Soya, from kissing to swallowing the toad

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My Argentinian friends challenged me to 'tell the unofficial story' of how soya was introduced to South America from Río Grande do Sul. I am no historian, but whilst recounting this, I want to go beyond the political and financial thoughts of the big corporations and governments, the 'gullible' NGOs who are disguised in their good intentions[2], and the corporate academy, obedient to the economies and interests of business.

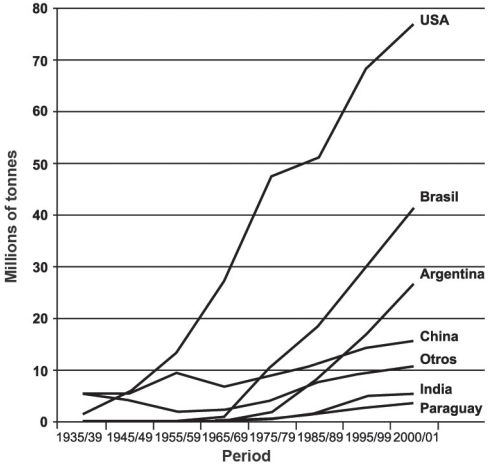

FIG 1: World soya producers. Source: USDA.

This official chart from the USA shows lines with the same point of origin. They are stable for China, India and others where the basic food is soya. Meanwhile, for the USA, Brazil and Argentina the lines follow identical angles of inflection, but at different times. In order to explain this I need to use three supporting points:

The first is, strictly speaking, related to time. All types of energy are intimately linked with the Sun, including that possessed by living human beings (who receive and transform the Sun's heat) through *metabolism* and *autopoesis* (self-creation) with their food and energy.

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* Swallowing the toad is an idiomatic expression used in southern Brazil, it implies being forced to do something one does not want to.

[2] Read "A Máfia dos Alimentos no Brasil" (The Food Mafia in Brazil), Editora Fundação Juquira Candiru, 2005.

The discovery and later utilisation of fire allowed humanity to alter the planet's *Wheel of Time.* Fire allowed human beings to initiate their independence from nature through the alteration in the transformation of energy, and as a consequence, human beings are the only beings capable of destroying their habitat. At the same time, and like all other living beings, humans are dependent on nature for their food and are subject to *Nature's Time* (*Tn*). Not only are they dependent for their food as, without exception, from the very beginning all wealth came from nature. With the possibilities for change that fire brought, humanity began to perfect these transformations of energy and created new kinds of times. These are known from the 'wheel of the Sun' as its movements, networks and cycles.

In order to work, humanity invented machines, and one of the oldest of these was the 'wheel'. The invention of the wheel, over six thousand years ago, brought great advances for civilisation, as it facilitated the conquest of more territory, the ability to work larger areas and to transport produce, food and tools more quickly. We live in a society based on time and space, where speed (*v*) is the reason between the displaced space (*s*) and time (*t*) spent ($v=s/t$); Work (*W*) is measured physically through the result of the distance (*s*) and by the force (*f*) exerted to realise it ($W = s.f$).

Nonetheless, this is strange, as there have been civilisations who have known about the wheel but who have never made use of it. These civilisations had complex, fascinating and sophisticated agricultural systems which gave rise to advanced science and cultures, which are enigmatic even to this day (the Mayans invented the zero and the Incas knew about DNA).

The "coyvara" (employed by the guaraníes) consists of a system of using fire to burn the forest in order to manage nature, and to create a space for agriculture. This is a wheel of time, with a complete cycle – a horology – of more than fifty years. An annual or biannual burn is not coyvara – its time is agricultural (*Ta*), as are its consequences.

Within the wheel of time we learned to recognise the influence of the lunar phases on the produce of nature and agriculture, but even so, in order to facilitate trade we gave more importance to the Greenwich time zones. Could this be because the wheel of time is an obstacle to the accumulation of wealth and power?

To clarify this idea we need to answer the question: what is time? Newton time is part of the fundamental structure of the universe, a dimension in

which things happen in order and can be measured via a fundamental unit (this means that they cannot be defined in any other fundamental terminology such as speed, strength and energy, as these are already defined by their own terminology). Later, time becomes the register of movement.

Nature shaped living beings according to their natural energy throughout the course of the 3.8 million years of *bio-geological* evolution on the surface of the planet, if we consider that as its native environment, and much more if we consider it to be alien.

Agriculture is a space of time within nature of a little more than ten thousand years, and no matter how industrialised by machines, products, technology and science it has become, it does not reach the independence of *Tn* as its function is to produce food whose development, we could say, is linked to the Sun.

From the beginnings of their *Ta*, farmers have obtained produce through a geographical, biological and social extraction from nature, which has in turn been transformed by *W* without altering *Tn*. In other words, *Tn* and *Ta* are nearly identical, except for a few small seasonal or premature changes.

Within the chronology of life's evolutionary time the emergence of the Industrial Society is a very short lapse – almost a "flash" within the planet's lifetime. Besides, it has its own "Industrial Time" (*Ti*) and each day makes the wheel go faster and faster in order to rid itself of *Tn*.

This occurs despite some problems, as the comparison between natural, industrial and agricultural products can never be calculated using the same norms, rules or tables of costs. As a function of their respective times, this often takes place on the periphery of the world.

On the one hand, Ti does not account for the Tn it takes to produce oil or mineral coal (between 70 and 400 million years). If we compare this, for example, with the price of cultivated firewood or firewood gathered in a forest as a function of the calorific value contained in these, we would need to include in their price the calculation of *Tn*. Ti does not consider these timescales when determining its economic prices or level of use.

The cost of an industrial product, such as margarine, provides another example. This invention was induced by Napoleon through a contest in which *Ta* for producing margarine for the officers in the front line of

the battle could not be altered. Margarine is a mixture of products: fats, vegetable oils and chemical additives. It is not the same as butter. To increase production, all one has to do is increase the quantity of materials, labour and energy. Butter production, on the other hand, is determined by the life cycle of the cow, needing a specific amount of *Tn* to reach puberty (normally 2.5 years). The cow also needs to be bred. Then there is the period of pregnancy (9 months), birth, and then lactation for approximately 6 months. After this, butter production is inexorably linked with the *Tn*, and a few interventions and influences of agricultural *Ta*.

Although margarine can be made with the raw materials produced by farmers, its time does not need to take into account *Ta*, as this is not a limiting factor in its production, as in the case of butter. Even if farmers possess all the resources to make butter they would still have to wait for the necessary natural stages to elapse.

Having become aware of the migration of wealth from rural activities to industry, dependent on the high financial return of "Ti", many governments have created protection mechanisms[3], or values (falsely known as subsidies) to re-establish the purchasing power of farmers.

This was done through tariffs until the Second World War. After this time it became relegated through different rounds of GATT[4], through the interests and bilateral agreements of the large multinational corporations.

Faced with the realities of the globalisation of the World Trade Organisation (WTO), the values of "Tn" and "Ta" need to be competitive beyond the regions, in order to increase capital accumulation and yield. But the economy does not work like this. All paths lead to Doha in Quatar where the World Trade Organisation conference took place.

The second point relates to the image of a "drop that falls on a liquid surface at rest". This is the centre of impact. It is also the place from which the reaction irradiates within the liquid mass, and where waves expand and change the inertia of the mass. Each wave is weaker than the previous one, as they lose their strength depending on the reaction of the liquid mass.
There is a time between the impact caused by the drop and the arrival of the waves within a determined distance, or beyond this to the periphery

[3] For many years the sale and consumption of margarine was prohibited.
[4] General Agreement for Tariffs and Trade: a multilateral treaty for trade which was negotiated and signed in 1947. Existed until the creation of the World Trade Organisation (WTO).

of the mass of water. This time is important as, often, when the wave reaches the periphery, there is already absolute calm at the centre of impact, depending on the time expired and the reduction of energy.

Within the past decade, when anyone proposes to understand the "history of soya" or to discuss *GM seeds*, I reply: "Do you know the history of the town of Quina in Peru? This is where the meeting took place between Bolivar and San Martin after the battle of Ayacucho. The town is also famous because "quinine" is derived from its name. Quinine is used to cure malaria (which was brought to America by the Conquistadors). Quinine was taken all over the world, but was not given to all: for example, in India it was only recommended for Hindus, and was denied to those who were seen to be opposed to British rule. This is the time of power ($T_{\$}$).

Today, "natural quinine" is nature's domain, and its active constituents are a thing of the past. What matters today is its active genes. These make for better business! The conquest now takes place in the molecular field. Malaria will increase with *Climate Change* (Kyoto Protocol), but RoundUp's responsibility for the hole in the *Ozone Layer* (Montreal Protocol) does not show any interest in preventing this. The reason for this is because the change in the energy and technology matrix is just deception and propaganda.

Debate is only possible where concepts and objectives are honest. Think of *Tn* and *Ta* as the true value of the genes within a domestic or wild seed that has existed for over eight thousand years and the value of the new introduction as *Ti* or $T_{\$}$. The new Conquistadors of our time, point their galleons towards this new world, which is capable of generating great wealth. And just as the Conquistadors of the past, who were no more than invaders and pirates, in the name of God and the Queen invade the beaches that are not theirs, and take them as their possessions.

Sadly, we did not learn to understand the importance of evaluating in advance the "impact of the drop" *on the centre,* and to react within the necessary time and space to resolve the problems caused by the waves of interests around the periphery. In fact, the opposite is true.

The third point is an historic feat, which goes unnoticed due to religious and hegemonic reasons. It is the deed that *Martin Luther* translated the *Holy Bible* from Latin. Humanity's great leaps do not come from books. Nor from Gutenberg's revolutionary machine which turned printing into an industry. The main thing was that everyone should know how to

read. It would be of no use to have translations or a printing industry if few people could read. "*Teach everything to everyone*" was the most revolutionary slogan, even more so than the discord over dominance to achieve the goals or the new phases of "predetermined progress" imposed by dominant societies.

II – The history of soya also includes *time, impacts of drops of water*, and "*teaching everything to everyone*". NGOs, governments, religions, academies and others who are subordinate to a central power do not understand history within this context.

It is not possible to become familiar with soya in the south of Brazil through textbooks being unaware that its context is in the place where the drop falls. In order to explain this, I have to refer to the process of oil nationalisation[5] and the final downfall of the Agrarian Reform brought about by the President General Lázaro Cárdenas in México. The impact he created ("the centre of the drop") within the interests of the technology and energy matrix were strong enough to bring about an armed military intervention, as occurred in 1924.

The US businessman Henry A. Wallace was sent to the neighbouring country as ambassador with full powers. He belonged to a family of seed producers that has dominated North American agriculture for over fifty years and his company was extremely concerned by developments in Mexican agriculture, as he owned Pioneer Hi-Bred, the largest seed company in the world, being hybrid maize is its major product.

His report to the State Department is objective and direct: "There is a latent risk for the agriculture of the *New Deal*[6] at the southern frontier of the USA. Mexico is the place where maize originated, tended by humans, it has enormous potential, but at the same time, if its cultivation continues there is a danger if it continues to be cultivated within a community-indigenous framework and competes with the hybrid strains or the market's genetic reserves"[7].

However, the situation before the Second World War and the restructuring of the agricultural system were more strategic for the future of North American interests. History describes the strategy of the North American Government by placing the Rockefeller Foundation in front of the *hidden*

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[5] See Appendix 1
[6] New business.
[7] See www.Rockfound.org/decades and decades/

proposal for " the capitalisation of Mexican agriculture" moulded on the North American model (without any regard for Article 27 of the Constitution of the United Mexican States). The Rockefeller Group dictated the financial norms, under the pretext of doing away with hunger and misery. These were carried out meticulously. The misguided Rural Extension programme that they created promoted the substitution of Mexican winter wheat with Spring wheat from seed produced (and sold) by ROCK-MEX (known by rural people as (*rocamé*). The rest was official and private propaganda that aims to make the waves reach every part of the periphery, thereby adding to the interests of the Foundation.

To facilitate the training of the extensionists, teaching programmes were modified in the name of progress, and teachers received elite training to end hunger, poverty and misery within the schools of North America.

The Mexican reality is no different to the Brazilian reality - even its regional highs and lows are similar. Soya is a leguminous exotic which existed in Brazil since the arrival of the first oriental communities in 1908. They used the plant as a source of human food even in Imperial times, although it was never an important or traditional crop.

III – In 1930, both in Mexico and Brazil, a political restructuring of agriculture took place. In Brazil, particularly in the South where, along with the colonisation by privileged Europeans, there existed small properties run along the lines of 18th and 19th century European and North American agriculture. The large farming estates (known as latifundios) remained restricted to extensive livestock rearing and political disputes.

The Government of Getúlio Vargas provided the infrastructure, created the public policies to stimulate the development of "colonial windmills"[8], credit cooperatives, produce cooperatives, among others. The priority was the production of wheat to substitute the manioc crops. Behind this façade, lay the same scheme for the capitalisation of agriculture by the Rockefeller Foundation. The wheat, maize, rice and bean, milk and pork cooperatives proliferated and regions of the South became known as the "grain basket of Brazil".

The Brazilian diet includes pork lard, therefore all species of this animal are fat producing. That is the value of the animal – not the meat, which has a secondary value – and is an industrial primary material. The ability to

[8] Community windmills that pay in kind.

supply the cities of Sao Paolo and Rio de Janiero with pork lard without a road system forced farmers, cooperatives, businessmen and governments to create an air freight service. The air company Sadia, which later became *Transbrasil*, was created with this in mind. It has recently ceased to operate.

After the Second World War, we faced a new reality. Europe needed to reconstruct itself and it modelled itself on North America. This is why we resort to multilateral organisations, the World Bank (IBRD)[9], and a raft of investments closely linked to the *Marshall Plan*. In order to supply the needs of industrialised European countries the North American proposal could only be completed through the development of industrial agriculture in the Southern Hemisphere. The first step towards this was a Rural Extension, which was also initiated in Brazil by the Rockefeller Foundation[10] with the blessing of the Catholic Church. The real intention was to do away with the decentralised credit cooperatives and to monopolise and internationalise them. Public sector officers were taken to the USA to be trained into new management techniques through the Point Four Programme - the source of agricultural and livestock rearing programmes using large amounts of capital, energy, mechanisation, and causing devastation in the natural environment.

Soya was brought from the USA under the pretext of providing a protein food for pig rearing. Pigs are now known as suínos in agricultural glossaries. The propaganda disseminated by the Rural Extension, in accordance with the Rockefeller "*intelligence*" stated that the "best sack in which to keep soya is the pig".

A military regime was imposed after the Cuban Revolution. To control the Marxist influence in Latin American universities, the Rockefeller Foundation made a donation to modernise programmes, curriculums and training of lecturers in the USA. This mysteriously became an agreement with the Ministry of Education and Culture and USAID. Dean Rusk left the Presidency of the Rockefeller Foundation and took on the task of Secretary of State for the Kennedy Government.

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[9] World Bank is the name that has been adopted for the International Bank for Reconstruction and Development, IBRD.

[10] The US Congress determined that the Rockerfeller Group should diversify its activities to block the cartels and trusts (a group of companies under one management whose aim is to control the market of a product or a sector). That is how the Rockerfeller Foundation was created, also, Chicago University, the Rockerfeller University in New York (NY), the United Fruit and United Brands for the banana trade, the first industrial chain in modern agriculture, and the Central Bank of the United States – the FED.

Around this time there was a big clean up of Brazilian universities and organisations. University Professors were isolated within their lecture rooms and substituted by young lecturers freshly returned from the USA. A sad example is that of Arthur Primavesi who was an opponent of the implementation of "Operation Tatu" and its massive use of agricultural lime, which was harmful to wheat crops bred for acid, basalt soil. The lime benefited the soya crops destined for international export, primarily for consumption in the countries of Western Europe that have been commercialised by the large grain companies such as Bunge & Born and Cargill. No critical evaluation was carried out on the production of soya for the meat and dairy production sectors, or of the level of competition with national production.

According to Vavilov or G. W. Carver, within the field of science, and Jackson within the field of politics, the greatest strategic value within a country are its seeds. The USA, which is not used to giving something for nothing, brought through "an act of altruism" all the varieties of improved soya to Brazil (Lee, Jackson, Bragg, Davis, Bossier, Hardee, Majós, Kent). As always, the Brazilians did not suspect foul play from such generosity. The most well-adapted seeds were sown and the others were incorporated into hybrid programmes. Up to that time, the USA was the main - and virtually the only global producer of this crop. What was the reason behind this action by the North Americans?

Some soya varieties were selected in bulk at the Agricultural Institute at Campinas (IAC). One of these varieties was named Santa Rosa. It is in this ingenuous manner that soya began to expand exponentially throughout the Río Grande do Sul.

In less than a decade the few thousand hectares were transformed into millions of hectares of this gigantic monoculture. Science "proved" that pork fat increases cholesterol, thereby promoting an increase in consumption of vegetable oils. It was necessary to build a local industrial park, because the international market required the soya protein for animal food and the vegetable oil by-product had to be consumed locally. The same businesses that exported the grains were the owners of the soya mills and vegetable oil merchants, they held the monopoly on phosphate fertilisers, potassium, and had links to the oil business (nitrogen) and to energy. Here lay the reason for the *yankee generosity*.

The wheat cooperatives stopped giving priority to cereals bought by the State, or products for family consumption. Instead they turned to soya, whose price was determined by the Stock Exchange in Chicago.

Journalists were enticed into semantic discussions as to the gender of the noun of this leguminous seed, whether it should be "el soya" or "la soya". In the same manner, economists stated that they could not perceive that family-based agriculture was being drained of its wealth, and argued over the "Cobweb Model." The authoritarian regime was unaware that, before the industrial capitalisation there had been virtually no "high capital turnover" or manipulation by international capital.

In Mexico a similar seed quality programme was organised (AGIPLAN) and many bureaucrats were taken to the USA for training. At this point, only inspected seeds could be financed and farmers were prohibited from taking out loans to use their own seeds.

Seed companies drafted a bill for the protection of the crops, and this began its progress through the National Congress. Subsidiary companies from Shell (Improvement Planting Breeders) and Continental Grain set up a commercial and technology centre for the new agricultural model ready to begin the commercialisation of selected and patented seeds in Passo Fundo/RS. A campaign against the bill blocked plan of the transnationals for thirty years.

One of the first activities of the military regime was to make the colonial windmills (models of socio-community) and the credit cooperatives illegal. This gave the advantage to modern agriculture. Financed by the Bank of Brazil through centralised public policies with complete control over prices, it was able to demand an even greater concentration of capital and increased production.

The Minister for Agriculture, who had recently returned from his postgraduate education in the USA attended the FAO conference in Rome in 1974, and arrogantly stated that nobody need worry, as Brazil would feed the world. Coins were minted with this statement, and one of these had a soya sheath on one side. This was the era of the "Brazilian miracle", where overconfident fascism with out of control repression, and the audacity of the transnationals could "conquer all".

Amidst all this, the Brazilian Company for Agricultural Research was created in a way that satisfied all the interests of the Rockefeller Foundation, mimicking the style of the International Centre for the Improvement of Maize and Wheat (CIMMYT), the International Centre for Tropical Agriculture (CIAT) or International Institute of Renewable Resources (IRRI) and other organisations with the same objectives. Its first action in the

capitalisation of agriculture was to organise the "technology packages" with their relentless need for loans and raw materials. It is no exaggeration to say that monocultures were introduced from an idea with no scientific or technological basis – but purely for commerce.

The dictatorship also included ideologies, and the multinational companies agreed contracts with the generals, admirals and brigadiers as heads of pressure groups to restrict the activities of the press, the bureaucracy, academia or other opposition, and to help them achieve their villainous plans with the aid of public money. The more daring corporations set up and backed military Ministers (such as Golbery do Couto e Silva – Dow Chemical; Idalio Sardenberg – Bayer; Heitor de Aquino Ferreira – Daniel Ludwig Group[11]).

The trade in raw materials, machinery, energy, seeds, and agricultural services grew rapidly, causing economic inflation. The most reliable indicators with which to observe this calamity was the register documenting the incidence of poisonings and deaths from chemical poisons, which were known at this time as "agricultural defences". It was obligatory to use these chemicals and payment came from the State, with a total subsidy for the companies that manufactured them. It was considered subversive to national interests to alert people to the risks and dangers involved in their use. There were no controls placed or any fines given to companies who used the Health and Agriculture Ministries as their own "cartorio"(a public service)[12]. A scandal erupted when river sand was found in place of fertilisers. The large corporations such as VW, Ford. Mercedes-Benz, Sharp, and Tamakavi were given vast areas of land in Amazonia to use for large agricultural projects. The international politics of the World Bank created lines of credit, and forced debtors to use chemical fertilisers and soil correcting materials, such as lime. The Government created *Procal* from which the farmer would buy his lime or fertiliser. He would then return to the bank with his credit note and the bank would credit his account with 40% of the money he had paid. These fraudulent "cold notes" as they were known were promoted by the official banks, cooperatives and multinational businesses. The scandal was known as the "Fertiliser Paper" and many farmers were jailed over

[11] Daniel Ludwig bought land and founded the company Jarí Celulosa in 1967 to produce cellulose for export. He cut down 100,000 hectares of Amazon forest to plant eucalyptus, and brought a floating island from Japan containing a plant made from cellulose. (http://osal.clacso.org/espanol/html/osal17/alimonda.pdf)

[12] In Brazil the "cartorio" is where registers of people and properties are held. It is not a public service, but is made available for public use.

this practice, although there were no repercussions on the businesses or the financial institutions involved.

During this time there was something that worried even the indigenous communities: the value of grain on the Chicago Stock Exchange. Soya became a business currency throughout the interior of southern Brazil.

Great swindles were organised that played the big speculator game with 'green soya', creating virtual soya banks long before the crop had been cultivated, and without the slightest awareness that their games were being manipulated by Bunge, Cargill, ADM, and Dreyffus.

Soya was planted right up to the graves in cemeteries, and in order to make amends, the Federation for the "wheat" cooperatives promoted and broadcast the film "Ave soya, Holy soya" (Rubens Bender, 1980). Within the film there are some veiled criticisms aimed at the grain, as if it should be held responsible instead of the socio-economic model. Reviews of the film were indulgent, as they did not face up to the responsibility of the authors, they merely shared the information and maintained the status quo. We were being led and we could not see where or when the drop was going to fall.

There was a frenzy of competition for the golden grain. Soya advanced over the fragile soils of the extensive livestock farms of farmers who were eager to take part in this new wealth and who rented their lands for cultivation. In a very short space of time, this resulted in an increase in areas of desertification (Alegrete, São Gabriel).

These were strange times: a small farmers' cooperative from Ijuí/RS had a small soya terminal at the super-port of Río Grande/RS. The "soya boom" had become so important that an over-valuation in the Chicago Stock Exchange was subjected to a "confiscation of currency" by the military government involved in the oil crisis of 1976.

Soya became the main component of the economy of the South, with an infrastructure of silos, stores, rail transport system, and the social organisation of cooperatives being taken over by the large international corporations and their financial networks, all supported by the government and its vested interests.

When the State policy for wheat cultivation came to an end in the 1970s, small farmers found soya to be a reasonable business solution. It was possible to grow the crop in small areas of five or ten hectares on steep

slopes and to harvest it without machinery, the harvest would then be transported to the cooperative and then the farmers would wait for a price rise on the Chicago Stock Exchange. Because of this, there was a sharp rise in family incomes. But although it went unnoticed, the cooperatives were acting as stores for the Bank of Brazil and the large grain terminals. The infrastructure was created to meet the demands from companies such as Cargill and Bunge by using money destined for social projects.

It could be said that the soya industry existed there where a production chain consolidated. At the same time, there was also a family based soya agriculture, where manual labour supplied the raw materials, the energy and mechanisation. Obviously, the system needed the latter to migrate and capitalise, and thousands of farmers departed with their machines without knowledge of how to produce in a wide variety of differing climates, soils and environments.

This was used as the driving force for migration to areas at the edges of the agricultural lands in Paraná where the frosts had destroyed the coffee plantations and increased the amount of available land. The same migration occurred in Mato Grosso where the small family farmers became aware that cheap land was available around the edges of the agricultural areas and that this would allow them to buy ten to twenty times more land in these areas, thanks to the valuation of the gaucha lands[13].

This resulted in family farmers from the south migrating towards the edges of agricultural areas in Paraná, Mato Grosso do Sul, and Amazonia, or to other areas where the destructive model of soya agriculture was already established, or to areas of extensive livestock farming.

The exodus of small farmers (made up mostly of the younger farmers) towards the edges of agricultural areas involved thousands, and sometimes, even millions of families. The National State profited from this situation, but this did not diminish its social impact.

Today, the State of Rondônia is the largest devastated area of Amazonia, and, because of forest fires, Brazil is the largest non-industrial contributor to the effects of Global Warming.

The lands of the small farmers in the south of the country were sold off. This allowed corrupt professionals, the military and politicians to acquire

[13] Lands in the State of Rio Grande do Sul.

these lands and, by doing so, to consolidate their properties. At the same time, soya was expanding at the edges of the agricultural areas. This created an ideal situation for the soya transnationals by capitalisation at both ends of the chain.

The "adventurers" left for Paraná, and from there to Mato Grosso. They crossed the frontier into Paraguay, and from there headed toward Rondônia, Acre, Roraima, and Pará. During this wave of optimism and alienation the regime became weakened and a new globalisation model emerged: the re-democratisation. Farmers who had resisted the exodus, even when they had lost their lands, or those who returned from their misadventure as victims of tropical disease, impoverished and disillusioned, began to organise themselves. At this same time, the church was also setting up the "Landless Farmers Movement". Those who had "invaded" Paraguay with soya had "returned", and more than 120 million families ended up camped along the roadsides.

The powerful Wheat Cooperatives were selling soya instead of wheat and diverting funds through grain exports in the same way as the large grain corporations. According to the Bank of America, FECOTRIGO, Coopasso, Cotrisa, Cotrijui and many other organisations were swallowed up whilst trying to survive the establishment of the supermarkets, the refrigeration industry, or sales and services to the large corporations, which infrastructures had been financed with public money. One of the last Presidents of the once-powerful Federation of Wheat and Soya Cooperatives (FECOTRIGO) bought lands on both sides of the border with Paraguay so that he could personally influence the variation in the exchange rates.

This period saw the greatest levels of destruction of democratic values, and the construction of many fantasies and sources of fascination, as well as the alienation of society. The curious thing was that the propaganda did not describe soya as the food that would end the levels of hunger that existed across the nation. This is because everyone was aware that it was a *commodity* for the international market, and that its purpose was to provide a food security strategy for a Western Europe which had united in the face of the Cold War, and they were also aware that this initiative was financed by more sources of capital than the humble Peruvian anchovy had ever been.

In order to corroborate the inequalities caused by soya cultivation, the campaigns of the Agricultural Dispensary against the abuses arising from

the sale of agrochemicals resulted in the use of Baculovirus, a type of virus which was very effective in controlling the caterpillar which is one of soya's major pests. Campaigns to increase household use of this virus gained headway and applications of agrochemicals fell from 8 to 0.5 per hectare. Even so, the greatest enemies of this alternative pest control were the official investigators, who alleged that it would be difficult to control the efficiency and quality of the "polyhedron of the virus" (using the language of the agrochemical industry). This popular biotechnology was put aside and forgotten, and caused no more damage to the business of the multinational agrochemical companies.

The price of soya and the lack of agricultural planning led to a situation where the main protein component in the Brazilian diet, the feijoada (a type of stew consisting of beans, rice and meat), no longer had a safe place at the dinner table. After having reduced an administrative loophole, the Minister for Agriculture, Amaury Stabile, ordered that 40% of soya grain should be used in the production of ready-made feijoada. The general public were aware that they were eating "sojoada" or 'soya feijoada", as these soya-laden dishes became known, even though it was common knowledge that there were no set cooking times for the varieties of soya grown in Brazil, as it was grown for oil extraction and not for human consumption.

Forty years on, soya has another purpose as the provider of biodiesel, so that the car manufacturing industry can be seen as clean when challenged about Climate Change. Although, as a high protein food, soya must be used in the preparation of meals for school and social welfare projects, as this product is abundant and there is much malnutrition around the periphery where the drop of water falls.

The "drop of soya" fell on Mato Grosso and replaced the wheat crops, filling the silos and the land with soya. The same occurred in the region of Barreiras in Bahía, where landowners were forced off their land by immigrant farmers or their hit-men. A similar situation occurred in Cerrado in southern Pará, in southern Piauí, Rondônia, Roraima, and Amazonia. The situation extended beyond the frontiers into Paraguay and Bolivia, and was caused by Brazilians wanting to reduce costs during a time of price rises, and to take advantage of the cheap land prices in these areas. In Argentina, they took advantage of the difficulties experienced by traditional crop growers due to internal market prices being kept low in a bid to control inflation.

IV – In Argentina, the Ministry for Agricultural Affairs of the Buenos Aires Province carried out experiments with soya crops in the 1970s. This industry began to grow towards the end of the decade and, in a short space of time, occupied areas of maize and pasture by renting agricultural land from farmers. It experienced its "boom period" after the fall of the democratic regime (see Fig 1).

The expansion of soya in Brazil's regions of Cerrado and Amazonia found there was a great advantage to scale of production, concentration of capital and intensity in the production chain, large investment in fertilisers, toxic chemicals, herbicides, machinery, fuel, and the adoption of the transport and logisctics infrastructure by private interests – all with the incentives from large grain corporations who viewed the above as areas of primary importance.

In this scenario, the soya agricultural model changed. Industrial capitalisation gave rise to technological services aimed at increasing financial capital, which was subordinate to the large international banks. This change was brought about by increasing political influence within multilateral organisms such as the OECD, UNIDO, FAO, WHO, ILO, who work with governments towards "modernising management".

Two technological instruments reinforced soya in this new phase: Direct Sowing and GM Seeds.

No-Till was researched and developed during the 1970s by the British agronomist Mike Barker from ICI, with the purpose of finding an opening in the market for *Paraquat* in the region of Passo Fundo. Previously, Monsanto had tried to promote its product *Glyphosate* for the same purpose, making it easier to manage large areas without the need for multiple stages of soil preparation, resulting in less use of water, energy, time, fuel and a reduction in sowing costs.

Monsanto declared that its herbicide was innocuous, that it was an ecological product. The company organised Friends of the Earth Clubs under the pretext of conservation of Nature and the Environment. It also organised the Cooperative Services for No-Till, which acted as an agent for Monsanto's social capital and prepared the ground for GM soya Roundup Ready.

The most surprising thing was that after the consolidation of soya as an important segment of the national economy with a privileged future,

organic soya did not become a priority for the authorities, and Monsanto became their great opponent. We should remember that, at a meeting with the US President Clinton in 1997, Monsanto CEO Robert Shapiro, attempted – unsuccessfully - to classify his soya Roundup Ready as a product for organic agriculture[14]

Every commercial sector had to stimulate the 'organic soya' debate, and at the same time, decide on their GM soya market. The farmer had three options (organic, indifferent, and due to its superiority, GM RR). But the unexpected actually took place, as agrarians, cooperative leaders, bureaucrats and politicians were as yet undecided about how to implement agribusinesses and the financial aspects of these, which were subordinate to the large "traders"[15] and the grain corporations.

Since the latest scandal (2005), when more than 40 tankers destined for China were sent back, it has become easier to understand this situation.

To have a shipment returned by a buyer brings indicates a lack of satisfaction within the whole community, particularly when the product has become one of the country's major exports.

In the press each day, a number of traders and middlemen accused the Chinese, but no information was given about the returned shipment. This caused a vast amount of damage to the national public accounts. For more than two months there was no public statement or explanation from the authorities about what had taken place. Nor did the media publish any explanation of any kind.

What had taken place was unacceptable: *Aventis Cropscience* carried out some trials in an attempt to register its fungicide Rhodiarum, based on THRIAM (or TMTD) for the treatment of soya seeds. The results were so catastrophic that the company had to take back all treated seeds and credit farmers in the interior of the Río Grande do Sul. The treated seeds remained a toxic hazard and should have been destroyed. Instead, they remained in storage in cooperatives and silos, and were subsequently mixed with harvested soya and exported to China.[16]

China was concerned about the rise and fall of market prices and decided to buffer this by buying a large quantity of soya. They paid for this in

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[14] "Transgênicos o fim do Gênesis", S. Pinheiro, Editora Fundação Juquira Candiru, 1999.
[15] The grain merchants.
[16] See "A máfia dos Agrotóxicos no Brasil", S. Pinheiro, Fundação Juquira Candiru.

advance in order to obtain a better deal. Cargill, Bunge, ADM and other companies decided to speculate with the Chinese by charging them 35% more than the price originally quoted to them eight months earlier. This action provoked the Chinese, who resolved to carry out a strict analysis on the soya. Results of this indicated the presence of toxic grain. The Chinese sent back each one of the thirty tankers arriving at their ports until the Brazilian Government intervened and absorbed the difference in price, in this way protecting the multinational agrochemical and soya manufacturers.

This was the reason why no information about this problem was ever published by the media, as they were subsidised by the agribusinesses.

If this was not enough to understand the "*status quo*", the following example should help to clarify the situation: after the above incident had taken place, in order to prevent a similar situation from happening, the Chinese Government made a visit to the State of Paraná to buy some non-GM soya. The Governor, Roberto Requião (2002 – 2006) held meetings with all the agricultural sectors, but became disillusioned when he realised that everything was under the complete control of Cargill, Bunge and ADM. Although the Government of Paraná produced 22% of Brazilian soya, this left them unable to supply the Chinese order.

The concept of the cooperative was created in Rochdale (England), and those idealised by Reiffeison, Luzzatti or Chayanov ceased to exist after the military coup of 1964. They were slowly transformed into the "armed services" of the multinationals acting as middlemen for the official services offering credit, machinery, and raw materials. To comply with the new order imposed by the WTO, they transformed into cooperative companies, distorting even the cooperative concept as a regulator of capital by social means. This situation continued even after the return of democracy.

In Argentina, the soya scenario followed the same path, with worse results due to the new situation of the International Order. The large multinational grain corporations, did as they had done before, and took advantage of the exemptions and the Dirty War (previous dictatorship) to gain space and "Ti". In less than a decade soya production was more than 11% of the global legume production.

The ease of agricultural (tandem) mechanisation, soil uniformity and climate, as well as the reduction in manual labour facilitated the increase in soya plantations. Following the same pattern as in southern Brazil,

there was no obvious science or technology behind the cultivation, as for a long time the *Rhyzobium* were still brought from Brazil, even though Argentina had known how to produce it for use on alfalfa since the beginning of the 20th century.

The importance of soya had reached gigantic proportions within the new democracy. It provided an insuperable source of income for the national economy, and soya flour and oil took the lead in Argentina's major global exports.

With the rise of Carlos Menem and his liberal external policies under the banner of Domingo Cavallo, the role of the grain companies became crystal clear: the National State was dispensable. The only anchor for constitutional parity between the Dollar and the Peso could only come from a product that was controlled by the Chicago Stock Exchange. This consolidated the "soya model" and the farmers began to be known as "Cargilleros".

Acknowledgement from North America took the form of reduced endorsements for nationals depositing in the USA. The real objective of this was to avoid the recognition within the farming industry that soya was no longer an agricultural crop, but a link in a complex financial chain. This financial chain had a closed loop and was under the control of Monsanto, whose GM seeds and Roundup herbicides – along with their complicity with Cargill and Bunge – would completely dominate the Argentine territory in the same way as it had done in Brazil during the previous decades.

It was not surprising that the businesses did not even question the lack of contracts to protect their seed technology and rights to "*royalties*". These contracts were demanded from companies in the USA and Canada without flexibility. They had other reasons for not demanding these contracts.

Within a small amount of time. GM eliminated all other soya seeds, as well as all other crops and any less profitable rural activities. Everything focussed on soya Roundup Ready, which was very easy for the farmer to grow and was under the complete control of a massive financial economy.

The self-financing system run by Cargill, Bunce, ADM or Dreyffus established a closed loop without the need for collusion or participation

from the National Government. The "sowing pools" were not evaluated for their social impact because of the concentration of land or the rural exodus. When, on the 19th of December, Argentinians realised that they no longer had parity with the Dollar, the most frequently heard word was "corralito" (trapped in the cattle pen). This blow was hard to take.

V – Through financial GM agriculture, the grain corporations could demand back payments of "owed" royalties for past use of the technology. This was enforced by preventing the docking of tankers at ports all over the world.

The Argentinian situation was becoming serious. But there was no way to stop this dance, so the ball continued. President Duhalde became concerned that there would be a "block out" by the large grain corporations, and he allowed them to place their currency on the international financial market, and in so doing, he removed any remnant of State power and transferred it to the speculators market.

The most dramatic situation occurred after the resignation of President *De la Ria*. The spouse of the new President "Chiche" Duhalde distributed food (GM soya croquettes) for children's school dinners and for social welfare organisations, calling these *solidarity croquettes*. The packets of "powdered milk" produced in the USA, clearly stated that they were "Not for children's consumption". This was the same powdered milk that the "Alliance for Progress" was distributing to Latin American schools and which had a detrimental effect on children's health due to its trypsin-inhibiting action[17] which caused retarded growth and development.

A few decades earlier Argentina had one of the best distributions of income in the whole of Latin America, and an enviable level of nutrition. Now, the emergency caused by the existing levels of poverty and misery forced action to be taken, and soya was used as a means of nourishing the poor.

On looking back to the beginning of this assay, we can say that the visit of the all-powerful ambassador Henry A Wallace, the owner of the world's largest seed factory, had been a success not only in Mexico and Brazil, but also in Argentina.

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[17] Soybean Trypsinic Inhibitor (Kunitz) www.nature.com/nature/journal/v249/n5452/abs/249054a0.html

In Brazil, GM soya faced resistance from social movements, particularly the environmental ones, who were well established in RS. These movements vilified the establishment of soya cultivation and even the governors of the Labour Party who tried to adopt the issue as a political banner by publicly declaring that the territory was free from GM. There was State legislation in existence with powers to prevent GM crops, but they were too incompetent to enforce this.

In Argentina farmers were not forced to sign a contract of responsibility by Monsanto for the acquisition of GM seeds, as were farmers in North America and Canada.

This could be viewed as an 'act of consummation' for the contamination of Brazilian soya, where the Federal Government had issued no statement regarding the liberation of GM soya. Nonetheless, the interests of the Rockerfeller Foundation, Cargill, Bunge, Monsanto and Embrapa clearly favoured this.[18]

Contraband in GM seeds coming through Argentina pointed not only to the contamination of crops, but in a very astute way, to making farmers buy a 50 kilo bag of seeds for $200. The farmer would multiply this grain but would sell it on, but he would not be able to make back what he had paid for it. This took the responsibility for distribution away from the seed company, and the seeds would be disseminated without any controls, making GM crops a fact of life.

In the first year of the Government (1999), it was suggested that a strategy be set up to buy all GM seeds held by farmers. This did not reach 2% of the total. It was thought that this would block the dissemination of seeds planned by Monsanto, and that the company would be forced to pay the costs to farmers, as Monsanto had protected its technology by means of what could only be described as expropriation.

This strategy was blocked by a group of corrupt militants within the Government who were interested in the acquisition of testing "kits" to verify GM soya. This equipment was not approved by the National Institute of Metrology, Standardisation and Industrial Quality (INMETRO), and therefore the use of these kits did not have any legal support or

[18] The parallel between mobile phones and seeds is important to point out, in which the fascinated consumer acquires five phones in a year. Seeds are the food of humanity and cannot be turned into this kind of high profits investment that is subject to the interests of the industry without any means of State control.

commercial transactions. But the "kits" were acquired as the militant group planned to use them to create a scandal so that the Minister for Agriculture from the Federal Chamber could be elected.

State legislation relating to GM (No. 9.453/91-Dec 39.314/99) was revoked and substituted by another law that served Monsanto's interests (Act RS No. 11.464/00). This was vetoed by the Governor, but the Legislative Assembly broke the veto through the absence of a deputy from the Government. What followed was a free for all of whitewashing, corruption, incompetence and clashes of ideologies within all sectors under the supervision of the (agribusiness) press.

It is quite easy to identify a "field" in which GM soyaRR is growing. All that needs to be done is spray a normal dose of Glyphosate on it and wait 48 hours. If the plants dessicate, then it is not GM soya. This was the method carried out following accusations during police investigations. But it did not provide the expected results, as corrupt investigators from official bodies told farmers to apply a substitute herbicide to the plants (Paraquat) and after a few days the soya was dead, whether it was GM or not. This typifies the villainous nature of those in the know.

The GM issue was item nine of a list of twelve point of Luis I da Silva's campaign programme for the Presidency, in which he undertook to declare a moratorium and an in-depth debate on the subject of GM.

Once in Government with the elections were over, his first decision was to free the GM market. His Minister for Agriculture was a staunch defender of GM crops, having been given the go-ahead from CTNBIO to grow soya Roundup Ready at the Agricultural Show at Ribeirao Preto in 1998, even before their cultivation was authorised in the country.

The CTNBIO used corruption in a bid to deregulate GM on behalf of Monsanto, but the social movements did not allow this to take place.

The State declared itself to be a "GM-free territory" although it possessed 85% of the area used for soya experiments. This was planted with contraband seeds smuggled from a neighbouring country by the same public officials. These cultivated areas were on Government land and the Government was giving the go-ahead for their free trade.

Led by the GM businesses, Brazil felt obliged to discuss and approve biosecurity legislation that failed to include any mention of health,

environment, or employment. It consisted of a commercial *document* according to the interests of the seed companies and their creations. After vetos, demonstrations and counter-demonstrations, the law was revoked and replaced with a new one which catered even more for the interests of business. This law lasted no more than three years before being replaced with another in favour of the interests of large corporations.[19]

Today, the situation taking place is Argentina is the same as it was in Brazil, with Monsanto attempting to claim royalties for the use of technology which they smuggled in so that they could reap the profits.

Monsanto brought in *Pinkertons Detective Agency* to investigate the theft of their technology in the gaucho territory. Their actions were an illegal act of proselytism and propaganda, which turned out to be a mistake for them, as the Federal Police (Of. No. 5.139/2003 – OAB/SR/DPF/RS) who had the same powers as Pinkertons had never actioned any such cases, and they were unable to challenge any supposed rights.

Their greatest exploit of all was their contract with the Brazilian State research organisation EMBRAPA, to whom they sold their technology (the RR gene) so that it could be implanted into EMBRAPA soya varieties through standard crossing techniques. Monsanto became the owner of all the *tropicalised soya germoplasm*, in exchange for a percentage of sales to the State-owned company who had been taken in by the talk of *financial* agriculture.

At the World Trade Organisation meeting in Cancun, Monsanto attempted to distribute GM food to a poor village on the outskirts of the resort and tried to put pressure on the authorities to provide free access for its crops.

VI – At the World Social Forum in Porto Alegre, we watched the WWF, Soya Coalition – Holland and Soya – Brazil Coalition orchestrate a pantomime with a group of international environmentalists around a discussion on the sustainable cultivation of soya in Amazonia. They received a public reproach for their shameless behaviour. As an act of provocation,

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[19] Law No. 11.105/05 – Regulated clauses II, IV, and V of the 1st Article of the Federal Constitution. It establishes security procedures and mechanisms for legalising the activities involving GM organisms (genetically modified organisms and their derivatives), creates the National Council for Biosecurity (CNBS), restructures the National Technical Commission for Biosecurity (CTNBio), place the National Biosecurity Policy(PNB) at their disposal, revoke Law no. 8.974 of the 5th of January 1995, and Provisionary Measure no. 2.191-9 of the 23rd August 2001, and Articles 5, 6, 7, 8, 9, 10 and 16 of Law no. 10.814 of the 15th of December 2003, as well as providing other powers.

troublemakers from the Soya Coalition appeared unannounced at a workshop of the Grupo de Reflexión Rural to debate the greenwash of the soya takeover of agriculture. The troublemakers were told to leave the workshop.

The agriculture of the gaucha and Parana communities produce between 16% and 22% of the total Brazilian soya production. In the past, and in different times, production represented up to 95% and 40% respectively. The contribution diminished annually due to lack of scale and the absence of agricultural areas for expansion. This led the social movements to devise a strategy against GM soya crops by taking advantage of the experience gained in the fight against the agrochemical companies, which took the form of systematic denunciations against the Government for facilitating the interests of the multinationals whilst at the same time, developing an organic agriculture as an alternative to these. Soya cultivation in the South is based on an agricultural system of small and medium-size rural family farms. These lack the scale to compete against those in Mato Grosso and Amazonia, which are consolidated by a financial chain.

The strategy aims to predict organic soya production beyond the "niche market" of the interests of the Rockerfeller Foundation and the agribusinesses.

The following example will clarify this: The companies created by the Rockerfeller Group for the banana trade (*United Fruit* and *United Brands*) in Central America at the beginning of the last century produce organic bananas in the same way as Bunge and Cargill produce organic soya – through scale, quality, low price (preventing any kind of competition), and by incorporating services which are impossible to be replicated by organic agriculture practiced on small family farms.

In spite of this, no company can produce "organic produce" in the same way as the "traditional communities", as they are protected from "free trade" by the OMC in order to prevent their cultural demise. This demise would be undesirable in a world where the currency is solidarity, diversity, and tolerance in every sense.

An organic banana from Quilombo[20], or organic soya from Guarana can only be produced by their traditional populations, without concerns over scale, services or competitive costs.

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[20] Black communities living all over America that rebelled against slavery, who isolated themselves and continued to live an independent community life.

In this way, their existence is guaranteed by giving a value to "Ti" in the "Ta" and "Tn", without turning into a Fascist or authoritarian economy, which is the way that organic agriculture is currently being managed.

This also allows the planning for "traditional community" agriculture, according to the changes made at the United Nations conference in North Brabant, Netherlands in 1991, with the trends in Low External Inputs for Sustainable Agriculture (LEISA), leading in twenty or thirty years, to the expansion of organic agriculture certificates, which will benefit the large corporations.

Sadly, we witnessed the decline due to the State's incompetence during 1999 to 2003, along with the submissive nature of the governments that followed this time.

Cargill built an illegal grain port on the River Tapajos in Santarem, right in the heart of Amazonia. This port grants illegal, exclusive concessions for the transport of grain in tankers from Bolivian, Paraguayan, Argentinian and Brazilian rivers, canals and lakes from illegal mobile silos and warehouses. The speed at which these structures move grain regulates the loading of soya in ports around the world, with the advantage of having no competition and no infrastructure costs.

In 2006 agribusinesses had a debt of 141,000 million dollars. The industry is totally dependent on one sector of the fertiliser market (NPK), which is linked to a cartel by large corporations. The seed sector is under the complete control of the same cartels, and the machinery sector has been totally dismantled. The ecological pioneering Cooperative Coolmeia, that organised the largest free ecological fair in the world, and which was the technological base for organic agriculture, has closed down. One of the pioneers of "organic soya" in RS went on to become the Director of an agribusiness.

Soya has become a principal world player within the threat of climate change. The car is the villain because it accumulates carbon gases, Nitrogen oxide and other gases contribute to the Greenhouse Effect. The car needs to change its image, and fuels sourced from photosynthesis provide a fantastic way out. This provides an added advantage to the soya, as its protein-rich by-product provides a social solution to a miserable and undernourished world.

In Brazil, this campaign was known as "Zero Hunger" and in Colombia as "Colombia Without Hunger". There are many more countries throughout

Latin America and other areas surviving on the edge with identical programmes and equally evocative names.

Hunger is an apocalyptic scourge on humanity, and as such is feared by all. In the past, it was an infrequent and unexpected phenomenon, and this is the reason why it was transformed into a tax for those defeated during wars. Hunger equals fear and submission.

Following the Second World War, hunger became a political ideology that was applied to those who rebelled and alienated themselves from bilateral ideologies, although this fact was always covered up by the official propaganda.

Within the new international unilateral order, there is no room for hunger. That is why teachers from the Mexican hills are funded to go to learn how to cook soya in Canada, so that the children they teach do not remain small. What parent would not like to see their child growing up tall?

World hunger needs to be eradicated. The multinational companies are a substitute for the National State and they propose joint programmes, such as the Public-Private Associations (APP) to end hunger. These programmes are now big business.

Nonetheless, international statistics provided by FAO predict that hunger will continue to exist in Africa, Asia and Latin America until 2025, as the diet will have a calorific content 25% lower than the diet of rich countries.

Nobody mentions that the diet of the rich countries will be organic, certified, and traceable, and of course, more expensive. While the diet of the poor countries will consist of GM foods, distributed by the logistics arm of the multinationals contracted by governments through public contracts the world over.

We are well aware of the winners and losers in Washington's consensus on the new policies on international hunger. We know Cargill, Nestle, ADM, Dreyffus, Bunge, and others will be the winners – and that the winnings will be huge.

Using the same logic, we can see that the big oil companies running the financial economy can use soya and other oil producing seeds to produce food for cars at the same time as they produce food for the poorest

communities through public policies of interest to large corporations. Additionally, they have control over the use and occupation of lands, credit and raw materials for food production. This reduces land availability and gives greater value to the adopted production policy.

By reducing the amount of land available for food production there is a slight phase shift between the value of food for machines (fuel) and food for living beings. This increases research to identify foods that will serve both humans and machines, resulting in a rural exodus, and the concentration of production into combined and top-down industrial and financial chains.

All this masquerades as public policy with pompous names, such as "The National Programme for the Production and Use of Biodiesel", insinuating that the objective is to promote social inclusion, or guarantee competitive prices.

In Argentina, biofuels became an issue for the State, instead of public policy. Export duty for soya oil (for human consumption) dropped from 22% to 5% when the oil was destined for biofuels. The problem is how to distinguish the former from the latter, when they are just one product and both are under the control of the same company. We should not forget that the European Union exports 13% of soya flour and could transform itself into a large exporter of soya oil by avoiding Argentinian taxes. Past Ministers of the Brazilian Government are negotiating with banks, the Kyoto Protocol and the Mechanism for Clean Development (MDL) to find devious ways to achieve this type of fraud.

When compared to all the primary materials for the production of fuel for machines and human beings, soya is unique throughout the world, because of its industrial and financial scale and its incomparable quality.

In the Argentinian film "Hambre de Soja" (Soya Hunger) by Marcelo Viñas (2005) a concern lingers: Nobody has asked on which side the balance will fall. Will it be the external market, or the supply of food for the human race? The obvious answer to this question will close the debate around agrofuels.

Another advantage of the biofuels issue is that the diet loses its cultural components by being internationalised, and becomes subordinate to one's ability to pay, thereby creating even greater profits for the food industry as they go all-out in a bid to consolidate their efforts.

The proposed future agricultural certification is a tax for new services and aims to extract wealth and add more value to the agriculture[21] of the Southern Hemisphere. In our projected calculations, there will be confrontations with "*traditional communities*", as for obvious reasons, they do not have the capacity to compete with the schemes of the multinationals that are protected through the WTO's New Order.

According to the multinationals, because of the lack of scale for growing monoculture crops in the regions where Mercosur family farming still exists within "traditional populations" they should focus on the cultivation of organic soya under the guidance of the large grain corporations, organised within linked chains in the same way as tobacco, poultry, pork, milk, etc.

The environment would be contaminated with GM seeds in order to avoid competition from the organic soya on family farms (traditional communities) and once this has taken place, an integrated chain would be created for organic soya, such as TRADAX, INNOVASURE and others who are establishing themselves in Argentina, Brazil and Mexico.

The serious issue is that "the damage that soya can do" is not being discussed, but instead, new ways are being investigated to make soya palatable, as it is no longer possible to live without it.

The synthesis of urea by *Friedrich Wohler* in 1828 was a new dawning for the fascinating world of organic chemistry, and freed it from the theory of vitalism. In the same way, the synthesis of anilines from mineral coal by the German *von Hoffman* in Great Britian displaced the giant markets in natural dyes. The work of *Justus von Liebig* added to this new trend and transformed the world, firstly with fertilisers through chemical reactions; secondly with the production of tinned cooked meat at his gigantic refrigerated plant on the Uruguay River between Fray Bentos and Gualeguaychu, which replaced the English monopoly in dried meat, and; thirdly, through the creation of a substitute for breast milk. The most celebrated of all was the ex-slave George Washington Carver (1864 – 1943)[22]. He carried out detailed research and obtained over 300 different products and a number of patents from using peanuts as a

[21] In the middle of the 20th century this was known as a process of civilisation. Source: 'EL Signficado del siglo XX'. Kenneth Boulding (1956).
[22] He became the Director of the Institute for Agricultural research at Tuskegee, Alabama. Two postage stamps were printed in his honour. There are also two ships named after him, the second of which is a nuclear submarine.

primary material. From this, he produced previously unknown products such as plastics, oils, margarines, waterproof textiles, and concentrated food products (which were of interest to the armed forces). His work served to introduce soya to Latin America, in a bid to respond to strategic industrial demand for materials sourced from nature. He was a hundred years ahead of his time.

The vegetarian Adolf Hitler, bought great quantities of soya in 1938 from the USA in a strategic move to store protein foods for the war he was planning.

Soya had a privileged position within the agriculture of the New Deal. In 1935 Henry Ford was one of its greatest promoters. He knew of GW Carver's pioneering work, and was aware that his cars needed covers, pedals, buttons, stuffing for seats, etc. made from plastics sourced from soya extracts. He used to say to W Morse that every car he manufactured in the future would carry sacks of soya as industrial products. This is the reason why soya cultivation between 1940 –1965 leapt from 2 million to 19 million tonnes. If we compare this with another 25 year period between 1970 – 1995, soya cultivation in Brazil rose from 1.5 million to 26 million tonnes. In the meanwhile, we are not in the same *time*, nor at the *centre of the drop of water*.

Today, soya represents 6% of Brazil's GDP, and more than 10% of exchange reserves, even more so in Argentina. Soya developed and imposed long-term trends according to the interests of the grain corporations. We have no idea of the social, economic and financial impacts this has had during and after the military regime imposed 40 years ago.

From another angle, the environmental "intelligentsia", such as the WWF, Greenpeace, and other subsidised NGOs showed us how soya can be cultivated responsibly in Amazonia at the Global Social Forum, and they prepared the coup by outlining the value of these services in order to legalise interests in the longer term.

In Bolivia, soya is the second major export, after natural gas. There are 1.5 million hectares in the region of Santa Cruz, and potential for an additional 12 million hectares. Because of this potential, Cargill, Bunge, ADM, the banks and the large Brazilian landowners involved in agribusiness have organised a movement to remove private interests, which has the potential to spark off a genocide.

The scale of soya cultivation in Amazonia is unknown. The *Maggi Group* in Mato Grosso could be described as a small producer within the context of Amazonian soya, and therefore could be quickly swallowed up as it does not have a large enough infrastructure or area of expansion to be able to fend off groups like George Soros, Cargill, Bunge, Rockerfeller, the Gates Group, the Aldrich Group, and others of their stature.

VII – Let us return to the history: In 1912 Rudolph Diesel created a powerful engine for cars with heavy traction. This engine ran on vegetable oil – from seeds that take their energy from the sun and are available to everyone.

During the first oil crisis of 1967, German interests and investment were dominant within the motor car industry in Brazil. The oil crisis led to Brazilian cars being quickly adapted to run on ethanol from sugar cane. This was a low-cost solution, as sugar cane was managed by the cartel of the Cooperative of Sugar Cane Planters of the State of Sao Paolo (COOPERSUCAR). For some years, up to 85% of cars changed to ethanol. Then there was an inexplicable reversal. Why?

At the end of the 1980s, before the first meeting of the IPCC in Geneva, the Germans became pioneers of biodiesel from crops of rape seeds (RME). Meanwhile, a reunited Germany realised that they did not stand a chance against the large petrol corporations. They continued to develop the technology, but not in direct competition, not even so they could develop the energy for themselves (even though they had enough territory, space or "Tn").

Discussions about global climate problems resulted in the Leipzig Conference, where agreements were reached on the need to set international measures. In Kyoto, Japan, the Protocol was approved, although without the commitment of the USA, who are the world's major consumers of energy.

The Kyoto Protocol is gaining ground, but it is a process for the banks, long discussions and diplomatic negotiations to bring national strategic interests into line. Away from the negotiating tables the oil companies tighten their global grip over the poor nations in the same way that they did in the 20th century.

Decisions taken regarding company interests were later transformed into the special programmes of the World Bank, which put pressure on credit

arrangements for members of the IMF. This is the beginning of the 21st century, and corporations no longer need the support of the wealthy nations. They dictate their public policies on a global scale through the WTO.

The sugar cane cartel expanded their interests under the banner of renewal. In the meantime, scientists such as David Pimentel and Tad Patzek compared the disadvantages of the production of ethanol from maize, sugar beet, or sugar cane. Anyway, what was of prime importance was their viability for capital investment.

A Cuban official document (*Gramma*) declared: On planet Earth there are 13,041 hectares of surface area, of which 4,155 are not arable; 3,869 are scrub and forest; and 5,017 are agricultural land. According to FAO/2001, 30.5% or 1,530 million hectares are for cultivation and 69% or 3,478 million hectares are for pasture.

Ten thousand square metres of sugar cane produce 6,500 litres of alcohol per year. If the fermentation of pulp were to be used, this figure would rise above 6,500 litres. Vegetable oil would have an output of between 0.5 and 1.0 tonnes /hectare/year.

Global primary consumption of natural gas and oil is approximately 5,881 tonnes per year. The 5,017 million hectares of agricultural land available for crops and pasture are the basis for feeding humanity, and this is where it is proposed to grow biofuel crops. In order to substitute 5% of oil and gas consumption we would have to sacrifice 20% of the total surface area available for agriculture (both crops and pasture). If the crop area alone is considered, this would mean losing 32% of the 1,530 million hectares available for cultivation across the whole world. In order to reach the targets set, we would need more than twice the existing area. And so, the devastation will continue to advance through scrub, forest, and protected areas, and accelerate problems of water availability, climate change, the rural exodus, and desertification, which is increasing by 1,370 hectares per hour across the surface of the globe.

The Rockerfeller agricultural model is based on high energy use, mechanisation of agricultural processes, fertilisers, agrochemicals, ploughing, sowing, irrigation, harvest, transport. The remaining activities are based on oil and gas. Today, this model includes the production of

foods currently being disputed at a territory level, and this diminishes availability, induces price rises, guarantees a monopoly and production on an industrial scale.

Rockerfeller's industrial agriculture has increased. It has consolidated its capacity to produce energy. Soil fertility and water are over-exploited, and it would not be difficult to include the production of air (oxygen) to this list because of the increasing amount of inputs it receives.

In the past, the traditional indigenous model was the subject of ridicule (it was thought of as uncivilised) because it used 1 unit of energy to produce half a unit of food. Today's industrial equivalent uses 10 units of energy in order to harvest 1 unit of food. We are now reaching *Peak Oil* (or Hubbert Peak) and more capital is invested into extracting one barrel of oil than the capacity generated by the liquid energy within the barrel.

We did not realise that those who sold the fertilisers, the agrochemicals, the seeds, the credits and the rural lands were the Rockerfeller Foundation and its peers – Cargill, Bunge, ADM, etc. In a conference in 1953 at the University of Illinois,[23] the Rockerfeller Foundation confirmed that the greatest obstacle to investment in the Mexican agribusiness was Article no. 27 of the National Constitution, which prevented the sale of lands. Providence provided a solution to their problem, and in order to satisfy the interest of the agribusinesses, Article 27 was revoked by President Salinas de Gortari in 1988.

Today, these companies are expanding their so-called sustainable model (post-civilisation), in which for every 100 units of renewable energy invested there will be 1 unit of vital energy created. This will be totally dependent on what is *bio-manufactured* and by appropriation of the Sun through patents and service agreements.

The idea of using plants to produce oils for biofuels is not a new development. During the Second World War, the Ford and Rockerfeller Foundations introduced and stimulated the cultivation of plants such as tung, castor, and white pine nut that produce combustible oils throughout the continent. These were to be used for the allied war machine.

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[23] Cited in the book "Hitler Won the War" Walter Graziano, Bs As, 2007, Editora Sudamericana.

A list of plants used for the extraction of biodiesel, and their yields p/ha.

Plant	Yield Litres/Ha
Soya, *Glicine max*	420
Rice, *Oriza sativa*	770
Tung, *Aleurites fordii*	880
Sunflower, *Helianthus annuus*	890
Peanut, *Arachis hipogaea*	990
Rape, *Brassica napus*	1.100
Castor, *Ricinus communis*	1.320
Barbados nut, *Jatropha curcas*	1.590
Avocado, *Persea americana*	2.460
Coconut, *Cocos nucifera*	2.510
Macaw palm, *Acrocomia aculeata*	4.200
African palm, *Elaeis guineensis*	5.550
Babassu palm, *Orbignya phalerata*	5.550

The BIODIESEL discussion brought to light a new reality, as the diesel engine had been designed for use with vegetable oils. But the oil companies were only interested in adding value through industrial and biotechnological patents, and in centralising the production of raw materials for use in energy production in submissive countries.

While there are no GM oil producing seeds (modified to produce oils and fats) that satisfy the needs of the oil producing industry, the oils are processed through esterification for vegetable oil with ethanol to transform two raw materials into an industrial fuel, with a more centralised production, distribution and consumption base than oil.

In Brazil, the interests of the large oil companies are hidden by the press and the government. Everyone ignores the risks posed by consuming fruit juices, such as peach, pear, apple or banana, mixed with soya "milk". These juices have not been tested for antitrypsin toxicity, as the manufacturers will not allow this.

In Brazil, governments are being forced to plant eucalyptus as if this were the economic redemption for society and culture. Uruguay has experienced two situations that are applicable to Rio Grande do Sul in southern Brazil, an area of large estates built out of shanty towns that had been emptied of their inhabitants. With the planting of eucalyptus there is a demand for a large number of temporary workers (known as boias frias). This extra

manual labour will also impact on the rural workers and the semi-rural workers that live in these areas. The region is a large producer of water, which guarantees activity and offers some opportunities in the near future. This is the reward for the clean air produced by the eucalypts.

All the above took place within the great political experiment aimed at giving "power" to the left wing of yesteryear. Many believed that the election of Bachellet in 2006 was as significant as the election of Salvador Allende in 1971, and the election of the "worker" alluded to in the leftist Brazilian (or Uruguayan, or Argentinian) discourse[24]. This was total deception. Our democratically elected representatives may have a different function to that of their authoritarian predecessors, but they fulfil the same economic orders, financial objectives and political duties.

The large corporations relied on the environmental awareness in southern Brazil, particularly in Rio Grande do Sul. They went so far as to set up stimulating meetings, financed by the Brazilian Chamber of Commerce and the USA, to deal with questions on the Kyoto Protocol. Banks, institutes and universities were involved in formulating the aims and objectives of this misinformation and deceit.

If the global problem is Climate Change, there should be no more sugar cane cultivation in order to maintain the status quo of the motor car, nor any eucalyptus plantations that are completely cut down every seven years.

If all the above is not enough, be forewarned: All the eucalyptus currently being prepared for planting within the next few years is GM, as is all the sugar cane and all the maize (E327, from Sygenta). This creates a convergence of confusion. The price will define if the crop is for food or for fuel. And so the market becomes the supreme organ of light and power.

Today, once again, we blame the eucalyptus and the GM seeds without questioning the determining political model. In the future, we will evaluate the model's uneconomic external policies (the so-called 'non-conformities'), and its environmental, social and cultural externalities with

[24] "The owners of the sugar cane, who ten years ago would have been thought of as bandits of the agribusiness within our country, are now becoming national and international heroes because everyone is keeping an eye on the alcohol" (Folha e Sao paolo, 20/03/07). It is a shame that the President is not paying attention to the scandal and the cost of the Abraham Lincoln Agrocanavieiro Project (1981) in Altamira, south of Para.

the same self-gratification as we currently do with the "green revolution", "soya", "monocultures", "agrarian reform", etc. We are obedient to the established political, social and intellectual inducement of the Rockerfeller Foundation. As if in a dream, they lead us to kiss the frog and wait for the transformation to take place. But all we can do is to "swallow the frog".

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