

**COVALENCE ANALYST PAPERS**

**The Soybean boom: Doom for Brazil’s forests and savannahs**

[Natalie Ickes](#), Bayerische Julius-Maximilians-Universität Würzburg (Germany), intern analyst, Covalence SA, Geneva, 20.10.2006

**Introduction**

Characterized by a large and well-developed agricultural, mining, manufacturing and service sector, Brazil's economy outweighs that of all other South American countries and is expanding its presence in world markets. Productivity gains - particularly in agriculture - contributed to the surge in exports, and Brazil in 2005 surpassed the previous year's record export level. Within the agricultural sector it is especially the soybean industry being the driving force for high export earnings.

Except for the already mentioned positive effect of the soybean industry concerning the economic growth of Brazil, this publication tries to have a more critical look on the soybean industry containing environmental and social impacts. A web of actors and policies, outlined in this paper as well, can always be identified as responsible for initiating processes leading to natural degradation and social disorientation. Finally the short report mentions recent achievements in the battle of preserving the Amazon followed by a short conclusion of the soybean industry.

**1. General facts**

Soybeans are an important global crop. It is grown for its oil and protein and it is mainly used for animal feed like cattle, poultry or pig feed. Only a very small proportion of the crop is consumed directly for food by humans. Soybean products however appear in a large variety of processed foods, such as tofu, yoghurt or soymilk and increasingly in cosmetic products.

The top soybeans producers are the U.S. with the world’s greatest soybean area and world wide greatest production of soybeans (see table) followed by Brazil, Argentina, China, India etc. Brazil is on the verge of supplanting the United States as the world’s leading exporter of soybeans within the next few years.

Top in 2005	Soybean	Producers
(million metric tons)		
<a href="#">United States</a>		83.9
<a href="#">Brazil</a>		52.7
<a href="#">Argentina</a>		38.3
<a href="#">China</a>		17.4
<a href="#">India</a>		6.6
<a href="#">Paraguay</a>		3.5
<a href="#">Canada</a>		3.0

<a href="#">Bolivia</a>	1.7
<a href="#">Italy</a>	0.5
<b>World Total</b>	<b>214.3</b>
<i>Source:</i>	
<a href="#">UN Food &amp; Agriculture Organisation (FAO)[2]</a>	

But Brazil is already the world's leading low-cost producer of high-quality soybeans, not growing genetically modified beans which is officially not permitted in Brazil compared to the United States, using Monsanto's, the world's largest producer of GM seeds, agricultural genetically modified soy.

As the world demand has nearly doubled over the past 13 years from 100 million tonnes in 1990 to 200 million tonnes in 2003, the Brazilian soybean output has more than tripled from 15 million tonnes to 52 million tonnes. Two reasons can be outlined for this development:

The European Union as a whole is by far the most important importer of Brazilian soy with almost 33 million tonnes (2003) buying only not genetically modified beans. The European Union and Japan ban the sale of genetically modified (GM) food, so the European farmers needed an alternative soy source. Brazil's exports have been growing to meet this new European demand for non-genetically altered soy.

Besides in the wake of the Mad Cow epidemic in Europe, which was caused mainly by the use of animal bones in livestock feed, European farmers searched for a non-animal based protein-rich feed for livestock. Soy meal was the perfect alternative.

High soybean prices have also served as an impetus to expanding soybean cultivation. From 1992 to 2003 soy food sales have experienced a 15% compound annual growth rate increasing from \$300 million to \$3.9 billion over 10 years. Netherlands are after China the world's second largest importer of soy, and has expanded its processing capacity from 6.3 million tonnes in 1995 to 8.1 million tonnes in 2003. Two-thirds of this originates from South America.

## 2. Companies involved

World soy trade is dominated by several large trading houses like Archer Daniel Midlands (ADM), Bunge, Cargill (U.S.), Dreyfuss (France) and the Maggi Group (Brazil), the largest private soy producer in the world and by chance owned by the current governor of the Brazilian state of Mato Grosso, Blairo Maggi.

The first three U.S. based corporations control 60 percent of soy production in Brazil and more than three-quarters of Europe's soy crushing industry.

Cargill is the largest soy producer and exporter in the Amazon, operating 13 silos in the heart of the Amazon rainforest and supplying big fast food chains such as Kentucky Fried Chicken (KFC) and McDonald's with meat that goes into chicken nuggets and sandwiches in Europe.

All companies are being accused of illegal actions such as illegal cultivation of soybeans, land grabbing and slavery.

## 3. Banking on "Green gold"

Despite the fragile ecosystem in which they operate, and the controversy around their practices the agribusiness giants have had little trouble getting bankrolled by public institutions like the International Finance Corporation (IFC), the private lending arm of the World Bank, Brazil's development bank and a banking syndicate arranged by Deutsche Investitions- und Entwicklungsgesellschaft (German Investment and Development Corporation). More significant than the direct consequences of public institutions loan, is the prestige that the international lending bodies have given to these companies, which in turn has attracted much larger loans from mostly European and Japanese private banks such as Rabobank, the Netherlands' biggest agricultural bank, ING Bank (Netherlands),

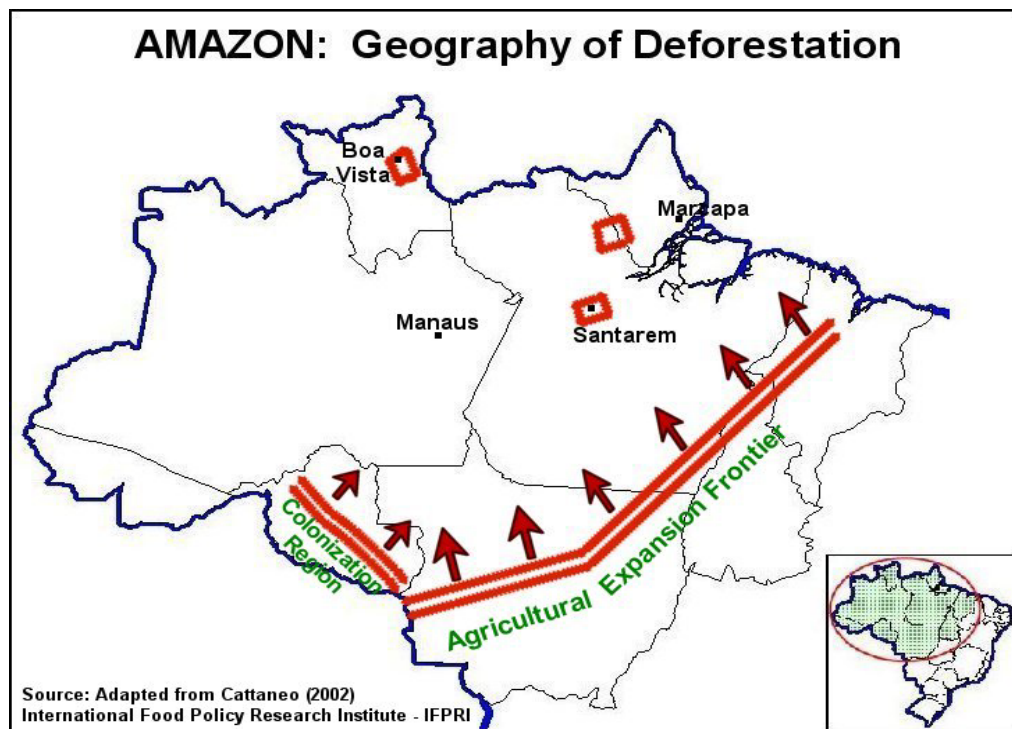
Fortis Bank (Netherlands), HSBC (UK), Credit Suisse (Switzerland), UFJ Bank (Japan), WestLB (Germany), HSB Nord Bank (Sweden), Banco Bradesco and Banco Itaú (Brazil), now investing in soybean cultivation with a clean conscience.

#### 4. Environmental impact

Most soybeans are grown on the cerrados (savannahs) in the southern part of Brazil (see map below), which are already converted into soy plantations resulting in the near disappearance of the Atlantic forest in South Brazil in the 1970s and 80s.



But now, as world demand increases the cultivation of soybeans is spreading to the forested North (cp. map2).



The augmentation in soy production to satisfy increasing world demand is only possible with creating new cultivated land. Land clearing is usually carried out by total removal of the original vegetation. The use of fire for land clearing is common practice in both forest areas and savannahs. Land clearing for soy plantations destroys almost all the biodiversity in the area.

Forest soils in the Amazon are typically low in fertility and the resulting cropland is only viable for farming for a period of two or three years without intensive fertilisation and management. After several growing seasons the land's fertility ebbs away and crop yields falter, leading the farmer to abandon it or a wide-scale use of artificial fertiliser and pesticides are needed to harvest crop polluting the ground and surface water systems.

Soy, at this moment, is the most important driver for deforestation, directly and indirectly. Directly because the savannahs and rainforests are being converted from natural vegetation into soy fields and indirectly, because in this region a lot of cattle farms are being replaced by soy farmers buying or renting land from cattle farmers. Consequently cattle farmers tend to advance into new forest area, causing more deforestation.

Insofar as soybean infrastructure is concerned, the state government has plans to expand and pave roads to connect the soybean producing plateau areas with coastal traders. The improved roads are also meant to encourage multinational agricultural investment in the region. Environmentalists and native Indian tribal leaders warn the pavement will eliminate even more rainforest and pollute the region with crime, drugs and prostitution. Besides the state is planning an additional rail line for the soy areas to build a link between soybean fields and the manufacturing industry on the cost as well.

The landscape, however, is rapidly being altered as vast fields of soybeans and cattle ranches replace grasslands and forests, destroying one of the most bio diverse in the world. Recovery of the flora and fauna of these areas will be very slow and areas with torrential rainfall or long dry seasons are highly vulnerable to degradation or desertification.

## **5. Socio-economic impact**

The development of new soy plantations implies land expropriation. The establishment of a soy industrial complex run by an external labour force, combined with mechanisation of production often leads to social disorientation and an increase in slum areas in cities due to involuntary migration.

Large scale mechanised soy production is very labour extensive. Labour requirement is only one job per 100-500 hectares. Soy production therefore has a negative impact on agricultural employment.

The added value of the soy production chain benefits external stakeholders (landowners, banks, trade houses, and transport companies) most; little value is added inside the production areas.

The clearing of natural vegetation for soy is one of the few activities in the soy production chain that requires manual labour. Labour conditions are extremely poor, often paying less than minimum wages. Further ranchers and farmers in the region have been implicated in debt-bondage, where they trap poorly paid workers in conditions analogous to slavery.

According to peasants and environmentalist groups, the government and local person in charge, are ignoring the war that is going on in the countryside of South America by reason of the soybean business. Farmers and indigenous communities are suffering violence and repression because of the economical power of the soy industry.

Soy rules Mato Grosso and it's not the soy that much of the world associates with the ostensibly eco-friendly, vegetarian diet, either.

## **5. Recent developments**

The environmentalist movement and especially international watchdog Greenpeace are celebrating a new victory in Brazil: the big companies that process and export soy have decided not to buy soybeans from newly deforested areas in the Amazon jungle. The

Brazilian Association of Vegetable Oil Producers (ABIOVE) and the National Grains Exporters' Association (ANEC) which includes multinationals such as Cargill, ADM and Dreyfuss announced in a joint communiqué that their members will stop using soybeans from land that has been cleared to grow soy in the Amazon jungle.

In the face of growing pressure of NGOs, Greenpeace and European consumers, starting to demand proof of origin, these companies agreed several weeks ago to negotiate new practices consistent with preservation of the jungle. The moratorium, which will last for two years, will apply to soybeans planted as of October 2006 in newly deforested areas of the Amazon rainforest. During the moratorium Brazilian soy industry leaders and large commodity multinationals (ADM, Cargill, Bunge) will work with the government and non-governmental organizations to come up with strategies to develop the Amazon while preserving the Amazon.

## 6. Conclusion

Over the long run, demand for soy is only expected to grow. With an area as large as France deforested from the Brazilian Amazon over the last thirty years, the need for responsible sourcing of soy has never been greater. But as long as consumers continue to demand meat from soy-fed livestock in combination of attractive soybean export prices, ample supply of public and private agricultural financing and the ready availability of vast tracts of relatively inexpensive arable land, multinationals will stay in business. Meanwhile, the vital ecosystems of the Amazon rainforests and cerrados remain in danger. It needed great efforts of public scrutiny, led by campaign groups at the head Greenpeace at least to lead multinationals into the right direction taking first attempts of environmental and social responsibility. Positive effects for the future remain to be seen.

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Covalence SA, Av. Industrielle 1, 1227 Carouge, Geneva, Switzerland  
tel: +41 (0)22 800 08 55 ; Fax: +41 (0)22 800 08 56  
US Representative Office, 143 Dudley Street, Cambridge MA, 02140, USA, tel +(1) 617 429 4758  
Scandinavian Rep. Office, Lokföraregatan 7C, 222 37, Lund, Sweden, Tel: 0046 (0) 46 14 97 15  
<http://www.covalence.ch> / email [info@covalence.ch](mailto:info@covalence.ch)