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**An evaluation of International Finance Corporation financing of Grupo André Maggi  
(Project Nº 11344) in the soybean sector:  
Environmental and social impact considerations**

Claudia M. Stickler<sup>1\*</sup>, Wendy-Lin Bartels<sup>1</sup>, Maria DiGiano<sup>1</sup>, Roberta M. Veluci<sup>2</sup>, Kelly J. Keefe<sup>2</sup>, and William Hart<sup>2</sup>

<sup>1</sup> School of Natural Resources and Environment, University of Florida, Gainesville, Florida, 32611, USA

<sup>2</sup> School of Forest Resources and Conservation, University of Florida, Gainesville, Florida, 32611, USA

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\* Corresponding author: Voice: +1-352-846-2860; Fax: +1-352-392-8855; E-mail address: [stickler@zoo.ufl.edu](mailto:stickler@zoo.ufl.edu)

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## Summary

Following 30 years of rapid expansion, Brazil's soybean production outpaced that of its competitors for the first time in early 2004. Expansion of soy farming has occurred in tandem with Brazilian government programs that have encouraged private investments and development of large agricultural businesses in the Center West region of the country. Export of soy serves as an important source of foreign exchange for Brazil, which has heightened government interest in the industry as well as exacerbating conflicts among the agribusiness, environmental and social sectors in this region.

International lenders play an important role in the expansion of large-scale soy cultivation, providing capital for infrastructure development, agrochemical inputs, and producer pre-financing. In this paper, we examine the case of IFC funding for Brazil's largest independently-held soy producer and exporter, the Grupo Andre Maggi, to provide working capital for pre-financing farmers and for inventorying soybeans and soy by-products. In particular, we evaluate the project's current classification with respect to environmental and social impacts. First, we review the major relevant IFC requirements and the initial assessment of the Amaggi project by the IFC. In the second section, we examine environmental, health and safety, and social issues associated with Amaggi and with soybean cultivation in area, reviewing the concerns raised in the project report, as well as those not addressed. We highlight a number of areas where the IFC's classification of the Amaggi project seems inappropriate.

The soybean industry can have serious negative impacts on both people and the environment. Although the IFC targets a very specific component of Amaggi's operations for financing, the greater context of soy production's influence must be accounted for in the decision-making process. Grupo Maggi is playing an instrumental role in opening the Amazon to soybean expansion through the construction of waterways, attracting other, even larger producers and traders to the area. Thus, due to the potentially serious and even irreversible impacts of Grupo Maggi's activities on both environment and society within the larger context of soybean cultivation in Mato Grosso, we recommend that this project and any subsequent loan applications be reevaluated for Category A classification. We argue that a more extensive and publicly accountable review of the project's impacts is necessary if Amaggi and the IFC are to play a leadership role in promoting more ecologically sustainable and socially equitable soy production in Brazil.

Reclassification of the project would provide the IFC the unique opportunity to structure project monitoring such that Grupo Maggi incorporates a greater degree of social and environmental responsibility into its own operations, as well as providing such oversight for its producers. This is particularly critical given the importance of soybean cultivation in the region and the number of large corporate actors participating in the sector. Given the growing demand for soy, the IFC has an opportunity to take a leadership role in fostering more responsible soy cultivation in Brazil. An important step in this process would be to demand better oversight from the Grupo Maggi, and to extend monitoring to the smaller producers from whom the company buys its raw grain product.

Moreover, the IFC should recognize and include extant social movements and coalitions as potential partners for collaborating with civil society in the decision-making process concerning development in the region. Building upon these collaborative relationships, the IFC and Amaggi could be instrumental in encouraging more socially equitable investments—increasing the percent of profits that are returned to communities through education, healthcare and other social services. In fostering new models of sustainable soybean cultivation, greater transparency and more stringent adherence to established requirements should be a priority for both the IFC and Grupo Maggi.



## Resumo

Após 30 anos de rápida expansão, a produção de soja no Brasil ultrapassou a de seus competidores pela primeira vez neste começo de 2004. O avanço desta expansão tem ocorrido concomitantemente com programas de incentivo do governo brasileiro, que tem por sua vez, encorajado investimentos privados e desenvolvimento de grandes empreendimentos no campo da agricultura na região Centro-Oeste do país. A exportação da soja se tornou um importante recurso no cambio internacional e tem acentuado o interesse do governo neste produto, assim como, instigado conflitos entre os setores da agricultura, meio-ambiente e social desta região.

Investimentos internacionais são fundamentais para a expansão da soja em larga escala no Brasil, o que garante investimentos para infra-estrutura, agro-químicos e pré-financiamento da produção. Neste relatório, verificamos o financiamento aprovado pelo IFC (International Finance Cooperation) para a maior empresa independente, produtora e exportadora de soja no Brasil, o Grupo André Maggi. O projeto financiado é conhecido por "Amaggi", à qual o IFC investiu capital necessário para pré-financiar fazendeiros (sojicultores), e para que estes possam inventariar a soja e seus derivados. Em particular, avaliamos a atual classificação, requerimentos e compromissos do projeto Amaggi com respeito a impactos sócio-ambientais exigidos pelas normas do IFC.

Primeiramente revisamos os requerimentos e aspectos da análise inicial do projeto Amaggi exigidos pelo IFC para a disponibilidade de fundos. Numa segunda etapa, examinamos fatores ambientais, sociais, de saúde e segurança associados com o Amaggi e com o cultivo da soja proveniente deste projeto. Em adição, relatamos fatores que discordamos durante a avaliação deste projeto, assim como fatores não considerados mas potencialmente prejudiciais quando aliados ao incentivo desta expansão. Por conseguinte, salientamos áreas onde a classificação do projeto Amaggi feita pelo IFC aparece inapropriada.

Mesmo que o agro-negócio associado com plantações de soja possa trazer, entre outros, um desenvolvimento econômico para o país, este pode também resultar em impactos irreversíveis tanto para as pessoas quanto para o meio-ambiente, e seu manejo e expansão deveriam ser acompanhados de maneira sustentável. Assim o sendo, mesmo que o IFC apóie um componente específico do grupo Amaggi, a produção de soja deveria ser colocada num contexto maior durante processos de decisões

políticas, sociais e ambientais para garantir a elegibilidade dos financiamentos. O Grupo Maggi, bem estabelecido e com grande poder econômico e político, está mediando a expansão rápida da soja em direção à Amazônia através da construção de portos e estradas, e atraindo outros grandes produtores e compradores de soja para esta região. Neste amplo contexto do cultivo da soja no Mato Grosso, recomendamos que este projeto, e quaisquer outros financiamentos, sejam re-classificados de Categoria B para Categoria A, segundo o IFC. Ainda argumentamos a necessidade de um relatório mais extensivo de potenciais impactos derivados deste projeto (ambiental, social, saúde e segurança), e mais acessível ao público, uma vez que o grupo Amaggi e o IFC estejam dispostos a promover a produção de soja no Brasil ecológica- e socialmente sustentável.

Reclassificação do projeto poderá trazer uma oportunidade única ao IFC para re-estruturar o monitoramento de um grande projeto, como o Amaggi, e de também incorporar um compromisso maior com entidades sociais e ambientais dentro das suas operações, enquanto supervisionando os produtores. Mais transparência e monitoramento parecem fatores críticos e necessários dando-se a legítima importância e aumento do cultivo da soja nesta região e o grande número de empresas que participam neste setor da agroindústria. Com o aumento da demanda da soja, o IFC poderá liderar o desenvolvimento responsável da soja no Brasil. Por exemplo, com maior supervisão do Grupo Maggi, eles poderiam monitorar operações de pequenos produtores de soja que fornecem grãos para o Grupo, uma vez que o Grupo Maggi lhes fornecem pesticidas e sementes durante o plantio.

Além disso, o IFC deveria reconhecer e, incluir, movimentos e coalizões sociais existentes como potenciais parceiros em colaboração com a sociedade civil no processo de decisões, e portanto, “descentralização” do desenvolvimento desta região em expansão oriunda da soja. Através de parcerias colaborativas, o IFC e Amaggi poderiam encorajar investimentos imparciais – aumentando a porcentagem de benefícios que são retornados à comunidade através da educação, saúde e outros serviços sociais. Fortalecer modelos sustentáveis para o cultivo da soja com maior transparência e adesão a requerimentos estabelecidos entre os beneficiados deveria ser prioridade para ambos, o IFC e o Grupo Maggi.



## INTRODUCTION

Following 30 years of rapid expansion, Brazil's soybean production outpaced that of its competitors for the first time in early 2004 (Shean 2004). The nation's ascendancy in one of the fastest-growing agricultural sectors in the world assures it an important source of foreign exchange to service international debts and stabilize its trade balance. Brazil's Center-West region has become a major hub of activity for multinational as well as domestic soybean producers, processors and exporters (Van Gelder and Dros 2002). Further expansion of this industry puts pressure on the regions' unique and sensitive savannah ecosystem, and threatens to increase already high rates of deforestation in the world's largest continuous tropical forest on its northern border (Fearnside 2001).

International lenders play an important role in the expansion of large-scale soy cultivation, providing capital for infrastructure development, agrochemical inputs, and producer pre-financing (Van Gelder and Dros 2002). Among these lenders, the World Bank (WB) and its subsidiary, the International Finance Corporation (IFC), have programs to promote corporate environmental and social responsibility as conditions for assisting domestic private enterprises in this sector (GEF 2002, IFC 2003a, World Bank 2004). However, the ability of such programs to mitigate the negative impacts of soy cultivation in Brazil depends on strict adherence to the lenders' own requirements and a high degree of transparency.

In this paper, we examine the case of IFC funding for Brazil's largest independently-held soy producer and exporter, the Grupo Andre Maggi. In 2002, the IFC approved a \$30 million loan to the company's soy production arm, Amaggi Exportação e Importação Limitada, to provide working capital for pre-financing farmers and for inventorying soybeans and soy by-products (IFC 2002). In this analysis we assess specific impacts of the project, evaluating it within the broader agricultural development context of the region, according to the IFC framework for project assessment. First, we discuss world market trends and the economic potential of Brazilian soybeans. We then describe the project objectives and the Amaggi company. We review the major relevant IFC requirements and the initial assessment of the Amaggi project by the IFC. In the second section, we examine environmental, health and safety, and

social issues associated with Amaggi and with soybean cultivation in area, reviewing the concerns raised in the project report, as well as those not addressed. We argue that a more extensive and publicly accountable review of the project's impacts is necessary if Amaggi and the IFC are to play a leadership role in promoting more ecologically sustainable and socially equitable soy production in Brazil.

In its 2003 annual report, *Sustainability Review*, the IFC lists this project as a model *high impact* project (Appendix A; IFC 2003a). That is, it is deemed to exceed the minimum requirements set by the lender at *the time funds are committed*, based on a 4-tiered framework of sustainability (IFC 2003a). The Amaggi project is listed as having the potential to meet the following standards (see Appendix B for a complete listing of IFC sustainability standards):

- Handling of environmental or social issues materially exceeds minimum standards.
- In so doing, the project or company creates local or global benefits in terms of reduced waste, emissions, or use of natural resources of its economic activity or helps spread the benefits accruing from its economic activity to the local community or to groups that often fail to benefit from such activity.
- Corporate governance practices are good enough to affect positively views of investors about investing in the country. (IFC 2003a)

Some environmentalists and human rights activists have criticized the project based on the soy sector's perceived negative impacts on both environment and society (Bickel and Dros 2003, Both Ends 2004). They argue that the initial project assessment failed to address how the company would meet the requirements set forth by the IFC, and as a result, the full costs of the project may not have been assessed or accounted for. The official IFC project reviews generated a list of instances in which Amaggi did not meet IFC requirements. These were considered to be serious enough that disbursement of funds was made conditional on remedying these problems (IFC 2002). However, approval of the loan came before documents demonstrating Amaggi's compliance with the financing conditions were made public, and annual monitoring reports—if any have been completed—of the company's progress in meeting environmental, health and social standards are not readily available to the public. Despite the lack of evidence that Amaggi has addressed the deficiencies previously noted by the IFC, the lender is currently



reviewing an additional US\$30 million loan to the company to finance the construction of soybean storage facilities and refinance short-term debt (IFC 2003b).

**BACKGROUND**

**The Soybean Sector in Brazil**

*Global Market Trends*

Soybeans are being touted as the new “green gold” due to rapidly expanding world markets. They are sold as grains and oils, but are principally crushed for meal, which is high in protein content (Hiel 2004). In 2003, the total world production of soybeans reached 189.5 Mt (Million metric tons), with the US dominating the global market, and producing 65.8 Mt (FAO 2004; Table 2). By the end of the same year, however, soybean production in South America surpassed the US, with Brazil and Argentina capturing a large percentage of the world market (Flaskerud 2003). The harvested area of soybean in the world increased 28 percent from 1990 to 2000, the result of large-scale, industrialized cultivation of soybean replacing small-scale and diversified production of other crops (Tengas and Nilsson 2002).

Table 2: Global soybean production in 2003 (Source: FAO 2004)

<b>Country</b>	<b>Soybean Production (Million metric tons)</b>
United States of America	65.8
Brazil	51.5
Argentina	34.8
China	16.5
Other	20.9
<b>Total World</b>	<b>189.5</b>

### Soybean Exports

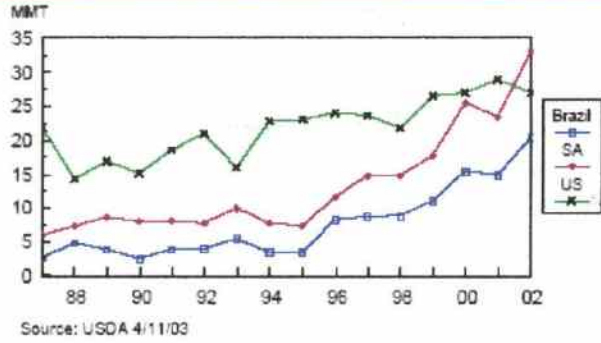


Figure 1. Soybean exports from South America and USA until 2003 (USDA 2003)

In Brazil, soybean production increased significantly over the last two decades, from 15.1 Mt in 1980 to 51.5 Mt in 2003 (Fig. 1; Schnepf et al. 2001). The nation achieved a record harvest of 52 million tons on 18.5 million hectares in 2003 (Shean 2004). Soybean producers and traders, scientists, and politicians envision production expanding to 100 million hectares by 2007, more than a 200 percent increase over current levels (Shean 2004; Appendix C). Soybean cultivation occurs mainly in two regions: the temperate South (in the states of Rio Grande do Sul, Santa Catarina, and Parana) and the more tropical Center-West (including the states of Mato Grosso, Mato Grosso do Sul, Goias, and the Federal District surrounding Brasilia) (Fig. 2). The latter region is primarily *cerrado* land and is associated with the highest yield growth due to economies of scale and favorable rainfall. Until recently and since its beginnings in the 1970's, soy cultivation occurred in the south and southeast of Brazil, where flat plains favor mechanized harvest and production. In the last 20 years, however, soybeans have spread across the plains and forests of northeastern Brazil and the southern Amazon region, along the infamous "Arc of Deforestation" (Fig. 3; Cattaneo 2002, Tengas and Nilsson 2002, Shean 2004).



Figure 2. Brazil's Center-West region with the areas in Mato Grosso and Rondônia affected by the project indicated (Encyclopedia Britannica 2002)

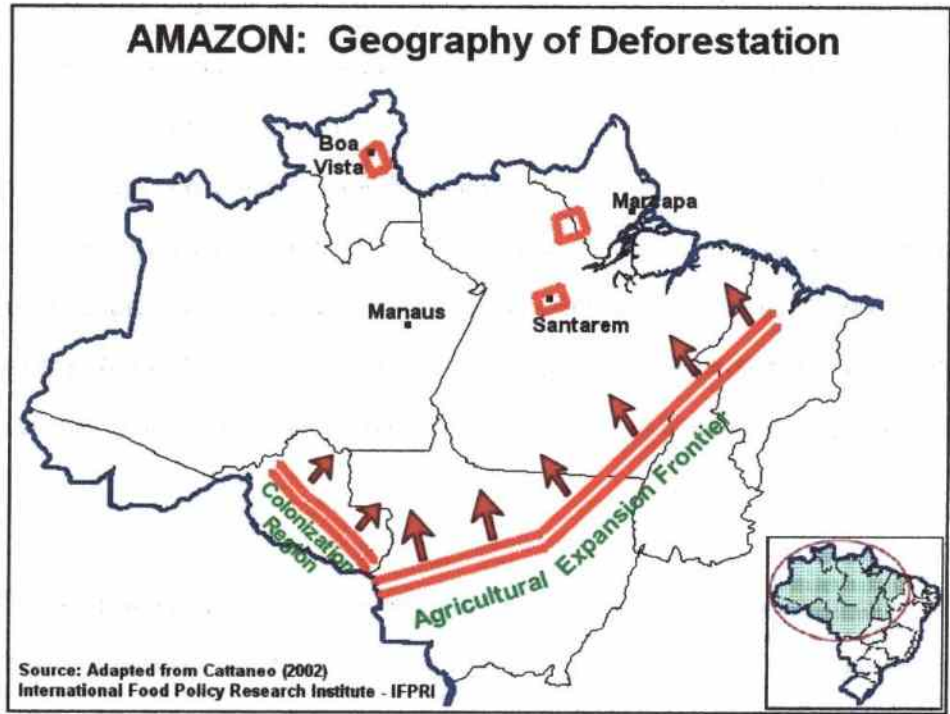


Figure 3: The "Arc of Deforestation" stretches along the southeastern edge of the Amazon rainforest, moving northward and westward due to expansion of soy cultivation and cattle ranching. (Source: Cattaneo 2002)



The state of Mato Grosso—encompassing areas of *cerrado* and forming the southern portion of the Legal Amazon—is the biggest soybean producer in Brazil. The state’s governor, Blairo Maggi, is also the owner of the Grupo Andre Maggi (Thompson 2003). In this area, farms are larger and highly mechanized, using more chemical inputs than in the South (Schnepf et al. 2001).

#### *Drivers of Soybean Expansion in Brazil*

The international livestock feed industry drives the greatest part of the market for soybean products (Bickel and Dros 2003). Currently, China represents the greatest potential market for soybean imports, a result of limited area for cultivation, steady income and population growth, and an increase in the demand for meat. On the other hand, due to the minimal growth of livestock markets, the European Union (EU) has limited market expansion potential for soy imports (Hiel 2004).

The booming developments in the soybean industry over the last three decades were fostered by governmental policy reforms that encouraged private investments, which attracted large international lending institutions to the area (Fig. 4; Schnepf et al. 2001). Investing in soybeans is currently extremely attractive, and the 2003 price of soybeans at the Chicago stock exchange reached \$12-13 per sack (60 kilograms). Therefore, international corporations like Bunge, Cargill, Dreyfus, and Archer-Daniels Midland are currently pre-financing third-party suppliers and making major infrastructure investments for transport and processing of soybeans (Van Gelder and Dros 2002, Bickel and Dros 2003). Grupo Maggi has recently received over USD\$300 million from a group of 10 lenders (led by the Dutch Rabobank) toward pre-financing of smaller producers, and the construction of storage facilities for both grain and fertilizer (Grupo Maggi 2004b).

Another important step in the soybean boom was the development of soy varieties adapted to local conditions (Schnepf et al. 2001, Shean 2004). Simultaneously, multinational fertilizer and pesticide companies offer attractive technology packages for large- and small-scale producers (Bickel and Dros 2003). The adoption of these advanced technologies has increased yields, and has allowed the

development of previously unproductive land, leading to the expansion of soybean cultivated area (Schnepf et al 2001). Yields in Brazil in 2003 exceeded those of the USA, reaching 27, 959 Hg/ha (Hectograms per hectare) compared with 22, 481 Hg/ha (FAO 2004).

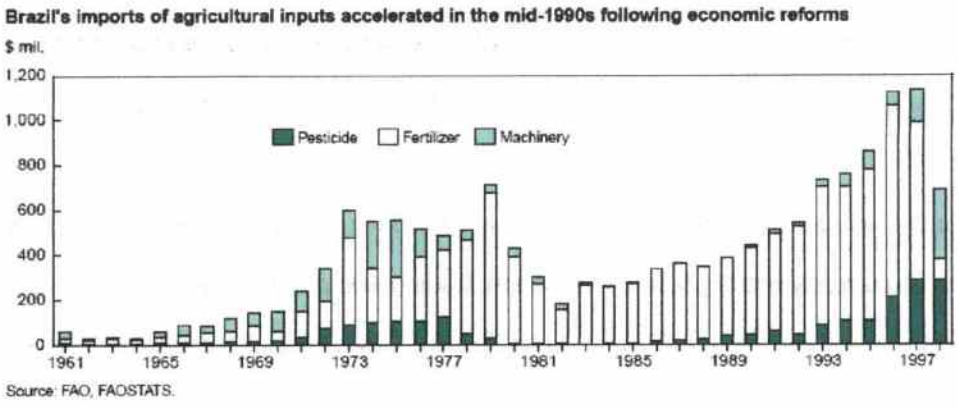


Figure 4: Brazilian trend: Increased imports of agricultural inputs following economic reforms (source: Schnepf et al. 2001)

The State of Mato Grosso is the biggest soybean producer in Brazil. Blairo Maggi is the governor of the state and is also the owner of the André Maggi group, the largest individual soybean producer in the world (Carvalho 1999, Thompson 2003). In this area, farms are larger and highly mechanized, using more chemical inputs than in the South, where smaller parcels have fewer inputs and less favorable yields (Figs. 5a and 5b; Schnepf et al 2001).

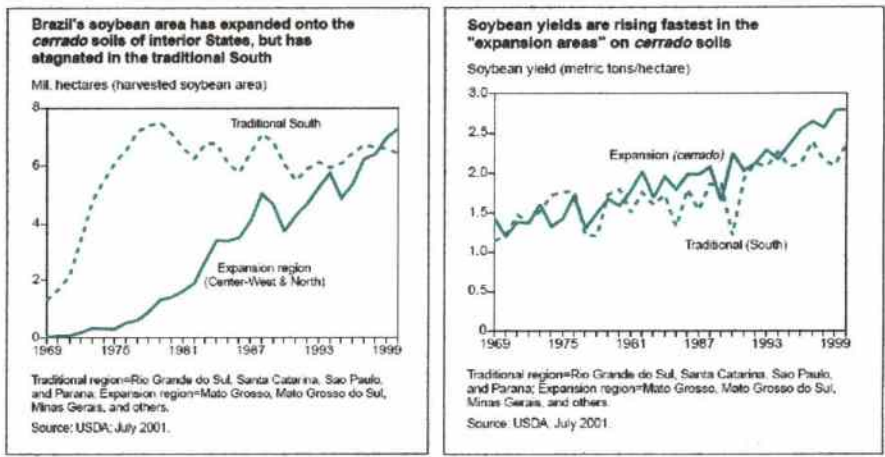


Figure 5: (a) Soybean expansion area and (b) soybean yields as compared between "traditional south" and "expansion areas" (cerrado).

### Grupo André Maggi

The Grupo Andre Maggi Participações Limitada headquarters are in the town of Sapezal, in Mato Grosso, where the Maggi family moved the company from the southern state of Paraná in 1979 (Grupo Maggi 2004a). Following the move to Mato Grosso, the Maggi company rose to become the leading individual soybean producer in the world. This has been paralleled by increased political power in the region, leading to Blairo Maggi's election as governor of Mato Grosso in October 2002.

Amaggi Exportação e Importação is the main operating company of the three, which comprise the Grupo Maggi. Amaggi is currently managing the production, trading and processing of over 2 million tons of soy in the 2003-2004 harvest year (Fig. 6; Grupo Maggi 2004a). The bulk of Amaggi's soybeans derive from third-party farmers.

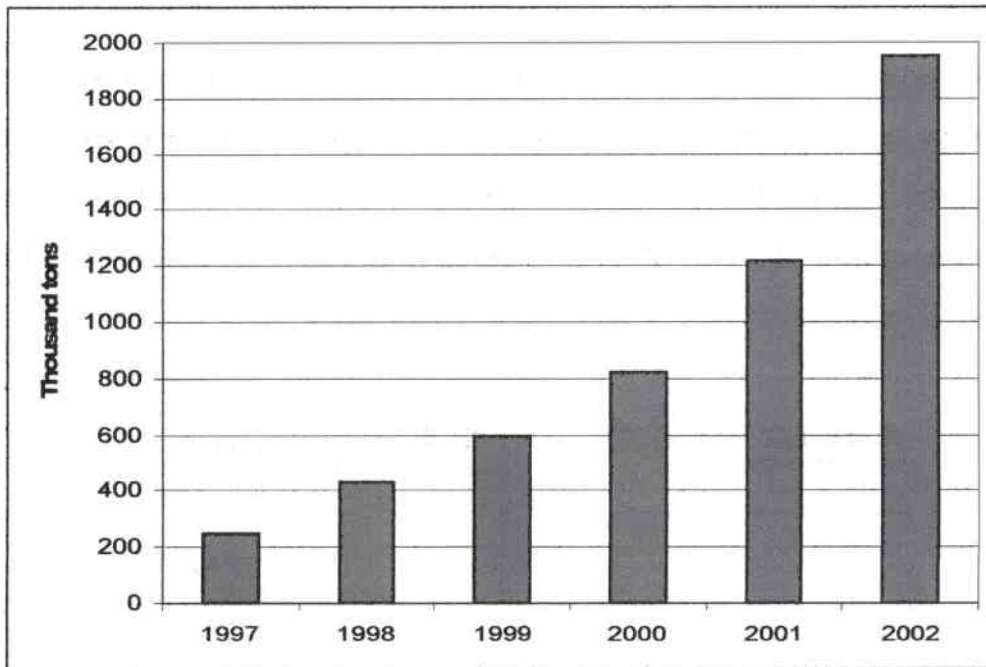


Figure 6. Amaggi's exports of soybeans grew from less than 400,000 tons per year in 1997 to almost 2 million in 2002. (source: Grupo Maggi 2004a)

The company also has two seed crushing facilities in Cuiabá, the capital of Mato Grosso, and in Itacoatiara, Amazonas state. A second branch, Hermosa Navegação da Amazônia, manages the



construction and maintenance of the company's infrastructure investments, as well as the shipping of soybeans and fertilizers (Grupo Maggi 2004a). Hermasa was established in 1997 (Grupo Maggi 2004a), in response to the Brazilian government's decision to privatize major infrastructure developments in the country to save money and promote agricultural expansion (Schnepf et al. 2001). Table 4 shows the major business figures for Grupo Andre Maggi soybean production, processing and export.

The company has recently constructed a 90,000-ton capacity port facility in Itacoatiara, and a 45,000-ton capacity barge terminal at Porto Velho, in Rondônia (Grupo Maggi 2004a). The company also began construction of storage terminal with capacity to store 75,000 tons of fertilizers and grains in Santarém, Pará state. Further, the company has plans to construct two more storage terminals: one at Itacoatiara to store up to 46,000 tons of fertilizers, and one at Humaita, Amazonas, to store grains (Trento 2003). The Maggi family's farm and one of the suppliers of soybeans for Amaggi is Agropecuaria Maggi Limitada, producing 300,000 tons per year on 90,000 hectares (Grupo Maggi 2004a).

Table 4: Major business figures for Grupo Andre Maggi soybean production, processing and export, as of April 2004 (source: Grupo Maggi 2004a)

Annual Exports	USD\$400 million
Annual Production	2 million tons
Storage Capacity	1.9 million tons
Processing Capacity	3000 tons/day
Annual Fertilizer Distribution	250,000 tons
Annual Soy Product Transport (by waterway)	1.2 million tons

**IFC Funding Proposal for the Amaggi Project**

Of the 176 IFC countries worldwide, Brazil has obtained the largest amount of IFC investment (IFC, 2003). The IFC aims to "promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives." On Oct. 1, 2002, the IFC invested \$30 million in Grupo André Maggi. The loan was intended to provide working capital to Amaggi to extend cash advances to 900 local farmers. In addition, the money would be used to conduct a minimum inventory of soybeans for

the company's crushing operations. Therefore, the IFC loan would provide necessary liquidity levels to enable Amaggi to "sustain the pre-and post-harvest financing of the soybean supply chain through (i) advances to farmers; (ii) purchases of soybeans; and (iii) crushing of soybeans." (IFC 2004).

Specific guidelines and procedures are in place for IFC project screening and classification, which demand that environmental and social impacts that could result from project funding be addressed.

General IFC requirements for sponsored projects are as follows (IFC, 2004):

- All projects must comply with applicable IFC environmental, social and disclosure policies
- Projects must comply with World Bank Group environmental, health and safety guidelines
- Projects must comply with host country policies and regulations
- Where no appropriate IFC policies or guidelines exist, projects must comply with relevant internationally recognized standards.

Technical specialists classify projects depending on the location (proximity to or encroachment on environmentally sensitive areas), scale (large or small) and sensitivity (whether impacts are irreversible). Projects are categorized into environmental review category A, B, C, or FI. These are defined on the basis of detailed appraisal guidelines found in the IFC *Environmental and Social Review Procedure*, IFC *Environmental Health and Safety Guidelines*, a series of IFC *Environmental and Social Safeguard Policies*, and the World Bank *Pollution Prevention and Abatement Handbook* (IFC 2004; see Appendix B). Projects are classified under one of four classes, as follows:

- Category A: Project is likely to have significant adverse, or irreversible environmental and social impacts in a "sensitive" area. Project impacts may affect an area broader than the sites or facilities subject to actual physical works
- Category B: Potentially adverse environmental and social impacts of project are site-specific, few are irreversible, and mitigatory measures can be designed
- Category C: Project likely to have little or no adverse environmental or social impacts
- Category FI: Project involves investment of IFC funds through a financial intermediary, in subprojects that may result in adverse environmental impacts (can be operations of financial institutions that are not actually financed by IFC for the project in question)



The Amaggi project was classified by the IFC as a Category B project. An Environmental Review Summary (ERS) document was made available through the World Bank InfoShop and to the locally affected communities, which were identified as Itacoatiara, Porto Velho, Rondonopolis, and Sapezal. This ERS document proposes mitigation options for social and environmental issues (See Appendix D). Some of the issues mentioned in the ERS that remain of particular concern include:

- Details about whether Amaggi has met the set-aside requirements of the Unified Environmental Law (LAU) of the Brazilian government. The ERS document states that it “has met, or *is in the process of meeting*” these requirements
- Details about compliance with occupational health and safety improvements, were lacking at the time the ERS was written. Ambient air quality, noise, and personal safety equipment were identified as problems, and were made conditions for disbursement.
- The ERS document indicates that solid and liquid waste would be disposed of in sewer and septic tanks and in the domestic landfill. However, details about the potential volume of these wastes were omitted from the report.
- Although the ERS document indicates that the IFC would “screen” each application from the 900 farms that asked for advances from Amaggi (in order to assess environmental and social risks and monitor performance), none of this information is available.

In addition, the IFC promises to evaluate the project’s compliance during the lifetime of the project by reviewing the Annual Monitoring Reports (AMRs) to ensure that mitigation measures are implemented. However, AMRs could not be located on either the IFC or the Amaggi website. This lack of transparency is of great concern, since it brings into question whether these mitigation measures have, in fact, been implemented.

## **ENVIRONMENTAL IMPACTS**

In the ERS prepared for the IFC, mitigation is proposed for the environmental issues associated with Amaggi Project. The document briefly addresses issues that relate to farmland conversion, agricultural practices, transport and processing facilities. However, the evaluation of these issues is too superficial. Most of the concerns raised are related to health and safety of workers, and this document lacks thorough consideration of the broader effects of this project beyond the farm gate. Evidence from current



academic literature indicates that these ripple effects deserve more thoughtful reflection on the part of the IFC Board of Directors. The major environmental impacts are deforestation and pollution.

### **Deforestation**

According to the most recent deforestation estimates by the Brazilian National Institute of Space Research (INPE), deforestation in Mato Grosso is the highest in the nation, reaching 10,416 km<sup>2</sup> in 2003, a 44% increase from the year before (ISA 2004, INPE 2004). This constitutes 43% of the estimated total 23,750 km<sup>2</sup> deforested for the entire legal Amazon region (INPE 2004). According to the state's Minister of the Environment, Rodrigo Justus, at a meeting to discuss the latest figures, two thirds of this deforestation is illegal (ISA 2004). The majority of this illegal deforestation occurred in agricultural areas (Teixeira 2004). There are indications that the advancing soybean frontier is displacing cattle pasture, causing new forest lands to be cleared for ranching (Rohter 2003, Shean 2004).

Under the Forest Code of the Unified Environmental Law, property owners are required to retain a specified percentage of native vegetation, according to ecosystem type (Seroa da Motta 2003).

According to the IFC's environmental review summary for the Amaggi project, these requirements were not being met for the farms owned by Amaggi, under the Agropecuária Maggi Limitada (IFC 2002). Of the 10 farms listed, 4 do not meet the requirements. More importantly, these 4 farms make up 64% (54,370 ha) of the total area of the farms (80,731 ha). The report states that Amaggi was in the process of negotiating with FEMA (Mato Grosso State's environmental management agency) to create conservation off-set areas of equivalent size on Bananal Island, in the Pantanal wetland. This negotiation was to have been concluded in 2002, but to date no information is available. In addition, this report provides no information on forest code compliance of non-Maggi owned farms, to whom the company provides pre-financing and from whom it buys a large part of its supply.

In addition to the Grupo Maggi's own port and shipping facilities, Amaggi's expansion is predicated on the expansion of larger shipping networks, including waterways and roads, required to transport soy from the interior to Atlantic Coast ports and international markets. Currently, the Brazilian government plans to

invest over US\$ 45 million in the development of infrastructure for agricultural export, as part of its *Avança Brasil* (Forward Brazil) program (Carvalho et al. 2001). The government has specifically encouraged investment in soybean production by supporting massive infrastructure development. By privatizing some of these projects, consortiums of agribusinesses, led by Grupo Maggi's *Hermasa* arm, have paved major highways and secondary roads throughout Mato Grosso (Shean 2004).

Paved highways have emerged as the single most important factor influencing deforestation rates in the Amazon because they provide for year-round access to the forests and efficient transportation to markets (Laurance et al. 2001). Infrastructure developments in the Amazon such as road paving are being undertaken in support of the agro-industrial production of soybeans intended for livestock feed industries worldwide (Bickel and Dros, 2003). An estimated 120,000 – 270,000 km<sup>2</sup> of forests along the proposed highways will be deforested resulting from the paving of these roads (Nepstad et al. 2001), possibly affecting 28% of the Amazon's indigenous reserves and 25% of national biological reserves (Nepstad et al. 2001). Although road paving will likely have beneficial impacts on regional economies by linking remote agricultural communities with markets, it may also serve to advance illegal timber harvesting, land speculation and the expansion of agriculture into the Amazon interior (Nepstad et al. 2001).

For soybean producers in the Amazon, benefits associated with paving the BR-163 include reduced transportation costs of up to R\$ 76 million per year. In addition, transporting soybeans to ports in Pará and Amapá by way of the BR-163 (narrowly bypassing the Tapajós National Forest) will link the Amazon River with southern Brazil (Linden 2000) and reduce transportation time for soybean produced in Mato Grosso, thereby bringing the Amazon closer to European and North American markets (Carvalho 1999). Grupo Maggi has on-going infrastructure projects, including road construction and paving, through *Hermasa* (Grupo Maggi 2004a). Carvalho et al. (2001) argue that paving the BR-163 is justified by transport cost savings accrued by soy farmers in north-central Brazil, although there would be substantial environmental impacts (e.g., increased deforestation, logging and forest fires) associated with the project. Greenpeace has shown that 57% of immediate forest in the vicinity of the BR-163 has already been



deforested (<http://www.24horasnews.com.br/>), and soy producers have been identified as the main vector for deforestation along the BR-163 and its vicinity in 2002 (Fontes 2003).

Intimately connected with road development is the increased incidence of fire. In 2003, INPE and Brazil's agricultural research and extension agency, EMBRAPA, report that monitoring satellites detected more than 75 percent of all fires detected in the dry season were in the state of Mato Grosso, in areas of newly paved roads (Fontes 2003). Nepstad et al. (2001) demonstrate that road paving in the Amazon leads to an increased incidence of forest fire. Furthermore, by opening up the Amazonian interior to colonization by increasing access, the number of management and escaped fires are likely to increase, endangering biodiversity, releasing stored carbon, increasing the risk of forest fires, and leading to reductions in regional rainfall (Linden 2000).

Another source of deforestation in the Amazon results from fuel wood production. It is estimated that the new oil mill owned by Bunge Limited (an American-owned corporation) requires 400-stacked cubic meters of *cerrado* wood per day. This is roughly equivalent to 20-25 hectares per day or 7,300-9,215 hectares per year. Once the native vegetation is depleted, it is expected that the plant will require about 7,000 hectares of eucalyptus plantations to provide 228,000 cubic meters of fuel wood annually (Bickel and Dros, 2003). The Amaggi group owns two mills similar to the Bunge mill, and so it can be expected that their mills would have similar fuel wood requirements.

### **Waterways and Port Facilities**

The development of several major river channels through the Brazilian Amazon and Center-West region to facilitate the exportation of grains has generated protests from a wide range of actors, including the Brazilian government, international and national NGOs, and indigenous groups concerning the potential environmental impacts of these projects. The proposed channels include the Teles-Pires Hydroway, the Araguaia-Tocantins Waterway, the Madeira waterway (currently being used by Amaggi) and the Pantanal-Parana waterway. The complex and varied ecosystems of these watersheds cover thousands of square kilometers and link the Amazon, *cerrado* and Pantanal (Cebrac 2000). These channels would be located within major watersheds of the Amazonian region that have both environmental significance as



well as socio-economic and cultural significance to indigenous and riverine populations. Moreover, companies such as Cargill and Grupo Maggi are heavily investing in expanding port and barge facilities on major rivers in the area's network, increasing the processing and storage capacity beyond current maximum production levels (Shean 2004).

The International Rivers Network, in coordination with Brazilian NGOs, has been independently investigating the development of the Araguaia-Tocantins and Tele-Pires waterways projects in order to provide information concerning potential environmental and social impacts. The International Rivers Network argues that the Environmental Impact Statements (EIA) submitted by the official waterway commissions fail to address potential environmental impacts. Based on the finding of their interdisciplinary research team, including biologists, geologists and geographers, the proposed waterways will have severe impacts on the river systems, leading to the restructuring of the rivers, resulting in flooding, build-up of sediments, disturbances to population dynamics of riverine flora and fauna, loss of habitat and subsequent loss of biodiversity (Cebrac 2000). These environmental impacts will subsequently have social impacts on the indigenous and riverine populations, whose livelihoods depend on the availability of game and fish. Over 15 indigenous groups will be directly affected by the proposed waterway, including the indigenous territories of the Munduruku and Kaiabi (Galinkin 2003).

### **Specific Effects on Indigenous Territories**

The development of infrastructure projects, which are essential to the expansion of the agricultural frontier, will have the greatest impact on indigenous populations, ranging from resettlement to the fragmentation of indigenous territories. The Center-West region contains 34 legally recognized indigenous groups within several ethnic groups. Indigenous territories have become fragmented forest islands as soybean expansion and deforestation increases in Brazil's Center-West (Fig. 7).

The conversion of lands adjacent to indigenous territories for soybean production fragments important ecological corridors that may maintain the ecological integrity of indigenous territories. Fire, frequently used in the conversion of land to soybean production, poses the threat of spreading into indigenous reserves, as in July 2003

when fires from adjacent soybean farms spread into the Xingu Reserve (Fontes 2003, Nepstad et. al. 2001). In addition to these direct impacts, indigenous reserves are increasingly threatened directly,--by the intrusion of soy farmers into the reserve—and indirectly, by increasing land conflicts among various stakeholders as soybean production leads to land consolidation and small farmer displacement (WWF 2004).

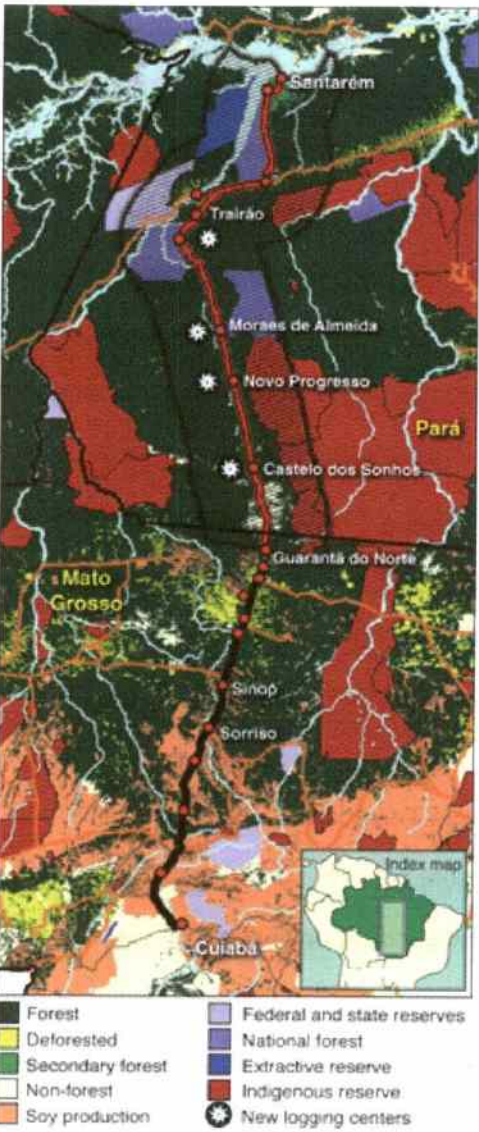


Figure 7. Cuiabá Santarém highway corridor through Mato Grosso and Pará (Nepstad et al 2002)

The infrastructure projects, such as grain transportation channels and highways, have sparked protest from various indigenous groups that have formed coalitions in order to protect their territories. Indigenous



groups successfully challenged and halted the proposed Araguaia-Tocantins and Teles-Pires waterways in Brazilian Federal Courts, based on the Brazilian Constitution requirement that projects affecting indigenous groups must first attain Congressional approval. Indigenous groups have also played a role in coalitions of diverse stakeholders who are challenging the proposed extension of the Cuiabá-Santarem highway (Encontro BR-163 Sustentável 2003).

### **Pollution**

Until the 1970's, the *cerrado* was considered a wasteland, unsuitable for agriculture. The development of modern agricultural technologies appropriate to the region made the expansion of large-scale agriculture possible in the area (Klink 2003). These modern technologies include the development of tropical soybean varieties, the adaptation of mechanized agriculture to the *cerrado*, direct planting of soybeans, as well as fertilizer, pesticide and herbicide packages designed for the region (Flaskerud 2003). New technology facilitated the transition from cattle pastures to soy fields in Mato Grosso as the profitability of soy has surpassed that of cattle ranching (DeFries et al. 2004). While agricultural technology has provided an undeniable boost to the development and expansion of the soybean industry in Brazil, it also has associated environmental health and human health impacts because soybean cultivation requires heavy inputs of agricultural chemicals (IFC 1999, Azevedo and Monteiro 2004).

#### *Agrochemical Use: Effects on Soil, Water and Human Health*

Although figures specific to the IFC project region in Mato Grosso are not available, research from other areas of the *cerrado* indicates that subsoil and surface waters are intensely affected by crop and livestock production, primarily through the application of agrochemicals (Azevedo and Monteiro 2004). A critical aspect of agrochemical use is the connection between the *cerrado* highlands of Mato Grosso and the Pantanal region to the south. The Pantanal is one of the largest and most diverse wetlands in the world (Ramsar 2002). Many streams in the southern part of Mato Grosso—between Cuiaba and Rondonopolis—drain into the Pantanal (Laabs et al. 2002). According to Laabs et al (2002), pesticide use has greatly intensified since the introduction of soybean and, more recently, cotton cultivation. Hydrologic connectivity (*sensu* Pringle 2001) of the greater *cerrado*-Pantanal system should be taken into



consideration with respect to agricultural development projects in the upland areas of Mato Grosso. Studies suggest that the effects of agrochemical inputs may not remain localized (Laabs 2002, Bester and Huehnerfuss 2000). It is well documented in other areas that upstream inputs can alter the integrity of downstream wetlands (Gunderson et al. 1995, Pringle 2001). Flooding events can increase pesticide concentrations in downstream areas when pesticides are carried directly off fields into rivers and lakes, killing aquatic organisms (Ramsar 2002). These effects are often additive and irreversible (Gunderson et al. 1995, Pringle 2001).

Intensified use of agro-chemicals and an increase in soil erosion resulting from the clearing of large tracts of land have had a profound impact on the watersheds that provide drinking water to indigenous communities as well as habitats for flora and fauna essential to indigenous livelihoods (ISA 2003). Indigenous groups within the Xingu watershed and bordering large tracts of soybean cultivation in Mato Grosso, have noted a decrease in fish populations as well as changes in waterways due to run-off and silt deposits from erosion (ISA 2003). Concerns over water quality have led indigenous groups of the Xingu reserve to fight for the enforcement of restrictions on soybean production in fragile riverbank parcels (ISA 2003).

At the end of 1990's, Brazil had the fourth largest market for agrochemicals globally (Racke et al 1997), with the *cerrado* area of the Center-West showing increasing growth in intensive, mechanized agriculture (Rescke 1998). In 1996, nearly half of the pesticides registered with the Brazilian Ministry of Health were classified as extremely hazardous or highly hazardous by the World Health Organization (Garcia 2002, IFC 2002). In 1997, the International Center for Pesticides and Health Risk Prevention estimated that 10% of Brazil's population—the 15 million people working on the country's 3 million farms—was exposed to pesticides (Garcia 2002). Based on a calculated relationship between the number of pesticides sold in 1985 and the number of people exposed, the Center-West region had the third highest exposure potential of the 5 regions (north, northeast, center-west, south-east, south), with nearly 25% of national pesticide consumption (Azevedo and Montero 2004). Since that time, pesticide sales have increased 3-fold nationwide, implying an increase in potential exposures. The number of pesticide poisoning cases in rural

environments is estimated to be 150,000 to 200,000 per year (Garcia 2002). Though the current Amaggi project was evaluated to meet minimum IFC safety standards, it is important to note the number of different small farms supplying Amaggi. The company's ability to supervise and enforce adequate safety standards is particularly critical in the absence of strong state or national oversight and regulation of the impacts of pesticides (Garcia 2002).

#### *Air and Solid Waste Pollution Related to Processing*

Soybean processing also produces a substantial quantity of pollutants, particular in the oil extraction and refining sector (World Bank Group 1999, Virendra 2002). Seed processing produces hazardous and non-hazardous solid wastes, and water and air pollutants (IFC 1998b, World Bank Group 1999). Moreover, large amounts of water are required in the process (Virendra 2002). The Amaggi project under consideration does not directly support Grupo Maggi's soy processing activities in the region. Again, however, in the broader context—in which Amaggi and several other companies run large processing facilities—the environmental impacts of activities associated with soy processing should be considered by the IFC in its deliberations about how to classify the Amaggi pre-financing project.

### **SOCIAL IMPACTS**

The assumed social benefits of soybean cultivation deserve further attention. While the Maggi Project promises employment opportunities and economic benefits to local populations, there is little evidence to support these claims. The economic benefits of mechanized soybean cultivation tend to further concentrate wealth disparities and increase marginalization will be concentrated in the hands of the rich, which will result in the marginalization of small farmers and their subsequent migration to urban areas. Potential negative impacts on indigenous peoples also deserve further attention by the IFC Board of Directors.

The IFC Environmental Review Summary for the Maggi Project states that the company has *“undertaken and supported a range of activities to benefit both their employees and the local communities where their*



*operations are located.*” These include drawing workers from local communities, providing salaries 10% higher than local wages, supporting workers through education and health benefits, and supporting communities through projects in collaboration with local municipalities.

However, these mechanized farming systems do not require a great amount of labor. On average, only one person is employed for every 167-200 hectares of soybeans planted (Bickel and Dros 2003). Evidence from the *cerrado*'s large plantations suggests that 4 fixed, and 6 temporary workers are employed per 1000 ha. The investment in labor is less than 4 % of the total cost of production (Mohr and Van Geelen 2004). Therefore, the Maggi Project's contributions to alleviating unemployment may be overstated.

IFC funds primarily support stakeholders in Mato Grosso who are already in positions of privilege, at the expense of marginalized sectors. The concentration of wealth to large corporations, with associated inequities also is of concern (Carvalho 1999) because it can magnify the political influence of powerful elites (Fearnside 2001). When official policies divert public resources to the agro-industry, they further marginalize small farmers in favor of larger corporations. For instance, while extension services to small producers lack government support (Bickel and Dros 2003), official incentives offer tax relief to soybean exporters. Under the “Kandir Law,” soybeans for export are exempt from the ICMS, a sales tax. However, domestically sold crops like corn, wheat or rice still pay this tax (Carvalho 1999). This system provides incentives for soybean export, but decreases soybean industry's benefits to local citizens. The ICMS was removed from soybeans in 1996. Prior to its removal, exports averaged 4.2 million tons per year, but following its removal, exports more than doubled to over 9.6 million tons (Schnepf et al 2001).

Such policies widen the gap between small and large farmers. Some 30% of all farmers in Brazil are small farmers (cultivating less than 22 hectares), owning less than 2% of farmland. Conversely, the largest 2% of farmers own more than 50% of farmland (Laws 2003). In Mato Grosso, over the past 20 years the number of small farmers (owning less than 10 hectares) has decreased by over 50%, while the number of large farmers (owning more than 10,000 hectares) has increased by 20% (WWF 2004).



At the start of the soybean boom, many held hopes that soybeans would provide greater food security in Brazil and worldwide. However, within the first years of soybean production, (1970-1973) 90% of production actually displaced staple crops such as rice, beans, corn, cassava and potatoes (Patel and Cassel 2003). In Maranhão, for example, the advance of soybeans has led to the retreat of family agriculture and increased social inequality (Fearnside 2001). Evidence from Paraná indicates that local small farmers who grew maize, beans and other food crops were displaced when land was converted to a mechanized production system (Fearnside 2001). As the soy frontier advances, small rural farmers sell their lands to large capitalized producers, leading to displacement and migration of these small farmers to urban areas and frontier regions. This is of great concern, especially in relation to food security among increasingly urbanized poor populations (Carvalho 1999).

While the population density of the *cerrado* is low (5.70 persons/km<sup>2</sup> in 2000) 81% of the total population is urban. Evidence suggests that agricultural intensification played a significant role in the profound demographic transformations of the region (Hogan 2001). Underemployment in the agricultural sector and the destabilization of traditional small-scale farming systems are major drivers of demographic changes, such as increasing urbanization and out-migration (Hogan *et. al.* 2001). In the case of Mato Grosso, urban population increased from 38.8% in 1970 to 73.2% in 1991 (Hogan *et. al.* 2001). During the early phase of agricultural intensification in the 1970s, population in the region increased as agricultural modernization in Southern Brazil and government incentives for agricultural investments and colonization projects drew migrants to the *cerrado* (Hogan *et. al.* 2001). During the mid-80s, changes in agricultural production systems, characterized by technological inputs and low labor intensity such as soybeans and cattle, greatly reduced opportunities for small farmers. While 33.3% of migrants to the state of Mato Grosso in 1980 were "self-employed" farmers, by 1991 this percentage had dropped to 10.2%, while the percentages of migrant farm workers and those employed in cattle ranching and agriculture increased (Hogan *et. al.* 2001). As a result, urban areas of the *cerrado* expanded rapidly and a reverse flow of out-migration resulted as job opportunities dwindled (Hogan *et. al.* 2001).

## CONCLUSIONS AND RECOMMENDATIONS

We have highlighted a number of areas where the IFC's classification of the Amaggi project seems inappropriate. As our analysis shows, the soybean industry can have serious negative impacts on both people and the environment. Many of these impacts are additive and have connections to ecosystems, health and livelihoods in other regions. Although the IFC targets a very specific component of Amaggi's operations for financing, the greater context of soy production's influence must be accounted for in the decision-making process. Grupo Maggi is playing an instrumental role in opening the Amazon to soybean expansion through the construction of waterways, attracting other, even larger producers and traders to the area. Thus, due to the potentially serious and even irreversible impacts of Grupo Maggi's activities on both environment and society, within the larger context of soybean cultivation in Mato Grosso, we recommend that this project and any subsequent loan applications be reevaluated for Category A classification.

Such reclassification would provide the IFC the unique opportunity to structure project monitoring so that Grupo Maggi incorporates a greater degree of social and environmental responsibility into its own operations, as well as providing such oversight for its producers. This is particularly critical given the importance of soybean cultivation in the region and the number of large corporate actors participating in the sector. Given the growing demand for soy, the IFC has an opportunity to take a leadership role in fostering more responsible soy cultivation in Brazil. An important step in this process would be to demand better oversight from the Grupo Maggi, and to extend monitoring to the smaller producers from whom the company buys its raw grain product.

Civil society, nationally and internationally, is questioning the expansion of the agricultural frontier in Brazil, and calling for a closer examination of its associated environmental and societal impacts. In recent years, diverse stakeholders have organized to create a powerful voice of protest. Indigenous groups successfully challenged two waterways slated for grain transport, leading to the suspension of the projects by the Brazilian government (Cebrac 2000, Galinkin 2003). Protests by the Brazilian Landless Worker's Movement (MST), in coalition with environmentalists and consumer groups against the



introduction of genetically modified soybeans in Brazil, resulted in the decision by the Brazilian federal court to suspend biotech soy production in 1999 (MST website). In addition, coalitions among various groups, including governmental and non-governmental agencies, are attempting to design new, more sustainable models for development in the *cerrado*, building upon existing natural resources and social capital in the region (Encontro BR 163 Sustentável 2003). The IFC should recognize and include these social movements and coalitions as potential partners for collaborating with civil society in the decision-making process concerning development in the region. If this opportunity is disregarded, the IFC and the World Bank risk facing serious setbacks as civil society groups gain more power and raise awareness within the broader society, both nationally and internationally. The Forest Working Group of the Brazilian Forum of NGO's and Social Movements (CEBRAC) has already submitted a letter to the World Bank questioning the Grupo Maggi's most recent loan application to the IFC (Kawakami 2004).

Building upon these collaborative relationships, the IFC and Amaggi could set the stage for Amaggi to take the lead in cultivating a market for "certified" soy products. In Europe, some consumers are already insisting on purchasing products only from operations certified as being "environmentally friendly" (Rohter 2003). Similarly, the IFC could be instrumental in encouraging more socially equitable investments—increasing the percent of profits that are returned to communities through education, healthcare and other social services (Both Ends 2004). In fostering new models of sustainable soybean cultivation, greater transparency and more stringent adherence to established requirements should be a priority for both the IFC and Grupo Maggi.



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## Appendix A

IFC definitions for identifying projects as having met *minimum standards* or qualifying as a *high impact* project in its assessment of the project's contribution to financial, economic, and environmental and social sustainability (IFC 2003a).

<b>Sustainability Factor</b>	<b>Minimum Standards</b>	<b>High Impact</b>
Financial	IFC reviews and helps reshape potential investments to minimize risks of failure.	IFC helps project partners innovate and add new elements to their business and improve corporate governance.
Economic	IFC ensures that it does not support projects that rely on economic distortions.	IFC helps member countries put in place key elements for private sector-led growth, such as institutions and infrastructure.
Environmental and Social	IFC ensures that projects meet safeguard guidelines; it does not support projects that rely on environmental or social distortions.	IFC supports dissemination and implementation of recognized best practice, such as eco-efficiency and community relations.

## Appendix B

IFC 4-tiered sustainability framework for evaluating contribution of funded projects to corporate, social and environmental sustainability (IFC 2003a)

<b>SUSTAINABILITY FRAMEWORK</b>			
<b>LEVEL 1 COMPLIES WITH IFC AND NATIONAL MINIMUM STANDARDS</b>	<b>LEVEL 2 ADDED ENVIRONMENTAL, SOCIAL, OR CORPORATE GOVERNANCE VALUE</b>	<b>LEVEL 3 HIGH PERFORMANCE</b>	<b>LEVEL 4 LEADERSHIP</b>
<ul style="list-style-type: none"> <li>• The economic activity conducted by the project or company is in accordance with accepted national and international (IFC) standards for mitigating potential environmental or social harm stemming from the activity.</li> </ul>	<ul style="list-style-type: none"> <li>• Handling of environmental or social issues materially exceeds minimum standards.</li> <li>• In so doing, the project or company creates local or global benefits in terms of reduced waste, emissions, or use of natural resources of its economic activity or helps spread the benefits accruing from its economic activity to the local community or to groups that often fail to benefit from such activity.</li> <li>• Corporate governance practices are good enough to affect positively views of investors about investing in the country.</li> </ul>	<ul style="list-style-type: none"> <li>• Handling of environmental and social issues materially exceeds WBG minimum standards. Formalization of practices or other steps enables good practices on environmental, social, and corporate governance issues to leverage change broadly within a region, a sector, or a supply chain.</li> <li>• Economic activity beyond the firm is influenced in the direction of improved resource intensity and inclusion of new beneficiaries.</li> <li>• Corporate governance attributes of the project are sufficiently advanced that a demonstration effect is possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Company is actively engaged on many fronts in the dissemination of best practice.</li> <li>• Economic activity well beyond the firm is influenced in the direction of improved resource intensity and inclusion of new beneficiaries.</li> <li>• Firm is seen as a global corporate governance leader, with wide influence.</li> </ul>



## Appendix C

Current and potential soy planted area, Brazil. *Source: WWF Forest Conversion Initiative 2003.*

Soy planted area (Million ha)			
Region	State	2002/03 planted area	potential soy planted area <sup>5</sup>
South	Rio Grande do Sul (RS)	3.6	5
	Parana (PR)	3.6	5
	Santa Catarina (SC)	0.26	0.5
<b>subtotal</b>		<b>7.4</b>	<b>10.5</b>
South East	Minas Gerais (MG)	0.86	1.4
	São Paulo (SP)	0.60	1.1
<b>subtotal</b>		<b>1.47</b>	<b>2.5</b>
Central West	Mato Grosso (MT)	4.5	40
	Mato Grosso do Sul (MS)	1.4	13
	Goias (GO)	2.2	12.7
<b>subtotal</b>		<b>8.2</b>	<b>65.7</b>
North East	Maranhão (MA)	0.28	1
	Piauí (PI)	0.12	5
	Bahia (BA)	0.85	1.5
<b>subtotal</b>		<b>1.24</b>	<b>7.5</b>
North	Tocantins (TO)	0.15	0.8
	Pará (PA)	0.01	1
	Roraima (RR)	0.01	1.5
	Rondonia (RO)	0.04	10
	Amazonas (AM)	0.003	0.5
<b>subtotal</b>		<b>0.21</b>	<b>13.8</b>
<b>TOTAL</b>		<b>18.5</b>	<b>100.0</b>

## Appendix D

### Environmental Review Summary for Grupo Amaggi Project (IFC 2002)

#### Environmental Review document

<b>Project number</b>	11344
<b>Project name</b>	Grupo Andre Maggi
<b>Country</b>	Brazil
<b>Sector</b>	Food & Beverages
<b>Department</b>	Agribusiness
<b>Company name</b>	Amaggi
<b>Environmental category</b>	B
<b>Date ERS disclosed</b>	May 9, 2002
<b>Status</b>	Active
<b>Previous Events</b>	Invested: October 1, 2002 Signed: September 17, 2002 Approved: June 25, 2002

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#### **Project description**

The project involves financing for Amaggi, a large Brazilian soybean producer, crusher, and exporter which will assist a growing export-oriented company located in a major soybean production area through the provision of pre-export finance with longer maturities not currently available in the market. The funds will be utilized to (i) increase permanent working capital; (ii) provide necessary liquidity levels to support the group's increasing annual crop and grower pre-financing requirements; and (iii) help fund minor capital investments. The group has been playing a major role in the agricultural development of central west Brazil, not only as a supplier of agricultural credit to soybean producers but in improving logistics and transport (specifically the development of the free flowing riverine transport of soy beans on the Madeira River from Porto Velho to a deepwater port at Itacoatiara on the Amazon River) that have been a significant constraint to agricultural development in Mato Grosso.

Soy production is being promoted by the Brazilian government and has become the dominant arable crop of Brazil's center west. In part because of its rapid spread, some sectors of society have expressed concerns including among others, infrastructure development proposals that open up new areas of land, conversion of sensitive ecological habitats, production methods which are heavily mechanized and dependent on large scale agricultural operations and inputs, genetically modified soy, and variation in the capacity of States to monitor and enforce land-use planning.

#### **Environmental Category B disclosure requirements**

IFC requires that this document is made available through the World Bank InfoShop and to the locally affected community no less than 30 days prior to project consideration by the IFC Board of Directors. The Summary of project Information (SPI) provides details of where the ERS has been made available to the locally affected community. The SPI must be sent to InfoShop no less than 30 days prior to project consideration by the IFC Board of Directors.

To view the Summary of Project Information(SPI) for this project, [click here](#)

#### **Environmental and social issues**

This is a category B project according to IFC's Environmental and Social Review Procedure. Environmental, social and health and safety issues associated with this project include:

- Farm acquisition and associated impacts to natural habitats (including cerrado grassland and tropical forest) and possible economic and social impacts;



- Agricultural practices and opportunities (including use of agrochemicals, water use and management; land management and tillage);
- Logistics and transport;
- Processing facilities and issues (including air emissions and waste water effluents, solid waste, and use of hazardous materials);
- Occupational health and safety issues throughout operations;
- Possible environmental and social issues associated with pre-financing activities;
- Corporate capacity in environmental and social areas;
- Community relations and development initiatives.

**Proposed mitigation for environmental and social issues**

The sponsor has presented plans to address these impacts to ensure that the proposed project will, upon implementation of the specific measures agreed, comply with applicable host country laws and regulations and World Bank/IFC requirements. The information about how these potential impacts will be addressed by the sponsor/project is summarized in the paragraphs that follow.

*Farmland acquisition and conversion:* Amaggi produces soy (and other agricultural products) from 12 farms in Mato Grosso (see table 1). These farms were developed on land that had largely (80%) been farmed by others previously, and acquisition by Amaggi did not result in involuntary resettlement or economic displacement. Neither did farm development take place on indigenous areas or sites that have been gazetted for conservation purposes. All arable farms in Mato Grosso are required to set-aside certain areas (legal reserves and permanent protected areas) for conservation. The specific details of this requirement are defined in the Unified Environmental Law - LAU (fema.mt.gov.br) and Amaggi has met, or is in the process of meeting, all state conservation set-aside requirements as described in Table 1. During appraisal of this investment, IFC found no evidence that the company has been directly involved in illegal land conversion or encroachment on indigenous reserves.

*Agricultural practices and opportunities:* Amaggi farms approximately 80,700ha in the State of Mato Grosso. Production systems include soy, corn and cattle. Ninety percent of the arable farmland (100% at the Company's largest farm at Tunucare) utilizes no till /direct planting technology (which reduces soil erosion and run-off, as well improving the soil structure and nutrient status). There is heavy and highly mechanized agro-chemical use, and some chemicals that are used are rated as highly or moderately hazardous under the World Health Organization agrochemical classification system. However the use of these products is well managed and controlled and there is appropriate use of personal protective equipment, as well as appropriate levels of training and agrochemical management. Attempts to promote the use of integrated pest management are evident (crop rotation and soil management, use of biological controls). There is a limited amount of irrigation (applied on one farm to approximately 460 ha in the municipality of Itiquira) and for which the company has all relevant permits and permissions. There is no irrigation on any other company farms. There is no use of genetically modified materials on the company farms.

*Logistics and transport:* The company operates a barge and transshipment facility at Porto Velho (R Madeira) and Itacoitiaria (R Amazon) and have all appropriate environment licenses to operate these facilities. Development and operation of these facilities does not require channel or dredging work and the company has not modified the course or structure of either river. Monitoring of environmental and occupational health and safety is undertaken and there is regular reporting to the National Council for the Environment (Conselho Nacional de Meio Ambiente - CONAMA). The company is in compliance with Brazilian and IFC requirements with the exception of some minor occupational health and safety improvements that the company will undertake. Details of such improvements and a timetable for their implementation over the course of the investment will be a condition of disbursement (CoD) for IFC investment.



**Processing facilities and issues:** The company operates a soy crushing plant at Cuiaba and has recently (April 2002) inaugurated similar facilities at Itacoatiara. At the *Cuiaba* facility there is minimal use of water at the site and domestic waste effluents are discharged to the municipal sewer. Process waste effluents are re-cycled or used for irrigation in a nearby orchard. Solid wastes are disposed of to landfill or recycled. Solvent (hexane) use achieves industry standards and IFC requirements. The boiler uses a combination of dust, rice husks and diesel oil for fuel. Monitoring of stack emissions is not currently undertaken and the Company will initiate monitoring of air emissions and will implement improvements if air emissions fail to comply with IFC requirements. Details of such improvements and a timetable for implementation will be CoD for IFC investment. Ambient dust levels are high and a number of improvements in other occupational health and safety features will be developed. Details of such improvements and a timetable for their implementation over the course of the investment will be a condition of disbursement (CoD) for IFC investment.

The *Itacoatiara* facility comprises an existing grain silo and transshipment facility (plus associated facilities – including power generation) and a soy crusher covering a total 26ha. Land for the silo and crusher was purchased through willing seller willing buyer processes and there has been no economic displacement or resettlement. Neither has there been a significant impact on natural habitats. The site has a dedicated waste water treatment works (designed to achieve Brazilian and IFC waste water quality requirements) which will treat all process and domestic effluents. Amaggi will provide design specifications and confirmation that the waste water treatment works will achieve these standards as a CoD for IFC investment. The site has a solid waste disposal plan which has been approved by the municipality and recycling (of glass etc) is undertaken where possible. Expansion of the thermoelectric generators will be required to service the crusher and these will be fueled by a combination of biomass and other solid fuels (including tires). The sponsor will provide details, design specifications and – as necessary guarantees that the generators will be able to operate in compliance with IFC requirements as a CoD for IFC investment. Fuel wood supplies for generators are currently obtained from the legal sale of wood sourced from cleared land authorized by a government run agricultural colonization program for previously landless farmers. The sponsor plans to develop its own plantation (800ha on degraded land) to service wood supply demand and aims to be self sufficient in 5 yrs. The Instituto de Protecao Ambiental do Amazonas (IPAAM) confirms that the company is operating in compliance with Brazilian laws and regulations and local municipality environment staff indicated that the company was in compliance with Brazilian requirements. There is regular environmental reporting to CONAMA and IPAAM.

The silo and trans-shipment facilities are in compliance with IFC requirements – barring some minor occupational health and safety improvements (ambient particulates, designated walkways, machine guards). Details of such improvements and a timetable for their implementation over the course of the investment will be a condition of disbursement (CoD) for IFC investment.

**Soy drying and seed warehouses:** There are few environmental and social issues at these sites. Grain dryers are fired by wood and the company plans to develop its own plantations to service this need (currently wood is procured in a similar manner as for the *Itacoatiara* facility). There are no process waste effluents and domestic effluents are discharged to sewer or septic tanks. Solid waste is disposed of to municipal land-fill or spread on fields as a soil conditioner (ash from dryers).

**Occupational health and safety(OHS) issues:** The sponsor has developed occupational health and safety plans for each of its operational sites and has a formal health and safety management program (Comissao Interna de Prevencao de Accidentes -CIPA) in place. The program has been developed in accordance with Brazilain health and safety legislation and requirements and the company employs technical engineers and medical staff to implement and monitor OHS performance. A number of minor improvements in OHS are required to ensure that the project achieves compliance with IFC's requirements (relating to use of personal protective equipment,



ambient air quality, noise and use of compressed air). Details of such improvements and a timetable for their implementation over the course of the investment will be a condition of disbursement (CoD) for IFC investment.

*Environmental and social issues associated with pre-financing activities:* Currently Amaggi pre-finances approximately 900 farms in Mato Grosso centered on Sapezal, but extending north east to Sorisso/Chapada dos Parecís and north-west to Rondonia. To ensure that IFC environmental and social requirements for this type of pre-financing support are met, the sponsor will develop an environmental management system and recruit full time qualified staff to "screen" each application, assess environmental and social risk and monitor performance. Specifically, the pre-financing contracts (Cedula de Produtor Rural – CPR) that is developed for each pre-financing agreement includes a special clause that requires farms to confirm that they have no involvement with child labor, do not finance farms with land conflicts, and that farming activities will not affect indigenous peoples or conservation units (Unidade de Conservacao).

*Corporate Capacity in Environmental and Social Areas:* In order to improve and formalize Amaggi's capacity to manage environmental and social issues in their operations and in pre-financing operations, the company will develop an environmental management system (EMS) as a CoD for IFC investment. The EMS will address environmental, occupational health and safety and social issues of Amaggi's direct farming, transport, and processing operations. The EMS will also be designed to monitor key environmental and social issues (described in section 14 above) in relation to indirect (pre-financing) activities. Components of the EMS will relate to external relations, communications and disclosure, roles and responsibilities for environmental issues, community development and social initiatives, and documentation of information and training /capacity building for employees.

*Community Relations and Development Initiatives:* The company has undertaken and supported a range of activities to benefit both their employees and the local communities where their operations are located. Initiatives are strongest in the centers of Amaggi operations (Itacoatiara and Sapezal). The majority of company employees are drawn from local communities. In Itacoatiara, the company is both the largest local employer (with 332 full time employees) and the most active local corporate citizen. The same is also true for Sapezal where the company has 350 employees. Programs for workers include: salaries at least 10% above wages paid for similar work in the area, health care coverage for workers and dependents, support for workers to own/build their own homes (and improve sanitary conditions), support for workers to continue their education, to cover transport costs, canteen meals supervised by nutritionists, and arrangements with local supermarkets and pharmacies that allow workers to only pay at the end of the month. Community support and development activities include: support for local municipalities including assistance with construction and equipping hospital, schools, and community church, road and infrastructure construction, donation of vehicles and supporting fuel needs for local groups (including the local police force), and providing food donations to child care facilities for poor children. In Itacoatiara, the company also generates employment by local outsourcing for food preparation and adding company emblems to uniforms. Since 2000, Amaggi has developed collaborative activities with a local environmental NGO (ARPA- Associacao Rondonopolitana de Protecao Ambiental).

### **Conclusion**

Accordingly, IFC concludes that the proposed project will meet the applicable World Bank/IFC environmental and social policies and the environmental, health and safety guidelines upon successful implementation of the agreed mitigation measures.

### **Monitoring and compliance**

IFC will evaluate the project's compliance with the applicable environmental and social requirements during the lifetime of the project by reviewing the annual monitoring reports (AMRs) prepared for the project covering: ongoing performance of project-specific environmental, health

and safety and social activities as reflected in the results of periodic and quantitative sampling and measuring programs. Periodic site supervision visits may also be conducted.

### Environmental and Social Documentation

**Table 1 - Conservation Areas on Amaggi Farms**

<b>Farm</b>	<b>Total area (ha)</b>	<b>Area (ha) and (%) of permanent preserve</b>	<b>Area and (%) of legal reserve</b>
<i>SM-5</i>	3,622	175 (4.8%)	287 (7.9%)
<i>Sapezal</i>	11,174	191 (1.7%)	2,841 (25.4%)
<i>Promissao</i>	116	0	0
<i>Bom Futuro</i>	4,486	453 (10.1%)	897 (20%)
<i>Ponte de Pedra</i>	62	0	12.5 (20%)
<i>SM-6 and SM -1</i>	5,188	296 (5.6%)	1,038 (20%)
<i>Ponte de Pedra</i>	4,406	0.9 (0.02%)	881 (20%)
<i>Esperenca</i>	2,955	29 (0.9%)	242 (8.2%)
<i>Juruena</i>	500	8.7 (1.7%)	172 (35%)
<i>Tucunare</i>	45,110	965 (2%)	7,031(15.5%)
<i>SM-3</i>	1,567	0	313 (20%)
<i>SM-2</i>	1,545	0	307 (20%)
<b>Total</b>	<b>80,731 ha</b>	<b>2,118.6</b>	<b>14,021</b>

Farms were acquired individually between 1985 and 2001. Under State conservation requirements (FEMA), permanent and legal reserve areas 20% of each farm in these areas of Matto Grosso are required to be left unfarmed for conservation purposes. Degraded areas of permanent preserve on the company farms are being reforested with native species.

Where total land area set aside for conservation is less than 20% (Promissao, Esperenca, SM-5 and Tucunare), Amaggi is in the process of agreeing (with FEMA) conservation off-sets on the Island of Bananal - an area which has been identified by FEMA as a priority conservation area. This arrangement is possible under the recently agreed Unified Environmental Law (LAU) and will be concluded by the end of 2002.