy (CAP), benefits has been utilized in a major scale as a protection for domestic markets. The European Union is simultaneously the main world food importer and a relevant exporter of a big quantity of tempered-climated agrifoods. At the same time, the European Union is in a paradoxical situation of being the major market for Argentinian agrifoods, and the origin of the biggest hindrances and distortions that affect Argentinian foods. For the sunflower complex, the European Union is today the main destination for sunflower seed exportation (98%).

During the last decade the behaviour was similar with values close to 80% (except for 1997). The same occurs with meals, which absorbs 80% to 100% of Argentinian exportations. When considering sunflower oil, purchases from the European Union have shown a variable behaviour, constituting between 2 and 15% of the exports. The percentage evolution of sunflower complex sales done to the European Union is shown in Figure 10.

Ukraine is another country that through import rights for crude and refined sunflower oil, and export rights for sunflower seeds, has protected its industry gaining new markets previously supplied by Argentina, as

Figure 8. Changes in crude sunflower oil exportations, in quantity and value creation. Source: CIARA

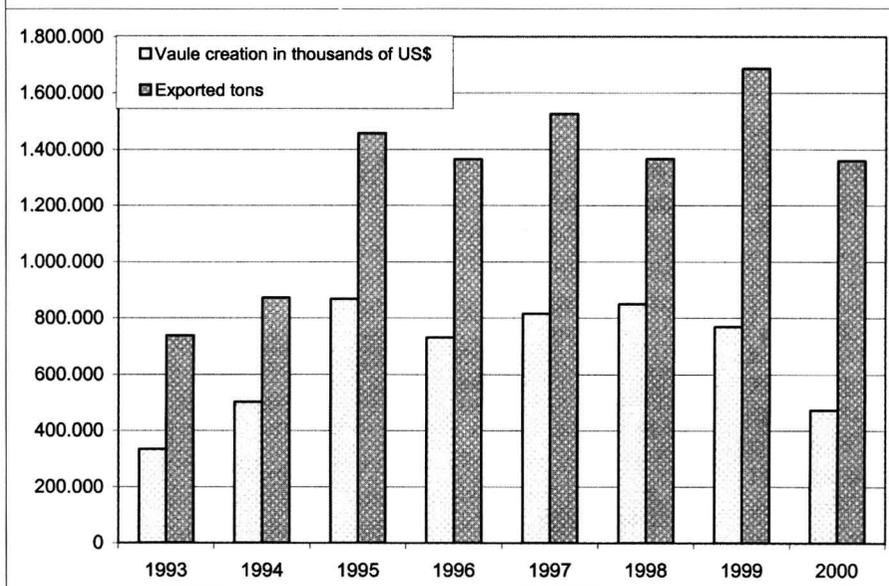


Figure 9. Changes in refined sunflower oil exportations, in quantity and value. Source: CIARA

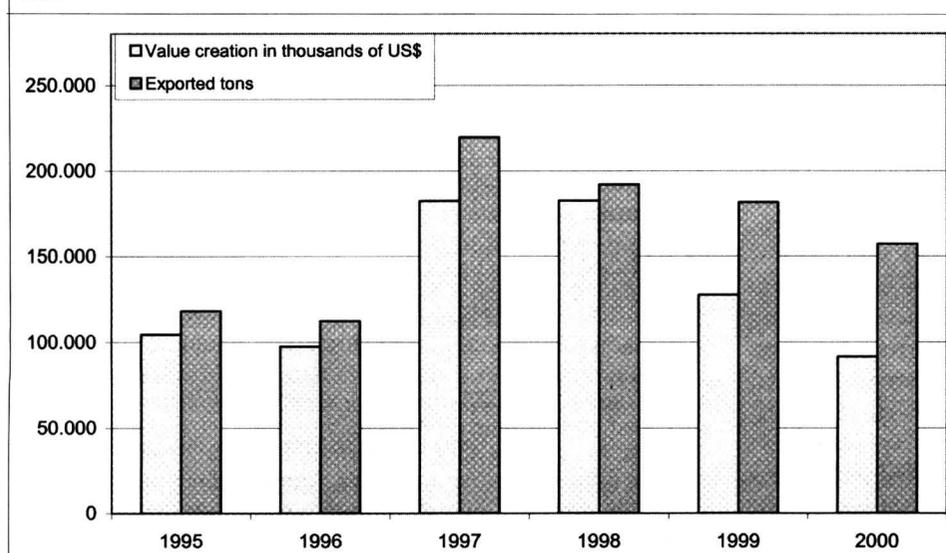
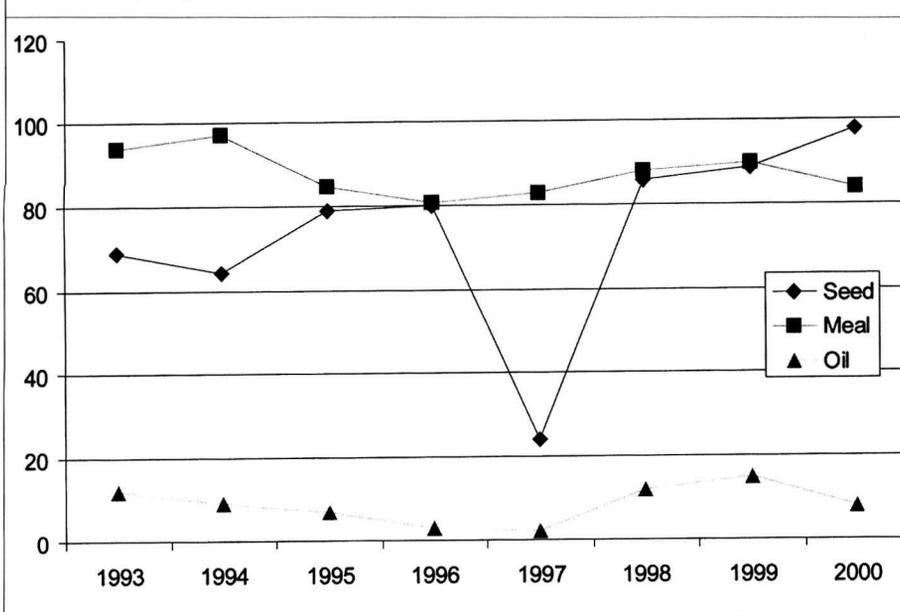


Figure 10. Percentage evolution of sunflower complex sales to European Union. Source: Halliburton (2001)



Algeria and Egypt. Is important to notice that in this case there is a big difference in yield per hectare between Ukraine and Argentina (1.24 and 1.75 tn/ha, respectively) according to estimations of Oil World. Similar measurements have been adopted by Russia, Kazakhstan and Belarus.

Sunflower oilseed sales also lost Mexico and Venezuela markets, where the North American production partially substituted (in the later case) and almost displaced completely (in Mexico) Argentinian vegetable oils. Venezuela used to be the main Latin American exportation market for vegetable oils, but since February 2000, this country established quotas for importations of all types of vegetable oils, regardless country origin, resulting such quotas insufficient for Argentinian sunflower oil exports. On the other side, the penetration of Argentinian vegetable oils in Mexico (where the country has assigned quotas) has been displaced by the United States competition since the incorporation of Mexico to NAFTA.

Also the Chilean market has taxed crude and refined Argentinian vegetable oil importations, while agreed with Bolivia to import tax-free vegetable oils, consequently affecting Argentinian exportations.

7. Conclusions

Argentina occupies a strong position in the international frame, leading the market of oilseed products and being the first sunflower oil and meal world exporter. This sector, which is the major share of Argentinian exportations, has inserted in the world market due its high competitiveness and efficiency.

However, Argentina compete in a highly distorted market and with even more active artificial competitors. Some of the most important factors that negatively affect

Argentinian competitiveness are: restricting importation quotas, that limits the commercialization of elaborated products such as sunflower oil and meals; supports from different sources to local oilseed complex production which increases production with market artificial signals and generating a strong pressure of offerings; preferred commercial regime and price sustaining mechanisms.

In this context, Argentinian industry is positioned in a critical situation, that needs an immediate joined public and private action, aimed to set strategies and policies tending to improve conditions for sunflower complex development, in order to cope with current distorted markets. Two possible initiatives are the strong investment in research and development, and intensive promotional activities for a better positioning in the international market.

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Source data:

- Secretary of Agriculture, Fisheries and Food of Argentina (SAGPyA - www.sagpya.mecon.gov.ar).
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