

REAPING THE BENEFITS OF GLOBALIZATION: THE CASE OF THE
ARGENTINE SOY ECONOMY

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Acronyms

AACREA – Spanish acronym; Argentine Association of Regional Agricultural Experimentation Consortiums

Bt - (*Bacillus thuringiensis*), a genetic modification that makes a plant produce toxins to protect it from certain pest insects

CARBAP – Spanish acronym; Confederation of Rural Associations of Buenos Aires and the Pampa; organization representing Argentine agricultural producers that works closely with Rural Argentine Confederations (CRA)

CLEA – Collection of Laws for Electronic Access

CRA – Spanish acronym; Rural Argentine Confederations; organization representing and unionizing Argentine agricultural producers

CBD – UN Convention on Biological Diversity

DSB – Dispute Settlement Body

DSU – Dispute Settlement Understanding

EC – European Commission

ECLAC – Economic Commission for Latin America and Caribbean

EU – European Union

FAA – Spanish acronym; Argentine Agrarian Federation; organization representing small and medium sized agricultural producers in Argentina

FAO – Food and Agriculture Organization; part of the United Nations (UN)

FDI – Foreign Direct Investment; defined by United Nations Conference on Trade and Development, www.unctad.org as "investment made to acquire lasting interest in enterprises operating outside of the economy of the investor."

GATS – General Agreement on Trade in Services

GATT – General Agreement on Tariffs and Trade

GM – Genetically Modified

INASE – Spanish acronym, Argentine National Seed Institute; decentralized organization within SAGPyA

INPI – Spanish Acronym; National Institute of Industrial Property

INTA – Spanish acronym, Argentine National Institute of Agricultural Technology; decentralized organization within SAGPyA

IPR – Intellectual Property Rights

ISI – Import Substitution Industrialization

MECON – Argentine Ministry of Economics

MNC – Multinational Corporation

NGO – Non-governmental Organization

OECD – Organization for Economic Cooperation and Development

ONNCA – Spanish acronym, Argentine National Office of Commercial Agriculture Control; decentralized organization within SAGPyA

PCT – Patent Cooperation Treaty

RR – “RoundUp Ready”, a genetic modification making plants resistant to the herbicide.

SAGPyA – Spanish acronym; Argentine Secretariat of Agriculture, Cattle, Fishing, and Foods; within the Ministry of Economics

SENSA – Spanish acronym, Argentine National Service of Agricultural Food Sanity and Quality; decentralized organization within SAGPyA

SRA – Sociedad Rural Argentina (Argentine Rural Society); a powerful organization representing rural landholders in Argentina.

TRIPS – Trade-Related Aspects of Intellectual Property Rights

UN – United Nations

WIPO – World Intellectual Property Organization

WTO – World Trade Organization

Introduction

In the last fifteen years, Argentina has gone from producing insignificant amounts of soy to being the world's third largest producer and an important exporter. This has had substantial positive impacts on the Argentine economy: this multibillion dollar business has the potential to re-establish Argentina as one of the world's wealthier, more developed nations – a status it had enjoyed through similar export-led growth at the beginning of the twentieth century. This increasing importance of soy is owed to several factors. Firstly, the agricultural sector has developed and has been important throughout the history of the country because of its various competitive advantages. Secondly, population growth and globalization have driven up demand for many agricultural products like wheat, corn, beef, and soy by increasing the number of mouths to be fed while opening many new markets throughout the world. The fact that soy products are healthy, easily added to many different foods, can be used for feedstock, and can be used to produce biofuels drives up demand and prices. Thirdly, while demand for soy was rapidly growing, international diffusions of technology, another attribute of the globalizing economy, allowed Argentine farmers to produce soybeans more efficiently by using machinery, agrichemicals, and genetic modifications.

In this paper, the modern Argentine soybean economy will act as the lens through which to examine an emerging global political economy of agribusiness. Argentina's current soy boom would not have been possible without the opening of global markets. Thus, globalization has brought increased trade, revenue, and wealth for Argentina, but it also raised the political stakes in the soy business. In contrast to Argentina's earlier agricultural booms, the main stakeholders include international players: in addition to the

Argentine soy producers, their trade associations, and the Argentine government, there are also multinational agribusiness corporations, importers of Argentine soy products, foreign governments, and the World Trade Organization (WTO). They all must interact in a new global economy that has only immature, imperfect governmental infrastructure available to offer fair, proper, and unbiased regulation and representation. The global political economy of agribusiness is still in formation, and this thesis can throw light on that process and the respective conflicts.

As a window into these processes, this thesis uses the issue of Intellectual Property Rights (IPR). The recognition and treatment of IPR related to international technology transfers is a central problem that has been created by globalizing trends, sometimes resulting in abuse and malpractice. Most agricultural engineering technologies utilized by Argentine soy producers were developed by foreign-based, multinational corporations. In this case, for various reasons, Argentina refuses to grant patents and pay royalties for genetically modified (GM) seeds created by the US biotech giant, Monsanto. The WTO has tried to address such IPR issues, and the respective disputes give an interesting picture of the international politics of soy. These disputes show the concrete interaction between producers, multinational companies, and the respective governments and throw light on the respective motivations and strategies.

This paper has three main chapters. The first explains the historical importance of agriculture and agribusiness in Argentina. It explains how Argentina came to be one of the foremost producers of soy and the role that it plays in the international soy economy. It traces the development of the agricultural sector from colonial times to the present as well as the importance of that sector in export-led economic growth and the subsequent

development of the country. Argentina naturally has some comparative advantages for agriculture. The *Pampa*, a vast and fertile prairie, is the main productive area. Other advantages had to be developed and perfected. Some of these are infrastructure, traditional expertise based in agricultural activities, and policies that reinforce the agricultural sector. The first chapter also (modestly) explains the global soy economy and shows where Argentina fits within it by comparing it with other important soy-producing countries. This chapter is intended to demonstrate the importance of Argentine soy production to stakeholders in Argentina and consumers around the world.

The second chapter identifies and describes the relationships between key stakeholders in Argentine soy production. These stakeholders are international and domestic entities that have vested interest in the Argentine soy sector generally and the issue of patent protections for GM products more specifically. The domestic stakeholders include Argentine soybean producers, trade associations that represent and lobby for the domestic producers, and other businesses that rely on increasing soy production (land leasing, transport, milling operations, etc). They also include the Argentine government, which represents its constituents and has an interest in the tax revenue generated by soy farming. Among the international stakeholders are Monsanto, the powerful multinational corporation based out of St. Louis, Missouri, USA, which has been key to Argentina's acquisition of advanced agricultural technology; the United States government which represents the interests of US companies like Monsanto in international negotiations and disputes; foreign importers of Argentine soy products who have been reluctantly brought into recent legal disputes; and the World Trade Organization (WTO) in its role as arbitrator over such global political economic issues like the ones explored in this case.

This chapter helps us understand the interests of each player and to some extent their relative power.

The third chapter explains the disputes between Monsanto and Argentina's various domestic stakeholders, both the formal, public dispute within the WTO dispute settlement system and informal, private dispute that continues. It lays out key parts of the WTO Agreement that are critical to patent protection and Intellectual Property Rights (IPR) as well as the differing opinions of the stakeholders as they relate to the relevant IPR sections of the WTO Agreement known as the Agreement on Trade-Related Intellectual Property Rights (TRIPS Agreement). This chapter shows how the different players attempt to defend their stakes and how the economic fortunes of the Argentine agricultural sector as well as the profitability of Monsanto is being negotiated. To a large extent these negotiations are out of the control of Argentina and Monsanto. Because of the globalizing trends, the different stakeholders and interest groups may experience a loss of power, revenue, and/or sovereignty as they are made to submit to international interests and organizations.

Several key sources were invaluable to the writing of this paper. Publications of non-governmental organizations (NGOs) and periodicals from the United States, Argentina, and Europe are used. Some important NGO sources were organizations like AACREA, Monsanto Watch, CRA, FAA, SRA, and CARBAP. Periodicals used include the New York Times, Grain, The Guardian in the United Kingdom, BBC Mundo, and La Nación in Argentina. The WTO website and its available documents were helpful. This paper would not have been possible were it not for the information and support provided by several friends and contacts in Argentina: Economist Hernan Satorre, business

professor and entrepreneur Marcelo Simon, political and economic professor Ignacio Labaqui, and agricultural engineer and advisor Esteban Artica. Also, I would like to give special thanks to the teachers and friends who helped me learn Spanish, without whom I would have never been able to properly research the topic at hand. Finally, Dr. Oliver Dinius has been a great mentor throughout this thesis process from which I have learned much. I thank all of these people sincerely.

Map 1: Key Regions of Argentina

QuickTime™ and a
decompressor
are needed to see this picture.

Regions of Argentina

Metro

NW

NE

La Pampa

Cuyo

Patagonia

Source: "Argentina Regions Map," *Google Images* 27 January 2008.
<http://209.15.138.224/argentina_maps/m_rArgentinaZonasx.htm>.

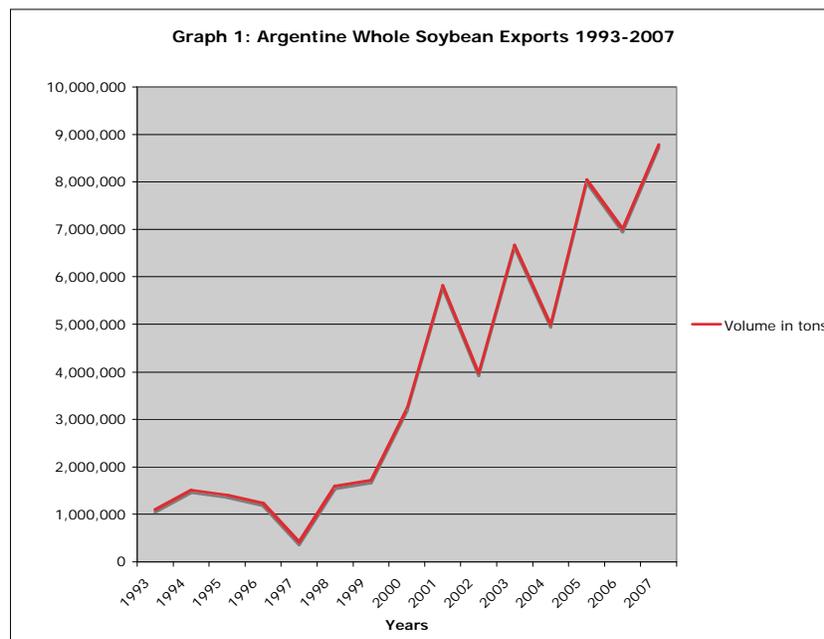
*Chapter One**Soy in the Argentine Agro-Economy*

Throughout the country's history, Argentina has developed several advantages that have made it a powerful agricultural producer and exporter, focusing in recent years on increasing soy production. This chapter will explain the factors, both globally and within Argentina, which led to the development of a powerful agricultural, specifically soy, economy as well as the importance of soy in Argentina. It will also explain the global importance of soy products and the roles that are played by Argentina and the other major soy producing countries. The main geographic focus will be the *Pampa*, though in recent years the Northeastern and Northwestern portions of Argentina have become more important to agricultural production, specifically production of soy. Similar to the North American Mid-west, the *Pampa* "is one of the world's most extensive natural prairies with a moderate climate...covering an area of about 56 million hectares (nearly 140 million acres)."¹ This region is characterized by its fertile soil and ample water supplied by various important rivers and regular rains. Today, within the *Pampa* lie five Argentine provinces: Buenos Aires, La Pampa, Entre Rios, Santa Fe, and Cordoba (Map 1).

For the majority of the *Pampean* agricultural history, the crops produced have been relatively constant. Beef cultivation originating in the 16th century and production of cereals such as wheat and corn, also dating back to colonial times and amplified toward the end of the 19th century, remain important. The production of oilseeds, especially soybeans, however, is comparatively a very new endeavor for the Argentine producers.

¹ Aldo Ferrer. *The Argentine Economy*. Trans. Marjory M. Urquidi. English ed. Berkeley: University of California Press, 1967. p. 22.

Soy production in the *Pampa* has exploded in the last fifteen years. Growth has been so potent surrounding the production and exportation of soy and its related products that several other industries, such as processing and transport, have experienced added activity. Similar growth and economic benefit has generally been experienced in the other major soy producing countries. Graph 1 shows the evolution of Argentine soybean exports from 1993 to 2007.

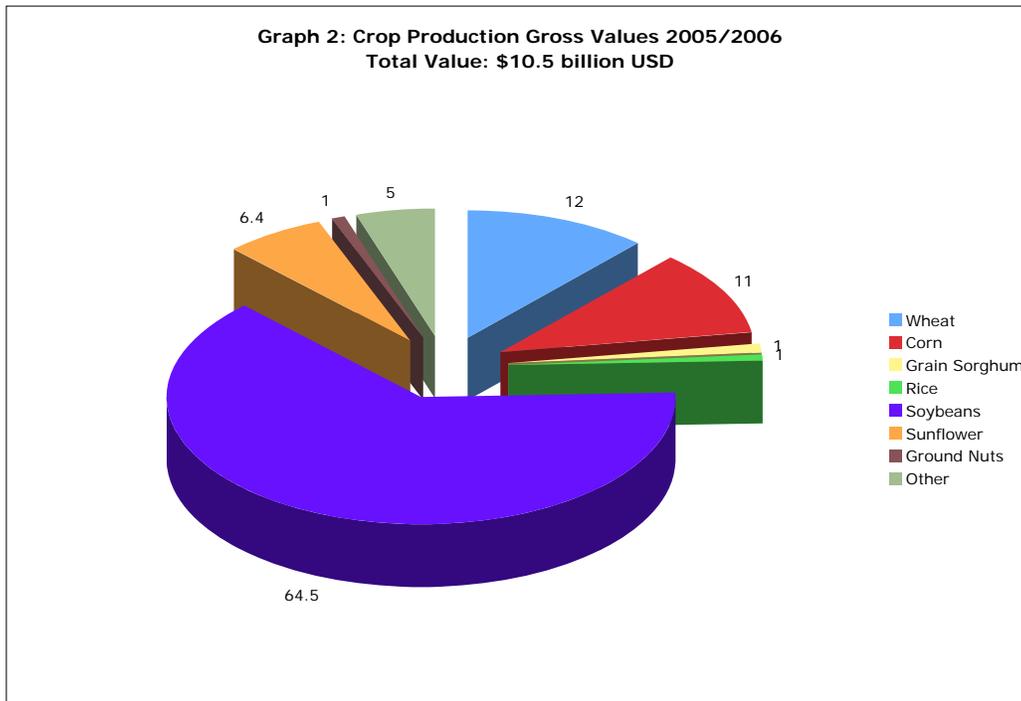


Source: Data taken from Argentine Secretariat of Agriculture, Livestock, Fishing, and Foods (SAGPyA).
Translations and chart are mine.

Out of all of the grains and oilseeds produced by Argentina, soy is the most profitable. Graph 2 shows that soybeans earned almost 65 percent of the 10.5 billion dollars grossed by all crops in the 2005/2006 season.² It “requires less capital investment than corn, sunflower, or wheat. Its revenue can be 100 percent above direct costs

² Interview with Fernando Landgraf. Sociedad Rural Argentina (SRA). 15 June 2007.

(cultivation costs)” and, taking account of administrative costs and land capital, “profit will be 10 percent.”³ With a good crop profit can be as high as 50 percent.⁴



Source: Sociedad Rural Argentina (SRA).

To understand the recent expansion of soy cultivation in Argentina and the world, it is important to understand the characteristics of the crop itself. The soybean has its roots in what is today central and northern China where it has been cultivated and consumed for thousands of years. It did not arrive in Argentina until 1862, and was not studied or cultivated with any significance until the 1950s. Soy is considered an oilseed, as are other crops such as sunflower seeds, peanuts, colza, and cotton. On average, about 20 percent of the weight of a whole soybean is extractable oil – a high percentage

³ Email from Esteban Artica, Agriculture, Cattle and Business Advisor. Argentine Association of Regional Agricultural Experimentation Consortiums (AACREA). Bahia Blanca, Argentina. 10 June 2007

⁴ Marcela Valente. "AGRICULTURE-ARGENTINA: Soy Overruns Everything in Its Path." IPS - Inter Press Service. 6 Aug. 2004. 14 Jan. 2008 <<http://ipsnews.net/interna.asp?idnews=24977>>.

compared to other oilseeds.⁵ Although consumption of whole soybeans is possible, soy oil and meal, extracted at industrialized mills in a process called “crushing,” account for 85 percent of world soy consumption.⁶ Soy and its derivative products are all extremely rich in protein and low in trans-fats, making them ideal for human and animal consumption. The nature of soy derivatives makes them potent and inconspicuous additives for many processed foods.

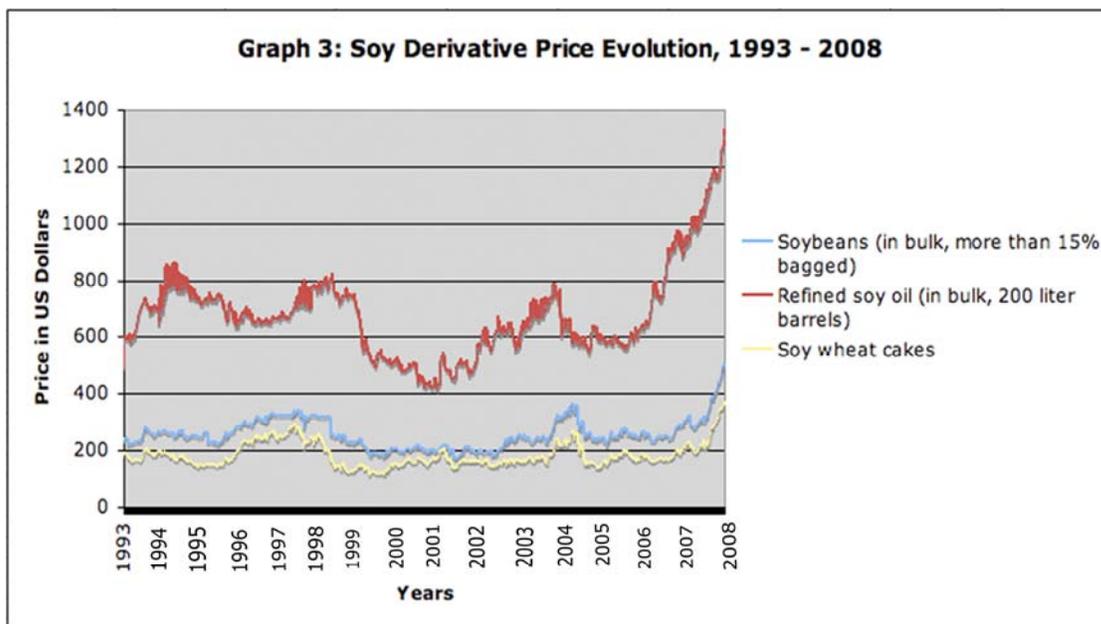
In the period studied by the Argentine Association of Regional Agricultural Experimentation Consortiums (AACREA in Spanish), world demand for soy expanded from over 112 million tons in 1995/1996 to over 173 million tons in 2004/2005, an increase of 54 percent.⁷ Strong increases in demand since the last decade of the twentieth century have pushed the price of soybeans and its derivatives upward. These higher prices give more incentives for soy production to agricultural producers of the major soy-producing countries – the US, Brazil, Argentina, and China. Three factors contribute to increased demand. First, globalization and economic liberalization has increased importance of emerging markets. According to Argentine agricultural economist, Hernán Satorre, as a population’s acquisitive power grows, the first changes in spending habits can be seen in the ways the population feeds itself. Since soy is used to feed humans and animals alike, its consumption in developing countries is increased not only as more people consume soy directly, but also as they consume meats previously too expensive

⁵ Isidro J.F. Carlevari and Ricardo D. Carlevari. *La Argentina: Geografía económica y humana*. 14th ed. Buenos Aires, Argentina: Alfaomega, 2007. p. 272.

⁶ Carlos Pouiller et al. *Comercialización de granos*. Coordinated by Teodoro Zorraquin. 1st ed. Buenos Aires, Argentina: Argentine Association of Regional Agricultural Experimentation Consortiums (AACREA), 2005. p. 70

⁷ *Ibid.* p. 73 – 77.

for consumption like beef, pork, or chicken.⁸ Second, many consumers in more developed economies have become more concerned with good health and eating habits. These consumers are turning away from red meats to satisfy their protein needs and embracing soy or products containing soy. Some studies have shown that not only is it high in protein and low in cholesterol and trans-fats, but that consumption of soy can help avoid certain illnesses and cancers.⁹ Thirdly, it has recently been discovered that the crop can be used to produce biofuels, a discovery that will add to overall demand in the near future.



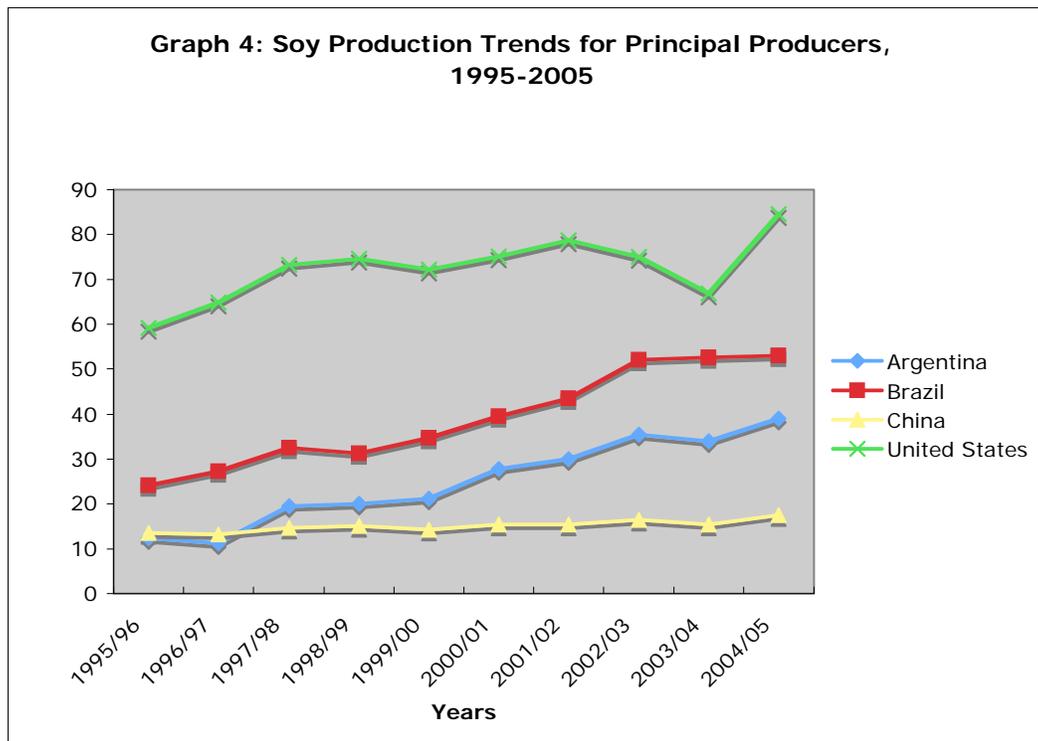
Source: Data taken from SAGPyA (Dirección de Mercados Agroalimentarios). This graph shows official free-on-board (FOB) futures prices in US dollars per ton of derivative as they were recorded on each workday during the time period. Graph and translations are mine.

Today Argentina is the third largest soy producer in the world behind the US and Brazil and ahead of China. In the 2004/2005 season Argentina produced about 39 million

⁸ Interview with Hernán Satorre, Economist, Argentine Association of Regional Agricultural Experimentation Consortiums (AACREA). Buenos Aires, Argentina. 8 June 2007.

⁹ Sally Fallon and Mary G. Enig. "Tragedy & Hype: The Third International Soy Symposium." <<http://www.westonaprice.org/soy/tragedy.html>>. 26 May 2007; Charles W. Lamb, Joseph F. Hair, and Carl McDaniel. *MKTG: Student Edition*. Mason, OH: Thompson South-Western, 2008. p. 69. (See Also: Stephanie Thompson, "Marketers Embrace Latest Health Claims," *Advertising Age*, February 28, 2000, 20-22; John Urquhart, "A Health Food Hits Big Time," *Wall Street Journal*, August 3, 1999, B1, B4.)

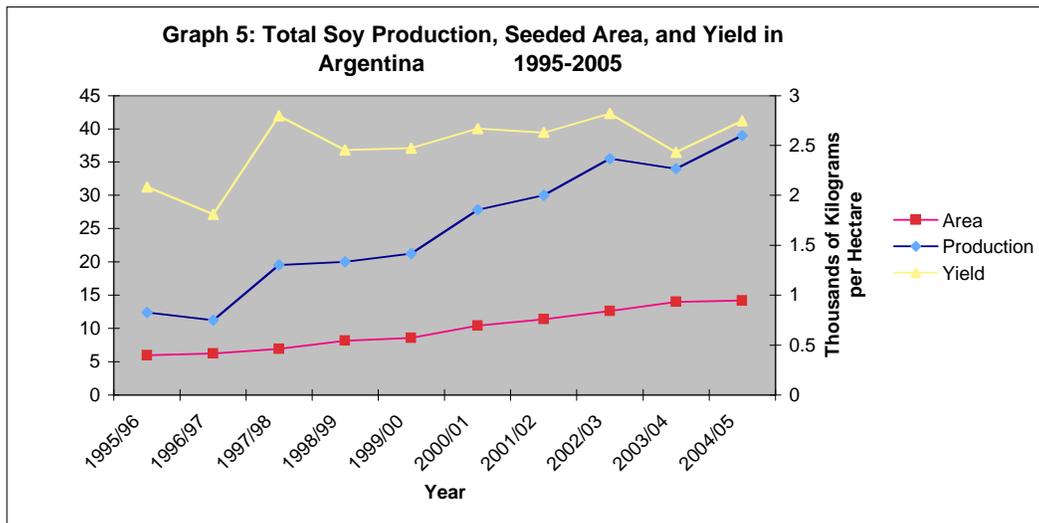
metric tons of soy as compared to 84.56 million tons by the US and 53 million tons by Brazil.¹⁰ One can note that, although the US has been the largest single producer since the 1950s, the countries of Mercosur – Brazil, Argentina, and to a lesser degree Paraguay and Uruguay – together have superceded US production in the last few years. Argentina and Brazil, most notably, have increased soy production more rapidly than any other country in the world. Between 1995 and 2005 “the area under soy cultivation in the South American countries grew 117 percent moving from 18.13 million hectares to 39.5 million hectares.”¹¹ The increased production of Argentina and Brazil compared to that of the US and China can be seen in Graph 4. This increased production can serve to explain the price volatility and sharp decrease in price for soy products lasting from about 1998 to 2002, shown in Graph 3.



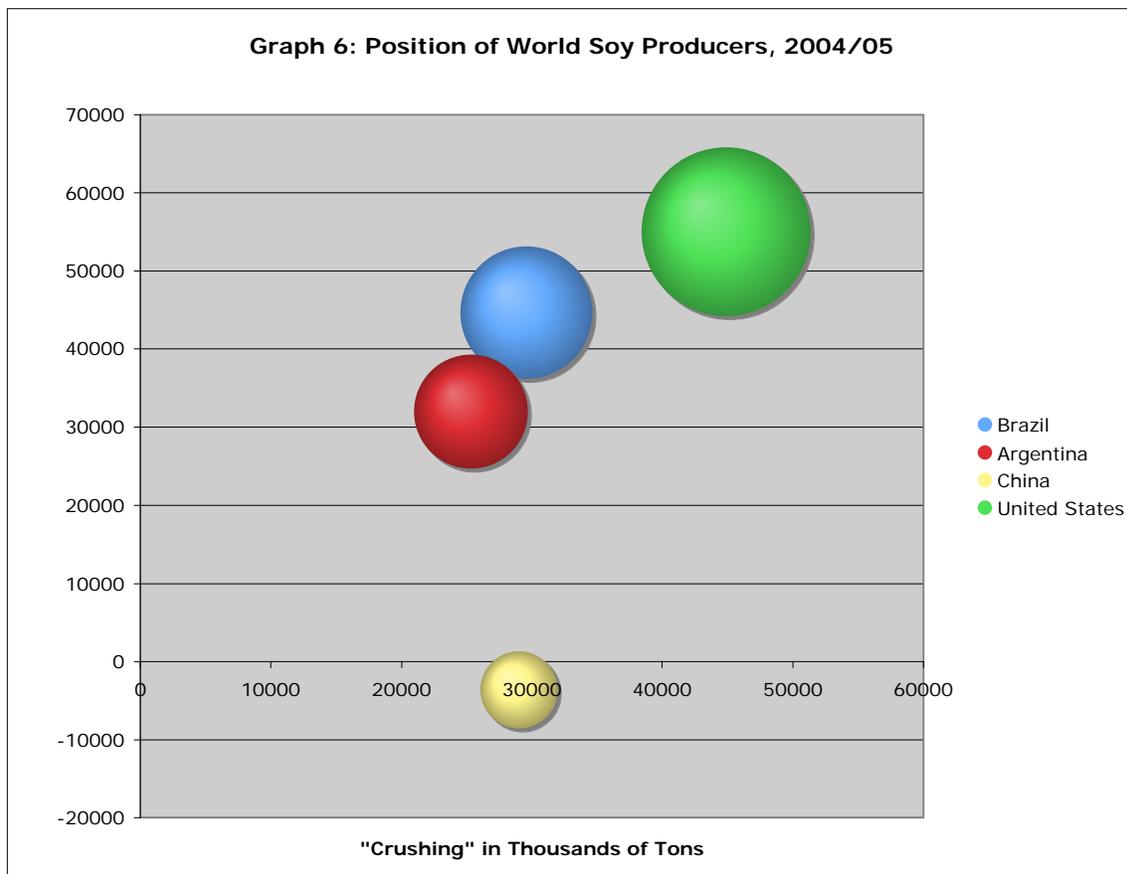
Source: Carlos Pouiller et al. p. 67. Graph and translations are mine.

¹⁰ Carlos Pouiller et al. p. 67

¹¹ Ibid. p. 66

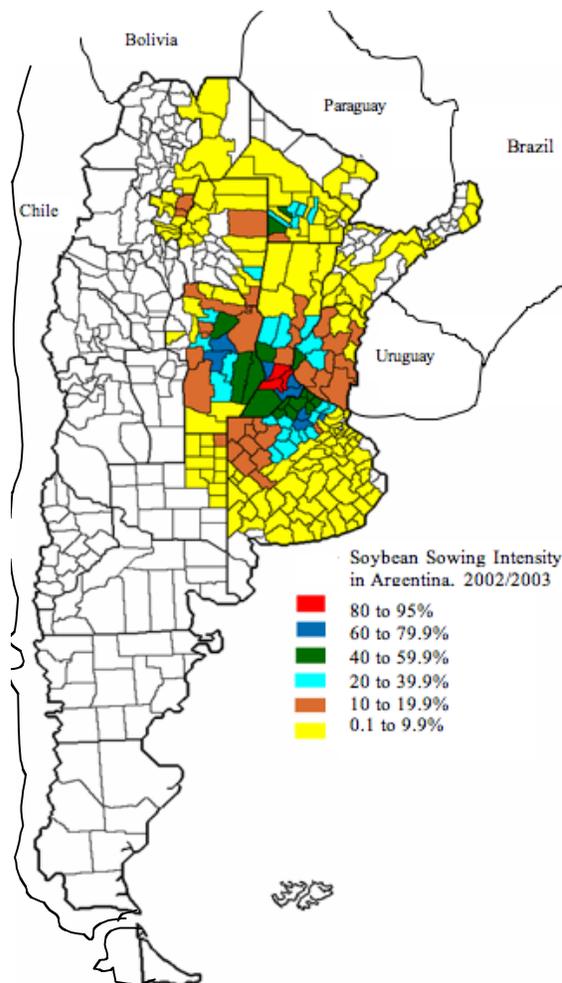


Source: Carlos Pouiller et al. p. 67. Graph and translations are mine.



Source: Carlos Pouiller et al. AACREA. and SAGPyA. Graph and translations are mine.

Map 2: Intensity of Seeded Area



Source: Sociedad Rural Argentina (SRA)

Graph 5 shows the trends of seeded area, yield, and overall production for Argentina during the 1995-2005 period.

In Argentina some production comes from the northwestern and northeastern regions, but the *Pampa*, specifically the *Pampa humeda* (humid *Pampa*) is the most important production region.

Between 2000 and 2003, the principal soy-producing provinces, all in the *Pampa humeda*, were Córdoba with 30 percent of the total national soy production, Santa Fe with another 30 percent, and Buenos Aires with 20 percent.¹² Other soy-producing

provinces include Corrientes, Misiones, La Pampa, Chaco, Santiago del Estero, Formosa, Tucumán, and Salta. The intensity of seeding and cultivation, or percentage of agricultural land devoted to soybeans, is shown on Map 2.¹³

The technology used for soybean cultivation by the United States, Brazil, and Argentina is far more advanced and prevalent than that used by China. The extensive use of technology allows the average yields of those top three to be much higher than that of the fourth. The US was the first to develop large-scale implementation of technologies

¹² Ibid. p. 86-87

¹³ Interview with Fernando Landgraf. Sociedad Rural Argentina (SRA). 15 June 2007.

like mechanization, agrichemicals, and genetically engineered crops. Today, the simultaneous implementation of these technologies allows for the technique of direct sowing. Direct sowing is a capital-intensive process that is much more efficient and as cost-effective or more so than traditional, labor-intensive farming techniques. Specially designed machinery is used to directly insert genetically modified (GM) seeds into the ground without tilling. Since these GM seeds are engineered to resist the deadly effects of herbicides, all weeds that might hinder the growth and survival of the soybeans can be eradicated by mass spraying. When it is time for harvest, other specially designed machinery quickly removes much of the crop above ground while leaving the root structure intact in the soil. Though new environmental problems are created such as contamination of water above and below ground, the multinational biotech company, Monsanto, and many agricultural producers claim that direct sowing has shown to sustain higher yields over the course of many years and has helped to combat other environmental concerns connected to traditional farming, particularly erosion.¹⁴

Because Argentina and Brazil recently developed as soy producers, soy production in these countries also employs modern technology and direct sowing. On the other hand, China tends to be much more labor intensive, which partially explains its lower yields from 1995 to 2005. Another factor contributing to low yields in China is water availability. A millennium of production has lowered soil fertility and ground water availability. Lester R. Brown of the Earth Policy Institute is quoted in the New York Times claiming that “1,000 tons of water is required to produce one ton of soy grain,” and that, in the regions of China that historically have produced soy, water tables are

¹⁴ Email from Esteban Artica, 10 June 2007; “Roundup Ready Soybeans.” 2004-2008. *Monsanto Company*. 29 March 2008.
<http://www.monsanto.com/monsanto/ag_products/input_traits/products/roundup_ready_soybeans.asp>.

lowering between three and ten feet (about 1 to 3 meters) every year.¹⁵ Trends in yields for the four major producers are demonstrated in Table 1.

Season	USA (#1)	Brasil (#2)	Argentina (#3)	China (#4)
1997/98	2.62	2.5	2.8	1.76
2001/02	2.66	2.66	2.63	1.63
2002/03	2.56	2.82	2.82	1.89
2004/05	2.82	2.35	2.75	1.79

Source: Carlos Pouiller et al. p. 67. Table is mine.

Argentine economic policy and global position in the early and mid 1990s was good for the adoption of soy and capital intensive techniques. By pegging the peso to the US dollar, the Law of Convertibility enacted by President Carlos Menem and Economic Minister Domingo Cavallo successfully brought inflation under control and temporarily stabilized the economy. Low tariffs and increased international trade, two staples of the Washington Consensus, as well as a strong monetary unit made it cheaper and easier for agricultural producers to obtain the necessary capital goods for a modern agricultural system: machinery, agrichemicals, and biotechnology.

Also in those first years of the soy boom, domestic producers took advantage of a world soy market that was not as heavily subsidized as other agricultural commodities markets, like that of wheat.¹⁶ The departure from Convertibility and the collapse of the peso in 2001 brought much economic and social stress, but it was ultimately beneficial for soy exporters. Lower prices in Argentina effectively boosted the export sector and meant that international importers could buy more goods, including soy, from Argentina. As a result, the agricultural sector has been “the most profitable (sector of the Argentine

¹⁵ Alexi Barrionuevo. “Life on the Soybean Highway.” *The New York Times*. 6 April 2007.

¹⁶ Interview with Fernando Landgraf. Sociedad Rural Argentina (SRA). 15 June 2007.

economy) since 2001,”¹⁷ and “has been the principal motor of Argentine economic growth since the profound crisis” in the same year.¹⁸

The fact that internal demand for soy products is so low in Argentina has helped to make it the biggest exporter of soy oil and meal and the third biggest exporter of soybeans in the period studied. In fact, Argentina exports almost 95 percent of its soy products.¹⁹ Graph 1 above demonstrates the progression of whole soybean exports from 1993 to 2007. The sub-products are sold to different client countries depending on those countries’ own demands. Soy oil, reaching an exported weight of between four and five millions of tons in 2004/2005 was sold mainly to South and East Asia. China imported 29 percent of Argentina’s soy oil that season while India imported 23 percent and Bangladesh and Venezuela each imported five percent. Whole soybeans reaching between six and nine millions of tons between 2002 and 2004 was sold mostly to East Asian countries, but the EU-25 was also an important importer. In that period China imported 58 percent of Argentina’s soybeans while Thailand imported ten percent and the EU-25 imported thirteen percent. Finally, soy meal, the most important subproduct, reached between seventeen and twenty million tons each year between 2002 and 2004 with the majority going to European, African, and Asian countries.²⁰ Although much of the soy exports go to China and Europe, the export of the most important derivative, soy meal, does not depend on one single country or region. This relative independence helps to avoid crisis if the demand of one place quickly changes without warning.

¹⁷ Quote from President Cristina Fernandez de Kirchner in Max Seitz’s “Argentina: Se Radicaliza Conflicto.” *BBC Mundo*. 26 March 2008. Translation is mine.

¹⁸ Max Seitz. “Argentina: campo desafía a Cristina,” *BBC Mundo*. 18 March 2008.

¹⁹ Marcela Valente. “AGRICULTURE-ARGENTINA: Soy Overruns Everything in Its Path.” Inter Press Service (IPS). 6 Aug. 2004. 14 Jan. 2008 <<http://ipsnews.net/interna.asp?idnews=24977>>.

²⁰ Carlos Pouiller et al. p. 88-90. The most important importers were Spain (11% of total), Italy (6%), Poland (4%), Greece (3%), Philippines (12%), Thailand (8%), Vietnam (6%), Malaysia (5%), Indonesia (3%), Egypt (11%), South Africa (6%), and Algeria (3%).

The recent developments of soy activities in Argentina have spurred investment and growth in other industries. Shipping, trucking to be more specific, is one of these. Transport of raw materials would be cheaper by train; however, today many rail systems are in disarray from lack of upkeep. Instead most transport is done by truck. It is more economical since it requires a much less substantial initial investment and products can be taken directly from the farms to the factories to be processed or directly to the ports for exportation.²¹ Like the rail system, the design of the main roads is conducive to the extraction of raw materials to ports for export. Today nearly all roads and rails lead to one of the main ports – Buenos Aires, Rosario, or Bahía Blanca.

Other related industries that benefit from increased soy production and trade are derivatives extraction/milling, food processing, and agrichemicals. The town of Rosario is the home to the majority of the mills and extraction plants, many of which were built to satisfy the increased exploitation of soy. In the 1990s, the company, ProFertil, invested US \$1.5 billion to build the world's biggest industrial fertilizer plant at that time. That plant, located in Bahía Blanca in the southeastern part of Buenos Aires Province, extracts chemicals from natural gas to make urea and other fertilizers, nearly all of which are consumed in the domestic markets.²² The advancement of these industries has helped to curb unemployment linked to technology use and mechanization in the actual cultivation. Some of the jobs created, such as agricultural engineers and chemists, require high levels of education and human development. Others, such as truck drivers, require almost no

²¹ Email from Esteban Artíca. 10 June 2007.

²² Interview with Marcelo Simon, Entrepreneur and Professor of Business and Globalization, IES and UADE. Buenos Aires, Argentina. 14 June 2007.

special education.²³ Regardless there has been “a great exodus of employees to the cities” due to the more efficient, technology-heavy direct-seeding methods.²⁴

Argentina has various comparative advantages for producing soybeans. The most important can be grouped into three basic categories: (1) geographic location and ample expanses of land, (2) the historical development of agricultural expertise and know-how, and (3) infrastructural development. Because of its location in the Southern hemisphere, production in Argentina is particularly important to the world markets. This can be seen when one notes futures prices on any given day; a higher price is always paid for Argentine soy products to be delivered during the months of November through April.²⁵ Argentina’s ability to cultivate while agricultural activity is impossible in the Northern Hemisphere means that it plays an important role in maintaining world food stockpiles throughout the year. The *Pampa* region has ample water and fertile soils, and while soy can be produced in the drier Northwest, yields are slightly lower and more irrigation technology is required. In the hot, humid regions of the northern *Pampa* and the Northeast, it is possible to have two harvests per year.²⁶ Of the roughly 56 million hectares available in the *Pampa* and millions more in productive regions of the Northwest and Northeast, only 14.2 million hectares were exploited for the cultivation of soybeans in 2005, leaving ample space for expansion.²⁷ Though destruction of tropical forests would be detrimental to the global environment, Brazil also has the potential to expand cultivated area. On the other hand, the United States and China have much less potential

²³ Interview with Hernán Satorre, Economist. 8 June 2007.

²⁴ Email from Esteban Artica, 10 June 2007.

²⁵ Data taken from SAGPyA website; Free-on-board prices of several different soy derivatives.

²⁶ However, this practice of double harvest can have extremely negative environmental consequences if repeated several years in a row.

²⁷ Carlos Pouiller et al. p. 67.

to expand production. Since the US has already developed much of its available agriculturally productive land, further expansion of soy production is less practical unless it allows for expansion into environmentally protected areas. But because the US has a highly developed, free-market economy with vast stretches of arable land already developed for agricultural production, transition from one crop to another requires little more than a strong shift in demand. Similar to the US and in contrast to Argentina and Brazil, China's long history of soy cultivation means that it has reached its geographical limits and cannot devote more land to the crop.²⁸

Throughout Argentina's history, a tradition of agricultural expertise has been created and an infrastructure that caters to the needs of an agroexporter has been developed. Education in cultivation and agrosociences originated with the gaucho lifestyle and became more developed and refined moving into the modern day. The first, ultimately failed, founding of Buenos Aires in the early 16th century brought the first cattle to the *Pampa*. The cows remained and multiplied, so that by the second founding of Buenos Aires by Spanish settlers in 1580, wild cattle were abundant and readily available for hunting and eventually domestication. The economy and population of the *Pampa* during colonial times and through the first few decades of independence were small and slow growing. During the first three centuries, "no part of the Argentine territory developed any activity closely linked to foreign trade."²⁹ Fortune seeking Europeans were much more interested in products of high value, such as precious metals located in

²⁸ Ibid.; In the period from 1995 to 2005, area devoted to soy cultivation expanded in Argentina from 5.98 million hectares (mh) to 14.2 (137% increase), in Brazil from 10.95 to 23 mh (110% increase), in the US from 24.91 to 29.94 mh (20% increase), and China from 8.13 to 9.8 mh (about 20% increase).

²⁹ Aldo Ferrer. *The Argentine Economy*. Trans. Marjory M. Urquidí. English ed. Berkeley: University of California Press, 1967. p. 24.

the high mountains of present-day Peru and Bolivia, and little importance was given to agricultural products. There were two main reasons behind this:

“(1) the metropolitan countries were primarily agricultural, and their imports were limited to a number of exotic food products and luxury goods for the politically and economically privileged groups...[and] (2) the uncertainty of transport, in the view of the primitive state of navigation and the dangers of maritime traffic, made transportation so costly that only products of high value per unit of weight could be profitably traded.”³⁰

During colonial times, the Northwest of Argentina was the most important region economically and culturally because of its proximity to and trade with more populous parts of the Spanish Empire. One of the most important activities of the colonial NW was the raising of mules for transportation. It was not until the mid to late 19th century that exploitation of agricultural goods for export became feasible and, thus, the *Pampa* became more important.

After Argentina’s independence, much of the *Pampean* territory was considered to be a desert controlled by hostile natives. The Conquest of the Desert, a succession of military campaigns in the late 1870s and 1880s lead primarily by General Julio A. Roca, displaced or subdued native populations in Western and Southern Argentina. The campaigns accumulated over 400,000 km squared, or 30 million hectares, of new exploitable *Pampa*, allowing Cattle farmers, or gauchos, to migrate further out to the frontiers without worry of loss of life or property. Increasing cultivation of cereals filled the vacancies left by cattle farmers, and the Province of Buenos Aires became more heavily reliant on corn production where as zones further to the north around the Paraná River produced more wheat.³¹

³⁰ Ibid. p. 17.

³¹ Roberto Cortés Conde., *La Economía Política de la Argentina en el Siglo XX*. 1st ed. Buenos Aires: Edhasa, 2007. p. 26 – 27.

To sustain growth of the expanding agricultural sector (cattle production and crop cultivation), more people would be needed. Between 1800 and 1869 the population share of Buenos Aires and the *Pampa* grew from 30 to 50 percent, but it was still not enough to satisfy demand for labor.³² The population of the *Pampa* increased from about “600,000 inhabitants in 1869, to 1,300,000 in 1895, and 1,900,000 in 1914.”³³ Most of these people emigrated from European countries, mostly Spain and Italy, or migrated from the depressed interior provinces such as the once powerful Northwest.

The period from 1880 to 1914 would come to be known as the “Golden Age” of Argentina. It became one of the world’s wealthiest countries, experiencing sustained growth of about 6 percent average per year.³⁴ Infrastructural development drove that growth and remains a strong comparative advantage to this day. Heavy investments in rail transportation allowed for the delivery of immigrant laborers and the efficient extraction of raw materials for export. Because of ongoing inter-provincial civil war, this development was difficult until the 1860s when a strong peso and a new Constitution that protected property rights offered stability and began to attract foreign, particularly British, investors.³⁵

During the “Golden Age” it is estimated that about 26,000 km of new railroads were constructed. In 1892 alone, 2,400 km of rail was laid. By the beginning of the 20th century the Argentine rail network was the 10th largest in the world.³⁶ These advances arrived in perfect harmony with the pace of agricultural development. Improved infrastructure helped to deliver perishable goods to demanding markets much more

³² Aldo Ferrer. p. 65

³³ Ibid. p. 92

³⁴ Roberto Cortés Conde. p. 18.

³⁵ Ibid. p. 31-33.

³⁶ Roberto Cortés Conde. p. 29, 30.

quickly and efficiently. In 1904, the Agricultural Ministry announced that 83.7 percent of wheat and 53.7 percent of corn had been transported by rail.³⁷ The railroads were organized similar to a pinwheel. There was one central hub – the city of Buenos Aires – which was the home of the most important port. From Buenos Aires, branches extended in every direction to extract from every corner of the country, from North to South, East to West. Because the volume of world trade increased by nearly five times between 1870 and 1913 and six-fold between 1870 and 1929, the structure of this transportation system was essential for efficient exportation of primary goods.³⁸ The rails not only served to export agricultural goods to foreign markets but also to supply farms and estates deep within the interior.

Today, this long-established system connecting the furthest corners of Argentina to the main ports makes exports much more efficient than for many other countries. The United States also shares the advantage of a highly developed transportation system, which helps it to quickly meet internal and foreign demand. From the farms to the crushing and extraction factories to the grocery stores or ports, the US is the most efficient. This internal transportation is faster and more reliable allowing exportation costs to be about 25 percent less than exportation costs of Brazil.³⁹ This advantage makes production in Argentina and the US more profitable and allows for more money to be reinvested to further enhance production or efficiencies.

The promotion of the export led growth cycle centered around exportation of agricultural goods boosted Argentina's wealth, developed the country's agricultural productive capacity, and established a social structure, but Argentina's exposure to

³⁷ Ibid. p. 27.

³⁸ Aldo Ferrer. p. 83

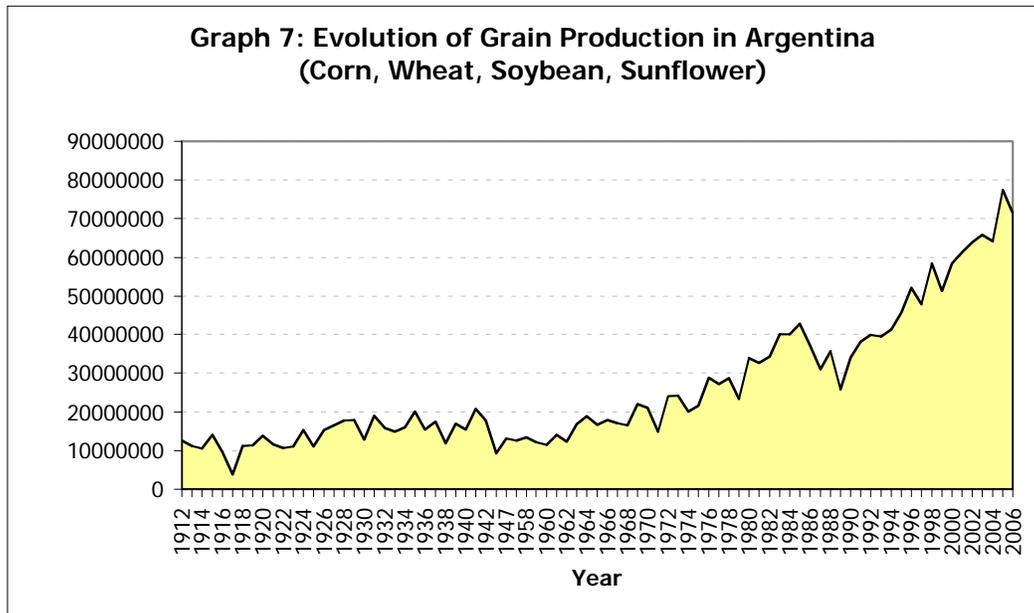
³⁹ Alexi Barrionuevo. "Life on the Soybean Highway" *The New York Times*. 6 April 2007.

international trade left it vulnerable for the shocks to come after 1914. Starting with World War I, capital previously going to Argentina was either reinvested elsewhere or was no longer available. Demand for goods fell as did incomes of producers and exporters.⁴⁰ The euphoria of commercial expansion and world trade began to grind to a halt as isolationism took hold.

Though much of the world reopened to trade after World War II, Argentina remained relatively closed and isolated until the latest return to democracy in 1983. A pendulum is an appropriate metaphor for Argentina in that period. The country swung back and forth between civilian governments and military regimes. Often times political and economic objectives were totally reversed. Sometimes during the period, policy reflected the economic theory of Import Substitution Industrialization (ISI). Generally, during periods of ISI government intervention in the economy favored importation of capital goods for industrialization using high tariffs and high valued currency while disfavoring exportation of raw materials. With a low-valued currency, exports are boosted, while high-valued currency, though negatively affecting exports, allows for the importation of more capital goods (necessary for the growth of Argentine industries). Because the pendulum effect offered no sustained support for agricultural production and the export-lead growth model and because ISI favored industrial advancement over agricultural, the agricultural sector lost some of its share of the Argentine GDP.⁴¹

⁴⁰ Victor Bulmer-Thomas. *The Economic History of Latin America Since Independence*. 2nd ed. New York: Cambridge University Press, 2003. p. 152-154.

⁴¹ *Ibid.* p. 275 – 276, 268, 269, 271.



Source: AACREA data. Received in emails from Hernán Satorre and Alejandra Linares (AACREA), 29 Jan 2008.

This stagnation in the agricultural sector can be seen in Graph 7. Growth in the sector was stagnant through the world wars, the depression, the beginnings of industrialization under Peron in the 1940s and 1950s, and the “substantial industrial growth in the 1960s” linked to the import substitution strategy. It was not until the military dictatorship of 1976-1983 that the agriculture sector started to rebound with more strength. This is mainly attributed to that regime’s neo-liberal and deindustrialization policies, a reversal of the ISI policies. These policies were not necessarily intended to boost the agricultural sector, but rather to control and take power from unions and organizations in opposition to the neo-liberal policies. “The neo-liberal orientation of the military would not have been possible without the physical extermination of the activists of the popular forces.”⁴² Democratization and further liberalization after 1983 laid the groundwork for a sort of renaissance in the agricultural

⁴² Joseph Halevi. "The Argentine Crisis." *Monthly Review* Vol. 53 (2002). 29 March 2008. See also Fernando Hugo Azcurra, *La "Nueva" Alianza Burguesa en Argentina*. Buenos Aires: Dialectica, 1988.

export sector. A new wave was coming: modern soy production was about to explode, reviving some of the importance to the agricultural sector.

Chapter Two

Diplomacy of Soy: Stakeholders in Argentine Soy Production

The rapid growth and increasing global interaction of Argentina's soybean economy raised the stakes of competition for revenue by attracting foreign stakeholders and deepening the interest of traditional stakeholders to continue to fight for their economic share. We will see which stakeholders favor and oppose patent protection for genetic material, why they hold their positions, how they relate to or interact with other stakeholders, and how they are represented. Domestic stakeholders are producing individuals or firms, various organizations developed around those producers, the Argentine government, complementary industries that benefit from increased soy production, or any other domestic entity with economic ties to soy. The main international stakeholders are multinational corporations responsible for development of agrochemicals and biologically engineered crops, the nation(s) that represent those corporate interests in the WTO, firms that import Argentine soy, and the nation(s) that represent them in the WTO. Fewer stakeholders are foreign or international in nature, but this does not mean that they are less important. One multinational company may have the ability to affect the lives of thousands of domestic farmers and producers.

Domestic Stakeholders

Agricultural producers have been a strong lobby in Argentina since the "Golden Age." The economic developments of that time period laid the foundations for a rural oligarchy with the power to influence policy decisions. There were several reasons for the development of an agricultural elite class. Firstly, due to great expanses of available land

and a small population, land prices in the *Pampa* remained very low – below 150 pesos (1903 value) per hectare until 1907.⁴³ Another factor was, with the concentration of land in a few hands, many immigrants were “obliged” to work for low wages as tenant farmers or field hands. According to Argentine Economist Aldo Ferrer, “about 70 percent of the gross income derived from the agricultural sector was held by not more than 5 percent of the active population in that sector; on a national scale, this means that about 2 percent of the population received 20 percent of Argentina’s gross income.” Furthermore, constant influxes from immigration kept the labor supply high and, thus, wages low.⁴⁴

The Rural Argentine Society, or *Sociedad Rural Argentina* (SRA), is one of the oldest organizations for agricultural producers and rural landowners. Since its formation in 1866, its main goals have been:

“to guard the endowments of the country’s farming and to foment its development as much in its natural riches as in the riches incorporated by the force of its settlers; to promote the roots and stability of the man in the field and the improvement of all aspects of rural life; to help improve the techniques, methods, and procedures applicable to rural tasks and the development and advancement of complementary and derivative industries; and to assume the most effective defense of farming interests.”⁴⁵

From its inception through the “Golden Age” it formed and protected the interests of powerful landholders and rural employers, enabling the establishment of a powerful rural oligarchy. Historically, it has been part of the *Grupo de los Ocho*, or “group of eight” of the most powerful employers’ organizations that shaped Argentina’s development.

Government policies less favorable to export-agriculture and more favorable to the development of industry after World War II deflated some of the power of the SRA and its rural oligarchy. Regardless, although there is no longer one rural oligarchy per se and

⁴³ Roberto Cortés Conde. *La Economía Política de la Argentina en el Siglo XX*. 1st ed. Buenos Aires: Edhasa, 2007. p. 25.

⁴⁴ Aldo Ferrer. *The Argentine Economy*. Trans. Marjory M. Urquidi. English ed. Berkeley: University of California Press, 1967. p. 116

⁴⁵ From Article 1 of SRA Charter. <<http://www.ruralarg.org.ar/>>. 8 Jan 2008. Translations are mine.

despite recently strained relations with the government, to this day land ownership is still very much concentrated and the SRA remains a powerful organization.⁴⁶

As a response to inequality and lack of protection for workers and small farmers, other organizations were formed. The formation of the *Federación Agraria Argentina* (FAA), or Argentine Agrarian Federation, stemmed from land renter and tenant farmer strikes in 1912. The main objectives of this organization are the support and unionization of small and medium-sized agricultural producers. Furthermore it promotes the “union defense and socio-economic...elevation of agricultural producers and their families.”⁴⁷ Many other organizations have sprung up since then to organize, represent, and protect farmers and laborers. One of these is *Confederaciones Rurales Argentinas* (CRA), or Argentine Rural Confederations founded in 1943. Similar to the FAA though not exclusively catering to small producers, CRA organizes, supports, and offers union protection to more than 109,000 small, medium, and large agricultural producers.⁴⁸ Representing more than 34,000 producers in the *Pampa*, the Confederation of Rural Associations of Buenos Aires and the Pampa, or CARBAP by its Spanish initials, is another organization that works closely with the CRA and shares many of its goals.⁴⁹

The individual domestic producers constitute another group of important stakeholders. While some of the old rural oligarchic families have transitioned into soy production, many of Argentina’s soy producers today are relatively new to agriculture. Grupo los Grobo, more commonly known as simply “*los Grobo*” is one of these

⁴⁶ Email from Ignacio Labaqui, Political Economist and Professor for IES Buenos Aires. 10 Jan 2008.

⁴⁷ Federación Agraria Argentina (FAA). <<http://www.faa.com.ar/>>. 8 Feb 2008.

⁴⁸ Confederaciones Rurales Argentinas (CRA). <<http://www.cra.org.ar/home/quienessomos.htm>>. 8 Feb 2008.

⁴⁹ Confederacion de Asociaciones Rurales de Buenos Aires y la Pampa (CARBAP). <<http://www.carbap.org/root/institucional.asp?accion=1&encabezado=13>>. 24 Feb 2008.

companies. Established in 1984 by Adolfo Grobocopatel, it has grown to be a powerful producer and one of the foremost traders and exporters of agricultural raw materials, including soybeans, in Argentina. The company has 150,000 hectares in production; 90 percent of that is rented.⁵⁰ This may not seem like much, but *los Grobo* uses advanced technologies (not just farm capital, but communication and internet technologies) and new ways to think about agribusiness to work with just about all other producers trading goods and services.⁵¹

The Argentine government stands as the third domestic stakeholder in Argentine soy production. The government sets and enforces laws based on the interest and pressure of both domestic and international stakeholders. It acts as a representative of domestic interests in formal disputes negotiated in the World Trade Organization (WTO); it also may act as an intermediary in informal, private negotiations with multinational corporations outside of the WTO. Several Ministries and Secretariats deal with negotiation of agribusiness policy and international trade of agricultural goods. The Ministry of Foreign Relations, International Commerce, and Culture is responsible for negotiation of international agreements and the representation at organizations where Argentina is a member, including the World Trade Organization (WTO), the Food and Agriculture Organization of the United Nations (FAO), the World Intellectual Property Organization (WIPO), the Organization for Economic Co-operation and Development (OECD), and the Economic Commission for Latin America and the Caribbean (ECLAC)

⁵⁰ Jose Crettaz. "Grobocopatel: 'Si no nos dejan ganar, no podemos invertir.'" *La Nacion*. 28 Nov 2007.

⁵¹ Grupo Los Grobo. <http://www.losgrobo.com.ar/nuestra_empresa.asp>. 8 Feb 2008; Email from Ignacio Labaqui, 10 Jan 2008.

to name a few.⁵² The Secretariat of Agriculture, Cattle, Fishing, and Foods (SAGPyA by its Spanish initials) is another government office important to the subject of genetically modified soybean production. SAGPyA, within the Ministry of the Economy and Production, has several decentralized organizations under its control which also may have some input into negotiations surrounding the topic at hand: the National Seed Institute (INASE), National Institute of Agricultural Technology (INTA), the National Office of Commercial Agriculture Control (ONCCA), and the National Service of Agricultural Food Sanity and Quality (SENSA).⁵³ The SAGPyA is currently headed by the Minister of Agriculture, Javier de Urquiza, who replaced Manuel Campos in 2007.⁵⁴

Relations between the government and producers and their organizations have become tense recently. This relationship has been strained by several factors,⁵⁵ the most important of which is high export taxes. Up to the last quarter of 2007, Argentina set export taxes for soybeans at 27.5 percent, and on exports of soy meal and soy oil at 24 percent. These already high tax levels were further increased in November of 2007 to 35

⁵² Ministerio de Relaciones Extranjeras, Comercial Internacional y Culto. <<http://www.mrecic.gov.ar/>>. 26 Feb 2008.

⁵³ Secretaría de Agricultura, Ganadería, Pesca y Alimentos (SAGPyA). <<http://www.sagpya.mecon.gov.ar/>>. Path -> "Institucional" -> "Organismos Decentralizados" 24 Feb 2008.

⁵⁴ Mercedes Colobres. "Una nueva ley de semillas, en marcha," 8 September 2007. *La Nacion*.

⁵⁵ There is speculation that the official inflation rates published by the Argentine government are understating the actual inflation. This imbalance has a negative impact on exports of soy, beef, and wheat, among other products. Since many of these agricultural products are exported, less is left for consumption in the domestic markets. Because Argentina is an important agroexporter, Argentine consumers must compete with consumers all over the world for the foods produced domestically. This decrease of supply domestically has caused high prices and discontentment for Argentine consumers. Pressure has been so great at times in the last couple of years that the Argentine government has mandated that no beef or wheat products be exported for given time periods. This temporarily lowers the price for domestic consumers, but is harmful to the revenues of beef and wheat exporters. It also shows a sign of instability to international buyers, which could effect future terms and transactions. (Summarized from email correspondence with Esteban Artica, 12 Feb 2008.)

and 32 percent.⁵⁶ These revenues are used for many things, including subsidizing other parts of the agricultural sector that are lagging.⁵⁷ By doing this the Argentine government is betting that soy prices will continue their record-breaking trends. So far, these predictions have been validated, with soy prices reaching a 34-year high at \$12.78 per bushel.⁵⁸

Recently, tensions between these groups have worsened. In mid-March 2008, the Argentine government announced its intent to further increase export taxes for sunflower and soy products to 45 percent. This action caused producers all over the country to strike and picket important highways, slowing or shutting down domestic and international trade. Subsequently, food scarcities in the major cities have infuriated and radicalized many citizens. The producers, especially small producers, feel that the government is taking such a big piece of their income that they cannot reinvest and sustain themselves; producers do not understand why the Argentine government is “drowning” the sector that brings about 12 billion dollars of income to the country every year.⁵⁹ The government is maintaining a popular platform: many of the urban poor believe that the old rural oligarchy is alive and strong. The Chief of the Cabinet, Alberto Fernandez, declared, “the country people (producers) have to understand that if the international markets are

⁵⁶ World Energy. “Biofuels Escape Argentina Export Tax.” 14 Nov 2007.

<http://www.worldenergy.net/public_information/show_news.php?nid=97>. 14 Jan 2008. Tax increases mentioned above were only for edible soy products, not soy derivatives used for biofuels.

⁵⁷ Interview with Fernando Landgraf. Sociedad Rural Argentina (SRA). 15 June 2007.

⁵⁸ World Energy. “Soybean Prices At 34-Year High.” 4 Jan 2008.

<http://www.worldenergy.net/public_information/show_news.php?nid=179>. 11 Feb 2008. As defined by the US Grains Council in “Conversion Factors”, one bushel of soybeans is 60 pounds. Thus, one metric ton of soybeans is about 36.74 bushels.

<<http://www.grains.org/page.wv?section=Barley%2C+Corn+%26+Sorghum&name=Conversion+Factors>> 29 March 2008.

⁵⁹ Max Seitz. “Argentina: campo desafía a Cristina,” *BBC Mundo*. 18 March 2008; Jose Crettaz.

“Grobocopatel: ‘Si no nos dejan ganar, no podemos invertir.’” *La Nacion*. 28 Nov 2007.

favorable, somehow they have to share (the gains) with the rest of the Argentine people.”⁶⁰

Upon the writing of this, the strikes and the arguments over export taxes continue. At this point there is no certain outcome, but the source of the argument is clear: The increased economic importance of soy production in Argentina has helped to re-establish the economy and give more power to producers and the government. The two groups may argue about how income from soybeans should be spent, but neither group wants to lose any share of its ever-increasing revenue derived from soy export.

The issue with export taxes can also be linked with globalization of the soy economy and the entire political economy in general. The globalization that brought technology transfers and mechanization practices from developed countries allowing for increased efficiency in agricultural production also caused unemployment and poverty among rural workers. Many of these unemployed farm laborers have relocated to the major cities, what has been called an exodus from the countryside.⁶¹ In an attempt to appease the urban poor constituency group, the Argentine government is leaning heavily on the strongest and most productive sector of the economy. But soy producers, particularly Gustavo Grobocopatel of *los Grobo*, claim that if “they (the government) do not let us make money, we cannot invest;” this investment is crucial to ensure that these producers can remain competitive internationally.⁶²

⁶⁰ Max Seitz. “Argentina: campo desafía a Cristina,” *BBC Mundo*. 18 March 2008.

⁶¹ Interview with Hernán Satorre, Economist, AACREA. 8 June 2007.

⁶² Jose Crettaz. “Grobocopatel: ‘Si no nos dejan ganar, no podemos invertir.’” *La Nacion*. 28 Nov 2007. Translation is mine.

International Stakeholders

The international stakeholders include a handful of multinational corporations, the governments that represent them in the WTO, the WTO itself, and international importers of Argentine soy. Similar to the Argentine government, the United States government employs officials from several of its Departments to represent US companies in international disputes and negotiations. These Departments include the Trade Representative and the Department of Agriculture. The United States government represents US companies in official WTO proceedings, but probably plays a lesser role in informal, private negotiations between US companies and domestic Argentine stakeholders.

Concerning the issue of soybeans in Argentina, Monsanto is the most important international stakeholder. Monsanto (ticker symbol MON on New York Stock Exchange), a biotech and agrichemical company based in St. Louis (Missouri) is one of the world's foremost producers of agricultural technology.⁶³ Agricultural and biological technology are relatively new undertakings for the century-old corporation. Monsanto was created in 1901 by John Francisco Queeny to manufacture chemicals like saccharin, caffeine, and vanillin. As World War I raged and the supply of industrial chemicals from Europe dwindled, Monsanto substituted for much of the European production and became one of the foremost US chemical companies in the process. After World War II, Monsanto began to diversify its chemical and industrial products and expand by acquiring other companies. By the mid-1960s the "company consisted of eight divisions, including petroleum, fibers, building materials, and packaging," in addition to

⁶³ Cristian Mira. "Soprendentes desarrollos transgenicos," *La Nacion*. 1 September 2007

agrochemicals.⁶⁴ It continued to grow through the 1970s and 1980s despite “continued challenges from a variety of sources, including government and public concern over hazardous wastes,” and various lawsuits, including a case over the defoliate Agent Orange.⁶⁵ In 1985, Monsanto acquired G.D. Searle, maker of NutraSweet, whose sales helped to contribute to record revenues in 1988 and 1989 of \$8.3 and \$8.7 billion, respectively.⁶⁶

According to its website, the “flagship of Monsanto’s agricultural chemical business” is the potent and popular glyphosate-based herbicide known as Roundup. First patented and introduced in 1980, Roundup is the most common herbicide used by farmers as well as hobby gardeners concerned with weed control all over the world. Since its development it accounted for a large share of Monsanto’s revenue until the expiration of its worldwide patent in 2000. Monsanto is also a leader in the field of transgenics, estimating that it is currently responsible for the production of at least 70 percent of the world’s herbicide-resistant seeds.⁶⁷ This redefining from industrial chemicals to a heavier focus on genetics and agricultural technology began to occur more strongly in the mid-1980s, first “with a \$150 million investment in a genetic engineering lab in Chesterfield, Missouri.”⁶⁸ “Monsanto, which had committed 8 percent of its operating budget to research and development, far above the industry average, hoped to emerge in the 1990s as one of the leaders in the field of biotechnology,”⁶⁹ By 1995 the market for plant biotech products was \$450 million, and at that time it was estimated to expand to \$2

⁶⁴ Marinell Landa, Jeffrey L. Covell, and Frederick C. Ingram. "Monsanto Company." *International Directory of Company Histories*. Ed. Jay P. Pederson. Vol. 77. Detroit: Thomson Gale, 2006. p. 301-302.

⁶⁵ Ibid. p. 303.

⁶⁶ Ibid. p. 304.

⁶⁷ “Monsanto Company Company Description,” 2008. *Hoovers*. 12 September 2007.

<http://www.hoovers.com/monsanto-company/--ID_100932--/free-co-profile.xhtml>.

⁶⁸ Marinell Landa et al. "Monsanto Company." *International Directory of Company Histories*. p. 305.

⁶⁹ Ibid. p. 304.

billion by 2000 and \$6 billion by 2005. The success of the first line of genetically modified seeds introduced in 1996 demonstrated that Monsanto's heavy investments had paid off by giving it a dominant position over the market. This success prompted the company's leadership to make a surprising announcement: it would separate itself from its traditional industrial chemical business, which had generated \$3 billion of its \$7.9 billion total revenue the previous year, to further pursue dominance in the emerging biotech market.⁷⁰

Today, Monsanto produces integrated solutions for its customers; it provides a combination of its powerful herbicides with various strands of genetically altered plants, allowing for the use of direct sowing methods, higher yields, and better quality foods. Monsanto combines advanced cross breeding of the best strains of its crops with gene modification. This in turn has produced several different strains of genetically modified (GM) crops like corn, cotton, and soybeans, which, after modification carry traits like the ability to resist glyphosate (RR, or Roundup Ready), the ability to resist and repel certain species of pest insects (Bt, or *Bacillus thuringiensis*), and the ability to produce more integral nutrients and less trans-fat (Vistive Low-Linolenic). The company has even found ways to stack these and other traits, giving their products even more drastic advantages over natural crops.⁷¹ Roundup Ready (RR) soybeans, Monsanto's most widely used transgenic invention, are resistant to the deadly effects of glyphosate found in Roundup, allowing fields to be sprayed indiscriminately, killing all weeds that might lower overall yield while leaving the soy unharmed (i.e. direct sowing method).⁷²

⁷⁰ Ibid. p. 305-306.

⁷¹ Monsanto Company 2004-2007. 8 November 2007 <www.monsanto.com>.

⁷² Bill Tomson and Taos Turner. "Argentine Ag Chief discusses Monsanto Concerns with US Gov," *Dow Jones Commodities Service*. 23 February 2006. <<http://www.gene.ch/genet/2006/Feb/msg00117.html>>.

The aforementioned products and technologies, particularly RR soybeans, have become staples to Argentine agricultural producers, and are now fully disseminated throughout the country and much of the South American continent. Because of technological transfers, Monsanto can be considered a central enabler of Argentina's expansion of the soy sector. Esteban Artica estimates that between 80 and 90 percent of Argentina's soy production utilizes transgenic seeds and the more efficient direct sowing process.⁷³ Of that percentage, Monsanto is responsible for about 95 percent.⁷⁴ Since the introduction of Roundup Ready (RR) soybeans in Argentina in 1996, the amount of land sown with this product has increased from about six million hectares to about 16 million hectares in 2006, representing "more than half of the country's total agricultural land (cultivated surface area)."⁷⁵ A yearly production from such a large share of the Argentine agricultural sector in 2005 represented 11 million metric tons of soy products exported to Europe for an estimated \$2 billion dollars, only a percentage of the total revenue given the many international importers of Argentine soy.⁷⁶ Monsanto feels entitled to some of that revenue since the development of these technologies took years of research and heavy investments. "Between the mid-1980s and the mid-1990s, Monsanto had spent approximately \$1 billion on developing its biotech business."⁷⁷ In 2002 Monsanto posted a year-end loss of \$1.7 billion, although it had a 90 percent share of the world market for GM seeds.⁷⁸ The loss can be partially blamed on the denial of royalty payments by

⁷³ Email from Esteban Artica, Agriculture, Cattle and Business Advisor, AACREA. 10 June 2007.

⁷⁴ Bill Tomson and Taos Turner. "Argentine Ag Chief discusses Monsanto Concerns with US Gov"

⁷⁵ Oliver Balch. "Seeds of Dispute," *The Guardian* 22 February 2006.

<<http://www.gene.ch/genet/2006/Feb/msg00117.html>>; Max Seitz. "Argentina: campo desafía a Cristina," *BBC Mundo*. 18 March 2008.

⁷⁶ Bill Tomson and Taos Turner. "Argentine Ag Chief discusses Monsanto Concerns with US Gov."

⁷⁷ Marinell Landa et al. "Monsanto Company." *International Directory of Company Histories*. p. 305.

⁷⁸ *Ibid.* p. 306.

Argentina.⁷⁹ As with the government and domestic producers in Argentina, Monsanto has been vying for a cut of the soy revenue. In the new global political economy in which soy is produced and traded, there is an arena to bring such cases – the World Trade Organization (WTO).

Establishing an International Dialogue

In September 1986, the eighth multilateral world trade negotiation under the General Agreement on Tariffs and Trade (GATT) began in Punta del Este, Uruguay. The Uruguay Round as it would come to be known lasted until April 1994, yielding “more than 400 pages of detailed trade agreements supplemented by more than 22,000 pages containing schedules of commitments by member nations regarding access to their markets for specific goods and service sectors.”⁸⁰ By creating the World Trade Organization (WTO) which came into force on 1 January 1995, the Uruguay Round strove to further integrate the economies of the world, dealing justly with the disputes that may arise, promoting the diffusion of new technologies to developing countries, and simultaneously setting standards to protect intellectual property rights. The agreement pertaining to Intellectual Property Rights (IPR) established by the WTO known as the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement) is central to the subject of genetically modified (GM) material patentability in Argentina. Before this agreement took effect at the beginning of 1995, intellectual property control and arbitration fell under the jurisdiction of the World Intellectual Property Organization

⁷⁹ Argentina’s denial of patentability for GM crops is only part of the reason Monsanto lost so much money. Other factors include soybean piracy in Brazil (which has since been resolved**) and the adjustment from the loss of exclusive rights to produce and sell glyphosate (Roundup) in 2000.

⁸⁰ Jeffrey J. Schott and Johanna W. Buurman. *The Uruguay Round: An Assessment*. Washington, D.C.: Institute for International Economics, November 1994. p. 3.

(WIPO), an organization that had little power compared to that of the WTO in enforcing rulings. Many of the goals set by the WTO and the Uruguay Round were fulfilled, but the system remains far from perfect.

The WTO expanded on the 1994 General Agreement on Tariffs and Trade (GATT, Annex 1A of WTO Agreement) by including the General Agreement on Trade in Services (GATS, Annex 1B), and the Agreement on Trade Related Aspects of Intellectual Property (TRIPS, Annex 1C), all of which are binding on all WTO members. Separate specialized councils oversee these agreements in action. The WTO Agreement contributed other governing functions to world trade, namely: the Dispute Settlement Body (Annex 2), the Trade Policy Review Body (Annex 3), and Plurilateral Agreements (Annex 4).⁸¹

The Dispute Settlement Understanding (DSU) of the WTO successfully formed a single board in which all disputes between WTO member countries or relating to the organization's formation could be resolved. Dealing with disputes arising after the enactment of the WTO, the DSU was an upgrade to the previous dispute settlement procedures under the GATT. Stricter time limits were set for the various stages of the settlement, from establishment of expert panels to adoption of reports and settlement or retaliation.⁸² Other improvements on the former GATT dispute settlement system were “a new appeals procedure,” “time periods for compliance,” methods to monitor compliance, and the allowance of “automatic retaliation in the even of noncompliance.”⁸³ This body oversaw the proceedings of the formal TRIPS dispute DS171/196. Interested parties, such

⁸¹ Ibid. p. 134-135.

⁸² Ibid. p. 125-126.

⁸³ Ibid. p. 126. It should be noted that, since its inception, not all disputes reviewed under the DSB have been able to be resolved within the mandated timeframes for various reasons, the biggest being the sheer size and detail of panel reports.

as the various stakeholders, are represented by their member country. For any given case, the involved countries will select one authority to represent its government and its involved constituents as a “notification authority” and “enquiry point.” Usually, the government agency that works with the issue under review will be the central representative authority; if many agencies deal with the issues under review, only one can be appointed.⁸⁴ The Argentine Secretariat of Agriculture, Cattle, Fishing, and Foods (SAGPyA in Spanish) plays a central role in agricultural issues in the WTO, including the negotiations concerning the treatment of GM soybeans.⁸⁵

The agreement on intellectual property (TRIPS) undertaken by the Uruguay Round is a culmination of past international agreements. Along with recognizing “the applicability of the basic principles of GATT 1994,” it draws from many formerly developed agreements encompassing copyrights, trademarks, patents, industrial designs, trade secrets, semiconductor layouts and geographical indications.⁸⁶ The most relevant for the topic of patents is the 1883 Paris Convention for the Protection of Industrial Property, which was revised in the Stockholm Act of 1967.⁸⁷ The negotiation of the TRIPS agreement attempted to combine the distinct needs and desires of developed as well as developing countries, but “as with any negotiated text...fully satisfied neither.”⁸⁸

The TRIPS Agreement is divided into seven parts: “Part I – General Provisions and Basic Principles” (Articles 1 – 8); “Part II – Standards Concerning the Availability,

⁸⁴ “Establishing an SPS Notification Authority and Enquiry Point,” World Trade Organization (WTO). 27 Feb 2008. <http://www.wto.org/english/tratop_e/sps_e/sps_handbook_cbt_e/c1s1p1_e.htm>.

⁸⁵ Email from Anonymous Source in SAPGyA. dnm_sapgya@mecon.gov.ar. 17 March 2008.

⁸⁶ “Annex 1C of WTO Agreement: Agreement on Trade-Related Aspects of Intellectual Property Rights,” April 1994. World Trade Organization (WTO). 9 October 2007 <http://www.wto.org/english/docs_e/legal_e/legal_e.htm#TRIPs>. Path: pdf. P. 320.

⁸⁷ Jeffrey Schott. *The Uruguay Round: An Assessment*. p.115-116; “Paris Convention for the Protection of Industrial Property,” Amended 28 September 1979. World Intellectual Property Organization (WIPO). 6 November 2007 <http://www.wipo.int/treaties/en/ip/paris/trtdocs_wo020.html>.

⁸⁸ Jeffrey Schott. *The Uruguay Round: An Assessment*. p. 115.

Scope, and Use of Intellectual Property Rights” (Articles 9 – 40); “Part III – Enforcement of Intellectual Property Rights” (Articles 41 – 61); “Part IV – Acquisition and Maintenance of Intellectual Property Rights and Related *Inter-Partes* Procedures” (Article 62); “Part V – Dispute Prevention and Settlement” (Articles 63 – 64); “Part VI – Transitional Arrangements” (Articles 65 – 67); and “Part VII – Institutional Arrangements; Final Provisions” (Articles 68 – 73).⁸⁹ The most relevant parts for the issue of GM soy are found in Part II. Section 5, in particular, addresses the qualifications for patents and how patents may be treated.

According to Article 33 of the TRIPS Agreement, all patents are insured protection for a period of twenty years from the date the applications are filed. Article 65 sets forth the time periods in which new legislation should be implemented giving no less protection than offered by the Agreement. One year was afforded to developed countries to reach compliance unless, as specified by paragraph three of that Article, any of those countries were experiencing unusual difficulties in reforming their patent system. Those developed countries experiencing reform difficulties as well as all developing countries were given four additional years, according to Articles 65.2 and 65.3.⁹⁰ Finally, developing countries experiencing reform delays could further delay compliance an additional five years, making the possible delay total ten years according to Articles 65.4 and 66.⁹¹ The agreement adheres to national and most-favored nation (MFN) treatment meaning that all IPRs are subject to “treatment no less favorable than [accorded] to [a country’s] own nationals” and that “any advantage a country gives to another country

⁸⁹ “Annex 1C of WTO Agreement”

⁹⁰ The methods used to distinguish “developed” and “developing” countries are not explained in the TRIPS Agreement, though it is probably explained elsewhere in the all-encompassing WTO Agreement.

⁹¹ “Annex 1C of WTO Agreement” p. 347-348.

automatically applies to all other countries, even if such treatment is more favorable than that which it gives to its own nationals.”⁹² Article 27 insures that, inter alia, those patents cannot be discriminated by country of origin. In other words all patents are equal whether they are “imported or locally produced.”⁹³

These are some of the Articles that would come under review allegedly violated by Argentina and some of its soy producers in the disputes. In the next chapter we will see how these disputes have played out. It can be noted that the globalizing system in which the stakeholders are interacting and pushing each other for a bigger slice of the soy pie has become much more complicated. There are more stakeholders today at the table than there would have been in a less globalized world. As they all push to ensure that their individual demands are fulfilled, it becomes more and more obvious that (a) the current international institutions are inadequate to provide fair and balanced arbitration, and (b) not all stakeholders can be granted what they seek because there is not enough money available to satisfy them all and because of the flaws in the current global regulatory systems.

⁹² Jeffrey Schott. *The Uruguay Round: An Assessment*. p. 116.

⁹³ “Annex 1C of WTO Agreement” 331, 334.

*Chapter Three**Case Studies of Disputes Over Argentine GM Soybeans*

There are two basic disputes that this chapter explores. The first dispute, settled in 2002, was the “official” dispute brought up in the WTO. It actually included two combined disputes, which were arbitrated and settled together as one dispute. Because these disputes involved other industries, not just agribusiness or the genetically modified (GM) seed issues, and therefore did not fully clarify the issues or satisfy all the parties, an “unofficial” dispute continued between Monsanto and the Argentine stakeholders. This dispute continues to this day. In a perfect world with fully functional global regulatory systems, increased genetically modified (GM) soybean production and trade in Argentina would be beneficial for all stakeholders, domestic and international. They would all be fairly rewarded for the roles that they have all played in developing Argentina’s soy economy: Argentine producers would benefit from the enhanced efficiencies of high-tech GM soy operations, the government would benefit with increased tax revenue and a better trade balance, and Monsanto would benefit from selling more of its enhanced seeds and agrichemicals. This, however, has not happened as disputes have arisen over Monsanto’s rights to patent and control sales of Roundup Ready (RR) soybeans in Argentina.

The problem stems from one particular article of the WTO TRIPS Agreement. Article 27 of the TRIPS Agreement⁹⁴ is central to all disputes explored by this chapter: both the formal disputes carried out by the WTO’s Dispute Settlement Body (DSB) regarding, inter alia, patent law, as well as the private, informal disputes between Monsanto and the Argentine stakeholders. In his assessment of the Uruguay Round,

⁹⁴ Refer to Annex 1

Jeffrey Schott, a senior fellow with the Peterson Institute of International Economics, said that specifically Articles 27.2 and 27.3 pertaining to the patentability of plant varieties and biotechnological inventions, inter alia, are written in “a very narrow scope...and are likely to be the subject of future disputes – especially considering the high level of protection that both the United States and the European Union provide for biotechnology inventions.”⁹⁵

Article 27 is divided into three sections and covers what the WTO considers to be “patentable subject matter.”⁹⁶ In the first paragraph, it states that anything may be patentable from “all fields of technology” as long as it is “new” (novelty), involves at least one “inventive step” (“non-obvious”) and has an “industrial application” (“useful”). The first paragraph also states that patents should not be discriminated against regardless of their “place of invention, the field of technology and whether products are imported or locally produced.”⁹⁷ The second paragraph allows for countries to deny patents regardless of their origin or place of invention “to protect human, animal or plant life or health,” to protect the wellbeing of the nation, and to safeguard the environment.⁹⁸

The third paragraph is subdivided into two subsections. The first subsection, article 27.3a, refers to “diagnostic, therapeutic and surgical methods” and is not relevant to the topic of GM soybeans. The second subsection on the other hand, article 27.3b, is crucial to the relationship between the stakeholders and the disputes at hand. It reads:

⁹⁵ Jeffrey J. Schott and Johanna W. Buurman. *The Uruguay Round: An Assessment*. Washington, D.C.: Institute for International Economics, November 1994. p. 118; “Research Staff: Jeffrey Schott,” *Peterson Institute for International Economics*. 19 April 2008.

<http://www.iie.com/staff/author_bio.cfm?author_id=62>.

⁹⁶ “Annex 1C of WTO Agreement: Agreement on Trade-Related Aspects of Intellectual Property Rights,” April 1994. *World Trade Organization (WTO)*. 9 October 2007.

<http://www.wto.org/english/docs_e/legal_e/legal_e.htm#TRIPs>. Path: pdf. p. 331

⁹⁷ Ibid.

⁹⁸ Ibid.

“Members may also exclude from patentability: ... (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.”⁹⁹

It allows for a WTO member country to exclude patents for plants, animals (but not micro-organisms) and biological processes that propagate those beings. The next sentence of the same sub-section then states, seemingly in opposition to the previous sentence, that plant varieties “shall” be protected by some combination of patents and/or “an effective *sui generis* system.”¹⁰⁰ Finally, the article states that subsection 27.3b would be further reviewed four years after the implementation of the WTO Agreement in 1995.¹⁰¹ To this day this section is unclear and highly disputed. Since the initiation of the article review in 1999, much discussion has been centered on the ambiguity of the language used in article 27.3b.

Article 27.3b has not been altered since the WTO took effect in 1995, despite its ambiguities. Many WTO members want the key terminology to be more narrowly defined. The discussions have focused on several main points: (1) the lack of consensus on how the TRIPS provisions should be applied to patent or not to patent plants and animals; (2) what, if any modifications should be made; (3) the meaning of “effective protection for new plant varieties” and how to maintain flexibility for the benefit of traditional farmers who have historically saved and traded seeds; (4) moral and ethical issues related to life forms as protected property; (5) how countries should deal with and commercially use traditional knowledge and genetic material originating from other

⁹⁹ Ibid. p. 331-332.

¹⁰⁰ According to dictionary.com, *sui generis* is something unique, “constituting a class of its own.” In biology it refers to a single plant variety that is so unique that it is of its own genus.

¹⁰¹ “Annex 1C of WTO Agreement,” p. 331

countries; (6) and how the TRIPS Agreement and the UN Convention on Biological Diversity (CBD) should support each other.¹⁰² Almost all WTO members that are involved in the discussion over Article 27 agree that the article should be changed somehow, but the argument to enforce patentability of biological materials (plants and animals), biological processes (reproduction), and genetic information (gene modification) has polarized the issue. There are basically two camps: those that support rewriting the law to oblige all WTO member countries to honor patents for these things and those that do not. Each side has good reasons for their adamant support.¹⁰³

TRIPS Article 27.3b and the Soy Stakeholders

Monsanto and its representative country in the WTO, the United States, favor the rewriting of 27.3b to strengthen patent laws and encompass biological materials. The characteristics of the GM products appear to be consistent with the characteristics that allow an object to be patentable according to the WTO TRIPS Agreement, specifically the first part of Article 27. It is biological, however, which explains why Monsanto has not been able to patent its RR soybeans in Argentina.¹⁰⁴ Argentina's stance on 27.3b has caused Monsanto to lose billions of dollars of potential revenue. Because Monsanto was a pioneer company in the field of transgenics, enjoyed ample protections by US laws, and enjoyed a developing global system that catered to similar corporations, Monsanto gained a healthy majority of market share in Argentina for RR soybeans. That doubtlessly made

¹⁰² "TRIPS: Reviews, Article 27.3(B) – Background on the Current Situation," *World Trade Organization (WTO)*. 27 November 2007. <http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm>.

¹⁰³ "TRIPS: Reviews, Article 27.3(B) – Background on the Current Situation," *World Trade Organization (WTO)*. 27 November 2007. <http://www.wto.org/english/tratop_e/trips_e/art27_3b_background_e.htm>.

¹⁰⁴ Bill Tomson and Taos Turner. "Argentine Ag Chief discusses Monsanto Concerns with US Gov," *Dow Jones Commodities Service*. 23 February 2006. <<http://www.gene.ch/genet/2006/Feb/msg00117.html>>; Oliver Balch. "Seeds of Dispute," *The Guardian*. 22 February 2006. <<http://www.gene.ch/genet/2006/Feb/msg00117.html>>.

Argentina an important customer of Monsanto, the complete loss of which would be unacceptable. It is logical that Monsanto will fight using any possible means to make that revenue. It is also logical for the United States to support one of its own powerful companies. Because of many of the same reasons as in Argentina, Monsanto is one of the biggest seed suppliers in the US. The US Government also loses out on potential tax revenue and increased trade opportunities if the company cannot receive royalties. The royalty charge, or “technology fee,” that Monsanto claimed that it deserved in 2005 was between \$15 and \$18.75 per ton of RR soy meal – not a small amount when one considers the volumes traded.¹⁰⁵

Argentina refuses to grant patents for “all classes of living material and substances preexisting in nature,” adding an amendment stating that “plants, animals and the essentially biological processes for their reproduction are not considered patentable.”¹⁰⁶ The former Argentine Agricultural Secretary, Miguel Campos, reasoned that this stance was not a violation of international or US Intellectual Property Rights (IPR) and that it was in the best interest of Argentine producers.¹⁰⁷ According to Campos, GM seeds should “only be paid for at the point of purchase,” and that Monsanto has no right to tell Argentine soy farmers that they may not reuse the seeds they produce from year to year.¹⁰⁸ Many other developing or less-developed countries share this stance.

¹⁰⁵ Oliver Balch. “Seeds of Dispute”

¹⁰⁶ “Article 6(g) and Regulatory Modifications of Article 6,” Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003). Instituto Nacional de la Propiedad Industrial. 23 November 2007 <http://www.inpi.gov.ar/templates/patentes_ley.asp>. Translations are mine. It may also be noted, though purely speculative, that Argentina’s rich history of Catholicism may have constructed a strong moral opposition in the people and leaders to the development of property rights for living entities.

¹⁰⁷ Bill Tomson and Taos Turner. “Argentine Ag Chief discusses Monsanto Concerns with US Gov”

¹⁰⁸ Taos Turner. “Royalty Saga Continues in South America over GM Soybeans: Brazil to Study Argentina’s Request on Monsanto Royalties.” *Dow Jones Newswires*. 4 April 2005. <<http://www.grain.org/research/contamination.cfm?id=314>>.

They wish to leave the law written unaltered because they fear that it may hurt domestic producers, break their traditions of seed sharing (or force them to engage in illegal activities), stifle technology transfers, stall rural development, and lower the revenue of the government. It may threaten the country's food security if it becomes dependent on one international corporation to deliver crop seeds every year. Foreign breeders producing crop seeds integral to the wellbeing of one country may not be totally reliable or may develop unreasonable demands in the future.¹⁰⁹

Domestic producers in Argentina oppose royalties because it would lower their overall revenue. This is true because the producers and sellers are "price-takers" for the soy they produce: they must accept the prices set in the world markets and can do little or nothing within their own production chains to change the offered price. There are only a few multinational corporations that buy and sell grains, including soy and its derivatives, in the world markets. That small group of buyers acts together creating an oligopsony. Lowering costs and more effectively utilizing technology to improve yields and increase efficiencies are the only ways to improve marginal profit.¹¹⁰ Price-takers are generally more vulnerable because any increase in prices of inputs for their products will directly lower their revenue. At this moment soy is a lucrative crop, but as more people enter the market to produce soy and compete, average profits will likely fall. More people want to enter the market, which increases demand for land, and therefore land sales and lease prices. More people producing soy will also increase the supply, which, if the increase is faster than that of demand for soy, will lower the offer price. Mandated royalties

¹⁰⁹ "Review of the Provisions of Article 27.3(B) – (IP/C/W/369/Rev.1)," *World Trade Organization (WTO)* 9 March 2006. p. 15.

¹¹⁰ Interview with Hernán Satorre, Economist (AACREA). 8 June 2007.

payments from Argentine producers would cut producers' profit, necessary for reinvestment and growth, even more.

The Argentine government has three main incentives to deny patent protection for GM soybeans while promoting their exportation. First, as has been demonstrated, though tensions are high right now, rural organizations for Argentine agribusiness represent a fairly strong lobby and constituent group. More than 50 percent of Argentina's foreign exchange revenue comes from the agricultural export sector.¹¹¹ The government is partially attempting to appease these constituents by denying patentability. Second, the government derives significantly more revenue by denying royalties. The economic logic is relatively simple. The charging of royalties would cut into revenue gained by producers. This effect would then be transferred to the government, as there would be less taxable revenue available from the soy sector. And third, by denying royalties, the government ensures that profits generated from the soy sector stay in the Argentine economy and are not sent abroad.

WTO Disputes DS171 and DS196

The Republic of Argentina, after its admittance to the WTO on 1 January 1995, took several measures to ensure compliance with the new standards of intellectual property protection.¹¹² In March of 1995, the nation enacted law No. 24,481 which effectively replaced the Patent Act No. 111 of September 1864. One of the many changes made with the update of Argentine IPR law was the switch from the previous patent protection period of fifteen years from the date the patent was granted to the

¹¹¹ Max Seitz. "Argentina: campo desafía a Cristina," *BBC Mundo*. 18 March 2008.

¹¹² "Member Information: Argentina and the WTO," *World Trade Organization (WTO)*. 5 October 2007 <http://www.wto.org/english/thewto_e/countries_e/argentina_e.htm>.

internationally recognized protection period of twenty years from the filing date. Several other corrective laws were issued over the next year to increase compliance with the WTO TRIPS Agreements. This culminated in the modification of law No. 24,481 on the 20 of March 1996. Principally law No. 24,572 and Decree 260/96 brought about this modification.¹¹³ Unfortunately, the official WTO text (“IP/N/1/ARG/1/2” p. 67) that lists the exact changes to the law is unavailable.¹¹⁴ But according to other WTO Members and international stakeholders of various Argentine industries (aside from just agriculture; one example is the pharmaceutical industry), full compliance with WTO standards was still lacking even after the modifications.

On 6 May 1999, the United States formally requested consultations under the WTO with the Republic of Argentina on the subject of “Patent Protection for Pharmaceuticals and Test Data Protection for Agricultural Chemicals,” opening Dispute Settlement #171 (DS171).¹¹⁵ Having a “substantial trade interest in these consultations,” Switzerland also joined in DS171 versus Argentina on 20 May 1999.¹¹⁶ Just over a year later, on 30 May 2000, Ambassador Rita D. Hayes with the Permanent Mission of the United States to the WTO (the “complainant”) sent another request for consultations to Argentina’s Ambassador to the WTO (the “respondent”), Juan Carlos Sánchez Arnau, on

¹¹³ “Argentina – AR,” Thomson Derwent. 6 November 2007 <scientific.thomson.com/support/patents/patinf/expiries/updates/march/ar.html>; “Argentina - Law No. 24.481 on Patents and Utility Models (as amended by Law No. 24.572),” *World Intellectual Property Organization (WIPO)*. 20 March 1996. 19 April 2008. <http://www.wipo.int/clea/docs_new/en/ar/ar002en.html>.

¹¹⁴ “Argentina - Law No. 24.572 amending the Law No. 24.481 on Patents and Utility Models,” *World Intellectual Property Organization (WIPO)*. 23 October 1995. 19 April 2008. <<http://www.wipo.int/clea/en/fiche.jsp?uid=ar041>>.

¹¹⁵ “Request for Consultations by the United States: Argentina – Patent Protection for Pharmaceuticals and Test Data Protection for Agricultural Chemicals (WT/DS171/1),” 10 May 1999. *World Trade Organization (WTO)*. 5 October 2007. <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds171_e.htm>.

¹¹⁶ “Request to Join Consultations by Switzerland: Argentina – Patent Protection for Pharmaceuticals and Test Data Protection for Agricultural Chemicals (WT/DS171/2),” 26 May 1999. *World Trade Organization (WTO)*. 5 October 2007 <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds171_e.htm>.

the subject of “Certain Measures on the Protection of Patents and Test Data.” This would be classified as Dispute Settlement #196 (DS196).¹¹⁷ On 16 June 2000, the European Community jumped on the consultation for DS196.¹¹⁸ These two disputes were reviewed in conjunction and ultimately settled through the WTO’s Dispute Settlement Body (DSB) on 31 May 2002.¹¹⁹ DS196 rearticulated sentiments of DS171 while bringing to light a more comprehensive view of Argentina’s alleged violations.

In general terms they attempted to address problems with protections for patents and test data for many industries, including but not limited to pharmaceuticals and agribusiness. Some Argentine companies were infringing the rights of foreign companies by using and/or selling those companies’ products without proper permission. Moreover, it was alleged that the Argentine legal structure was not in compliance with WTO mandates for dealing with these inconsistencies and misuses of intellectual property. In the disputes, the United States and the related third parties declared that Argentina was in violation of the TRIPS Agreement on many counts.¹²⁰ Since DS171 and DS196 cover so many aspects of intellectual property, including the protection of pharmaceuticals and microorganisms, some of the points raised are unimportant to the themes of agribusiness and GM agriculture. The parts of the TRIPS Agreement that are most relevant to the

¹¹⁷ “Request for Consultations by the United States: Argentina – Certain Measures on the Protection of Patents and Test Data (WT/DS196/1),” 6 June 2000. *World Trade Organization (WTO)*. 5 October 2007 <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds196_e.htm>; “US Government Request for WTO consultations with Government of Argentina.” 30 May 2000. *Consumer Project on Technology (CPT)*. 20 Feb 2008. <<http://www.cptech.org/ip/health/c/argentina/consultationmay302000.html>>.

¹¹⁸ “Request to Join Consultations by European Union: Argentina – Certain Measures on the Protection of Patents and Test Data (WT/DS196/2),” 20 June 2000. *World Trade Organization (WTO)*. 5 October 2007. <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds196_e.htm>.

¹¹⁹ “Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4),” 20 June 2002. *World Trade Organization (WTO)*. 5 October 2007. <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds171_e.htm>.

¹²⁰ The combined disputes DS171 and DS196 alleged that Argentine law regarding patents and data protection was inconsistent with Articles 27, 28, 31, 34, 39, 50, 62, 65, and 70 of the TRIPS Agreement.

subject at hand are Articles 27, 28, 31, 50 and 65.¹²¹ The following paragraphs will explain the mandates of these articles for which Argentina was found to be in violation during DS171/DS196.

The first four paragraphs of Article 65 detail the time periods allotted for a country to reach compliance with the TRIPS Agreement. Upon ratification of the WTO, all Member countries are allotted at least one year to reach full compliance with the TRIPS Agreement. Developing countries and “any other Member which is in the process of transformation from a centrally-planned into a market, free-enterprise economy and which is undertaking structural reform of its intellectual property system and facing special problems in the preparation and implementation of intellectual property laws and regulations,” are allotted an additional four years. Furthermore, countries having special problems extending “patent protection to areas of technology not so protectable in its territory” are given another five years to reach full compliance. The Article also defines full compliance in paragraph five as the implementation of regulations that “do not result in a lesser degree of consistency with the provisions of” the TRIPS Agreement.¹²²

According to this timeframe, Argentina should have had until at least 1 January 2000, if not 1 January 2005, to set up an overhauled regulatory system for IPR. How could the US issue a complaint including the alleged violation of TRIPS article 65 in May of 1999? Since the US viewed Argentina’s IPR reforms as less than consistent with the TRIPS Agreement and since Argentina had not considered making any changes in intellectual property regulation since 1996, it can be deduced that the US anticipated that no new changes would be made before the expiration of the second deadline. Though the

¹²¹ They will not be considered in sequential order, but in the order in which they affect each other most clearly.

¹²² “Annex 1C of WTO Agreement,” p. 347-348.

complaint seems premature in regards to this article, the US was well within its right to question the degree of reform made by Argentina. This initial non-compliance complaint opened the door for the discussion of other more specific issues.

Article 50 deals with the power of the judiciary in a member country to force compliance with the recognized intellectual property rights. As stated in the “Request for Consultations by the United States,” Argentina lacked the proper authority seeded in its judicial system to comply with the agreement. The burden of proof involving patent infringement cases was improperly shifted to civil proceedings.¹²³ This shift of authority was not consistent with Article 50.1(a), which states that the judicial powers within the country should have the authority to prevent or immediately stop any infringement.¹²⁴ This means that, provided Argentina’s hypothetical recognition of the patentability of GM soybeans, Argentine judges should have the authority and obligation to enforce the following articles in favor of Monsanto, Articles 28 and 31.

Article 28 of the TRIPS Agreement refers to the rights conferred by the owners of intellectual property. Paragraph one, part “a” of Article 28 mandates that third parties must be prevented from “making, using, offering for sale, selling, or importing” protected intellectual property without the owner’s consent.¹²⁵ The illegal third-party sale of protected goods included pharmaceuticals and agricultural chemicals, but it also included the illegal trade and sales of patented transgenic seeds between traditional Argentine farmers. Again, given the hypothetical acceptance of GM soy as patentable material, Argentine producers that do not buy seeds directly from Monsanto every growing season, thus paying proper royalty fees to the inventor company, would be made to immediately

¹²³ “Request for Consultations by the United States (WT/DS196/1),” p. 1

¹²⁴ “Annex 1C of WTO Agreement,” p. 341

¹²⁵ “Annex 1C of WTO Agreement,” p. 332

cease and desists.¹²⁶

The complainants of DS171/DS196 also found Argentina to be in violation of Article 31. This article sets provisions for the legal use of intellectual property without consent of the right holder. Section “b” of the first paragraph (31.1b) allows for use of protected property without authorization of the right holder as long as permission is solicited “within a reasonable time period,” and the product in question is necessary to mitigate a national emergency and used for the public good in a non-commercial manner. Not only did Argentina not solicit permission from right holders “within a reasonable time period,” but also the uses of GM soybeans in particular were commercial and for the benefit of the agricultural sector, not the public. Paragraph 31.1f may have also been violated, since the vast majority of GM soybeans produced by Argentina are sold abroad and not used exclusively for the “domestic market.” Finally, 31.1h mandates that the right holder be paid “adequate remuneration” for the violation of its rights.¹²⁷ These remunerations may refer to the royalties that Monsanto has been seeking from Argentine soy producers for the last few years, but as with Articles 50 and 28, a strong ruling in favor of the inventor is dependant on the country’s stance on Article 27 and the patentability of organisms.

After nine consultation meetings spanning from 1999 to 2002, an agreement was finally reached between the complainant, the United States, and the respondent, Argentina. Consensus was reached on nine points, three of which depended upon pending Argentine congressional and judicial approval. Argentine patent law 24,481 modified by law 24,572 in 1996 was further modified by law 25,859 and put into place on 8 January

¹²⁶ “Annex 1C of WTO Agreement,” p. 339

¹²⁷ “Annex 1C of WTO Agreement,” p. 333

2004. The new modifications would cover Argentine patent law Articles 8, 83, 87, and 88 specifically.¹²⁸ The first point was settled without having to wait for legislation. It modified Argentina's system for compulsory licenses, which allow for the violation of the inventor's exclusive rights by the state or another third party under certain conditions. These compulsory licenses were to be granted if a patent holder was found to be engaging in "anti-competitive" practices to be consistent with Article 31(k) of the TRIPS Agreement.¹²⁹ The section on compulsory licenses corresponds to Title II, Chapter 7 of Argentina's patent law.¹³⁰ The second point of agreement, complying with TRIPS Articles 70.8 and 70.9, which deal with the patent application process, also did not require legislation. It proclaimed that market access would be granted for five years until a patent is granted or rejected. This hinged on a few variables: (1) a patent application must have been filed after 1 January 1995, (2) the product must have a patent in other WTO member countries, and (3) the product must have market approval in that other member country.¹³¹ Since all of these are fulfilled in Monsanto's case, its GM products should be marketable at least until a patent is denied (which happened in 2001). This section refers mainly to Title II, Chapter 3 of Argentina's patent law.¹³² The third point gave patent owners the right to prevent third parties from "making, using, offering for sale, selling or importing a patented product" without the owner's consent, in compliance

¹²⁸ "Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003)". *Instituto Nacional de la Propiedad Industrial*. 23 November 2007.

<http://www.inpi.gov.ar/templates/patentes_ley.asp>. Translations are mine.

¹²⁹ "Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4)," p. 2

¹³⁰ "Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003)"

¹³¹ "Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4)," p. 2

¹³² "Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003)"

with the aforementioned Article 28.1a.¹³³ The section of Argentine patent law dealing with the violation of rights conferred is Title VI.¹³⁴ The fourth, fifth and sixth points all were agreed upon pending the completion of legislation in Argentina. The fourth satisfied TRIPS Article 28.1b accounting for process patents, or inventions that are in themselves a process. The fifth shifted the burden of proof to the defendant in process patent infringement cases. The sixth allowed for the expansion of judiciary authority to control third-party violators of property rights, consistent with TRIPS Article 50.¹³⁵ These sections also correspond to Title VI of the Argentine law, specifically Argentine Articles 88 and 89.¹³⁶ The seventh point dealing with “Patentability of Micro-organisms and other Subject Matter,” agreed upon without having to wait for further legislation, seems to lay the groundwork for the protection of genetically modified plants or animals, but at this point GM soybeans are still excluded.¹³⁷ The eighth and ninth dealt with administrative matters, insuring the passing of legislation and court decisions that would lock some of these reforms into place.

All of these complicated legal interactions and modifications have a couple of different significances. Using twentieth-century, nationalistic political thinking, having to change laws even to a tediously minute degree is viewed as a threat to national sovereignty. Incentives for a country to not comply are disappearing, since any country that refuses to comply can be met promptly with sanctions.¹³⁸ However, it is more

¹³³ “Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4),” p. 2

¹³⁴ “Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003)”

¹³⁵ “Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4),” p. 3, 4

¹³⁶ “Ley de Patentes de Invención y Modelos de Utilidad (Argentine Law 24,481 modified by law 24,572 of 1996 and 25,859 of 2003)”

¹³⁷ “Notification of Mutually Agreed Solution (WT/DS171/3 – WT/DS196/4),” p. 4, 5

¹³⁸ “Understanding the WTO: Settling Disputes,” *World Trade Organization (WTO)*. 20 April 2008.

<http://192.91.247.23/english/thewto_e/whatis_e/tif_e/disp1_e.htm>.

constructive and more optimistic to view the obligatory changing of these laws as a harmonization of international law to improve the efficiency of global trade. This harmonization is an integral part of the adaptation to globalization – what many who “[celebrate] its virtues,” like Thomas Friedman, consider to be inevitable.¹³⁹ Since globalization makes stakeholders all over the world interdependent on each other for any given product or industry, increased harmony between national laws becomes more and more important.

Also, amid the patch working of Argentine law to meet the WTO TRIPS standards, one vital piece to the Argentine soy-economy pie was missing: a modification of TRIPS Article 27.3b. Without a change of position on that one section of the patent law, the changes that Argentina put into place to strengthen the rights of inventors cannot be enjoyed by Monsanto. The disputes were the first international attempts to address these problems in Argentina. Because they were preliminary and general, lumping together many different industries and interests, not all issues were addressed and reconciled to a satisfactory degree. The outcome with regards to TRIPS Article 27.3b is the prime example. Though a settlement was reached, there was not yet closure. The powerful US biotech company, Monsanto, was dissatisfied with the outcome that still left its inventions exposed to misuse and government-sanctioned piracy.

Independent Disputes between Monsanto and the Domestic Stakeholders

The loss of revenue due to domestic seed trade and cooperation between Argentina’s soy producers seemed to not worry Monsanto between the introduction of RR soy in 1996 and 2000. As the company rode the soy production wave upward it

¹³⁹ Jagdish Bhagwati. *In Defense of Globalization*. New York: Oxford University Press, 2004. p. 3

enjoyed increasingly greater sales figures for its herbicide, Roundup, in Argentina. The worldwide termination of its patent on the glyphosate herbicide in 2000, however, led to legal third party production and the dramatic loss of profit for the company. This loss of profit signified the beginning of a campaign to gain GM soybean revenue through payments of royalties.¹⁴⁰

Because of legal disputability and third-party circulation of GM seeds, Monsanto has employed a dual strategy to recover profits and control over its intellectual property. The first stage of the strategy, negotiation with the Argentine government and producers, began almost immediately as Monsanto tried to impose patent protections on the use and circulation of its GM intellectual property. In 2001, the Argentine Supreme Court denied the patentability of Monsanto's RR soybeans once and for all.¹⁴¹ Because of differing opinions between Monsanto and Argentine stakeholders about IPR for living organisms, the negotiation strategy has been ineffective. A few ideas were proposed to mitigate damages to Monsanto, but they were delayed indefinitely in bureaucracy protecting domestic interests, such as those of the traditional farmers and producers' organizations. Even though the parties claim they are still in negotiations today, negotiations have effectively been suspended.

The inability to reach a compromise led to Monsanto's implementation of the second part of the strategy: the charging of royalty fees on importers of Argentine soy products in countries where the GM product is patented. According to Monsanto's official calculations, only about 18 percent of the 14 million hectares sown in Argentina

¹⁴⁰ Oliver Balch. "Seeds of Dispute."

¹⁴¹ Oliver Balch. "Seeds of Dispute."

with Monsanto seeds in the 2003-2004 season came from “certified,” legal sources.¹⁴² The Argentine government, specifically the new Secretary of Agriculture, Javier de Urquiza, appointed in 2007, does not deny this fact. He verifies that even in the current season (2007-2008), only about 20 percent of the seeds are certified.¹⁴³ In an attempt to recover some of its lost revenue, Monsanto filed suit¹⁴⁴ at the end of 2004 in several European countries that are importers of the Argentine “pirated” food products and also where Monsanto has TRIPS complying patents, namely Spain, Denmark, the Netherlands and the U.K.¹⁴⁵

In 2005 due to the vast unauthorized utilization of RR soy, Monsanto wrote letters to all importers and exporters of Argentine soy, including those implicated in the lawsuits, explaining its intentions to charge a “technology fee” of between \$15 and \$18.75 per ton of RR soy meal, which at the time traded for about \$178 per ton.¹⁴⁶ The results of most of the European court cases are still pending, however in early September 2007, a Spanish judge ruled against Monsanto’s attempt to collect royalties via the Spanish importers of Argentine RR soybeans.¹⁴⁷ An opinion letter from the Internal Market and Services Directorate-General of the European Commission (EC) sent to the Argentine Minister of Economics on 10 August 2006 indicated that the EU would side

¹⁴² “Monsanto’s Royalty Grab in Argentina.” *Grain* October 2004. 8 November 2007. <<http://www.grain.org/articles/?id=4>>

¹⁴³ Mercedes Colobres. “Una nueva ley de semillas, en marcha,” 8 September 2007 *La Nacion*. 12 September 2007 <<http://www.lanacion.com.ar/941766>>.

¹⁴⁴ By stopping cargo ships hailing from Argentina with soy-based products or soy derivatives aboard, Monsanto demanded that the customs agencies of those respective nations withhold all of those products in accordance with Monsanto’s rights under TRIPS Article 50.1b which states that evidence should be preserved when there is an alleged infringement. Needless to say, this withholding of evidence cost the importers of Argentine soy millions of dollars. This in turn could put pressure on Argentina to further modify its laws as they relate to TRIPS.

¹⁴⁵ “Monsanto invierte en Brasil” *La Nación*. 8 September 2007.; Bill Tomson and Taos Turner. “Argentine Ag Chief discusses Monsanto concerns with US Gov.”

¹⁴⁶ Oliver Balch. “Seeds of Dispute.”

¹⁴⁷ “Monsanto invierte en Brasil.”

with Argentina. “[T]he opinion isn't binding on national courts and the Commission isn't involved in the legal cases between Argentina and Monsanto,” but it stated that the EC’s “legal experts found that E.U. law governing the protection of biotech inventions doesn't extend to derivatives of patented products.”¹⁴⁸ This refers to the Argentine soy meal imported by Europe, Argentina’s largest customer for that derivative.

A statement from a Monsanto representative in August of 2006 indicated that Monsanto was neither aware of such an opinion letter from the EU, nor did they intend to give up on their lawsuits in Europe.¹⁴⁹ As long as Monsanto posts losses like the one in 2002 (\$1.7 billion), it will continue to fight to gain royalty revenues from somewhere, be it from Argentine producers or the importers and consumers of those products. Also, as long as the company is suffering to such a great degree, the US will support it in WTO proceedings because Monsanto is important for supplying farmers in the US, it brings in increased tax revenue, and can increase the US output and better the trade balance. Unless the pending court cases yield rulings favoring Monsanto and IPR protection for GM crops, it is very likely that TRIPS Article 27.3b will be the central subject of another official WTO dispute.¹⁵⁰

¹⁴⁸ “European Commission supports Argentina in Monsanto battle.” 11 August 2006. Monsanto Watch. 5 March 2008.

<http://www.monsantowatch.org/moduleinterface.php?module=News&id=cntnt01&cntnt01action=detail&cntnt01articleid=76&cntnt01returnid=19>.

¹⁴⁹ Ibid.

¹⁵⁰ Jeffrey Schott. p. 118.

Conclusion

Globalization has clearly had a transformative effect on Argentina's soy economy and the respective stakeholders. Increasing international trade was one factor of globalization that drove demand higher for Argentine soy products. The international transfer of technologies, another factor of a globalizing economy, put Argentina in a position to take full advantage of its land and labor resources and export soy at a large scale. However, Argentina also has to deal with international demands that came with this boom. Monsanto is pushing for Argentine producers to pay for the use of technologies and has instigated the US government to challenge Argentina's policy in several international disputes. That Argentina is being drawn into these disputes suggests a potential loss in national sovereignty under the new, emerging global political economy, in which transnational institutions such as the WTO will likely play an ever-greater role.

The stakeholders may hope that certain stances are taken by others or take stances themselves relative to their positions on IPR for GM soy. For example, Argentine producers probably hold more of a private interest position, being concerned for their own survival due to pressure from both the government and Monsanto. Larger Argentine producers probably share that position, but also recognize their role in international supply chains/world food stocks and their possible need for foreign investment, which could be jeopardized by taking a stance considered hostile by a multi-national corporation (MNC) that has helped it grow. Surely these producers also want the Argentine government to play a nationalistic role in which it would favor protection of Argentine companies. The opposite of this would be the government favoring MNCs, possibly to

attract more investments. There are many possibilities for each stakeholder, and it will be interesting to see how they continue to evolve with an increasingly faster globalizing agribusiness political economy.

The disputes over the soy patents, however, suggest that Argentina is not yet yielding easily to demands by international stakeholders. Argentina has denied patents of GM soybeans in order to benefit the soy-producing constituency, boost its own tax revenue to satisfy other constituents, and better its trade balance and national economy by keeping money in the country that would go abroad to pay royalties. Though it is within its rights as established by the WTO to deny GM soy patentability, in doing so it is helping to stall the development of a global system in which all stakeholders of a given industry can properly and justly benefit and sustain themselves. Since all stakeholders in this case and others are merely acting rationally to maximize their individual profits, better global institutions are needed to insure fair profit-sharing between stakeholders. Unfortunately for nations like Argentina, this enhanced global governance would mean a loss of sovereignty.

In this case of Argentina giving up its sovereignty to fully decide what objects or materials are or are not patentable, it and many other developing countries have actually come out on top. This is a rarity in a system that has been constructed favoring mainly developed countries and their native corporate interests.¹⁵¹ Argentina and many other developed countries were favored by the WTO's decision to defer the option of patentability for these materials to the individual countries. This has been extremely beneficial to the Argentine stakeholders, but has also meant that Monsanto receives

¹⁵¹ Joseph E. Stiglitz. *Globalization and Its Discontents*. New York: W. W. Norton and Company, 2002. p. 8, 244, 245.

almost no return on its multi-billion dollar investments. Like Argentina, the United States may also fear for its sovereignty with the developments of globalization. The decision against patents for GM soy has come as a blow to US sovereignty more so than to Argentine sovereignty in that a powerful US company is now suffering financially, with little hope of reversing an international decision that negatively affects its revenue.

At this point, the IPR disputes indicate that much of the division of interests as well as representation in the dispute of the issue is still divided along national lines. The division over rights protections for GM foods can generally be described as developed versus developing nations.¹⁵² Developed countries that have economies able to produce groundbreaking innovations like GM soy, which could have a powerful impact in reducing world hunger, want to see stronger intellectual property protections in the emerging global political economy to ensure that those corporations responsible for the inventions continue to succeed and innovate. The less developed countries that are opposed to these protections fear that they will continue to be taken advantage of by MNCs that would be protected by such international legal structures.

At this moment it seems as if the Argentine soybean producers and the organizations that represent them nationally are the stakeholders most positively affected by globalization and the international IPR decisions. Financially, they have been favored: soy prices are high right now and they do not have to pay royalties to Monsanto for the GM soybeans they plant and sell. However, there have also been negative consequences for the Argentine soy farmers. Because of the position held concerning GM intellectual property, Monsanto has cut off access to new innovations pending resolution of the

¹⁵² “Review of the Provisions of Article 27.3(B) – (IP/C/W/369/Rev.1),” *World Trade Organization (WTO)*. 9 March 2006.

royalties dispute. One of these is a GM soybean that is resistant to drought and can be cultivated in much drier regions.¹⁵³ While this technology is unnecessary in the *Pampa*, it could be extremely beneficial to producers and communities in the Northwest of Argentina – a region in which soy has also recently become important, but that suffers from much lower yields because of the drier climate. Although not related directly to their IPR position, high export taxes also continue to threaten the survival of many, especially small to medium sized, Argentine soy farmers.

Monsanto is obviously the loser in the case of intellectual property for its GM soybeans. The decisions by the WTO, Argentina, and some European courts have cost the company billions of dollars in revenue needed to finance further innovations. This is one of the few exceptions of a company from a developed country being negatively affected by decisions of global regulatory bodies that have been largely established with the interest of developed countries in mind.¹⁵⁴ Globalization, however, has also had some positive effects on Monsanto. It has allowed Monsanto access to many other markets all over the world in which it can sell its various genetic and chemical products. Monsanto may have turned out slightly better than some Argentine producers in terms of how it has been affected by the global political economy because the ability of Monsanto's employees to sustain themselves and their families is probably not at risk as much as some Argentine farmers'.

The governments of Argentina and the United States have also been affected in different ways, both positive and negative. While the Argentine government gained the ability to increase tax revenue and keep more money within the national economy

¹⁵³ Interview with Fernando Landgraf. Sociedad Rural Argentina (SRA). 15 June 2007.

¹⁵⁴ Joseph E. Stiglitz. p. 8; Jagdish Bhagwati. *In Defense of Globalization*. New York: Oxford University Press, 2004. p. 82, 83, 182.

because of the WTO's IPR stance in this case, the United States surely lost some tax revenue that it would have received from Monsanto and experienced a worsened trade balance. Both will be hurt if this IPR stance decreases Monsanto's incentives and ability to innovate. Finally, both countries experience decreased sovereignty as the global political economy continues to congeal, mature, and regulate itself more efficiently. This is a process that should not be feared or resisted, but accepted and planned for accordingly. It seems as if the United States has more to lose in this process than does Argentina – in many cases, including this one, its stance is shared by few other nations.¹⁵⁵

The WTO is a necessary step towards global governance. Just as enforceable laws were established to regulate powerful entities in any given nation, so must they be established in the global arena to protect the interests of customers and multinational corporations. The WTO is more democratic than some of the other international organizations that have helped to manage (or some would say mismanage) globalization because, “[i]t does not set the rules itself; rather, it provides a forum in which trade negotiations go on and it ensures that its agreements are lived up to.”¹⁵⁶ But more research must be done on ways in which countries can deal with globalization and increased international trade without causing widespread unemployment or large income disparities between rich and poor. More transparency is needed to keep powerful interest groups – be they a large corporation, a consumer group, or a group of agricultural producers – from controlling the outcomes of important policy decisions. More intimacy is needed to ensure true democracy in policy decisions and to make citizens of countries all over the world feel that they have a positive stake in the process and means of

¹⁵⁵ “Review of the Provisions of Article 27.3(B) – (IP/C/W/369/Rev.1)”

¹⁵⁶ Joseph Stiglitz. p. 16.

globalization. One suggestion would be to publicize more of the debates – broadcast on YouTube or have blog interactions between citizens and their WTO representatives. Using the tools that globalization has given us, like the Internet, will bring a better understanding of the cultures and needs of opposing stakeholders in any possible situation.

Epilogue

This global agribusiness economy could play out in a couple of different ways. In one scenario volatile soy prices could further increase. This would be due to several factors: China is unable to increase its soybean yields and must import more from abroad, Brazil starts to slow its production (dealing with cries to save rainforest),¹⁵⁷ soybeans take on an important role in the production of biofuels, and healthiness of GM foods does not come further into question, which might lead to a moratorium on those foods much like the one implemented by some European countries in the first few years of the twenty-first century.¹⁵⁸ Increased worldwide demand for soy will increase the revenue of Argentine soy farmers and the government. If this is the case, Argentina will probably further stall in the recognition of the patentability of GM crops in order to preserve more revenue for itself. Thus far it has few incentives to settle with Monsanto and pay some, even discounted, royalties. The decision seems likely to not be fully reversed in the WTO mandating that all countries must allow patents for living, GM material since many more

¹⁵⁷ Lisa Raffensperger. "Soy Moratorium Working to Protect Amazon." *World Resources Institute – Earth Trends*. 7 April 2008. 19 April 2008. <<http://earthtrends.wri.org/updates/node/297>>.

¹⁵⁸ "Reports of the Panel: European Communities – Measures Affecting the Approval and Marketing of Biotech Products (WTO DS293)," 29 September 2006. *World Trade Organization (WTO)*. 15 October 2007. <http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds293_e.htm>.

countries share the position of Argentina rather than that of the United States.¹⁵⁹ As has been indicated, patent recognition would also reduce tax revenue and send money out of the Argentine economy.

Another possibility, and probably the more likely, is that soy prices decrease. Though it is true that high soy prices, increased world demand and international trade, and technology transfers have made the operations of Argentine soy farmers more profitable, commodity export-led growth can be risky as prices are subject to large and sudden shifts because of changing world demand or supply. This price volatility was demonstrated from about 1998 to about 2002 (see Graph 3); but these producers may be in a similar situation as they were toward the end of the “Golden Age” if demand for GM soy decreases or supply continues to increase (the latter seems more likely). A price decrease could be caused by many factors, many more so in the global agroecology than in previous times. As the sales price for soy rises, more producers will enter the market. Eventually, supply becomes excessive and pushes the sales price down. It is likely that Brazil will continue to expand its area dedicated to soy and thus continue to produce more, possibly surpassing the US production. If China were to increase yields by using more advanced technologies, the outcome would probably be strong enough to have a negative impact on prices. Monsanto may lower its royalty demands in hopes that more producers will buy from legitimate seed dealers. Monsanto may not even require that these back-royalties be paid if globalization allows it to produce more revenue from more countries all over the world. With less revenue for Argentine stakeholders, there is however still incentive for the government to shelter them from royalty payments.

¹⁵⁹ “Review of the Provisions of Article 27.3(B) – (IP/C/W/369/Rev.1)”

Because of the number of countries that oppose granting patents to GM crops, it is unlikely that the WTO will ever mandate that these products be patented. Together those less developed countries have solidarity, but enough support the US's position to effectively polarize the debate. The only foreseeable way that countries like Argentina would approve patents for these materials is that either not doing so would have severe consequences to FDI, or the global agro-economy starts to lag due to fewer innovations by companies like Monsanto. The current stance on IPR for the kinds of products Monsanto produces could potentially have negative impacts on all stakeholders. Because of the lack of protection for and profit generated from GM soy seeds, Monsanto may have less incentive to innovate. This could be dangerous for Argentina, the US, and agribusiness all over the world since it is a commonly believed concept that innovation is central to growth.¹⁶⁰ The strategy to deny patents does seem to be a good one for short-run profit maximization. Enough revenue seems to be coming in to supplement any FDI that may be lost with domestic investment, provided the Argentine government does not choke the sector with export taxes. It all comes down to the understanding and intimacy among the interested stakeholders. Since globalization means that we are all more closely connected than ever, all parties must consider the effects on the others. Monsanto needs to get some sort of royalty so it can continue to innovate and drive growth all over the world, but the Argentine government needs to lower export taxes so that the producers are able to reinvest and better themselves as well as pay Monsanto what it deserves and not necessarily what it demands.

¹⁶⁰ W. Michael Cox. "Schumpeter in His Own Words," *Economic Insights: Federal Reserve Bank of Dallas*. Vol 6, Number 3. p. 3; Jagdish Bhagwati. p. 184.

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Annex 1

WTO TRIPS Agreement Part II, Section 5

Article 27: Patentable Subject Matter

1. Subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.¹⁶¹ Subject to paragraph 4 of Article 65¹⁶², paragraph 8 of Article 70¹⁶³ and paragraph 3 of this Article, patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.
2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.
3. Members may also exclude from patentability:
 - a. Diagnostic, therapeutic and surgical methods for the treatment of humans or animals;
 - b. Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

¹⁶¹ For the purposes of this Article, the terms “inventive step” and “capable of industrial application” may be deemed by a Member to be synonymous with the terms “non-obvious” and “useful” respectively.

¹⁶² TRIPS Article 65.4 – “To the extent that a developing country Member is obliged by this Agreement to extend product patent protection to areas of technology not so protectable in its territory on the general date of application of this Agreement for that Member, as defined in paragraph 2, it may delay the application of the provision on product patents of Section 5 of Part II to such areas of technology for an additional period of five years.”

¹⁶³ TRIPS Article 70.8 – “Where a Member does not make available as of the date of the entry into force of the WTO Agreement patent protection for pharmaceutical and agricultural chemical products commensurate with its obligations under Article 27, that Member shall: (a) notwithstanding the provisions of Part VI, provide as from the date of entry into force of the WTO Agreement a means by which applications for patents for such inventions can be filed; (b) apply to these applications, as of the date of application of this Agreement, the criteria for patentability as laid down in this Agreement as if those criteria were being applied on the date of filing in that Member or, where priority is available and claimed, the priority date of the application; and (c) provide patent protection in accordance with this Agreement as from the grant of the patent and for the remainder of the patent term, counted from the filing date in accordance with Article 33 of this Agreement, for those of these applications that meet the criteria for protection referred to in subparagraph (b).”

Annex 2

Seeded Area, Total Production, and Yield of Soy by Principal Countries (Area in millions of hectares, production in millions of tons, yield in tons per hectare)											
	Argentina (#3)			Brazil (#2)			China (#4)			United States	
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production
1995/96	5.98	12.43	2.08	10.95	24.15	2.21	8.13	13.5	1.66	24.91	59.4
1996/97	6.2	11.2	1.81	11.8	27.3	2.31	7.47	13.22	1.77	25.64	64.1
1997/98	6.95	19.5	2.8	13	32.5	2.5	8.35	14.73	1.76	27.97	73.3
1998/99	8.16	20	2.45	12.9	31.3	2.43	8.5	15.15	1.78	28.51	74.4
1999/00	8.58	21.2	2.47	13.6	34.7	2.55	8	14.29	1.79	29.32	72.2
2000/01	10.4	27.8	2.67	13.93	39.5	2.83	9.3	15.4	1.66	29.3	75.1
2001/02	11.4	30	2.63	16.35	43.5	2.66	9.48	15.41	1.63	29.53	78.1
2002/03	12.6	35.5	2.82	18.45	52	2.82	8.72	16.51	1.89	29.34	75.1
2003/04	14	34	2.43	21.45	52.6	2.45	9.3	15.4	1.66	29.33	66.1
2004/05	14.2	39	2.75	23	53	2.35	9.8	17.5	1.79	29.94	84.1
Percent Change	137.46%	213.76%	32.21%	110.05%	119.46%	6.33%	20.54%	29.63%	7.83%	20.19%	42.1%

Source: Carlos Pouiller et al. *Comercialización de granos*. Coordinated by Teodoro Zorraquin. 1st ed. Buenos Aires, Argentina: Argentine Association of Regional Agricultural Experimentation Consortiums (AACREA), 2005. p. 67