
GREENPEACE
EATING UP
THE AMAZON

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The Government decision to make it illegal to cut down Brazil nut trees has failed to protect the species from the expanding agricultural frontier. When farmers clear the land to plant soya, they leave Brazil nut trees standing in isolation in the middle of soya monocultures. Fire used to clear the land usually kills the trees.

DESTRUCTION BY NUMBERS – THE KEY FACTS

THE SCENE:

The Amazon rainforest is one of the most biodiverse regions on earth. It is home to nearly 10% of the world's mammals[1] and a staggering 15% of the world's known land-based plant species, with as many as 300 species of tree in a single hectare.[2]

The region is also home to about 220,000 people from 180 different indigenous nations[3] who live deep in the rainforest, along with many more traditional forest-dependent communities. The rainforest provides these people with everything from food and shelter to tools and medicines, and plays a crucial role in the spiritual life of indigenous peoples.

All this is threatened by deforestation and related crimes, committed for the sake of the profits to be made from agricultural commodities such as soya.

THE CRIME:

Since Brazil's President Lula da Silva came to power in January 2003, nearly 70,000km^2 of the Amazon rainforest has been destroyed.[4]

Between August 2003 and August 2004, 27,200km^2 – an area the size of Belgium – was lost. Three-quarters of this destruction was illegal.[5] That's an area 10km long by 7.5km wide lost every day. More than 3km^2 every hour. A football pitch every eight seconds.[6]

In 2004–05 around 1.2 million hectares of soya (5% of the national total) was planted in the Brazilian Amazon rainforest.[7]

It is well documented that slave labour is used to clear forest for agriculture. Mato Grosso and Pará – the two Amazon states at the leading edge of the soya frontier – are responsible for more than half of all the slaves reported in Brazil.[8] Between 2003 and 2004, the Brazilian Government reported nearly 8,700 slaves in the two states.

Up to 75% of Brazil's greenhouse gas emissions result from deforestation – with the majority coming from the clearing and burning of the Amazon rainforest.[9] Amazingly, relative to its industrialised size, Brazil is the world's fourth largest climate polluter.

THE CRIMINALS:

Three US-based agricultural commodities giants – Archer Daniels Midland (ADM), Bunge and Cargill – are responsible for about 60% of the total financing of soya production in Brazil. Together, these three companies also control more than three-quarters of the soya crushing capacity in Europe that supplies soya meal and oil to the animal feed market.[10]

With an estimated 13 silos and an illegal port facility already built into the Amazon rainforest, Cargill is leading soya's invasion of the region – spurring the incursion of illegal farms and building infrastructure to deliver Amazon soya to global markets. Bunge and ADM are following Cargill's lead, with an estimated six and four silos respectively in the Amazon.[11]

PARTNERS IN CRIME:

80% of the world's soya production is fed to the livestock industry.[12]

Spiralling demand for soya animal feed from European agribusiness is driving the expansion of the agricultural frontier into the Amazon rainforest. Europe buys half the soya exported from the Amazon state of Mato Grosso, where 90% of rainforest soya is grown. Meat reared on rainforest soya finds its way onto supermarket shelves and fast food counters across Europe.


LEVANTE A AMAZÔ

Since 1998, Greenpeace has been working alongside Amazon communities to investigate and expose the threats to the Amazon, and to confront the major actors driving the criminal destruction of this globally critical rainforest. In order to improve our effectiveness, we set up a satellite mapping team in the Amazon to track and identify those responsible for opening up illegal roads and driving deforestation. This work is coupled with on-the-ground investigations and aerial surveillance.

INTRODUCTION:
THE TRUTH BEHIND THE BEAN

SOYA'S INVASION OF THE AMAZON

In early 2003, the Brazilian Government launched a plan to combat deforestation in the Amazon. By 2004–05, the rate of deforestation – which had leapt to a ten-year high – had returned to its 25-year average of about 18,000km^2 a year.[13]

In 2004, however, Greenpeace started to document a powerful newcomer beginning to operate at the frontier of Amazon destruction: the soya industry. Through field investigations, aerial surveillance, interviews with affected communities, industry and political actors, analysis of Brazilian Government satellite and export data, tracking of shipments to the international market and a host of other research techniques, Greenpeace has built up a preliminary picture of this devastating new industry. This report represents our initial findings.

At the heart of Amazon destruction, Greenpeace has identified three US-based agricultural commodities giants – Archer Daniels Midland (ADM), Bunge and Cargill. These same three companies have a virtual monopoly of soya crushing capacity (for meal and oil) in Europe, supplying the lucrative animal feed industry with this cheap, high-protein ingredient – so fuelling Europe's intensive meat and dairy production, and feeding its ever-growing demand for cheap meat.

These companies also control other aspects of the food supply chain such as – in the case of Cargill – large-scale livestock farming and meat processing, making them not only buyers, suppliers and processors but consumers of soya. They are building up their presence in the Amazon by constructing storage and processing facilities and encouraging the development and expansion of illegal farms hacked out of the rainforest, whose operations are made viable by the infrastructure the companies have put in place.

WHY IS SOYA IN THE AMAZON?

Giants such as ADM, Bunge and Cargill have established themselves in the Amazon because they know they can make easy money out of the destruction of the rainforest. By providing everything from seeds and agrochemicals to the transport and storage infrastructure needed to access global markets, ADM, Bunge and Cargill act as a magnet drawing farmers into the Amazon rainforest.

While soya is being planted in areas previously deforested for cattle ranching, in large areas of Mato Grosso and Pará, the Amazon rainforest is also being converted directly to soya monocultures. Soya farmers deforest the land, usually planting rice for the first year to prepare the soil, and then grow soya. It is common practice for farmers to illegally grab public land, and deforest it using cheap, sometimes slave labour – the rainforest is largely beyond the law so the risks are low. Such criminal activities in effect constitute perverse financial subsidies for Europe's cheap meat.

Europe is a key market for Amazon soya. Nearly 18 million tonnes of soya beans and meal are imported into Europe from Brazil annually.[14] Almost all the soya exported in 2005 from the Amazon port of Santarém, built illegally by Cargill, was destined for Europe.

GREENPEACE'S INVESTIGATION

Since 1998, Greenpeace has been working alongside Amazon communities to investigate and expose the threats to the Amazon, and to confront the major actors driving the criminal destruction of this globally critical rainforest. Together, we are pushing for environmentally responsible and socially just solutions for the people of the Amazon.

In order to improve our effectiveness, we set up a satellite mapping team in the Amazon to track and identify those responsible for opening up illegal roads and driving deforestation. This work is coupled with on-the-ground investigations and aerial surveillance. Our evidence has been presented to the Brazilian authorities to compel them to act, and also has been shared with local communities and other NGOs.

The results speak for themselves. Our campaigns in Brazil, in global political forums, and critical market areas such as Europe and the USA, have persuaded the Brazilian Government to act on a number of fronts – closing illegal logging operations, ending the illegal mahogany trade, marking the legal boundaries of indigenous lands, creating new protected areas as a buffer against deforestation, and creating community reserves – all of which allow traditional forest people to regain control of their land for genuinely sustainable development. But much remains to be done if the Amazon, its peoples and its wildlife are to be safeguarded in the long term.

In this report we illustrate the soya crisis through the example of two key global players: Cargill (possibly the largest private company in the world) in the Amazon and McDonald's (the largest fast food company in the world) in Europe. We document the path taken by soya from illegally cleared farms, sometimes with the use of slave labour, to Cargill and its competitors, through the ports, processors and meat producers of Europe, and finally into the Chicken McNuggets sold under the golden arches across the continent.

While we focus on McDonald's, our investigations have also shown that the same crimes are likely to be on the menu of the majority of European fast food retailers and supermarkets. If we can track soya beans more than 7,000km from farms in the Amazon to chicken products in Europe, there is no excuse for the whole of the food industry not to do the same and to demand the exclusion of Amazon soya from their supply chain. However, not one of the major food processors, fast food chains or supermarkets contacted by Greenpeace was able to provide evidence that it was not using soya from the Amazon rainforest.

THE NEED FOR ACTION

Deforestation for cash crops such as soya does not translate into meaningful development for the peoples of Brazil's Amazon. It leads to displaced communities, illegal privatisation of public lands, the suffering of enslaved workers, and barren or contaminated lands and river systems. The devastation to biodiversity is irreversible, and a sustainable resource of unimaginable richness is lost forever. Nor do the impacts of deforestation end at the edge of the Amazon. By releasing centuries' worth of stored carbon into the atmosphere, the destruction of the Amazon rainforest makes a significant contribution to global warming, putting the whole world at risk.

Brazil's President Lula da Silva is failing to stop this invasion of the Amazon. Since he came to power in January 2003 nearly 70,000km^2 of rainforest has been cleared.[15] And an area of similar size[16] will have been degraded through logging, making the Amazon more vulnerable to fires and incursion by farmers.

But there are a number of factors that give cause for hope:

- **The scale of Amazon soya cultivation is still relatively contained.** In the 2004–05 planting season, only 5% of the total area in Brazil planted with soya was in the Amazon biome[17] – the proper biogeographical term for the area recognised as forming the Amazon rainforest ecosystem.[18] Over 90% of this Amazon soya was grown in the state of Mato Grosso.[19]

- **Existing and potential drivers of its illegal expansion are easily identifiable.** With proper environmental planning and strict governance, infrastructure projects such as soya drying and storage facilities or port terminals, which encourage the already rampant process of illegal land grabbing and deforestation in the rainforest, could be stopped.

- **Proper enforcement measures can be a barrier to destruction.** In 2005, the rate of illegal deforestation fell for the first time in nearly ten years,[20] due largely to the Brazilian Government's efforts to clamp down on corruption and illegal logging, and the creation in key regions of further protected areas situated so as to act as barriers to destruction.

- **The market has power.** As we have seen with European consumer rejection of genetically modified (GM) soya, supermarkets, food companies and fast food retailers have the power to transform the market.

Key players in the expansion of soya in the Amazon, and who have it in their power to turn back the tide, include:

- **Global commodity traders:** the market and production strategies of the mainly US-owned agricultural giants, such as ADM, Bunge and Cargill, finance and facilitate forest destruction.

- **The European food industry:** the growing market for soya for animal feed, especially to meet demand for meat products on the part of European food producers, fast food chains and supermarkets, is driving the advance of the agricultural frontier in Brazil.

- **The Brazilian Government:** lack of governance, a weak system of land titling, and a failure fully to protect public land in the Amazon make illegal land grabbing and deforestation easy, low-risk and cheap.

Solutions are obvious. With proper governance and industry action, there is still a chance that Brazil's soya industry can be excluded from the Amazon biome. An alternative, more environmentally responsible and socially just model of development for the world's most important rainforest is needed. But this will only happen with the support of businesses and institutions in the developed world.

The market needs to change. Companies involved in the food and feed industries must ensure that they are not using soya from the Amazon or GM soya, and they must urgently develop legal, environmentally responsible and socially just sourcing policies. This includes putting in place traceability systems to verify where a product's ingredients are sourced from, the conditions in which they are produced, and the overall impact of their production.

Governments and banks need to act. Governments and international financial institutions have increasingly promoted production of global agricultural commodities such as soya as a vehicle for development, even though they offer little in the way of value-added local industry. Yet this investment in soya and related infrastructure such as roads is harming both people and the environment, undermining economic and environmental sustainability.

Governments must urgently establish a global network of protected areas in the world's last ancient forests, including the Amazon rainforest. Until these networks are in place, governments must establish a moratoria on all new industrial developments in areas of intact forest landscapes.

'A smoky haze blurs the frontier between the world's mightiest forest and its biggest threat: the humble soya bean. The four-month burning season in the Amazon is when the giant trees felled to make space for crops are reduced to ashes. Even after being slashed and burned, the trunks of the tauari and maçaranduba are so huge that their embers glow for more than two years... Brazil's boom crop and [the world's] growing appetite are clearing more forest than logging, cattle farming and mining... Brazil is rapidly becoming the takeaway for the workforce of the world.'

The Guardian 'A hunger eating up the world', 18 January 2005[21]

'You could look all the way to the horizon. It was an ocean of soybeans as far as you could see. Hour after hour passed as we travelled along an asphalt road called BR163. We were all in shock. All this land has been cleared in the past 10 years? ... When I saw with my own eyes how TWO D-7 caterpillars could flatten 80 acres of trees per day, I was completely amazed. I had learned that hundreds of caterpillars were working in the forest at any given moment.'

US soya expert Kory Melby's January 2001 account of how he came to be a farming consultant in Brazil[33]

HOW SOYA IS DRIVING THE AGRICULTURE FRONTIER INTO THE RAINFOREST

The dramatic expansion of soya production in the Brazilian Amazon reflects an ongoing, equally dramatic and equally predatory shift in global commodities markets as a whole.

Until the early 1980s, the USA accounted for more than 90% of world soya exports. By the end of that decade, however, US dominance had begun to slip as soya expansion in Latin America began to take off, led by US-based multinationals such as ADM and Cargill. In 2003, the combined soya exports from Argentina and Brazil surpassed US exports for the first time.[22] The rapid growth of Latin American soya production has driven down global prices, making soya less profitable and less economically viable in the USA (even with government subsidies) and leading many farmers to abandon it for other crops.[23]

While China emerges as the world's manufacturing workshop and India as the service industry's back room, Brazil – in the words of former US Secretary of State Colin Powell – is becoming an 'agricultural superpower.' In the last few years Brazil has become the world's largest exporter of beef, chicken, sugar, coffee and orange juice. [24]

In 2005, Brazil added the soya bean to the list of export commodities in which it leads the world.[25] In 2004–05, Brazil produced over 50 million tonnes of soya across nearly 23 million hectares,[26] an area of land about the size of Great Britain.[27]

Within Brazil, the world's largest commodities traders (ADM, Bunge and Cargill) along with big Brazilian players like the Governor of Mato Grosso, Blairo Maggi, have all driven the soya invasion northwards, initially into the *cerrados* (savannahs on the edge of the rainforest),[28] through the provision of inputs such as seeds and agrochemicals and the construction of soya export infrastructure. With limited room left for expansion in the cerrados and increasing land prices there, soya is now leading the advance of the agricultural frontier into the Amazon rainforest, facilitated by both legal state roads and illegal access roads.

This is a new and ominous threat to the rainforest – the leading cause of deforestation today. To understand why, we need to look at the complex and chaotic issues surrounding land ownership in Brazil.

Public and indigenous lands account for nearly three quarters of the area of the Legal Amazon states.[29] While some public land falls within protected areas, most of it is classed as 'empty lands.' These unprotected and vulnerable lands include proposed protected areas, indigenous lands not officially recognised by the government, and other areas where the government currently has little legal control.[30]

Soya farmers target these lands. The land seizure is often on a large scale – thousands of hectares of land, not mere smallholdings. The farmers use loggers, bulldozers, and even slave labour to clear and then burn the forest in readiness for the crop.

What makes the soya industry's assault upon the Amazon even more damaging than previous incursions by other actors such as cattle ranchers and illegal loggers is that, unlike the ranchers and loggers, farmers planning to grow soya have access via international banks or global companies such as Cargill to cheap credit and other inputs, along with a guaranteed market for their harvests.[31] So soya farmers have the incentives and resources to buy large areas of cleared land or to pay for occupied land to be cleared.

In the absence of barriers to the illegal encroachment of the agricultural frontier in the Amazon, infrastructure projects such as roads which facilitate soya exports give speculators easy access to the rainforest, making it vulnerable to new incursions. This process threatens to fragment the existing core area of the Amazon, destroying the integrity of its ecosystems and indigenous lands.[32]

MATO GROSSO – THE FRONT LINE OF DESTRUCTION

Mato Grosso – the name literally means 'thick jungle.' Over half of Mato Grosso is in the Amazon biome. But Mato Grosso is a thick jungle no more; instead it is rapidly being transformed into a soya desert. One-third of the rainforest has now been cleared,[34] mainly by illegal deforestation, to make way for the advancing agricultural frontier.[35]

Within the space of a few years, Mato Grosso state has become the largest soya producing state in Brazil, accounting for almost a third of Brazil's total 2003–04 harvest.[36] Farms here are larger, more mechanised, and use more chemical inputs than those in the south of Brazil.[37]

The area planted with soya in Mato Grosso is twice the size it was in 1996,[38] and this expansion is driving the agricultural frontier into the Amazon.[39] Mato Grosso heads Brazil's statistics for deforestation and fires, [40] accounting for nearly half of the deforestation in the Amazon in 2003–04.[41] According to the Mato Grosso state environment agency,[42] two-thirds of this deforestation – the majority of it carried out to clear land for agriculture – is illegal.[43]

Described as a 'compulsive environmental criminal' by a Federal Prosecutor, land grabber José Donizetti Pires de Oliveira is accused of illegal deforesting 1,645 hectares in an area east of Santarém – rapidly becoming a frontier for the expansion of soya. Oliveira was arrested on 17 March 2006 at the office of the Agricultural Producers Association in Santarém (APAS), of which he is the president.

'The new owners of Brazil's soy industry are the same companies that dominate the seeds, fertilizers, growing, shipping and sales of US soybeans. Cargill, Archer Daniels Midland and Bunge alone control more than 60% of Brazil's soy exports.'

Glen Switkes, 'Feedstuffs' – a US Farm Bureau publication, 30 April 2001[44]

'As radical as it sounds, the prediction that 170 million hectares of new farmland could potentially be brought under crop production in Brazil might still be considered a conservative estimate [as it] ignores the actual scope of deforestation that is occurring and is likely to continue to occur in the Amazon Basin ... Large-scale farmers are currently responsible for the lion's share of Amazon deforestation, and their access to new land parcels will be accentuated by new road development.'

USDA, 'Brazil: future agricultural expansion potential underrated' 21 January 2003[45]

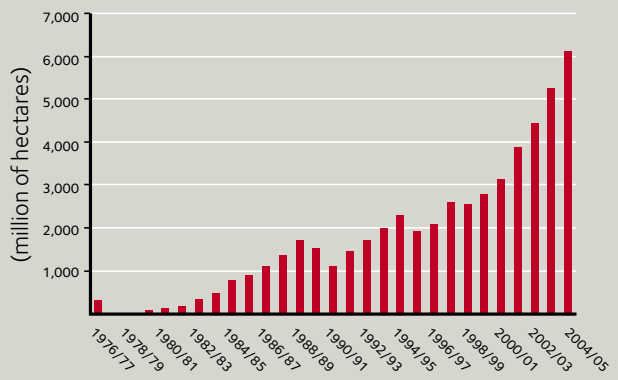
WHO PROFITS FROM AMAZON DESTRUCTION?

To profit from soya production as a global cash crop, farming must be done on a large scale. The soya industry in Brazil employs fewer people per hectare than any other crop grown across the country. Soya farms reach up to 10,000 hectares in size but employ only one worker per 170–200 hectares.[46] So it is not local communities who are benefiting from the soya industry. Instead, 'a critical mass of professional farmers and multinational agribusiness companies' are benefiting from transforming the Amazon 'into a tropical agricultural powerhouse... government officials, agribusiness executives, and producers alike recognize this, and are collectively working to ensure this happens.'[47]

World trade in and processing of soya is concentrated in the hands of a small number of global commodity traders who also often control other aspects of the food chain: ADM, Bunge and Cargill. In Brazil, this cartel assumes the role of the banks in providing resources to farmers. Instead of offering loans they provide farmers with seed, fertiliser and chemicals in return for soya at harvest: Bunge alone provided the equivalent of nearly US$1 billion worth of inputs to Brazilian farmers in 2004.[48] This gives the companies indirect control over huge swathes of land. Together, these three giants are responsible for about 60% of the total financing of soya production in Brazil[49] and control almost 80% of the EU's soya crushing capacity for meal and oil.[50] Such integrated production – the ownership of many parts of the supply chain – means that they have a virtual monopoly on supply.

The link between crime in the forest and the global market is most clearly illustrated by the case of Cargill, which not only controls a huge percentage of the world's soya trade, but also has important interests in global meat production and food processing. The company has ambitions to dominate 'the global chicken value chain'[51] – ie to control cheap chicken for fast food, catering, ready meals and 'value packs.' As Greenpeace investigations show, Cargill is both driving illegal forest destruction and feeding the products of this destruction to the world through fast food retailers and supermarkets.

AREA OF SOYA PRODUCTION IN MATO GROSSO



Source: CONAB - Levantamento: Jan/2006

SPEARHEADING DESTRUCTION: GRUPO ANDRÉ MAGGI AND THE SOYA KING

'As governor, my key goal is to... triple agricultural production in Mato Grosso within 10 years.'

Blairo Maggi, Mato Grosso governor and soya producer. Interview with Soybean Digest 1 March 2003

Along with the world's largest commodities traders ADM, Bunge and Cargill, big Brazilian players like Blairo Maggi have all driven the soya invasion into the Amazon.

Blairo Maggi is not only the governor of Mato Grosso, he is also the head of Grupo André Maggi, the largest individual soya producer in the world.[52] Maggi is a major international trader, exporting over two million tonnes of soya annually.[53] He is known in Brazil as 'O rei da soja' – the soya king.

Grupo André Maggi bears a huge amount of responsibility for 'reshaping' the Amazon – initiating soya cultivation in Mato Grosso and driving its expansion into the Amazon. Indeed, the company boasts its prominent role in opening up the area for agriculture in the name of progress and economic development.[54] To date, Greenpeace estimates that Grupo André Maggi has established 13 soya silos in the Amazon.[55]

In 2002, when Blairo Maggi was elected as governor, he added political influence to his economic power, and called for a tripling of the area planted with soya in Mato Grosso over the following decade.[56] In Maggi's first year in office as governor, the annual deforestation rate in Mato Grosso increased by around 30%.[57] When questioned about this high level of deforestation in an interview with the *New York Times*, Maggi responded: '*I don't feel the slightest guilt over what we are doing here ... it's no secret that I want to build roads and expand agricultural production.*'[58]

Maggi's power allows him to add funding from the Brazilian and Mato Grosso state governments to money from private companies (including his own), and to access international lenders such as the International Finance Corporation (IFC), the private lending arm of the World Bank. The funds go towards transport infrastructure projects that invite deforestation of the Amazon: new roads, port facilities and navigable waterways cutting through the heart of the rainforest.

THE BANKS BEHIND THE MAGGI BULLDOZER

'The fact that problems exist within a sector does not mean that a single actor who behaves in a responsible way should not be supported.'

IFC/World Bank Brazil Country Manager Wolfgang Bertelsmeier justifying a US$30 million loan to Grupo André Maggi, 23 July 2003[59]

International lenders are playing an important role in the expansion of large-scale soya cultivation, providing capital for infrastructure development, agrochemical inputs and prefinancing of farmers.[60] The case of Grupo André Maggi demonstrates how multiple public and international loans for soya production, processing facilities and transport infrastructure are pushing the conversion of the Amazon rainforest into a vast monoculture.

Grupo André Maggi has had easy access to financing from public and private banks in Europe and Japan, and from the IFC, totalling more than US$660 million.[61] These loans have helped the company finance advance payments to suppliers and infrastructural development for the storage and transport of soya.

In 2002, Grupo André Maggi landed the first of two US$30 million loans from the IFC in order to enlarge the company's storage capacity and to finance soya production by its contract farmers. The IFC justified this by saying that even if the soya sector as a whole was under criticism, individual companies with a 'good performance' could surely still be financed.[62] The IFC is bound to the World Bank's development mandate, and aims to *'promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives.'*[63] It has specific guidelines stipulating that projects be screened and classified according to the environmental and social impacts that could result from project funding.[64]

In 2004, only 15% of the Grupo André Maggi's total output came from its own farms. The remaining production came from some 2,000 third-party farmers, of which 45% were prefinanced through the 'Amaggi Expansion Project.'[65]

In 2004, the then World Bank President James Wolfensohn called for an audit of the IFC's loan to Grupo André Maggi.[66] The audit found that the IFC had not undertaken a sufficiently rigorous assessment of the company, and that therefore its assessment of the loan as low-risk could not be justified.[67] For instance, under the Forest Code of the Unified Environmental Law in Brazil, property owners are required to retain a specified percentage of native vegetation (80% for forest areas, 50% for cerrado). The review found that these requirements were not met on farms covering two-thirds (55,000 hectares) of Maggi-owned land[68] – in other words, the farms had broken the law.

Furthermore, the review did not even investigate compliance with the forest code by the third-party farms, even though almost 90% of the overall budget for the IFC Amaggi Expansion Project was to support the prefinancing of these farmers.[69] The fact that this legislation is so frequently violated leads one to conclude that the environmental cost of financing Grupo André Maggi extend beyond the company itself.

However, the fact that the IFC had classified Grupo André Maggi projects as 'category B' – ie of low environmental risk – and approved loans for these projects meant that private banks considered it unnecessary to evaluate and monitor the company according to their own environmental and social policies, including prohibitions on conversion of rainforest and monocultural methods.[70] For instance, Rabobank, the Netherlands' biggest agricultural bank, has led the provision of two loans together worth US$330 million: an IFC audit report found that 'Rabobank's reasoning [for giving Maggi the loan] was that if IFC approves this project and they classify it only as a class B, low-risk project, we can safely invest $230 million [the value of the second loan], eight times more than what IFC is investing, in this corporation.'[71]

Some private banks, such as HSBC, that have previously financed Grupo André Maggi[72] are beginning to grapple with the problem of withdrawing finance from rainforest destruction. In May 2004, HSBC introduced a policy that states that it will no longer finance projects 'located in and which significantly degrade or convert Critical Natural Habitats.'[73]

I don't feel the slightest guilt over what we are doing here... it's no secret that I want to build roads and expand agricultural production.'

Blairo Maggi (left)

This plane is spraying herbicide inside the Amazon biome. Large-scale planting of monocultures encourages the aerial application of herbicides, and much of what is sprayed is wasted through drift and leaching.

THE ENVIRONMENTAL COSTS OF AMAZON DESTRUCTION AND SOYA MONOCULTURE

GLOBAL CLIMATE IMPACTS

The destruction of the Amazon has implications beyond domestic politics and international markets, and brings environmental impacts beyond those felt in the vicinity. The long-term environmental services provided to Brazil, its people and the world by the rainforest – and jeopardised by its destruction – are far more valuable than short-term commodities trade, be it in soya for chicken feed or illegal logs for plywood.

What is being destroyed by global demand for cheap soya is more than just one of the most species-rich habitats on earth. Scientists describe the world's largest tropical rainforest as the earth's air conditioner: the region's humidity is vital to climate regulation and cooling patterns in South America – and globally.[74] The Amazon pumps about seven trillion tonnes of water a year into the atmosphere, providing the vapour that keeps the regional climate humid and rainy. The conversion of water to vapour also cools the air.[75]

Just as the rainforest helps keep our threatened global climate stable, so deforestation of the Amazon exacerbates global climate instability. In addition to the loss of the water cycling function, deforestation compromises the region's role as a vast carbon sink. Far from simply soaking up and storing excess CO_2 from the atmosphere, the Amazon has now become a substantial source of CO_2 pollution as burning trees and decaying vegetation release their stored carbon into the air.

In 2000, Brazil was the world's fourth-largest emitter of climate-changing greenhouse gases, ahead of industrialised nations such as Germany or the UK.[76] This high-ranking was not caused by pollution from manufacturing industries but by the deforestation that is driven by Brazil's eagerness to supply the world with cheap agricultural commodities such as soya. In fact, according to Brazil's Ministry of Science and Technology, deforestation has been responsible for up to 75% of Brazil's emissions, with 59% coming from Amazon deforestation.[77]

THE SLOW DEATH OF THE AMAZON

Deforestation aside, planting large-scale soya monocultures – particularly in such a vulnerable ecosystem as the Amazon – has other wide-ranging environmental impacts. The link between monocultural expansion, loss of biodiversity and increased vulnerability to pest outbreaks and crop disease epidemics is well established.[78] In addition, the increasing use of GM soya intensifies all the worst aspects of industrial agriculture and threatens the integrity of non GM supplies of Brazilian soya crop and the biodiversity of the Amazon rainforest.

Like many monocultures, soya monoculture leads to soil erosion, especially in areas where the crop is grown intensively. New 'no-till' systems of planting (linked with the use of herbicide-resistant GM seeds and heavy chemical use) have encouraged farmers to cultivate lands vulnerable to high levels of erosion.[79] Moreover, soya monocultures require massive agrochemical inputs (fertiliser and pesticides) to boost harvests in poor soil and to kill pests and pathogens against which intensively grown high-yield varieties have little resistance.

Large-scale soya monocultures without crop rotations quickly impoverish soils. In areas of poor soils fertilisers and lime may have to be applied soon after the land is occupied to get any kind of soya harvest – though even this only offers a temporary solution. As the soil becomes exhausted, farmers abandon the land which was so recently cleared and move to other areas where they again clear the rainforest, plant soya and repeat the vicious cycle of soil degradation and chemical pollution.[80]

Soya-related fertiliser usage has been linked to increased levels of nitrogen and phosphorus in several river basins of South America.[81] Such nutrient enrichment can be devastating to aquatic biodiversity. Pesticides also cause major problems of soil and water pollution, destruction of natural biodiversity and human poisoning.[82]

Brazil is one of the world's largest users of pesticides, and safety standards are lax. In 1996, the World Health Organisation classified nearly half of the pesticides registered with the Brazilian Ministry of Health as extremely hazardous or highly hazardous.[83] In 1997, the International Centre for Pesticides and Health Risk Prevention estimated that 10% of Brazil's population – the 15 million people working on the country's three million farms – was exposed to pesticides.[84] Since that time, pesticide sales have increased threefold nationwide, implying an increase in potential exposures. In 2002, an estimated 150,000 to 200,000 people a year suffered pesticide poisoning in rural environments, including about 4,000 deaths.[85] A quarter of all pesticides applied in Brazil are used on soya.[86]

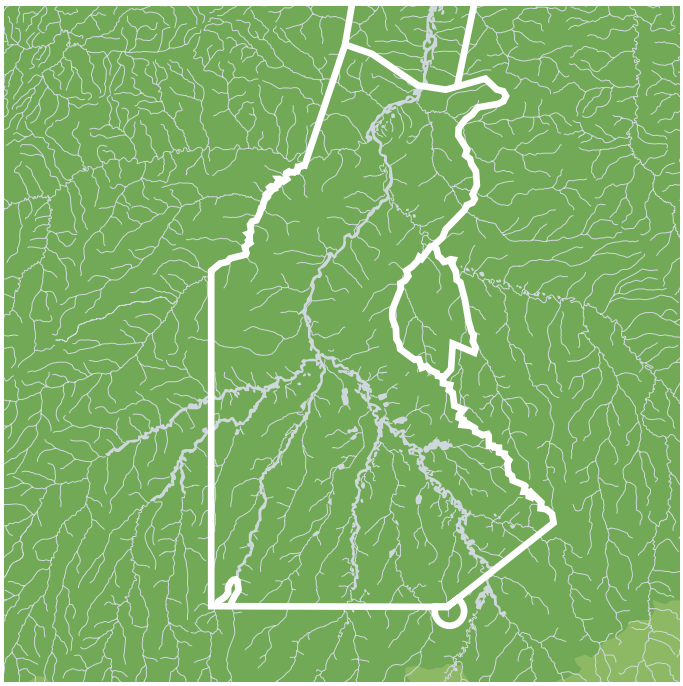
While the localised environmental and health impacts of intensive chemical usage are a cause for concern, the larger environmental issue is contamination of the rainforest and its river systems through run-off and the wider impacts of pollution. Rain and flooding wash agrochemicals off fields into rivers, killing fish and other life. These effects are often cumulative and irreversible.

In soya monocultures in Brazil, the herbicide paraquat is often used to kill weeds and other plants that try to recolonise the land. Paraquat is banned in many countries due to its toxicity, and is classified as a Restricted Use Pesticide in the USA, requiring special license to purchase and apply the chemical.[87] Roundup, the glyphosate-based herbicide manufactured by Monsanto is also widely used – particularly with the advance of GM soya into the Amazon. The widespread use of Roundup may have serious impacts on the life of the rainforest. There are new concerns regarding its toxicity to amphibians and to humans.[88]

Broad-spectrum herbicides such as Roundup kill all plants indiscriminately, leaving just the GM herbicide-tolerant crops

Xingu Basin – the waste drain for the soya industry

Rivers
Amazon biome
Xingu park boundaries



intact. The effect is not confined to the crop fields – spray drift can carry it far into neighbouring wild vegetation particularly when crop-spraying aeroplanes are used. This unnecessary destruction may lead to decreases in wild plant diversity with damaging consequences for insects, birds and mammals that are dependent on the plants affected. Where GM soya is grown, the number of herbicide applications and total quantities applied increase. Herbicide use is expected to rise further as weeds develop Roundup tolerance, as has happened in Argentina and in the USA.[89]

Moreover, Roundup is directly toxic to the naturally occurring soil bacteria that help make nitrogen available to plants, meaning that the GM soya beans designed to be grown with Roundup are dependent on chemical fertilisers for nitrogen, further increasing agrochemical use.[90]

Research in the cerrado of Mato Grosso shows that pesticide use has greatly intensified with the introduction of soya, and that subsoil and surface waters are seriously affected by soya production, primarily through the application of agrochemicals, whose impacts can be felt far from where they are applied.[91]

CHEMICALS AND RIVER BASINS DON'T MIX: XINGU INDIGENOUS PARK, MATO GROSSO (AMAZON BIOME)

'The greatest threat to traditional life comes from soya bean farming. Pesticides and insecticides have begun to pollute the water ... killing the fish.'

The Guardian, February 2006[93]

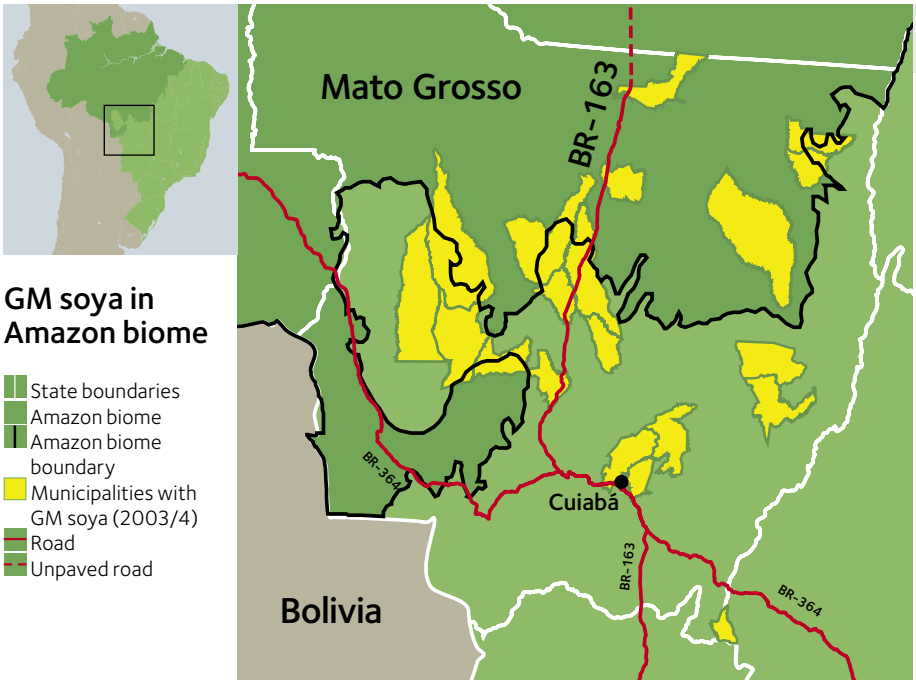
Intensified use of agrochemicals and an increase in soil erosion resulting from the clearing of large tracts of land have had a profound impact on the river systems that provide drinking water to forest communities as well as habitats for innumerable species of plants and animals, many of them central to indigenous livelihoods.[94]

The Río Xingu Basin, covering nearly 180,000km^2, is being turned into the regional waste drain as the soya industry encroaches upon it from all sides. At the heart of the catchment is a near-pristine area of rainforest – the Xingu Indigenous Park – which is home to 14 indigenous tribes.[95] Today, the Xingu Indigenous Park is rapidly becoming an increasingly vulnerable oasis in the middle of a scene of devastation.

Expansion of cattle ranching and soya is leading the destruction at the headwaters of the Río Xingu,[96] an important breeding ground for fish. Satellite photos reveal that almost 30% of the Río Xingu catchment has been deforested; nearly a third of that loss took place between 2003 and 2005.[97] Today, the southern half of the Xingu Indigenous Park is almost completely surrounded by agriculture.

Indians within the Xingu Indigenous Park have witnessed decline in fish numbers due to agrochemical runoff as well as changes in the courses of waterways as a result of silt deposition from farming-related erosion.[98] Their fears about the impacts of crop pesticides have led them to fight for restrictions on soya production in the headwater area.[99]

According to Ionaluka, a director of the Xingu Indigenous Land Association, 'The soya is arriving very fast. Every time I leave the reservation I don't recognise anything anymore because the forest keeps disappearing.'[100] For example, the illegal 'soya highway' (see below 'Road infrastructure



– making inroads') has opened up land to soya plantations alongside a feeder stream of one of the main tributaries of the Río Xingu. Intensive agrochemical use along the soya highway – and elsewhere in the Río Xingu catchment – means that protection of indigenous lands and critical habitats is currently inadequate to protect biodiversity from the impacts of the soya industry.

THE SEEDS OF RUIN – GM CONTAMINATION OF THE AMAZON

In February 2003 the global agrochemical and GM seed giant Monsanto opened a seed research facility in the municipality of Sorriso – the largest soya producing area in Brazil (about 600,000 tonnes) some 400km north of Cuiabá, the state capital of Mato Grosso. Sorriso falls partly within the rainforest and is at the cutting edge of the soya frontier that is marching into the Amazon biome. ADM, Bunge, Cargill and Grupo André Maggi all have large silos in the municipality.

According to Gateway Brazil, an English website for those interested in investing in Brazil's agriculture: *'The population has doubled in the past seven years [as] families from southern Brazil have migrated north in search of cheap land and new business opportunities. Sorriso is at the epicenter of the largest productive flat spot on the planet... Sorriso is home to Bunge's 8 million bushel elevator, Brazil's largest inland receiving station.'*[101]

Nearly 550,000 hectares of land was under soya cultivation in Sorriso in 2004. Greenpeace's analysis shows that one quarter was within the Amazon biome,[102] of which some was planted with GM soya.

Monsanto is not alone in championing GM soya. The Brazilian Government has an agreement with the company to develop Roundup Ready GM soya varieties specifically for the Amazon climate and soil conditions. These GM seeds are currently being tested in Rondônia inside the Amazon biome.[103] Monsanto gets a fee for the use of its patented Roundup Ready GM technology and the government research centre also charges the farmer for using these GM seeds that they have further adapted for use in different regions.[104]

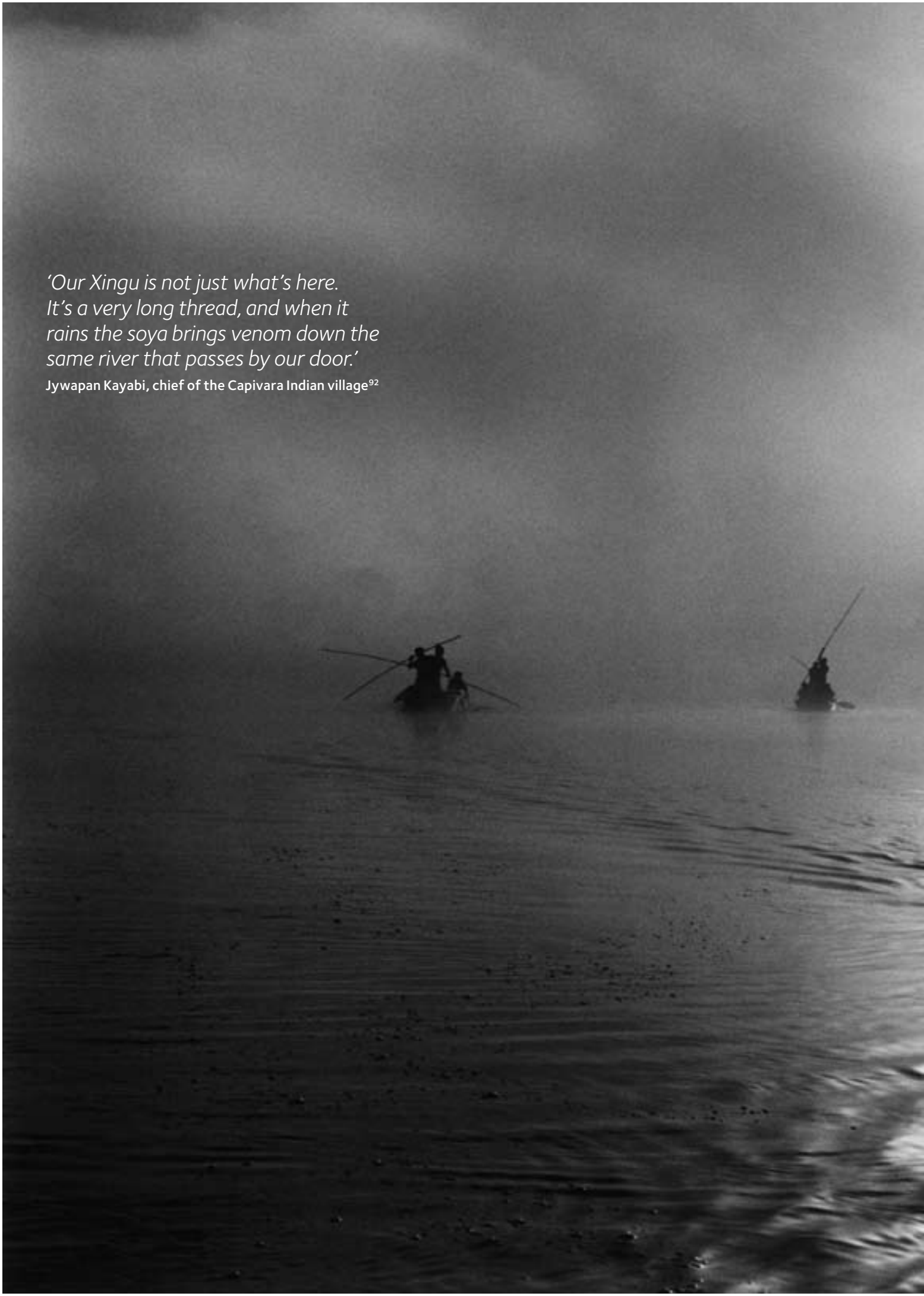
Brazilian law prohibits the planting of GM seeds in existing protected areas, proposed protected areas and their buffer zones, indigenous lands, and important catchment areas of public use. The environment ministry has yet to officially identify these areas (and as with the mapping of indigenous territories, this could take many years).[105] Meanwhile, the agriculture ministry is giving licenses to soya farmers in Mato Grosso to plant GM seeds in the Amazon.

Countries that grow GM crops are already experiencing environmental and agronomic problems.[106] As the case of Argentina shows, unchecked GM soya production with its heavy agrochemical use can result in the destruction of the soil's natural microorganisms (rendering the land inert) and the emergence of herbicide-tolerant weeds.[107] Studies in Argentina[108] and several US states[109] show that, after a few years of GM planting, diverse strains of Roundup-tolerant weeds are now growing in Roundup Ready GM crop fields, having built up resistance as a result of heavy herbicide usage.[110] The impact on wild vegetation can also be considerable. As a scientist at the University of Mato Grosso has observed, spraying herbicides from aeroplanes – as is common practice across the region – spreads the chemicals over a much wider area than intended.[111] Wind and other weather conditions influence the area contaminated by chemical applications.

In addition to the impacts of deforestation, habitat fragmentation and pesticide use – all directly linked to the expansion of soya into the Amazon biome – there is the threat from GM soya to contaminate Brazil's soya crop currently grown legally outside the Amazon.

GM soya has been planted in the state of Mato Grosso for the last four years. In the 2003–04 crop season, 1,800 hectares of GM soya was planted in 19 municipalities of Mato Grosso, of which nine were within or partly within the Amazon biome, (see GM soya map).[112] In the 2005–06 crop season, GM soya has increased dramatically to more than 500,000 hectares, accounting for at least 10% of land planted with soya in Mato Grosso.[113]

Greenpeace has documentary evidence that ADM, Bunge, Cargill and Grupo André Maggi have all bought from farmers growing GM soya within the Amazon biome.



'Our Xingu is not just what's here. It's a very long thread, and when it rains the soya brings venom down the same river that passes by our door.'

Jywapan Kayabi, chief of the Capivara Indian village[92]

'Lack of an adequate transportation system has been one of the major reasons that cropland expansion in Brazil hasn't progressed at an even faster pace. That is changing quickly, and it's changing because private money is being spent... They aren't waiting for governmental bureaucracies or environmental studies.They're moving dirt and pouring concrete.'

Mike Krueger, Ag Perspectives 25 March 2002[115]

'Just the hint of new asphalt ignites a flurry of Brazilian speculators.'

AgWeb (2004)[116]

BEYOND THE LAW: CRIMES LINKED TO SOYA EXPANSION IN THE AMAZON

'Very low land prices in the Amazon help to make ranching profitable. These prices remain very low in part because farmers find it easy to illegally occupy government land without being prosecuted.'

Kaimowitz (2004) 'Hamburger connection fuels Amazon destruction'[114]

The Amazon is a frontier beyond the reach of the law. Greenpeace investigations have shown how the demand for soya is directly driving the clearance of the Amazon rainforest – often by way of illegal activities such as land grabbing and slavery. By failing to insist on a clear and independently monitored chain of custody for commodities such as soya, European markets are complicit in this criminal and often brutal plunder.

ROAD INFRASTRUCTURE – MAKING INROADS

The profitability of soya has led to the construction or expansion of eight industrial waterways, three railway lines and an extensive network of roads to bring in farm equipment and chemicals and transport harvests to export markets.[117] Without this infrastructural expansion in the Amazon – funded in large part by private companies such as Cargill – there would be minimal incentive for the soya industry to have a presence there. The development of infrastructure – in particular roads – through unprotected public lands is an open invitation to landgrabbers and farmers to deforest land in the vicinity, driving the expansion of the agricultural frontier far into the Amazon.[118] 85% of all deforestation occurs within 50km either side of roads.[119] As well as stimulating illegal deforestation, many of the roads are themselves illegally constructed.

THE BR163 AND THE PROPOSED PROTECTED AREA, SORRISO, MATO GROSSO (AMAZON BIOME)

'Unless the Brazilian Government radically expands the number and size of federal forest preserves and severely restricts further penetration of the Amazon region... deforestation rates will remain high, pasture acreage will continue to grow, and the opportunity for expanded soybean cultivation in the region will increase.'

USDA Foreign Agricultural Service, 2004[120]

'The initiative of creating the Parque Estadual das Castanheiras is praiseworthy and long overdue. The region where these two biomes (forest and savanna) meet is still unknown. But its fate is more subject to economical issues, like the price of the dollar or the price of soya, than to the real conservation of the tropical ecosystems.'

Marília Kerr do Amaral, field biologist who discovered the 'new' species of monkey, February 2006[121]

The threat posed by road development without proper land use management and forest protection is shown by what has happened in the Amazon biome around the Santarém - Cuiabá Highway (BR163) in Sorriso, Mato Grosso.

Mato Grosso continues to witness some of the highest rates of deforestation in the Amazon. Only 2.5% of the Amazon biome in the state is protected,[122] and over 30% of the Amazon biome that lies within the state has been cleared.[123] Soya producers are the main agents for deforestation along the BR163 and its vicinity.[124] An increase in deforestation in the last few years has been mainly due to soya expansion along the paved section of the BR163.[125] Large-scale deforestation stops roughly where the paved section of the road ends, just south of the state border with Pará.

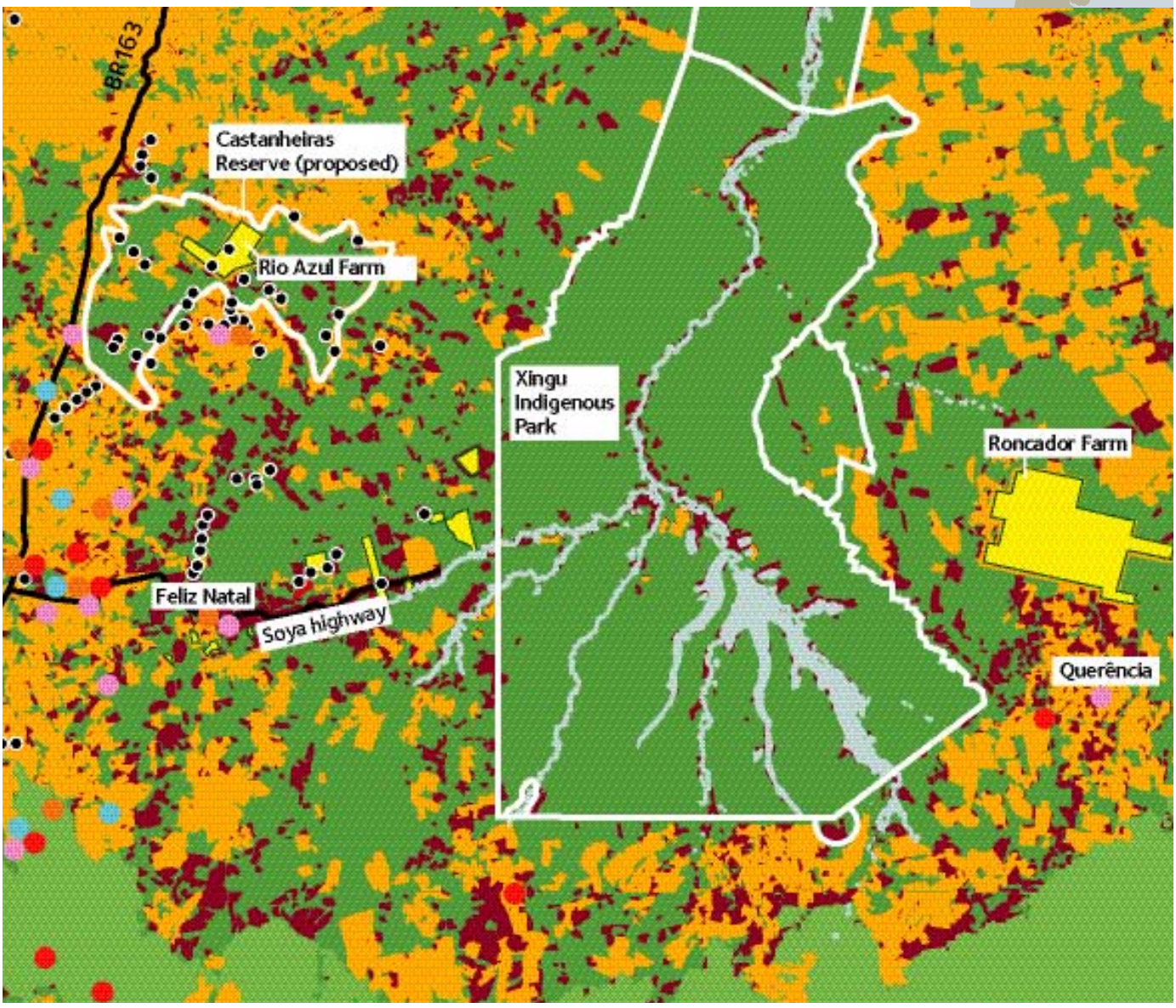
Nevertheless, here is major land appropriation along the existing unpaved BR163 as farmers seek to control land along the road.[126] One small town has seen its population double in just two years to 25,000 and land prices increase tenfold.[127] Local smallholders speak of increased tensions, armed conflict and killings in the area, all related to land disputes.[128] Several ongoing investigations have concluded that land grabbing is rampant in the municipalities surrounding Santarém along the BR163.[129] Land grabbing is not new to the area, but local settlers unanimously testify that the pressures connected to it have increased.'[130]

The paving of the remaining section of the road has been delayed for many years, to the frustration of the soya industry. Hoping to break the deadlock, Mato Grosso Governor Blairo Maggi has assembled a consortium of 30 companies – including ADM, Bunge and Cargill – to provide complete finance for the US$175 million project.[131]

Soya farmers have been targeting unprotected public lands along the road, rich in wildlife and important for forest communities who live alongside the road. This expansion is destroying environmentally and socially critical areas of the Amazon.

The BR163 runs next to the Parque Estadual das Castanheiras, first proposed as an Amazon Brazil nut tree reserve in August 2004. The reserve would cover 383,000 hectares of the Amazon biome.[132]

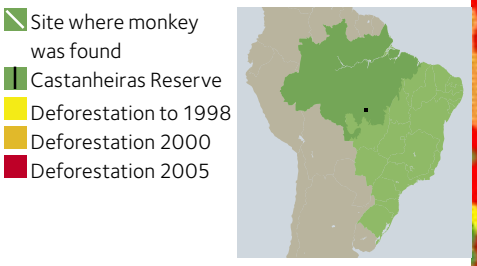
Soya invasion around Xingu Indigenous Park and the proposed Parque Estadual das Castanheiras



Park/reserve boundaries
Soya plantations
Farms with soya
Roads
Deforestation to 2002
Deforestation 2002 – 2005

Company storage silos
ADM
Amaggi
Bunge
Cargill

New species of monkey under threat from soya



In April 1997, biologists funded by the World Bank identified what is believed to be a new species of primate, known only as 'white monkey' *(Callicebus sp.)*,[133] about 30km east of the BR163.[134] Other important species found in the area include four other monkeys, an alligator, two snakes, a lizard, a number of bats, marsupial, anteater, puma, deer and bushdog.[135]

According to Megaron Txucarramãe, one of the tribal chiefs of the Caiapó Indians, the Caiapós use the area of the proposed reserve to harvest medicinal plants, as it is the only forest remnant where they can be found.[136] The native Brazil nut tree is important to forest-dwelling communities, being both a subsistence crop and a sustainable way of generating cash. Traders of Brazil nuts along the BR163 estimate that 30–40% of the money that circulates in Itaúba is related to the Brazil nut trade.[137]

In 1994, the Brazil nut tree was added to the government's list of species threatened with extinction[138] as a result of a decade of massive deforestation in areas where it is found.[139] However, the government decision to make it illegal to cut down Brazil nut trees has failed to protect the species from the expanding agricultural frontier.[140] When farmers clear the land to plant soya, they leave Brazil nut trees standing in isolation in the middle of soya monocultures. Fire used to clear the land usually kills the trees.

Intensive invasion by soya farmers inside the proposed *Parque Estadual das Castanheiras* has now destroyed over 20% of the original proposed reserve. Local politicians are trying to halve the size of the proposed reserve;[141] meanwhile, Bunge and Cargill have both installed silos nearby.[142]

Such is the magnetic effect of infrastructures such as roads that, without proper protection of public lands in key areas, the advancing invasion of soya in the Amazon is set to destroy an area of the highest value for biodiversity, indigenous peoples and sustainable forest harvesting.

THE SOYA HIGHWAY, MATO GROSSO (AMAZON BIOME)

The *rodovia da soja* – the soya highway – extends from the town of Felíz Natal toward the western boundary of the Xingu Indigenous Park (the last major protected area in the Xingu Basin – see case study above). In the summer of 2004, the municipality illegally built this 120km road to nowhere, without a state licence which requires an environmental impact assessment, in order to fuel soya development in the region. When the municipality ran out of funds, it washed its hands of responsibility for the road. At a council meeting in April 2005, a spokesman for the mayor declared that the municipality was not responsible for ensuring the road was legal as it was now a state project.[143] The state government is now planning to pave the road, but still without a proper licence and environmental impact assessment.

Greenpeace has documented at least 38 farmers clearing forest in the area near the road.[144] There are 14 soya producers directly bordering the road, eight of whom have cleared forest in the last two years. There are at least 100,000 hectares of land along the road being offered for sale on the internet for as little as RS$50 (US$24) per hectare. The land can even be paid for in soya harvested once the land is cleared. One seller describes a 10,000 hectare parcel of rainforest as 'excellent for soya' and promises to clear it and stack the trees for burning as part of the sale price.[145]

Since 2002, soya production has jumped from 2,500 to almost 45,000 hectares in the area of the road.[146] Bunge and Cargill have already installed themselves in the area. Both companies have built 60-tonne silos[147] and are offering credit and financial support to the farmers. They guarantee to purchase all soya produced, creating the basis for the region to become a soya production centre.[148]

Greenpeace analysis based on Brazilian satellite information shows that the soya highway is set to have an impact on one million hectares of rainforest in the region.[149] This figure is only based on the direct impact of deforestation. Of course, soya production has much wider environmental impacts (see pages 21–23).

Greenpeace has documentary evidence showing that both Bunge and Cargill have bought soya from farms in the area of the road.[150]

LAND GRABBING: THE QUEST FOR NEW FRONTIERS

The search for new land in Mato Grosso, driven by the expansion of soya, has stimulated land grabbing *(grilagem)*[152] and irregular land transfer practices by private estate agencies. According to the national land reform institute, INCRA, millions of hectares of public land have been fraudulently transferred to private individuals in Mato Grosso, and are being exploited by big farms.[153]

Some of the chief victims of land grabbing and other abuses linked to the expansion of soya into the Amazon

rainforest are Brazil's indigenous peoples. The Amazon is home to about 220,000 people from 180 different indigenous nations,[154] most of them still living their traditional lifestyles deep in the rainforest, along with many more smallholders or traditional forest dwellers. The rainforest provides these people with everything from food and shelter to tools and medicines, and plays a crucial role in the spiritual life of indigenous peoples.

Land speculators and soya farmers make full use of the lack of coordination between state and federal land registration agencies. The lack of governance goes hand in hand with the use of violence to expel landless settlers and invade the land of the indigenous communities who have legitimate rights.[155] Land grabbing is such big business that public lands are even offered for sale on the internet. Greenpeace investigations in 2004 uncovered at least 11 million hectares of forested land for sale in the states of Pará, Amazonas, Rondônia and Roraima.[156]

MEMBECA FARM, TREZE DE MAIO, MATO GROSSO (AMAZON BIOME)

Membeca Farm on the river Talunakãnali in Mato Grosso, owned by Sedeni Lucas Locks, is just one of the farms that have been illegally invading the traditional lands of the indigenous Manoki people.

Once their 206,000 hectare territory is recognised, they are supposed to be legally protected from such activities by the Brazilian Constitution.[157] However, the administrative process set up to 'demarcate them, to protect and enforce respect for all their assets'[158] has failed the Manoki in each regard. Like many other indigenous peoples in Brazil, the Manoki are left exposed to land grabbing.

According to Rinaldo Sérgio Vieira Arruda, the anthropologist who submitted the original report to the government in 2003 identifying the Manoki area, 'Since this time, everything has been done [by the government] to create difficulties in the demarcation process. In the meantime, soya has spread into the Manoki territory and the prospect of a fair solution for them seems more and more distant.'[159]

Since 2003, the 8,000 hectare Membeca Farm has increased its soya plantations by at least 20%, and the farm has been illegally clearing more rainforest inside Manoki land to make way for further soya production.[160]

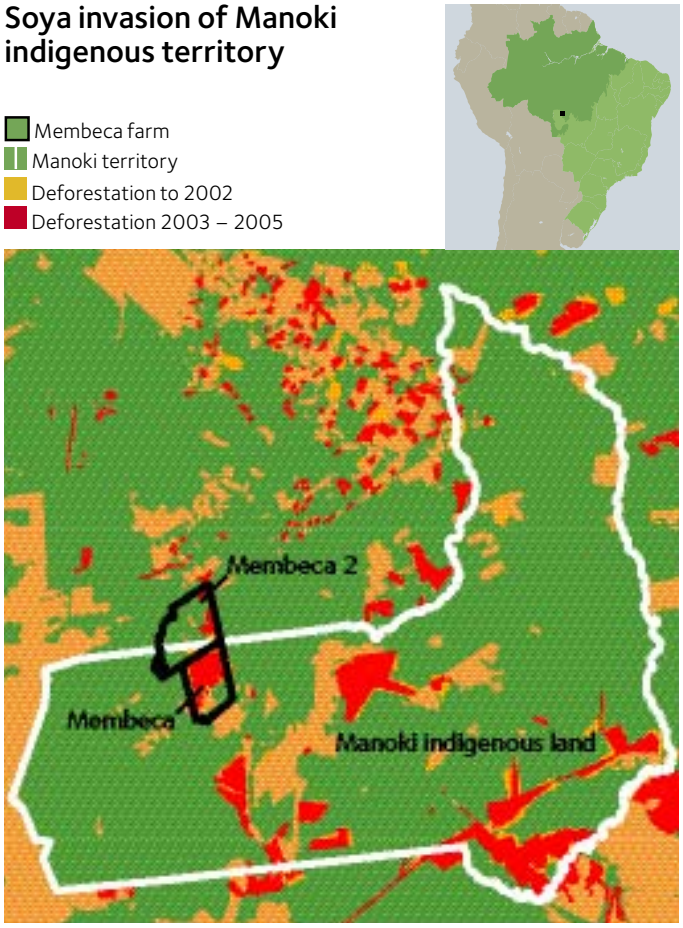
Membeca Farm is located in the municipality of Brasnorte: another new soya frontier opening up in the west of Mato Grosso, along the MT170 highway. Bunge, Cargill and Grupo André Maggi have all installed silos in the municipality. From here, the soya is trucked to Porto Velho where both Cargill and Grupo André Maggi ship the soya up the Rí‌o Madeira to their export facilities in Santarém (Cargill) and Itacoatiara (Grupo André Maggi). From here, soya is exported to the EU and other world markets.

Greenpeace has documentary evidence showing that both Bunge and Cargill have bought soya from Membeca Farm.

'Brazil has never faced up to the reality of life here for people. It's ugly. I know holes here that have two, three skeletons in them. I know road verges that cover people killed by ranchers.'

Former logger, Castelo dos Sonhos (the Castle of Dreams)[151]

Soya invasion of Manoki indigenous territory



SLAVERY: THE SORDID COST OF CHEAP SOYA

'What we know about is the tip of the iceberg. The official estimate of the number of slaves is way off the mark. The real figure could be 250,000.'

Father Ricardo Rezende, anti-slavery campaigner[161]

'Today's slave is not a concern to the landowner. He uses them as an absolutely temporary item, like a disposable razor.'

Marcelo Campos, Brazil's Ministry of Labour[162]

Hand in hand with illegal forest destruction and the expulsions linked to land grabbing comes slavery.[163] In fact, slaves provide a noteworthy portion of the manpower for forest clearance. Slavery exists principally in states with 'the strongest agricultural expansion upon native forest.'[164] The Amazon states of Pará and Mato Grosso are the champions.

Landowners do not own Brazil's current day slaves. Commonly, poor people in villages or cities are duped with promises of well-paid work and when they arrive at these remote farms, their documents are taken. The labourers often work at gunpoint, toiling without pay, hidden in the vast Amazon jungle beyond the reach of the law. Because slaves are no longer legal property, there is no financial incentive to look after them. The cost is almost zero. If the worker gets ill, he is dropped beside the closest dirt road and another one is taken to replace him.[165]

Greenpeace research shows that the people who use slaves in Brazil are not small farmers. They are often the big state-of-the-art farms – some with private airports – that sell to the international trade.

Greenpeace has documentary evidence linking slavery with global traders: in particular, soya from farms relying on slavery has been traced to Cargill, Bunge and Grupo André Maggi.

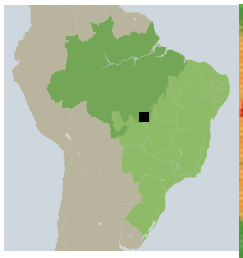
In 2004, the Brazilian Government intervened in 236 cases of slavery involving 6,075 labourers[166] including 127 child slaves. While Pará accounted for the lion's share – 2,475 slaves – 1,012 were found on farms in Mato Grosso.[167] Shocking as these figures are, it should be borne in mind that due to a shortage of staff in the Ministry of Labour's Mobile Inspection Group, only a fraction of the cases of slavery are ever reported or investigated and fewer come to court. Even when fines are issued to those successfully prosecuted, using slave labour is still a profitable business – the fines are seen as at worst a small business expense – and no one has ever been imprisoned for it.[168]

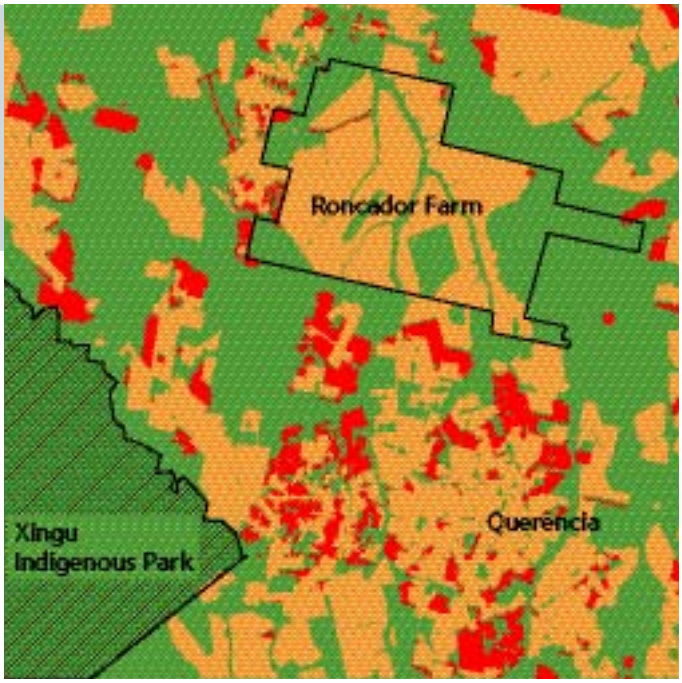
In November 2003, the government published its first official 'Dirty List' of farms successfully prosecuted for holding slave workers.[169] The list, which has been regularly updated since, publishes information that supposedly 'permits social control, for instance, requesting legal procedures or even boycotting a product that at some point of its production used slave labour.'[170]

It is not that easy to get on to the Dirty List – not only does the government's Mobile Inspection Group have to discover slaves, but the individual case must have been successfully prosecuted through the Brazil's notoriously cumbersome legal process. Getting off the list, however, is easy. A farm merely has to pay their fines within a period of two years, fully compensate the slave worker for the wages and social benefits they should have received, and not repeat the crime.

So, as its own ability to enforce the law is so limited, the Brazilian Government is appealing to the market to act. As Greenpeace research shows, the market is a poor policeman.

In December 2005, the president of Grupo André Maggi signed the National Pact on the Eradication of Slave Labour, committing the company to severing relations with farms and employers on the Dirty List. Cargill and Bunge have not signed. Grupo André Maggi claims it has long had a policy not to fund producers involved with any kind of slave labour, indigenous conflict, socio-environmental problems or illegal deforestation.[171] However, as recently as June 2005, [172] Grupo André Maggi had been forced to admit that it was buying soya from farms where a total 15 slaves were freed by federal agents in 2002, including the Vó Gercy Farm (see below).[173]





Fazenda Roncador – state of the art soya farm using slave labour

Roncador Farm
Deforestation to 2002
Deforestation 2003 – 2005

RONCADOR FARM, MATO GROSSO (AMAZON BIOME)

Nowhere is soya's advance upon the Amazon more apparent than in Mato Grosso's dusty boom town of Querência, 900km NE from the state capital Cuiabá, at the frontier of soya expansion on the southern edge of the Amazon.[174] All day lorries kick up dust hauling fertiliser in and soya out.

In 2003 and 2004, the municipality of Querência had one of the highest levels of deforestation in Mato Grosso.[175] Farmers are rushing into the jungle to take advantage of cheap land.

Research into activities in Querência led Greenpeace to document Roncador Farm, one of the most state-of-the-art farms in Brazil. Up for sale at US$190 million on the internet, Roncador Farm is owned by Brazilian entrepreneur Pelerson Penido. The farm covers 150,000 hectares and has 106,000 head of cattle and 4,000 hectares under soya. It has its own airport able to receive jets and 697km of paved road.[176] More than 50%[177] of the forest cover on the farm has been cleared. As 20% is the maximum permitted by the Brazilian Forest Code this is clearly illegal.

From August 1998 to August 2004, when 215 labourers were liberated by the government's Mobile Inspection Group, Roncador Farm used slave labour. Working 16 hours a day, seven days a week, the labourers were forced in live in plastic shanties with no beds or sanitary provision. Water for washing, cooking and drinking came from a cattle watering hole and was stored in barrels previously used for diesel oil and lubricants. There was no opportunity to leave the farm. Goods had to be bought from the farm shop at extortionate prices, putting labourers into ever-increasing debt, which they would never be able to pay off[178] – a form of slavery known as debt bondage.

Although Penido and others have been charged with setting up an organised gang and infringement of workers' rights, more than 18 months later the case is still languishing in Brazil's judicial system and, as Greenpeace documented in February 2006, the farm continues to grow soya for the market.[179]

The expansion of soya in Querência has tempted Bunge, Cargill and Grupo André Maggi into the municipality.[180]

Grupo André Maggi has 72,600 hectares of farmland around the town,[181] and in 2005 opened a new 60,000 tonne storage silo there with capacity to receive 400 tonnes an hour. Maggi aimed 'to win 100 new suppliers in its first year.'[182] Also in 2005, Bunge was recorded as exporting soya from Querência to the UK (via Itacoatiara) and Italy (via Paranagua).[183]

VÓ GERCY FARM, MATO GROSSO (CERRADO)

In June 2002, the Mobile Inspection Group raided Vó Gercy Farm belonging to José Francisco de Morais.[184] They found that slave labour had been used to clear 120 hectares of land to expand the existing 2,750 hectares of soya.[185] 15 labourers were freed[186] and the employer was fined R$8,039 (US$2,960).[187]

Greenpeace has documentary evidence that Cargill and Grupo André Maggi bought soya from José Francisco de Morais at the time the farm was raided. Bunge and Cargill can be shown to have bought soya from Morais in March 2003–nine months after the farm was raided.

The farm was included on the updated Dirty List in June 2004[188] and remains on the latest version published on 6 February 2006.[189]

TUPY BARÃO FARM, MATO GROSSO (AMAZON BIOME)

In September 2001, the Mobile Inspection Group liberated 69 labourers whose fundamental rights were being violated at the Tupy Barão Farm, owned by Agropecuária Tupy.[190]

Amongst other illegal acts, the labourers were subject to fraudulent retention of wages and were forced into an ever-increasing debt to buy goods. They were held on the farm against their will and received punishment beatings. Shelter consisted of shanties made of thin bamboo poles and covered with nylon fertiliser bags or canvas. Some were open to the weather.[191]

In June 2004, Tupy Barão Farm was finally included on the government's Dirty List and remains on the latest version of the list as of 6 February 2006.[192]

In February 2003, 16 months after the inspection, Bunge and Grupo André Maggi bought soya from Tupy Barão Farm.[193]

VALE DO RÍO VERDE FARM, MATO GROSSO (CERRADO)

Vale do Río Verde Farm is part of Agropecuária Vale do Río Verde, controlled by the brothers Orlando and Caetano Polato. The farm cultivates soya, maize and cotton.[194]

In 2005, the government Inspection Group found 263 labourers whose rights were being violated, and eight were deemed to be working in conditions of enslavement. Almost all of the labourers were from Maranhão – one of Brazil's poorest states. According to the inspection report the workers had not been paid, their documents had been taken, and they were forced to work at gunpoint. One of the bossmen brought in a relative who worked for the police to intimidate the labourers. Working conditions were appalling, with workers forced to clear land of tree roots for planting in their bare feet. There was proper sanitation and no proper accommodation. Food and other goods had to be bought through the farm shop at inflated prices – this was then deducted from salaries – driving labourers into debt bondage.[195]

The Polato brothers were charged with breaking labour laws and fined R$140,000 (US$56,000) for back payment of salaries.[196]

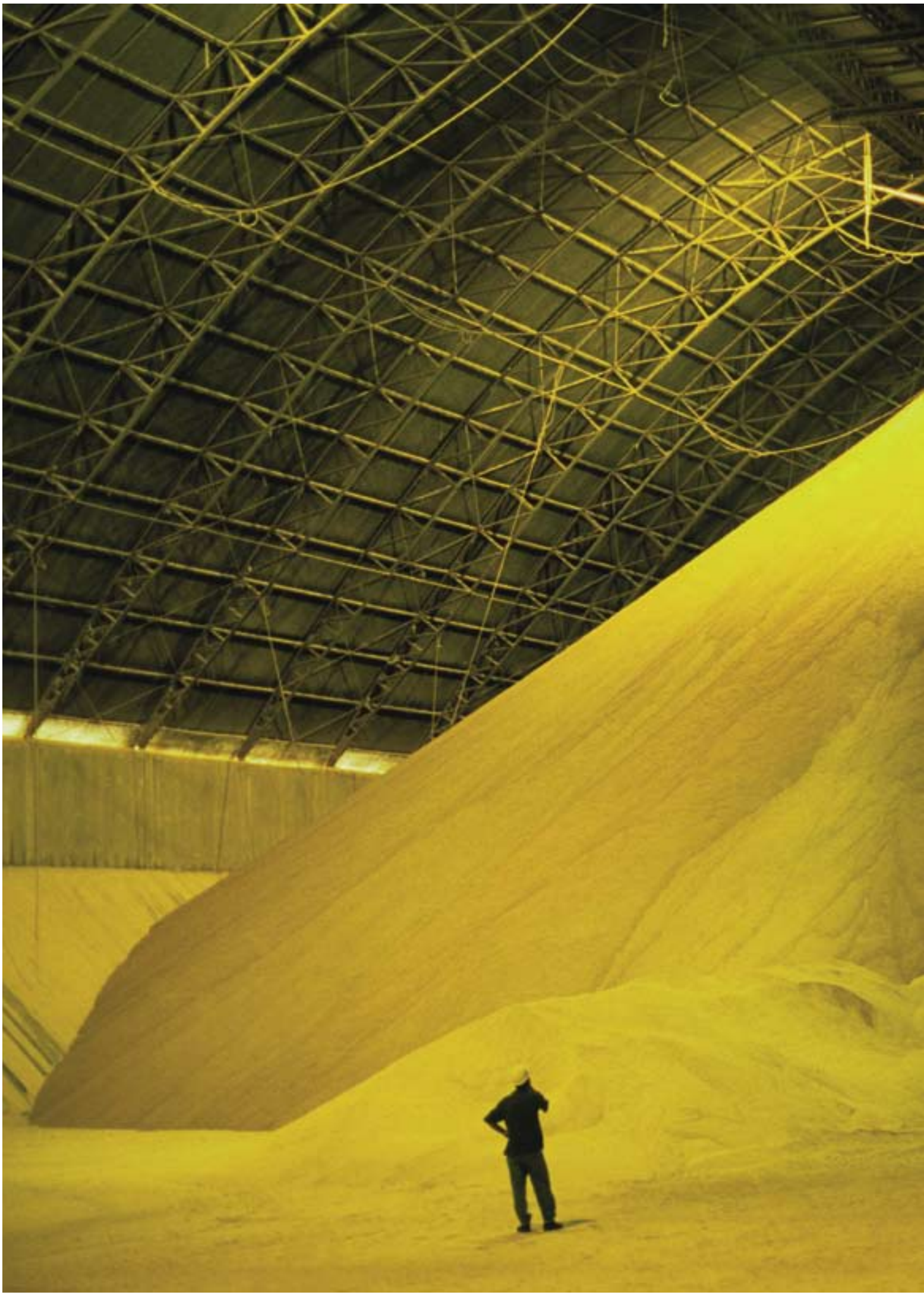
In June 2005, the farm appeared on the Dirty List.[197]

Greenpeace has documentary evidence that Grupo André Maggi, ADM and Cargill have bought soya from Vale do Río Verde Farm.

MAJOR TRADERS IMPLICATED IN ILLEGAL PRACTICES AND AMAZON DESTRUCTION

	ADM	Bunge	Cargill	Grupo André Maggi
Built infrastucture in the Amazon				
Number of silos within the Amazon biome	4	6	13	13
Port and storage facilities			●	●
Illegal export facilities – Santarém			●	
Received international financing				
Public banks – International Finance Corporation (IFC), World Bank				●
Private banks – Rabobank, HSBC, etc				●
Bought from farms involved in land grabbing				
Membeca Farm – Manoki indigenous land, Amazon biome		●	●	
Lavras Farm – Amazon biome			●	
Bought from farms inside proposed protected areas				
Río Azul Farm – Parque Estadual das Castanheiras	tbc*	tbc*	tbc*	tbc*
Bought from farms employing slave labour				
Roncador Farm – Amazon biome	tbc*	tbc*	tbc*	tbc*
Vó Gercy Farm – cerrado		●	●	●
Tupy Barão Farm – Amazon biome		●		●
Vale do Río Verde Farm – cerrado	●		●	●
Bought from farmers along illegal soya highway				
Saul Stefanello – Amazon biome			●	
Giovani Zamberlan – Amazon biome			●	
Eliseu Zamberlan – Amazon biome		●	●	
Agenor Favarin – Amazon biome		●		
Bought from farms planting GM soya				
Antonio Galvan, President of the Agricultural Union of Sinop – Amazon biome	●	●	●	●
São Carlos Farm – Amazon biome	●	●	●	●

*tbc - to be confirmed



'Santarém, New Agricutural Frontier for the World...
The future of the BR163 starts here.'

Cargill sign, Santarém[199]

CARGILL IN SANTARÉM: MOST CULPABLE OF THE SOYA GIANTS

'As the remaining available land in Northern Mato Grosso continues to be bought at a rapid pace, increasing land values have pushed soybean production into the new frontier areas of Pará, Tocantins, and Rondónia, areas with more affordable prices and lower transportation costs due to port facilities in Santarém and Itacoatiara.'

US GAIN Report[198]

'Land is only US$18 per acre around Santarém. $106 per acre clearing cost.'

Gilmar Tirapelle, Cargill agroeconomist[200]

Cargill is the largest private firm in the USA and possibly the world,[201] with revenues of nearly US$63 billion in 2003.[202] Founded in 1865, Cargill has its headquarters in a 63-room replica of a French chateau outside Minneapolis, Minnesota, USA. It is the undisputed ruler in the global grain trade and food system: 'We buy, trade, transport, blend, mill, crush, process, refine, season, distribute and deliver around the clock, around the globe.'[203]

Brazil is now one of Cargill's largest sources of revenue outside the United States,[204] and the company is expanding rapidly into the Amazon. In recent years, Cargill has considerably increased its export potential for commodities such as soya by building new ports in Santarém and Porto Velho. Eager to find a shorter and less costly route from new production areas in the Amazon to Europe, Cargill came to Santarém, at the head of the BR163, as its door for the northern export route. Cargill estimates that 2–3 million tonnes of soya a year will be trucked into its Santarém plant once the BR163 has been paved.[205]

Cargill's illegally built US$20 million grain terminal at Santarém is the pioneer terminal in the region. The port consists of two silos, one with capacity to handle 60,000 tonnes of dry soya daily and the other 2,500 tonnes of wet soya daily, as well as an elevator with three drop-pipes to load cargo ships.[206] Santarém has not yet reached its full capacity and less than 10% of the soya comes from the surrounding region.[207] The largest portion comes from Rondônia and Mato Grosso via Cargill's Porto Velho terminal.[208]

THE SANTARÉM PLANT IS ILLEGAL

'The Cargill port isn't legal.'

Felício Pontes Jr. Federal Prosecutor, Belém, Pará State[209]

In June 1999, the Ministry of Public Prosecution initiated a civil action to stop Santarém's Port Authority renting the site for the terminal to Cargill prior to completion and approval of an environmental impact assessment (EIA).[210] Instead of complying, the Port Authority and Cargill chose to contest this requirement in the courts.

Next, in November 2003, the Court of Final Instance ruled unanimously against Cargill and the Port Authority. In the interim, however, Cargill has already constructed its facility, in the process destroying a beach used by local fishermen and 25 small family businesses.[211]

In December 2003, Federal Prosecutors launched a legal action calling for the demolition of the facility. They also asked for the immediate suspension of Cargill's activities in Santarém until a legal decision could be reached.[212] In January 2004, a judge ordered a suspension of activities, on penalty of R$100,000/day (US$35,000),[213] but this decision was quickly overturned by another court.[214]

In May 2004, the Santarém Federal Judge ruled that Cargill must carry out an EIA. Cargill and the state government appealed[215] and Cargill continued to defy the requirement: 'No, we will be doing no EIA!'[216]

Finally, in February 2006, Brazil's second highest court ruled against Cargill, stipulating that the company must comply with Brazilian law and complete an EIA not only for the port terminal but for impacts on the surrounding region.[217]

Greenpeace investigations have found that Cargill's plant is not only illegal in its own right, but is already laundering soya from illegal deforestation to world markets (see the Lavras Farm case study below). The size and location of the plant show that Cargill is counting on increased deforestation in the Amazon to meet its huge export capacity. The plant offers yet another incentive for farmers to open up new frontiers in Rondônia and Pará along the BR163.

'They simply said that the land was theirs and that we had to leave.

They came and they burned down the house... it was horrible... they burned down 20 homes...

One of our friends was assaulted and had a shotgun shoved into his chest.

Others were forced to watch their belongings burn.

We're living in a time of terror. It is horrible.'

Zezinho, Santarém[218]

CARGILL'S IMPACTS AROUND SANTARÉM

Since Cargill arrived in Santarém, soya has been the major driver of deforestation in the municipality. Between 2002 and 2004, annual deforestation rates jumped from 15,000 to 28,000 hectares in Santarém and the neighbouring municipality of Belterra (also in Pará state).[219] Forests have started to give way to mechanised soya monocultures. While *direct* conversion of rainforest to soya plantation in the Santarém area has been estimated at 10% of the area deforested during recent years,[220] this figure fails to show the whole impact the soya industry and its infrastructure is having in the region. Much land is also indirectly converted – secondary forest is felled, and squatters are forcibly removed from land they have already cleared (inevitably leading to clearance elsewhere).

In August 2002, Cargill's director in Santarém declared that the area has the potential to make 300,000 hectares of land available to produce one million tonnes of soya a year.[221] According to Cargill's manager in Santarém, by 2004 some 14,000 hectares in Belterra and Santarém were already under cultivation, producing 34,000 tonnes of soya annually.[222] Farmers from the south have since started to buy up land and new roads are appearing.[223]

Cargill makes no secret of actively aiding farmers from the south to establish themselves in Santarém: 'We have even brought lime from Ceará to help producers, now we are helping them to increase production.'[224] By prefinancing soya harvests, Cargill makes soya economically attractive for producers – and helps fund forest conversion.

Since the arrival of Cargill and the soya producers there has been a dramatic rise in land prices – up 6,600% since 2002 to R$1,000–2,000 (US$471–942) per hectare, although land is still cheaper than in Mato Grosso.[225] Local and state government agencies have been accused of being actively involved in land grabbing.[226]

LAVRAS FARM, PARÁ (AMAZON BIOME)

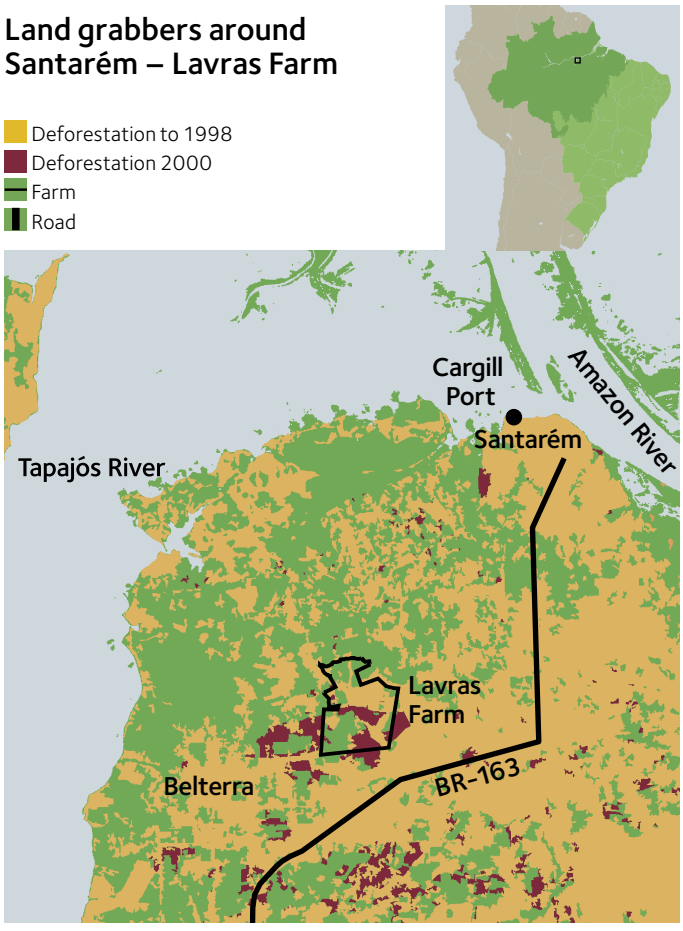
Greenpeace investigations have conclusively linked Cargill's export terminal in Santarém to land grabbing and illegal deforestation. For example, Greenpeace traced soya supplied to the terminal back to the Lavras Farm, run by the brothers Edno and Clóvis Cortezia. In October 2004, the Cortezia brothers signed a contract with Cargill to supply a total of 600 tonnes of soya before the end of July 2005.[227]

In 2000 (when rumours of the Cargill export plant were heard in the south), the brothers Edno and Clóvis Cortezia established the Lavras Farm, totalling 8,000 hectares, 20km outside Santarém on the west side of the BR163 (see Lavras map right).

The Cortezia brothers fraudulently obtained land titles for areas occupied by landless settlers *(colonos)*, as well as areas of public land, with the help of a lawyer who is currently under investigation by the Federal Police for his role in facilitating land grabbing in the region. The brothers themselves have repeatedly tried to launder their ownership of the land they occupy through various government departments.

In 2002 they paid Rural Territorial Tax to the government through the Bradesco Bank in Santarém, to create the illusion of legality through official paperwork.[228] They were then able to use the tax receipts to obtain loans from Brazilian banks to fund their soya expansion.

In 2003, the brothers then tried to register ownership of only 2,487 hectares of the farm.[229] The rationale for this is clear: parcels of public land greater than 2,500 hectares can only get conclusive land titles with the approval of the National Congress. Even if they had been successful in fraudulently getting official documents for this area of the farm, the Cortezia brothers have already cleared 1,718 hectares within this area.[230] This level of clearing violates the Brazilian Forest Code, which states that private landowners in the Amazon must preserve 80% of their forest areas.[231]



'Companies should avoid situations of complicity for reasons of principle.'

Global Compact/OHCHR Briefing Paper (2005)233

EUROPEAN CORPORATE COMPLICITY IN AMAZON DESTRUCTION

'Biodiversity is the sum of all life on Earth ... Food and agricultural production systems should protect native species and biodiversity by preserving natural habitats.'

McDonald's 'Socially responsible food supply guidelines'[232]

FROM THE AMAZON TO EUROPE

In 2005, soya originating from municipalities within the Amazon biome was shipped to global markets through seven major Brazilian ports: Itacoatiara (Amazonas state), Santarém (Pará state), Ponta da Madeira – São Luis (Maranhão state), Tubarão – Vitória (Espírito Santo state), Santos (São Paulo state), Paranaguá (Parana state) and São Francisco do Sul (Santa Catarina state) [see map on page 53].[234]

Nearly 15% of the EU's total soya imports originate from Mato Grosso.[235] Most of this soya is exported directly through the same seven ports (see Annex 1). An unknown proportion of soya meal is imported into the EU from Mato Grosso via other states in Brazil. For example, Cargill transports soya beans from many of its Amazon silos in Mato Grosso to its crushing facility in Minas Gerais in the south of Brazil. The soya meal is then exported.[236]

Almost all of the soya passing through Cargill's terminal at Santarém is destined for Europe. In 2005, 787,000 tonnes of soya were exported from the plant.[237] Of this, 52% went to the Netherlands, 31% went to the UK, Spain received 6.5%, and France took just over 6%.[238] The Netherlands is a hub for many countries in Europe such as Germany, Switzerland and the UK.

Greenpeace investigations in Brazil have traced soya linked to illegal deforestation, slavery and other crimes in the Amazon to giant commodities companies such as Cargill.

Our investigations in Europe tell the other half of the story, exposing the links between the environmental and social crimes of Brazil's soya industry, and Europe's leading food processors, supermarkets and iconic global fast food chains: the partners in crime.

These are major European and global corporations with very public commitments to corporate social responsibility (CSR) policies. CSR policies generally express a commitment to minimise the social and environmental impact of the business along the supply chain, and to work against all forms of corruption and human rights abuses. But CSR policies are empty slogans if corporations cannot be held accountable to their commitments.

Despite the across-the-board rush by big European and global brands to publish CSR statements in recent years, none of the 30 major supermarket chains and fast food outlets contacted by Greenpeace[239] were able to say whether the soya animal feed used by their meat suppliers originated in the Amazon or not. Their responses clearly indicated their failure to enact their CSR intentions. But their attitudes varied widely:[240]

- **Regretful:** One major European supermarket that claims to have independent audit of its own products back to source to ensure fair employment (eg to exclude slave labour) admitted that 'In the case of palm oil and soya, both are global commodity products and sadly, we, like all other major retailers and producers, are currently unable to trace the source of palm or soya back to an individual plantation.'

- **Patronising:** Burger King was more cavalier, and said that, with regard to the source of soya, 'Unfortunately we do not have the resource to answer specific questions, although you should be able to obtain further information from your local library.'

- **Wilfully ignorant:** The parent company of KFC and Pizza Hut hid behind the assertion that the 'main soya producing regions in Brazil ... are away from the Amazon region' (in truth, Mato Grosso, half of which is in the Amazon biome, accounts for about a third of Brazil's European soya exports[241]). However it admitted to buying its chicken from the 'same suppliers as other leading retailers.'

- **Passing the buck:** When one supermarket chain was asked about whether it had a segregation policy on soya to distinguish between Amazon and non-Amazon soya, it said 'This is a matter for our feed suppliers who in turn supply our product suppliers.' However, Cargill, a major supplier to supermarkets, states that 'It is our customers who determine what we process and supply.'

However dressed up their CSR statements and however green the messages of their brand marketing campaigns, by failing to address the issue of Amazon soya the food giants are silently complicit in the destruction of the Amazon.

The crime stretches across the European food industry. Soya is a key protein in virtually all animal feed and an ingredient in innumerable processed foods, including most bread. While the volume of soya produced in the Amazon is relatively small on the global market scale, its identity is lost by the time it is fed to animals supplying the European food industry. Therefore, the whole food industry risks being a partner in this forest crime.

THE END OF THE LINE FOR AMAZON SOYA CRIMES

The supply chain from soya producers in the Amazon to chicken, beef and pork products sold at supermarkets and fast food chains in Europe has many links.

When it comes to Cargill's own production of chicken meat products, it controls the whole chain: from the soya farmer in the Amazon, to meat production and distribution, right up to the doors of the supermarkets and fast food chains.

Below is a simplified supply chain illustrating Cargill's links to supermarkets and fast food chains.

Step one – from Amazon crime to export

Criminal soya production
(eg Membeca Farm, Vó Gercy Farm, Lavras Farm)

Trader/Crusher (eg Cargill)

Transhipment (eg Porto Velho to Santarém)

Export (eg Santarém, Santos)

Step two – from European port to farmer

Import (eg Amsterdam, Liverpool)

Internal distribution (eg the Netherlands to the UK)

Importer/ Crusher (eg Cargill)

Feed producer (eg Cargill subsidiary Sun Valley)

Meat producer (eg Sun Valley)

Step three – from food processor to fast food outlets and supermarkets

Slaughterhouse (eg Sun Valley)

Food processor (eg Vion Food Group, Sun Valley)

Supermarkets/Fast food chains
(eg McDonalds, Dutch Laurus Group, KFC Netherlands)


1

2


3


R.F. & J.A. TOLLEY


McDonald's

McDONALD'S CHICKEN McNUGGETS: A CASE IN POINT

'McDonald's mission ... involves protecting the environment at both a local and global level. We strive to ensure that our operations today do not have a negative impact on the lives of future generations. ... The preservation of tropical rain forest land is a top priority at McDonald's.'[242]

'Our influence in the marketplace brings a responsibility to ask for more than quality and price. ... Supporting responsible actions in our supply chain helps to advance important social, economic and environmental goals and will ensure the continued supply of high quality ingredients we need in the future. That's why social responsibility is one of our key strategic supply chain priorities.'[243]

Chicken McNuggets are on the menu at McDonald's in Barcelona, Hamburg, London, Marseille or Milan – the grub is so cheap and so universal, you can easily forget the environmental cost of such food. McDonald's has, after all, an explicit CSR policy to protect rainforests by not buying beef from any recently deforested rainforest land.[244] Who would think that these innocuous looking bits of chicken are helping to drive the destruction of the Amazon, one of the most biologically diverse rainforests on earth?

Yet the case of McDonald's Chicken McNuggets is a clear and straightforward illustration of how the European food industry is implicated in fuelling the destruction of the Amazon for soya. Cargill controls every step of the chain from the soya farm in the Amazon to the food processing plants which produce the nuggets supplied to McDonald's across Europe.

McDonald's is one of the world's best-known brands. The name is everywhere – from high street billboards to its sponsoring of mascots for England matches during the football World Cup. The golden arches are hard to miss.

Founded in 1954, McDonald's is the world's biggest fast-food chain. It has 31,000 restaurants and employs over 1.5 million people, serving 47 million people in over 100 countries each day.[245] In the USA, McDonald's is the largest purchaser of beef and one of the largest buyers of chicken and pork.[246]

McDonald's Europe:

- had sales of over US$6.7 billion in 2004[247]
- has sales which make up 35% of the company's global sales[248]
- operates over 6,200 restaurants, serving around 10 million people every day[249]
- uses 170,000 tonnes of beef and 110,000 tonnes of chicken per year[250]
- claims to be supplied with beef by over 500,000 farmers[251]

McDonald's claims that 'the preservation of tropical rainforest is a top priority'[252] and that it is 'committed to establishing and enforcing responsible environmental practices.'[253] In addition, McDonald's rainforest policy states: 'McDonald's does not, has not and will not permit destruction of tropical rain forests for our beef supply.'[254] What is not covered by this policy is the feed given to the chickens that end up as products such as Chicken McNuggets, or the cattle and pigs that are used to make other products.

Greenpeace investigations show that, despite its claims to be rainforest friendly, McDonald's deep fat fryers are directly responsible for a trail of destruction right into the heart of the Amazon rainforest.

FROM THE AMAZON TO CARGILL SUBSIDIARY SUN VALLEY – AND SO TO MCDONALD'S

'We have invested in a soybean export facility in the northern Brazilian port of Santarém ... From here we export soya primarily sourced from the Central Brazilian state of Mato Grosso and also from ... around Santarém.'

Letter from Sun Valley to Greenpeace supporter, 23 February 2006

McDonald's names Cargill 'supplier of the year'.

Minneapolis-St Paul Business Journal. 12 December 2005

Liverpool is one of the UK's busiest ports. In 2004 it imported nearly three million tonnes of animal feed. The national motorway network runs virtually to the dock gates, allowing quick and easy transport of feed to mills throughout the UK.[255]

Brazilian export data shows that between March 2005 and February 2006, Cargill exported over 220,000 tonnes of Brazilian soya originating in the Amazonian states of Mato Grosso, Pará and Rondônia through its Santarém port to the UK – the majority to Liverpool.[256]

Greenpeace has recently tracked the delivery of this soya from Cargill's terminal in Liverpool to Cargill subsidiary Sun Valley. In conversations with two senior managers at Sun Valley,[257] Greenpeace investigators confirmed that 25% of the feed used to feed Sun Valley chickens is Brazilian soya, which is supplied almost exclusively from the Cargill facility in Liverpool. Another 25% is a mix of ingredients including soya oil. The remaining 50% is mainly locally grown wheat.[258]

SUN VALLEY FOODS EUROPE

Cargill-owned Sun Valley is an example of integrated food production. Founded in 1960, the firm was bought by Cargill in 1980, and now operates across Europe.[259]

Sun Valley is a producer, marketer and distributor. It processes about 1 million chickens a week into fresh and frozen meat, as well as producing 250-300 tonnes a week of value-added products.[260] Sun Valley's biggest customers are McDonald's and supermarket chain Morrisons.[261]

Through separate McDonald's business units in Wolverhampton and Orléans in France,[262] Sun Valley is McDonald's largest poultry supplier in Europe and the UK, supplying Chicken McNuggets and sandwich patties. The firm produces half of all chicken products used by McDonald's across Europe.[263]

Sun Valley also has its own brand of consumer products and supplies other retailers under their own brand names.

Sun Valley has its own feed mill at the company's integrated poultry production facility near Hereford,[264] and produces feed including Brazilian soya imported through Cargill's plant at Liverpool.[265] In 2000, Sun Valley committed to using only GM-free ingredients in its chicken feed.[266]

RESPONSIBILITY OR GREENWASH?

McDonald's is just one example of a key player in a game where the majority are criminals. Despite spending millions on CSR to clean up its brand image, the company is glacially slow to take concrete steps to change its behaviour. It is cheaper and easier to greenwash by boasting of existing practices such as not sourcing beef from rainforest areas (a policy brought about largely as a result of campaigning by environmental groups and concerned individuals) than to make concern for environmental and social impacts a real part of procurement processes.

By selling the products of Amazon soya, McDonald's and other companies show that they still prefer to disguise the real practices behind their products rather than combat them. Slavery, pollution and deforestation are all linked to soya coming from states within the Amazon. The focus on image over substance shows that it is still only external pressure based on verifiable evidence that will force companies to change.

CARGILL AMSTERDAM: LINKS TO SUPERMARKET AND FAST FOOD SECTORS

In 2005, more than half of the soya exported from Cargill's Santarém facility was shipped to Cargill's facility in Amsterdam. The soya originated in the Amazonian states of Mato Grosso, Pará and Rondônia.[267]

Cargill is a major supplier to the Dutch animal feed industry. For example, farmers supplying pigs to the Dutch based Vion Food Group buy animal feed from suppliers[268] who source soya meal from Cargill Amsterdam.[269] The Vion Food Group control over 8% of the European pork market, supplying at least seven EU countries[270] including major supermarkets like the Dutch Laurus Group.[271]

Another large Dutch animal feed company is also a soya customer of Cargill Amsterdam.[272] It works with the Dutch chicken producer Storteboom, which supplies chicken to KFC Netherlands.[274]

By 2050, current trends in agricultural expansion will eliminate a total of 40% of Amazon forests, including at least two thirds of the forest cover of six major watersheds and 12 ecoregions, releasing carbon into the atmosphere... equivalent to four years of current annual emissions world wide.

Nature, March 2006 [277]

STRATEGIES TO PROTECT THE AMAZON AND THE GLOBAL CLIMATE

Solutions to the destruction of the Amazon for soya need to come from two directions: an environmental solution for the rainforest and the global environment, and an agronomic and economic solution for the global animal feed market, to minimise its environmental impact.

LARGE PROTECTED AREAS – what the Amazon needs and where it needs it

Brazil has two faces: one beautiful and one ugly. Its rainforest is the richest habitat in the world; but the rate of illegal destruction of that rainforest is the highest in the world.[275] The Amazon rainforest contains a significant proportion of the world's biodiversity, with as many as 300 species of tree in a single hectare.[276] A new study, published in *Nature* in March 2006, says the Brazilian Government's conservation strategies fall far short of what is needed to prevent escalating destruction. On present trends, cattle ranchers and soya farmers will destroy 40% of Amazon rainforest by 2050, threatening biodivesity as well as massively contributing to climate change.[277]

The front line lies where the interests of the agriculture industry meet the rainforest. Here, strategies for protecting the Amazon's rich biodiversity and halting the illegal expansion of agriculture into the forest are simple and proven – if only they can be decisively and effectively enforced. Large networks of properly protected areas – national parks, demarcated indigenous territories, extractive reserves, community areas – are critical to preventing species loss and adequately supporting indigenous peoples.[278] When reserves are fragmented or isolated, they risk losing wide-ranging top predators such as jaguars, pumas, harpy eagles and bush dogs,[279] ultimately upsetting the whole ecological balance.

Extractive and indigenous reserves also requires huge areas to maintain traditional culture and livelihoods. Large indigenous territories allow communities to use the land non-intensively because they have the space to move periodically, allowing an exploited area to recover. Low-density reserves are often still recovering from the fatal impacts of epidemic disease and warfare associated with recent contact with white people. These reserves need to retain large territories if entire indigenous peoples are to be able to subsist on traditional practices for generations to come.[280]

Large undisturbed forest reserves also act as giant firebreaks, decreasing the likelihood of future catastrophic wildfires that would further erode the biodiversity of the Amazon rainforest and compromise the ecological services it provides.[281]

Location is also critical. Placed in key vulnerable areas, large protected areas act as a barrier to the illegal land grabbing that precedes deforestation and the advancing agricultural frontier. A speculator or would-be farmer cannot get fake paperwork showing ownership of land that is clearly defined as a protected area.

Recent action by the Brazilian Government shows that this strategy works. Between 2004 and February 2006, President Lula protected nearly 14.5 million hectares of Amazon rainforest through the creation of national parks and areas limited to defined local community use.[282] Further indigenous lands have been officially demarcated, critical to defending them from illegal incursion.

The results speak for themselves: after the record-breaking deforestation levels of 2003–04, deforestation dropped by 30% to 18,900km^2 the following year – bringing destruction back in line with the average over the last 25 years.

Greenpeace investigations along the unpaved northern section of the BR163, where large areas have recently been protected, show that land grabbers are now targeting vulnerable areas elsewhere. For example, they are targeting the vulnerable unprotected frontiers in the state of Amazonas, along the Transamazon Highway and the unpaved BR319 connecting Manaus to Porto Velho.

The Brazilian Government is committed to protecting 10% of the Amazon by 2013.[283] Demarcation of indigenous territories, which cover more than 20% of the region, is also critical. However, for Greenpeace, these targets on their own are insufficient – the goal is to stop deforestation. So volume alone is not a true measure of forest protection: protected areas need to be placed strategically at the front line of destruction, where they can act as an effective obstacles to the destruction of a much larger area. Long term measures need to be adopted that allow traditional forest communities and other people in the Amazon region to meet their needs – food security, health, education and access to goods.

CONTROLLING INDUSTRY
– how the market can help control deforestation

Unlike its competitors, Brazil is not running out of land. Agriculture occupies 60m hectares now; it could stretch out to another 90m hectares without touching the Amazon rainforest.

Silvio Crestana, Director of Embrapa, Brazil's main agricultural research institute[284]

Global market forces are key drivers of the deforestation of the Amazon and other forests. Soya is just one of the latest commodities driving this clearance. Others may follow.

The soya industry sees the Amazon rainforest as a cheap source of land, often aquired through illegal land grabs. The exploitation of workers – including the use of slaves – reduces labour costs to a vanishing point. Combined with the large corporate incentives being pumped into the country from Cargill and other multinationals, these factors have made soya a boom industry in Brazil, and a cheap commodity for the world.

The market needs to share responsibility for this criminal advance of agriculture into the world's threatened ancient forests, and take urgent action to end its role in fuelling destruction.

Within Brazil, it is possible to buy soya free from environmental or social injustices. Further, experts are confident that the country could meet international demand for non GM soya without expanding the industry into the Amazon.

For this to succeed however, the market needs to put policies in place to address the environmental and social impact of industries right down the supply chain. This means that big food processors, supermarkets and fast food retailers in Europe need to ensure that the origin of the soya used in animal feed is not from within the Amazon biome, is not GM, and that its production complies with Brazilian labour laws and international human rights.

Traceability of soya (and other commodities) is clearly vital. Independently verified chain-of-custody schemes allow supermarkets and fast food retailers to connect their products with responsible production and avoid being complicit in environmental and social crimes (see Annex 1).

RETHINKING AGRICULTURE
– bringing home the problem and creating a solution

When your priority is to get the cheapest soya globally – or other feed input – you also buy habitat destruction, social conflict and fuel climate change.

The problem of getting cheap protein to feed factory farmed animals has been creating environmental and social conflicts for the last 40 years.

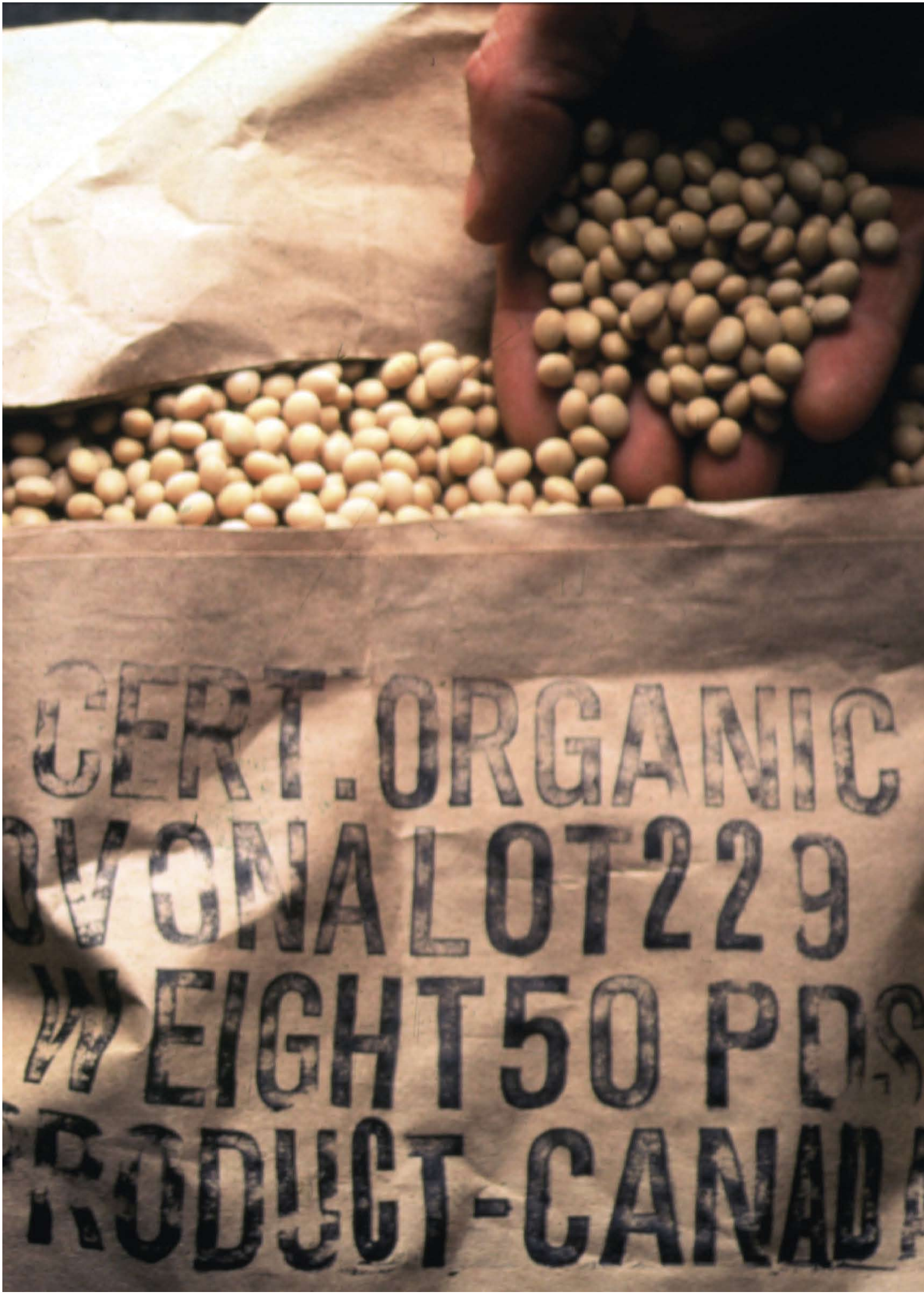
Until the collapse of the fishery in the 1970s, Peruvian anchovy was one of the largest sources of animal feed protein for the European market.[285] The market shifted from mining the oceans to rendering animal carcasses. When this market collapsed because of mad cow disease (BSE), the feed sector increased dependence on soya which has driven its expansion in sensitive habitats on a global level.

European governments, banks and the food industry must re-examine their agriculture policies and support more environmentally responsible and socially just ways of meeting food and farming needs without damaging rainforests or the climate.

Long term solutions to the social, economic and environmental problems of the industry would be to reverse the current trend of intensive factory farmed meat production with its reliance on global trade in cheap commodities.

Social responsibility –whether it be corporate, political or financial – needs to be meaningful if we are to tackle these challenges head on. Governments, banks, and the food industry need to support more extensive meat production strategies, encouraging the production of feed close to point of use if not on the farm.

Brazil and European countries need to re-examine agriculture policies and support only environmentally responsible ways of meeting food and farming needs without damaging rainforests or the climate and without introducing the additional problems caused by the use of GM crops.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RODUCT-CANAD

DEMANDS

STOP AMAZON DESTRUCTION

Trade

- Stop buying soya from the Amazon rainforest biome[289]
- Stop buying meat products made from animals fed on soya from the Amazon rainforest biome

Banks

- Immediately stop financing companies involved in soya production and trade in the Amazon rainforest biome

CLEAN UP THE SOYA TRADE

Trade

- Demand full chain of custody for all Brazilian soya to ensure it comes from legal sources outside the Amazon rainforest biome
- Ensure that all soya used is GM free

SUPPORT THE SOLUTION

Trade

- Develop responsible animal feed supplies in order to eliminate the pressure on the world's remaining ancient forests

Banks

- Ensure that funding does not contribute to deforestation and land conversion

EU governments

- Develop food and agricultural policies to eliminate the pressure on the world's remaining ancient forests
- Support the implementation of protected areas in the Amazon rainforest biome and other ancient forests

ANNEX ONE – GUIDANCE ON TRACEABILITY

Traceability is a key issue for companies not wishing to be implicated in Amazon destruction or the use of GM soya.

The state in which soya is produced and the port through which it is shipped are first indicators of whether there are known problems with soya for buyers.

This annex lists Brazilian states according to whether they fall entirely within the biome, partially within the biome, or outside the biome. It also links ports of export with the supplying soya producing states.

This indicates whether soya from a given state or port is clearly a problem (ie implicated in Amazon destruction) or potentially a problem (eg potentially GM or from within the biome).

In fact, the conclusion one must draw is that state of origin and port of export are no guarantee of the origin (or GM status) of the commodity. Nor do these assure that other illegalities – eg unauthorised deforestation, land grabbing, slave labour – are not involved.

What is needed is independently verified chain-of-custody (CoC) back to the producer.

Brazil has 26 states and one Federal District (Brasília). Soya is currently grown in 16 states, seven of which are entirely or partially in the Amazon biome.[290]

A) These four states are fully within the Amazon biome and where soya was grown in the period 2001/2006. Greenpeace opposes the use of the soya grown within these states. Companies should NOT source soya originating from these states.

RR – Roraima
AM – Amazonas
PA – Pará
RO – Rondônia

B) These two states are fully within the Amazon biome but where soya has NOT been grown to date Companies should NOT source soya originating from these states, if it is grown here in the future.

AP – Amapá
AC – Acre

C) Areas of these three states are within the Amazon biome and where soya was grown in the period 2001/2006. Greenpeace opposes the use of the soya grown within the Amazon biome in these states. Companies should either NOT source soya originating from these states or must have clear and detailed verification that the origin of the soya was grown outside the Amazon biome.

MA – Maranhão (33.2% inside Amazon biome)
TO – Tocantins (9% inside Amazon biome)
MT – Mato Grosso (53.5% inside Amazon biome)

The state of Mato Grosso is where the largest share of Amazon soya is grown. While the bulk of Mato Grosso soya is non-GM and from outside the biome, some is Amazon soya or GM.

D) These 10 states are outside the Amazon biome and currently grow soya. Greenpeace does not oppose the use of soya grown in these states so long as it is non-GM and from legally verified sources. GM free soya can be sourced from many of these states.

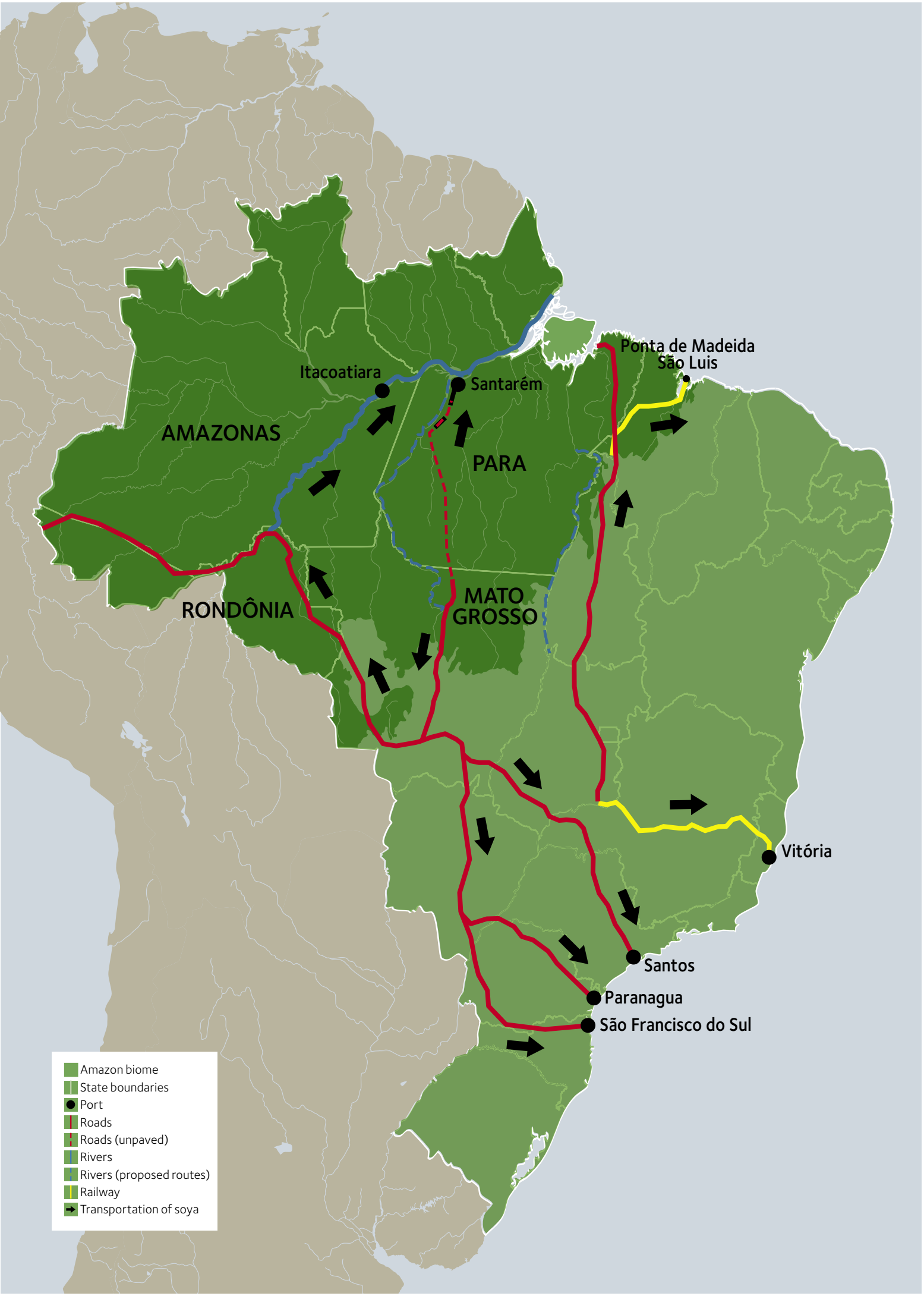
PI – Piauí
BA – Bahia
DF – Brasília
GO – Goiás
MG – Minas Gerais
SP – São Paulo
MS – Mato Grosso do Sul
PR – Paraná
SC – Santa Catarina
RS – Río Grande do Sul

The state of Paraná has a GM free policy controlled by the state government and is the state to which Greenpeace points companies who wish to source GM free soya. The state of Río Grande do Sul is 90%+ contaminated with GM soya and so we warn companies against buying soya from this state.

PORTS OF EXPORT

The table overleaf (page 54) gives a very rough guide to the ports through which a region's soya may pass to Europe. Greenpeace has identified seven major Brazilian ports through which Amazon soya is exported to world markets.

Two further ports are known to export soya from states mainly or entirely outside the Amazon biome, though Amazon soya may be passing through these ports as well – for instance, soya may be processed into soya meal in other states. For example, Cargill transports soya beans from a number of its Amazon silos in Mato Grosso to its crushing facility in Minas Gerais in the south of Brazil. The soya meal is then exported.[291]


Ponta de Madeida
São Luis
Itacoatiara
Santarém
AMAZONAS
PARA
RONDÔNIA
MATO
GROSSO
Vitória
Santos
Paranagua
São Francisco do Sul
Amazon biome
State boundaries
Port
Roads
Roads (unpaved)
Rivers
Rivers (proposed routes)
Railway
Transportation of soya

EXPORTATION OF BRAZILIAN SOYA[292]

Ports and Companies	States growing soya in Amazon biome (full or partial)	Non-Amazon states growing soya (outside Amazon biome)
Itacoatiara - east of Manaus (AM) ADM, Bunge, Grupo André Maggi	Mato Grosso (MT) Roraima (RR) Rondônia (RO) Amazonas (AM) Amapá (AP)	
Santarém (PA) Cargill	Mato Grosso (MT) Pará (PA) Rondônia (RO)	
Ponta da Madeira – São Luis (MA) ADM, Bunge, Cargill	Mato Grosso (MT) Pará (PA) Tocantins (TO) Maranhão (MA)	Goiás (GO) Piauí (PI)
Tubarão – Vitória (ES) ADM, Bunge	Mato Grosso (MT)	Bahia (BA) Brasília (DF) Goiás (GO) Mato Grosso do Sul (MS) Minas Gerais (MG) São Paulo (SP)
Santos (SP) ADM, Bunge, Cargill, Grupo André Maggi	Mato Grosso (MT)	Bahia (BA) Brasília (DF) Goiás (GO) Mato Grosso do Sul (MS) Minas Gerais (MG) Paraná (PR) São Paulo (SP)
Paranaguá (PR) ADM, Bunge, Cargill	Mato Grosso (MT)	Bahia (BA) Goiás (GO) Mato Grosso do Sul (MS) Minas Gerais (MG) Paraná (PR) Río Grande do Sul (RS) Santa Catarina (SC) São Paulo (SP)
São Francisco do Sul (SC) Bunge, Cargill	Mato Grosso (MT)	Río Grande do Sul (RS) Minas Gerais (MG) Paraná (PR) Santa Catarina (SC) São Paulo (SP)
Río Grande (RS) Bunge	Mato Grosso (MT)	Río Grande do Sul (RS) Santa Catarina (SC)
Ihéus (BA) Bunge, Cargill		Bahia (BA)

ANNEX TWO – A SHORT HISTORY OF GM SOYA, BRAZIL AND THE EUROPEAN MARKET

GM soya was first exported to Europe from the US in 1996. The technology was introduced by the agriculture and chemical giant Monsanto as a response to the end of its patent on its best selling product, the glyphosate-based herbicide Roundup. Monsanto's seeds were genetically modified to survive large doses of Roundup. If you bought the seeds, you had to buy the chemicals. The technology ensured a continued market for Roundup.

Between 1996 and 1999, Monsanto's GM soya spread rapidly across the USA and Argentina. The reasons for this rapid adoption were mainly based on the false promise of higher yields from the GM soya, Monsanto dropping the price of Roundup, and Monsanto increasing its control of the global seed market. GM varieties were readily available and farmers were left with fewer conventional (GM free) seed options.

By 1999, European companies started to specifically demand GM free soya from their suppliers in large volumes in response to demands from European consumers and food producers.

As a result of legal action by Greenpeace and a Brazilian consumers organisation (IDEC), which required the Brazilian Government to carry out a proper environmental impact assessment (EIA) before the legal introduction of GM crops, Brazil became the main supplier of GM free soya on the international market.

Many EU buyers simply switched to buying Brazilian soya on the understanding that it was GM free. And, of course, there is actually zero market demand for GM soya – ie no buyer actually demands GM soya.

Today demand for GM free soya exists not just internationally but also from within Brazil itself. Large poultry exporters use high volumes of soya and many domestic food producers guarantee GM free products to Brazilian consumers.

In recent years, there has been evidence of GM soya being grown illegally in the southern Brazil state of Río Grande do Sul using black market seeds that had been smuggled into the country from Argentina.

The Brazilian Government has not acted responsibly. In 2003, it had effectively legalised the illegal planting of GM soya without conducting the proper environmental impact assessments, thus opening the door to increased contamination and environmental damage.

The government is now involved with Monsanto to produce versions of GM soya adapted to the Amazon and other regions of Brazil. The introduction of GM soya will certainly fuel the destruction of the Amazon due to the 'kill everything green' concept of using high doses of herbicides in cultivating GM soya.

The European food industry needs to develop responsible animal feed supplies in order to eliminate pressure on the world's ancient forests and climate. This will include policies to source their products from more local, sustainable sources.

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ENDNOTES

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[3] COIAB (2006)
[4] Greenpeace estimates based on data from Prodes (2004): January 2003 – July 2003 14,003km2 (based on 57% of 24,567km2, annual figure for August 2002 –July 2003); August 2003 – July 2004 27,000km2; August 2004 – July 2005 18,900km2; August 2005 – December 2005 8,127km2 (based on 43% of 18,900km2, assuming that rate will not fall from previous year). Historic data shows that 57% occurs in the first half of the year (January – July) and 43% in the second half (August – December).
[5] Greenpeace analysis of data from IBAMA, FEMA and IMAC shows that 74% of the areas deforested between August 2003 and August 2004 did not have authorisation from the government
[6] Teixeira (2005). The area of a football pitch is taken to be 0.007km2, the average of the FIFA recommended maximum and minimum sizes for international matches.
[7] Area of soya in municipalities in the Amazon biome. Greenpeace estimates based on interpretation of IBGE (2004) soya production figures for 2004-05 crop season and analysis of satellite data from Prodes (2004).
[8] CPT (2005) and CPT (2004) www.cptnac.com.br/?system=news&action=read&id=1266&eid=6
[9] 59% of emissions from deforestation come from Amazon deforestation. Source: MCT (2004)
[10] Around 80% of the capacity is controlled by these three companies. Source: Dros (2004) p8
[11] Number of silos located within the Amazon biome.Source: flyovers by Greenpeace staff and Protocolo ICMS 18/05 'Dispõe sobre a remessa de soja em grão, do Estado de Mato Grosso para industrialização por encomenda no Estado de Minas Gerais, com suspensão do imposto' 11 July 2005. www.sefaz.am.gov.br/Areas/OpcaoSistemas/SILT/Normas/Legisla%E7%E3o%20CONFAZ/Protocolo%20ICMS/Ano%202005/Arquivo/PT_ICMS_018_05.htm
[12] Worldwatch Institute (2006)
[13] MMA (2005) – data for the period between 1996/1997 and 2004/2005
[14] Imports of soya beans and meal EU25 for the period December 2004 – November 2005: worldwide, 45.16 million tonnes; Brazil, 17.7 million tonnes (40%). Source: Eurostat (2006)
[15] Greenpeace estimates based on data from Prodes (2004): January 2003 – July 2003 14,003km2 (based on 57% of 24,567km2, annual figure for August 2002 –July 2003); August 2003 – July 2004 27,000km2; August 2004 – July 2005 18,900km2; August 2005 – December 2005 8,127km2 (based on 43% of 18,900km2, assuming that rate will not fall from previous year). Historic data shows that 57% occurs in the first half of the year (January – July) and 43% in the second half (August – December).
[16] Asner GP et al (2005)
[17] Area of soya in municipalities in the Amazon biome. Greenpeace estimates based on interpretation of IBGE (2004) soya production figures for 2004-05 crop season and analysis of satellite data from Prodes (2004).
[18] Amazon biome mapped by IBGE (2005)
[19] Greenpeace estimates based on interpretation of IBGE (2004) soya production figures for 2004-05 crop season and Greenpeace of satellite data from Prodes (2004). The remaining was produced in Rondônia (5.5%), Pará (3.3%), Roraima (0.88%), Amazonas (0.18%), Tocantins (0.03%) and Maranhao (0.01%).
[20] MMA (2005) – data for the period between 1996/1997 and 2004/2005
[21] Watts (2005)
[22] USDA/ERS (2005)
[23] USDA/ERS (2005)
[24] Morais (2005)
[25] Morais (2005)
[26] IBGE (2006)
[27] UK land = 241,590km2 (www.cia.gov/cia/publications/factbook/geos/uk.html); Great Britain land = 229,334km2 (www.citypopulation.de/UK-UA.html)
[28] The cerrado is a savanna region of South America rich in biodiversity. In Brazil, it is the second largest biome after the Amazon and covers 2 million km2, or around 21% of the country as a whole. Source: IBGE www.ibge.gov.br/home/geociencias/recursosnaturais/mapas/mapas_doc1.shtm?c=9
[29] The Legal Amazon is an administrative region covering the states of Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima and Tocantins (formerly the northern part of the state of Goiás), and most of Maranhão: 24% is private land, 42% public land (not including 8% protected areas), 20% indigenous lands and 6% settlement areas.
[30] MMA 'Plano nacional florestas' www.mma.gov.br/index.php?ido=conteudo.monta&idEstrutura=5&idConteudo=3323 (last accessed 25 February 2006)
[31] Steward (2004)
[32] Bickel and Dros (2003) citing Costa, Caixeta-Filho and Arima (2000)
[33] www.brazil.studyintl.com/team/kory/koryblog/01_firsttours.htm
[34] 487,992km2 (53.5%) of Mato Grosso is in the Amazon biome, of which 152,540km2 (31.2%) has already been destroyed. Source: IBGE (2005) and Greenpeace analysis of Prodes (2004)
[35] Bickel (2005) p8
[36] IBGE (2004)
[37] Stickler et al (2004) p12 citing Schepf et al (2001)
[38] CONAB (2006)
[39] Greenpeace analysis of satellite data from Prodes (2004) and IBGE (2005)
[40] MMA (2005) p6
[41] 48.1%. Source: MMA (2005) p7
[42] Rodrigo Justus, the then Director of Forest Resources at the Mato Grosso State Environment Foundation (Fundação Estadual do Meio Ambiente; FEMA), now known as the State Secretariat of the Environment (Secretaria Estadual do Meio Ambiente; SEMA)
[43] Stickler et al (2004) p17 citing Teixeira (2004); Instituto Sociambiental (2003)
[44] Iowa Farm Bureau Federation (2003). p34
[45] USDA/FAS (2003)
[46] Bickel and Dros (2003)
[47] USDA/FAS (2004c)
[48] Kruse (2005)
[49] Arnaldo Carneiro, Coordinator of GEO data, Instituto Nacional de Pesquisas da Amazônia (INPA; National Institute of Amazon Research) quoted in Greenpeace (2006)
[50] Dros (2004) p8
[51] Cargill Sun Valley Europe vision statement www.cargill.com/about/organization/sun_valley_europe.htm
[52] www.socioambiental.org/nsadetalhe?id=1706
[53] Grupo Maggi (2005b), Bickel (2005) p12 citing Carvalho (1999) and Thompson (2003)
[54] www.grupomaggi.com.br/br/grupo/index.aspMaggi (2006)
[55] Grupo Maggi (2004) and Greenpeace investigation
[56] Rohter (2003)
[57] 8,177km2 in 2001/2002 and 10,458km2 in 2003/2004. Source: MMA (2005) p6
[58] Rohter (2003)
[59] Bickel and Dros (2003) p19 citing personal communications
[60] Stickler et al (2004) p2
[61] An overview of these loans for 1999 – 2004: 1999, Société Générale, France, US$15m; 2001, DEG, Germany, US$24m; Standard Chartered Bank, UK, US$70m; 2002, Rabobank, Netherlands, US$100m; 2002, Standard Chartered Bank, UK, U$50m; 2002, IFC, International,U$30m; 2003, WestLB, Germany, U$80m; 2004, Rabobank, Netherlands, U$230m; 2004, BNDES, Brazil, U$34m; 2004, IFC, International, U$30m. Total: U$663 million. Source: van Gelder (2004)
[62] Bickel and Dros (2003)
[63] IFC mission statement www.ifc.org/ifcext/about.nsf/Content/Mission
[64] Stickler et al (2004) p15
[65] CAO (2005) p8
[66] Lilley (2004)
[67] Bickel (2005) p5
[68] Stickler et al (2004) p17 citing IFC (2002)
[69] Stickler et al (2004) p17
[70] For instance, the Deutsche Investitions und Entwicklungsgesellschaft (DEG) criteria state: 'No tropical rainforest... will be used for the silos or the expansion of farmland. Indigenous groups will not be expropriated. The soya will be grown in an environmentally responsible way and will not be grown as a monoculture. Grupo André Maggi will follow World Bank environmental guidelines.' However, no mechanisms have been put in place to independently monitor respect for these criteria. Source: van Gelder (2004)
[71] Bickel (2005) p5 citing CAO (2005)
[72] van Gelder (2004)
[73] HSBC (2004)
[74] Chu (2005)
[75] Moutinho and Schwartzman (2005)
[76] World Resources Institute Climate Analysis Indicators Tool (CAIT) – cait.wri.org
[77] MCT (2004). Deforestation emissions include Amazon rainforests, cerrado, Atlantic forests and Caatinga. This figure is based on data from over a decade ago (1990 – 1994), when Amazon deforestation rates were much lower than in more recent years. This means we now expect much higher emissions from deforestation in the Amazon. Nb: del Carmen Diaz and Schwartzman (2005) citing Mendonça et al (2004) state that fires are excluded.
[78] Altieri and Pengue (2006)
[79] Altieri and Pengue (2006)
[80] Altieri and Pengue (2006)
[81] Altieri and Pengue (2006)
[82] Altieri and Pengue (2006)
[83] Stickler et al (2004) citing Garcia (2002) and IFC (2002)
[84] Stickler et al (2004) citing Garcia

(2002)
[85] Garcia (2002)
[86] Altieri and Pengue (2006)
[87] www.pan-uk.org/pestnews/actives/paraquat.htm
[88] Relyea (2005a), Relyea (2005b), and Richard et al (2005)
[89] Benbrook (2004) and Benbrook (2005)
[90] Altieri and Pengue (2006)
[91] Stickler et al (2004) citing Gunderson et al (1995) and Pringle (2001)
[92] Astor (2003)
[93] Hattenstone (2006)
[94] Stickler et al (2004) citing Instituto Sociambiental (2004)
[95] The park is inhabited by 14 ethnic groups that speak different languages and are distributed among 49 villages and government Indian posts, with a total population of around 4,700 people. www.socioambiental.org/e/prg/xng.shtm
[96] Villas-Boas et al (2005)
[97] 1,259,022 hectares were deforested in the 2003 – 2005 period. Source: Greenpeace analysis of Prodes (2004)
[98] Stickler et al (2004) citing Instituto Sociambiental (2004)
[99] Stickler et al (2004) citing Instituto Sociambiental (2004)
[100] Astor (2003)
[101] www.brazil.studyintl.com/states/matogrosso/cities/sorriso.htm
[102] Greenpeace analysis of satellite data from Prodes (2004). 547,867 hectares in the Amazon biome and cerrado; 149,000 in the Amazon biome.
[103] Embrapa (2006)
[104] Embrapa (1997)
[105] Article 11 of Law 10.814 15 December 2003 www.planalto.gov.br/ccivil_03/Leis/2003/L10.814.htm 106 Benbrook (2004) and Benbrook (2005)
[107] Benbrook (2005)
[108] Benbrook (2005)
[109] Heap (2004)
[110] Benbrook (2004)
[111] Coelho (2003)
[112] Greenpeace communication with agronomist at the Ministry of Agriculture (2005). Figures based on Declaration of Commitment, Responsibility and Agreement of Conduct (Termo de Compromisso, Responsabilidade e Ajustamento de Conduta; TCRAC).
[113] Coodetec (2005)
[114] Kaimowitz et al (2004)
[115] Iowa Farm Bureau Federation (2003) p43
[116] AgWeb (2004)
[117] Fearnside (2001) and Fearnside (2005)
[118] Laurance et al (2004); see also Laurance (2005). William Laurance is with the Smithsonian Tropical Research Institute.
[119] Margulis (2003)
[120] Shean (2004)
[121] Greenpeace communication with biologist Marília Kerr do Amaral (University of São Paulo Zoology Museum), 22 February 2006. From 1993 – 2000 she worked in the Ecological, Economical and Social Diagnosis of the Mato Gross Agro-ecological Development Program (DSSE PRODEAGRO), financed by the International Bank for Reconstruction and Development (IBRD), an organization of the World Bank.
[122] 12,626km2 including federal and state conservation units. Source: Secretaria Especial do Meio Ambiente (SEMA).
[123] 487,992km2 (53.5%) of Mato Grosso is in the Amazon biome, of which 152.540km2 (31.2%) has already been destroyed. Source: IBGE (2005) and Greenpeace analysis of Prodes (2004)
[124] Stickler CM et al (2004) p18 citing Fontes (2003)
[125] Greenpeace analysis of satellite data from Prodes (2004); see also MMA (2005) p6
[126] Margulis (2004)
[127] The Economist (2004)
[128] Jornal de Santarém e Baixo Amazonas, 3–9 April 2004
[129] Eg Steward C (2004) and Cohenca D (2005)
[130] The Economist (2004)
[131] AgWeb (2004) and AgWeb (2005)
[132] The conservation unit would include the sources of the River Manissauá-Miçu (affluent of the River Arraias, in the River Xingu basin), in the east border of the Cuiabá-Santarém Highway (BR-163), between the municipalities of Sinop and Itaúba, and areas of the municipalities of Itaúba, Marcelândia, Cláudia and União do Sul. Source: Governo do Estado de Mato Grosso (2004)
[133] The white monkey is being described by biologists Marília Kerr do Amaral and Juliana Gualda de Barros from the University of São Paulo Zoology Museum.
[134] Between 1993 and 2000 the researchers were working for the Ecological, Economical and Social Diagnosis of the Mato Grosso Agro-ecological Development Program (DSEE PRODEAGRO), financed by International Bank for Reconstruction and Development (IBRD), an organisation of the World Bank.
[135] Greenpeace communication with biologist Marília Kerr do Amaral from the University of São Paulo Zoology Museum.
[136] Greenpeace interview with Megaron Txucarramãe in Colider, Mato Grosso, 19 January 2006
[137] Interview with Pedro Bueno de Lara (19 January 2006), between the municipalities of Sinop and Itaúba, and areas of the municipalities of Itaúba, Marcelândia, Cláudia and União do Sul
[138] UNB (2006)
[139] UNB (2006)
[140] Federal Decree 1282/94
[141] Assembléia Legislativa do Estado de Mato Grosso (2006).
[142] Cargill Agrícola SA Estrada Gladis, s/nº, Lotes 354 e 355 – Cuiabá. 78540-000 – Claudia – MT; Bunge in Claudia.
[143] Legislatura da Câmara Municipal de Feliz Natal (2004)
[144] Greenpeace field investigations, May and December 2005
[145] www.imoveisvirtuais.com.br; www.mercadodeterras.com.br; www.fazendas.e1.com.br: www.sofazendas.com.br
[146] Greenpeace interview with Alison Delcético, technician to the Secretary of Agriculture of Feliz Natal, May 2005
[147] Greenpeace field investigations, May and December 2005
[148] Greenpeace interview with Alison Delcético, technician to the Secretary of Agriculture of Feliz Natal, May 2005
[149] Greenpeace analysis of satellite data from Prodes (2004)
[150] Cargill from Eliseu Zamberlan, Giovani Zamberlan and Saul Stefanello; Bunge from Eliseu Zamberlan and Agenor Favarin
[151] Greenpeace field interviews along the BR163. 3 August 2005 investigation.
[152] Grilagem (land grabbing) is the illegal appropriation of land through false land titles.
[153] Bickel (2005) p17
[154] COIAB (2006)
[155] For more details on grilagem and methods applied by grileiros, see Greenpeace (2003).
[156] Greenpeace (2005b)
[157] Article 231 of the Federal Constitution of 1988
[158] Article 231 of the Federal Constitution of 1988 recognises the rights of indigenous peoples to their 'social organization, their customs, languages, beliefs and traditions and the original rights over lands they traditionally occupy.' Source: Ministry of Justice (1996).
[159] Greenpeace communication with Rinaldo Seérgio Vieira Arruda, 16 February 2006
[160] Greenpeace analysis of satellite data Prodes (2004)
[161] Phillips (2006)
[162] Hall (2004)
[163] 'Article 1 of the UN Supplementary Convention on the Abolition of Slavery, the Slave Trade and Institutions and Practices similar to Slavery, 1956' defines debt bondage as a form of slavery.
[164] Diário do Pará (2006)
[165] Reporter Brasil (2003)
[166] CPT (2005)
[167] CPT (2005)
[168] Hall (2004)
[169] Ministério do Trabalho e Emprego (MTE) www.mte.gov.br/Noticias/Conteudo/5773.asp
[170] Marcelo Campos, Minister of Labour and Employment's Inspection Mobile Special Group Coordinator
[171] Grupo Maggi (2005a)
[172] Bickel (2005) p5
[173] Bickel (2005) p11
[174] USDA/FAS (2004b) p33
[175] 412km2 and 419km2, respectively. Source: MMA (2005) p10
[176] Bromano (2006)
[177] 81,544 out of 150,000 hectares. Greenpeace analysis of satellite data Prodes (2004)
[178] MTE (2004)
[179] In January 2005, the solicitor from the Public Ministry of Mato Grosso, Douglas Lingiardi Strachicini, launched a legal case against Penido, the farm manager and others, charging them with setting up an organised gang and infringement of workers' rights. Strachicini requested the preventive detention of the accused to curb their activities. At the end of January 2005, Judge Angelo Judai Junior of the Judiciary District of Querência accepted the case. Source: Public Prosecution Office, Canarana.
[180] Data from government database SECEX/MDIC/Aliceweb (2006
[181] Grupo Maggi (2005b)
[182] Grupo Maggi (2005c)
[183] Data from government database SECEX/MDIC/Aliceweb (2006)
[184] Ministério Público Federal (2004).
[185] Greenpeace communication with José Pedro Taques, Procurador da República Ministério Público Federal
[186] MTE (2006)
[187] Greenpeace communication with José Pedro Taques, Procurador da República Ministério Público Federal
[188] MTE (2006)
[189] MTE (2006)
[190] MTE (2006) and MTE (2002b)
[191] MTE (2002b)
[192] MTE (2006)
[193] Greenpeace has documentary evidence that shows Bunge Bunge and Grupo André Maggi bought soya from Agropecuária Tupy
[194] MTE (2001)
[195] MTE (2001)
[196] MTE (2001)
[197] MTE (2006)
[198] US GAIN BR4623, p4
[199] Iowa Farm Bureau Federation (2003). p48
[200] Iowa Farm Bureau Federation (2003). P49
[201] Kneen (2002)
[202] Forbes (2004)
[203] Cargill company brochure 2005
[204] Romero (2004)
[205] USDA/FAS (2004a) p9
[206] Cargill (2002)
[207] Jornal de Santarém e Baixo Amazonas, 11–17 December 2004
[208] Data from government database SECEX/MDIC/Aliceweb (2006)
[209] Interview with Felecio Pontes Jr Federal Prosecutor, Belém, Pará State, in Greenpeace (2006)
[210] Processo 2003.39.02.001733-3, classe 9.108; MPF: Informação Técnica Nº 065/00 – 4ª CCR, Brasília (DF), 7 July 2000; Dossiê Nº 030/2000 – 4ª CCR
[211] Agravo de Instrumento N.2000.01.00.019713/1/PA Tribunal Regional Federal da 1a. Região – Brasilia DF, 29 September 2003
[212] Ação de Atentado com pedido de laminar, Ministerio Publico Federal, Procuradoria da Republica no Municipio de Santarém, Santarém/Belém, 12 December 2003
[213] Processo 2003.39.02.001733-3, classe 9.108, Santarém 8 January 2004
[214] Agravo de instrumento N 2004.01.00.000377-2/PA Proceso na Origem 200339020017333,

Brasilia, 14 January 2004
[215] O Liberal, 27 May 2004
[216] Processo 2000.39.02.000141-0 07100 Ação civil Publico Santarém 18 May 2005; Glaser (2004).
[217] Procuradoria da República no Pará (2006)
[218] Quote from Greenpeace (2006)
[219] Cohenca (2005)
[220] Lameira and Alencar (2002)
[221] Glaser (2002)
[222] Interview with Antenor Giovaninni, Cargill Santarém, Jornal de Santarém e Baixo Amazonas, 11–17 December 2004
[223] Steward (2004) and Greenpeace interviews
[224] Glaser (2004)
[225] Glaser (2004)
[226] See, for instance, federal judge ruling on public financing of land grabbing in the Santarém area, Jornal de Santarém e Baixo Amazonas, 10–16 April 2004
[227] Greenpeace has obtained a copy of the contract.
[228] Greenpeace has obtained a copy of the tax document.
[229] Greenpeace has obtained a copy of the INCRA registration document.
[230] Greenpeace analysis of Prodes (2004)
[231] Article 231 of the Federal Constitution of 1988
[232] www.mcdonalds.com/corp/values/socialrespons/market/food_supply_initiative/food_supply_guidelines.htmlhttp://www.mcdonalds.com/corp/values/socialrespons/market/food_supply_initiative/food_supply_guidelines.html
[233] UN Global Compact and OHCHR (2005)
[234] Greenpeace interpretation of data from MDIC/SECEX and www.exportadoresbrasileiros.gov.br/g36157/servlet/serpro.siscomex.cadexp.servlet
[235] EU25 imports of soya beans and meal for the period December 2004 – November 2005 totaled 45.16 million tonnes; 6.45 million tonnes (14.3%) were exported from Mato Grosso in 2005. Source: data from government database SECEX/MDIC/Aliceweb (2006) and Eurostat (2006).
[236] Protocolo ICMS 18/05 'Dispõe sobre a remessa de soja em grão, do Estado de Mato Grosso para industrialização por encomenda no Estado de Minas Gerais, com suspensão do imposto' 11 July 2005 www.sefaz.am.gov.br/Areas/OpcaoSistemas/SILT/Normas/Legisla%E7%E3o%20CONFAZ/Protocolo%20ICMS/Ano%202005/Arquivo/PT_ICMS_018_05.htm
[237] Data from government database SECEX/MDIC/Aliceweb (2006)
[238] Data from government database SECEX/MDIC/Aliceweb (2006)
[239] Responses sent to both Greenpeace and Greenpeace supporters January – February 2006.
[240] Greenpeace can make available copies of the letters, all from early 2006.
[241] In the period December 2004 – November 2005, EU25 imports of soya beans and meal totalled 17.7 million tonnes; 6.45 million tonnes were exported from Mato Grosso in 2005. Source: data from government database SECEX/MDIC/Aliceweb (2006) and Eurostat (2006)
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[260] Sun Valley (2005)
[261] Greenpeace communication with Stewart Rowney, Feed Mill Manager at Sun Valley Hereford, 7 February 2006
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[267] Data from government database SECEX SECEX/MDIC/Aliceweb (2006)
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The Amazon rainforest is one of the most biodiverse regions on earth. It is home to nearly 10% of the world's mammals[1] and a staggering 15% of the world's known land-based plant species, with as many as 300 species of tree in a single hectare.

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Greenpeace is committed to protecting the world's remaining ancient forests and the plants, animals and peoples that depend on them.

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