Future perspectives of the soya agribusiness: Biodiesel, the new market

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This essay contains several sections: It begins with a description of the emerging biodiesel market for soya within the countries of the Rio de la Plata river basin, particularly Argentina, Brazil and Paraguay. This is followed by a description of the reasons for the creation of the biofuels market[1], the legal framework for the promotion of these, and the relevant financial instruments offered to support the development of the new industry in the Southern Cone. A description follows of the Paraguay - Parana waterways project, which took on a new lease of life because of the diversity of raw materials produced in the region, particularly the production of biofuels. And lastly, we ask the questions that science has not responded to as seriously as it should, in relation to the implications of the soya monocultures in global warming.

Why are biofuels becoming obligatory?

Today's high prices for crude oil are making the large-scale production of Biodiesel and bioetanol competitive. The excessive use of fossil fuels by industrialised societies has limited access to this resource on a global level, and has caused a process of warming which is different to that of similar periods in the past when temperatures became higher than average, as this time, human activities have caused the rise.

Faced with the climate and energy crisis, Global Capitalism has recycled itself in order to continue the model of supply and demand. The biofuels niche hopes to support a large part of the energy matrix for transport. Most of the raw materials for this new energy output will be produced on the fertile lands of the so-called "Global South". It is claimed that the new "industry" will create employment, provide social inclusion for those left behind, and will contribute to environmental conservation[1]. Within the Southern Cone, Brazil presents itself as an example of "sustainable" biofuel production. The international corporations and institutions do not present this as a paradigm that should only be copied within our Latin American continent, but as a blueprint for Africa and Asia. However, this is the same exemplary Brazil that has millions of hungry people who have no land on which to grow food; where deforestation is massive, and where there are regular reports of slave labour within the country estates.

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[1] The term biofuel mainly covers the agro-industrial and animal products and sub-products utilised to produce fuels, which are generally referred to as "agrofuels"

The agribusiness focus on agrofuels is not supported through private initiatives alone. The corporations use the plans created for the exploitation of agri-energy by intergovernmental public organisations [2] to adapt the agricultural structures (that have up to now served the food industry) to the new requirements of the energy market[II].

Soya biodiesel

Biodiesel is a combustible synthetic liquid obtained from vegetable oils and animal fats through industrial processes. The most important raw materials for large scale biodiesel production are thought to be oils from the African palm, sunflower, rape, cotton, castor oil, jatropha and soya. The grains of soya contain approximately 18% oil.

The conversion of soya oil into diesel takes place through a process called transesterification, and the addition of 10% methanol or twice as much ethanol. Soya biodiesel is not a business to be carried out on a small scale, as cost, running the machinery, the distribution of the forage cake by-product, the size and cost of the overseas freight for exporters, means that the industry can only be taken on by large businesses[III].

As the main producer of soya oil, Argentina is in prime position to satisfy internal and external demand. The industry here has grown and developed in parallel with the growth of oil producing crops, which between 1980 and 2005 multiplied by a factor of six (from 7 million tonnes in the harvest of 1979/80, to 42.5 million tonnes in 2004/05). This reflects a global rise in demand and consumption of oils. Today, Argentina is the world's largest exporter of soya and sunflower oil. In the harvest of 2003/04, 75% of the soya and 95% of the sunflower produced nationally was destined for milling. Of this, 93% of the soya oil and 77% of the sunflower oil produced was exported.

Industrial growth owes as much to new investments within industrial innovation (milling technology and oil refining) as it does to the infrastructure of the ports. This situation has led to a drop in the number of factories and a rise in daily milling capacity. The current milling capacity in Argentina in 2004 was 108.508 tonnes per day, giving an annual total of 27,2 million tonnes from the 50 million tonnes of grain produced annually.

[2] The latest FAO reports, the Institute for Agricultural Cooperation (IICA), which is a response to the Organisation of American States (OAS) and to the Inter-American Development Bank, widely promote the conversion of agriculture to the production of agrofuels.

Six biodiesel projects have been started in Argentina. These are located in the Province of Santa Fe, where 74% of the total national milling capacity is concentrated. Five of the projects belong to the cereal companies: AGD/ Bunge, Vicentin y Glencore, Cargill, Dreyfus, and Molinos. The remaining project is led by Agroindustrias Tejedor, with financial support from Spain. Outside the Santa Fe region, the investment made by the Viluco company is prominent. This company trades in agricultural goods and plans to build a biodiesel plant in the Province of Santiago del Estero. Estimated production is around 400.000 tonnes per year, and investment is expected to be around US$ 38,40 million. Analysts believe that by 2010 Argentina will export 2 billion litres of biodiesel per year, and its principal market will be the European Union [IV].

In Brazil, investment in new biodiesel plants is also advancing at a rapid pace. It is calculated that investment in machinery for biodiesel plants will reach 4.000 million reales (2.214 million dollars) if the proposed projects to produce an annual 3,400 million litres of biodiesel are created [V]. Some of the most important raw materials for Brazilian biofuel are the oils of palm, spurge, sunflower and soya. A great deal of news comes from Brazil each day regarding investments for biodiesel production. One of the most prominent items from last year was the construction of the largest biodiesel plant in South America, located south of Sao Paolo, with an annual production capacity of 227 million litres. The Spanish-Brazilian company Naturoil has plans to increase biodiesel production to 500 million litres per year. The cultivation and milling of soya are also included in the plans of these 'entrepreneurs'[VI]. The North American company Archer Daniels Midland Co (ADM) has used similar methods to enter into large scale production in Brazil. The backbone of production will be soya, and the biodiesel plant is being constructed in the heart of South America's soya country, the Mato Grosso. Company projections for the next five years predict a four-fold increase in biodiesel on a global scale [VII].

In Bolivia, promotion of the biodiesel market is maintained by the Brazilian strategy of consolidating its landowners in Santa Cruz, promoting deforestation in favour of soya, the monoculture responsible for 65% of the forest clearance of Santa Cruz and 76% of national clearances. The Brazilian government has developed new strategies to enable it to dominate the production of raw materials for biofuels. While in Africa it appeals against famines, in Bolivia it proposes to replace coca plantations with energy commodities. The Brazilian Agricultural Research Organisation (EMBRAPA) has terminated its agreements with Peru and Colombia to substitute coca plantations for 'biomass', but Bolivia is resisting Brazil's proposals, saying that biofuels could create more problems than benefits[VIII].

In May of this year Paraguay signed an agreement with Brazil relating to cooperation in the development of agrofuels. Paraguay has embarked upon the development and installation of small and giant scale plants throughout the country. Also featured in these development plans are the construction of a port terminal for the production of oil and biodiesel, and its export through Brazilian installations at the port of Paranagua. The port administration at Paranagua is currently studying the project[IX]. The agro-energy map of Paraguay is divided into the north-east where sugar cane is the dominant monoculture, and the south-east where soya monoculture in rotation with cereal[3] predominates for the production of ethanol and biodiesel. The expansion of jatropha is also being promoted in the Chaco region.

In July 2007, the North American firm Biofuel International Corporation (BIC) confirmed its intention to invest around 80 million dollars in the region of Itapua on a biodiesel plant with an annual production capacity of 150 million tonnes. The Paraguayan daily ABC recently voiced it doubts about this proposal (this will be looked at in more detail below). Other biodiesel development projects belong to national and international firms such as Cargill, Adesa, Frigorifico Concepcion, Grupo Coopetrol-Alpasa del Paraguay, Enerco S.A. del Paraguay and Ecobio Itakyry de Paraguay. Cargill is building a grain terminal and an oil processing plant with a capacity of 1.000.000 tonnes of soya in the Paraguayan capital of Asuncion. This mega-port is being built in response to the growing demand in vegetable oil for export.

There are currently two companies producing biodiesel as a certified product, both nationally and internationally. These are Bio Guarani Multiproductos S.A. and Bioenergy S.A. Their plants are located in the central region of the country and they process 100% of the fat from cattle[4]. These two plants supply national demand for biodiesel, therefore all future plants that are planned will supply biodiesel for export. According to information supplied by the Mesa Sectorial de Biocombustibles (the Board for the Biofuels Sector) it is predicted that there will be 250 million dollars worth of exports of biodiesel[X].

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[3] Both Argentina and Paraguay promote the substitution of soya-wheat, or soya- chemically treated fallow rotations for a rotation of soya and winter crops such as maize – canola – sorgum – sunflower, all are primary materials for biofuels.

[4] The Mesa Sectorial de Biocumbustibles is made up of State organisations, private companies, technical organisations and universities. It created a competition matrix to define the players and objectives in the attempt to convert Paraguay into the great global producer and provider of biofuels from renewable sources. www.rediex.gov.py

In Paraguay, the most obvious tendency in relation to the emerging biodiesel market during 2007 has been the increased interest in the purchase of grain and vegetable oil by groups of foreign businessmen for biodiesel production in their own countries. Such is the case, that Spanish companies like Duro Felguera and Entaban are planning to become the world's largest biodiesel producers with its five plants in Spain[5], one in Argentina and another in Paraguay. They have announced that they will require 300.000 tonnes of vegetable oil form Argentina and Paraguay for their plants in Spain [XI]. Entaban is aiming for the purchase of canola oil in the long-term, but as it cannot be found in sufficient quantities, it will make do with soya oil. The growing trends in using European canola and sunflower oil are also predicted for the production of local biodiesel. This will provoke a greater long-term demand for soya and palm oil for the European domestic market.

Legislation to promote agrofuels in the Southern Cone

Agrofuels are a profitable business for corporations when legislation guarantees their compulsory use. Legislation to promote agrofuels has been sanctioned in a number of important countries all over the world[XII], and these aim to provide the new industry with tax incentives and credits which facilitate a rapid peneration of the market. The countries of the Southern Cone already have this legislation in place, and a brief description of these is provided below:

- Brazil was the pioneer in establishing policies for promoting agrofuels on a global scale. This was due to the first oil crisis in the 1970s, when the government decided to readjust the national energy policy, and the promotion of ethanol was adopted as part of the new measures. The 'Proacool 1975' introduced ethanol derived from sugar cane as a fuel for transport, and allowed a mixture of 20% of ethanol with 80% fossil fuels[XIII]. Brazil was also the first country in Latin America to legislate in favour of making the addition of alcohol compulsory, which it did in 1938. In 1993 the compulsory mix of anhydrous alcohol and petrol was exceeded. Early in 2005, Congress sanctioned the National Act no. 11.097, which disposed of the introduction of biodiesel into the country's energy matrix in the same way as it had previously done with ethanol. Between 2005 – 2007 regulations had at their disposal the use of a 2% biodiesel mix (B2) for diesel. This will be raised to a compulsory 5% in 2013. The National Programme for Biodiesel Production and Use (PNPB) has a series of incentives aimed at promoting large-scale biodiesel production[XVI].

5 The Entaban plants: El Ferrol. Capacity 200.000 tonnes/year; Zierbana S.A. Port of Bilbao, 200.000 tonnes/year; Tarragona 200.000 tonnes/year; Alcala de Gurrea, Huesca, 25.000 tonnes/year; Guadalquivir S.A. Sevilla, 50.000 tonnes/year.

- In mid-2007, the Uruguayan Congress partly sanctioned a legislative bill to establish and regulate a biodiesel and agri-fuel programme[XV]. The legislation stipulates tax benefits for biodiesel and ethanol production companies[XVI].

- In Argentina, the legislative Act number 26.093 entitled 'Programme for the Regulation and Promotion of the Production and Sustainable Use of Biofuels' outlines the compulsory use of a 5% mix of bioethanol in petrol and 5% biodiesel in diesel. The 'Local Biofuel Legislation' provides tax incentives for the industry, and the regulations set down by this legislation established that the marketing of biofuels by promotion companies should be carried out in accordance to the prices determined by the authority. This law became effective in early 2007.

- In Paraguay, legislation number 2748 for the development of biofuels was enacted in 2005 and became effective from 2006. In the same way as neighbouring countries, the legislation establishes tax benefits for those investing in biofuel production, and compulsory mixes of biodiesel with diesel oil, and alcohol with petrol to secure the market by means of increased demand[XVII].

- In Bolivia, legislation number 3207 entitled 'Incentives for Biodiesel Producers' has been in force since September 2005. It establishes that in two years, the initial percentage indicated within the legislation will be incorporated into the mix. The legislation foresees the incorporation of the final percentage within a period of 10 years[XVIII]. This legislation was set up before the current government presided by Evo Morales took power, and has not yet been put into effect.

Financial backing for biofuels

Themes within biofuel industry seminars often prioritise the potential for profitability of biofuel production. From a business perspective, a description of the economic basis for biofuel production would include the following corporate concerns: financing production plants, investment funds for 'bio-energy'. Tax charges and incentives for biofuels, carbon credits, and the expansion of the biofuel market[XIX].

1. Financing production plants

In the majority of cases, the development of biofuels is driven by private initiatives with a financial boost from public funds. Estimates indicate that 2.000.000 million dollars will be needed to increase global production

capacity within the next 14 years[XX]. One of the most striking European investments of 2007 in pursuit of Brazilian biodiesel production was announced by the Italian Premier Romano Prodi. The Italian government is to invest 480 million dollars into the production of biodiesel in Brazil. This will build 4 biodiesel plants. The Argentinean daily, El Clarin, described this as follows: 'With petrol prices going through the roof, and with little hope that they will drop again, the Brazilian biofuels market has become one of the greatest targets for foreign investment. This process began two years ago and has already attracted prominent world *players* such as George Soros; the founder of Sun Microsystems Inc, Vinod Khosla; the supermarket billionaire Ron Burkle; the co-founder of AOL, Steve Case; and the Dutch group Agrenco who merged with the Japanese conglomerate Marubeni Corporation for this purpose. Additional *players* include Mitsui, Mitsubishi and Chinese producers[XXI].

2. Investment funds

Investment funds for agriculture can be defined as local and foreign capital to rent or buy land on which to produce the most profitable agricultural commodities. Generally, investments also increase the capital invested within the local financial markets and in the foreign stock markets[XXVII].

In August 2007, El Clarin announced, with a great deal of pomp, that investment funds were looking for under-used lands for the production of grain and livestock. These under-used lands are understood by many to be the degraded lands being recommended for biofuel production[XXVIII].

Motivation for investors is based on global demand for meat commodities and raw materials for biofuel production. Among the investors, El Clarin mentions CRESUD and the PAMPA AGROBUSINESS FUND. On its website, CRESUD has a portfolio of rural properties. The company states: 'One of the advantages of CRESUD is its focus on Argentina, a country famous for the quantity and quality of its land, and for its role as one of the main global exporters of agricultural products'[XXIV]. Within the same website, CRESUD refers to BRAS-AGRO, the investment fund associated with Brazil, which is quoted on the Sao Paolo stock exchange and states that 'Brazil has the greatest global potential for agriculture, as well as optimum agro-ecological conditions for the development of a large number of crops. As indicated, land values in some regions are still unregulated'[XXV].

PAMPA AGRIBUSINESS FUND is a brand new investment fund registered in the Cayman Islands, although it makes its profits from Argentina and Brazil. The International Finance Corporation (IFC), which is part of the

World Bank, gave them 20 million dollars in May 2007 to add to their existing portfolio of 150 million dollars. The Executives of the Fund are Alejandro O. Quentin, who was part of AdecoAgro[6]; Charles E Shaw, who represented the First Atlantic Capital fund; and Miguel Potocnik, an ex-Executive of Mosanto, Argentina. The IFC webpage which refers to the investment project states that ' the IFC is satisfied with the investment fund's ability to identify and deal with social and environmental risks in an appropriate manner, such as establishing and maintaining a system of social and environmental management. PAMPA AGRIBUSINESS FUND has agreed to designate a qualified professional to manage environmental and social matters, and who will be responsible for environmental and social issues arising within each operation'.

The investment groups are also present within other MERCOSUR countries. An example of this is a German speculator who publicised investment in Uruguay in July of this year. His virtual newsletter states:'Uruguay offers fertile soils, a favourable climate, local infrastructure, proximity to transport routes and ports, low land prices, unrestricted leases for foreigners' and he adds that 'the price of land has risen by 12% since the last newsletter 10 months ago, for the above reasons. Bio-energy crops compete with food crops for land, and with the rise of associated commodities: soya and maize. Investors' interest in agricultural lands is growing at such a rate that more investment funds are appearing from as far away as New Zealand and as close as Uruguay itself.'[XXXVI].

3. The Inter American Development Bank (IADB)

The IADB will contribute 300 million dollars, which are to be incorporated into the private investment to finance the production of biofuels in Latin America to make a total of 3.000 million dollars. IADB's emphasis is in the production of ethanol and biodiesel from the African palm[7]. To date, there is no mention of financial support for the production of biodiesel from soya[XXVII].

In April 2007, when the IADB President Luis Alberto Moreno announced the budget for biofuels mentioned above to the ethanol businesses, he said ' Biofuels may bring investments, development and employment to rural areas which suffer from high levels of poverty, and may reduce

[6] A dairy farm on a massive scale in the Santa Fe Region, where ethanol production is combined with the production of milk products. www.adecoagro.com
[7] African palm monocultures are mostly within Ecuador and Colombia, and cause serious social and environmental impacts. In Colombia the expansion of palm oil has been linked to the large-scale forced displacement of small farmers through the use of armed conflict.

dependence on imports of fossil fuels…' 'From this viewpoint, we believe that biofuels may contribute to the advancement of our principal mission, which is to generate economic opportunities and improve the quality of life for the majority of the low-waged in the region'.

4. The role of the State Bank

Brazil can count on credits at a subsidised rate from the Banco Nacional de Desarrollo Economico y Social (BNDES – the National Bank for Economic and Social Development) for the construction of agri-fuel plants. In Paraguay it is planned that BNDES will promote Brazilian investments within the country on projects related to biodiesel and ethanol production. This will be coordinated with the Paraguayan Agencia Financiera de Desarrollo (AFD – the Development and Finance Agency)[XXXVIII].

The Argentine government encourages local and international investment for agri-fuel production and is working on a strategy with the private sector[XXIX]. Six years on from the economic crisis of 2001, Argentina continues to have difficulty placing itself within the flow of global investment. The great majority of finance for the construction of plants is sourced from sectors that have benefited from the high profits made from agricultural commodities and oil companies in Argentina[XXX]. Public sector banks in Argentina do not play such a major role as that played by the BNDES in Brazil.

5. Tax charges and tax incentives for agrofuels

As mentioned previously, the legislation in effect at the present time to promote agrofuels within the Southern Cone give freedom from taxes and financial incentives for the production of agrofuels[XXXI]. The situation in Argentina is described below to give an example of the way these tax advantages operate.

The core area of soya production in Argentina consists of a number provinces: Santa Fe, Santiago del Estero, Cordoba, and Buenos Aires. They all offer a variety of tax incentives and credits for the construction of plants and the production of agrofuels[XXXII]. These incentives include: a 10-15 year exemption on tax payments for gross investment and on agreements securing investment for agroofuel production (biodiesel, ethanol and biogas); a reduction on the State imposed tax on exports. It is also worth pointing out that a 23.5% tax is paid when soya oil is exported, whilst biodiesel for export pays a tax of 5%, for which there is a refund of 2.5%. The resulting difference is a benefit 17.5% for the export of biodiesel[XXXIII].

In a letter to the European Commission for Trade, this reduction in export tax was described by the 'European 90-Biodiesel Board' as a distortion of the global market in biodiesel. The complaint is based on the low tax payments imposed, which allow Argentina to give an added value to production and which therefore disadvantages the construction of plants in Europe[XXXIV]. Despite this complaint, the national States and Provinces stand firm in their attempts to provide incentives for the installation of agrifuel plants within the country. The Provincial Governor of Santa Fe aims to establish 100 provincial plants to satisfy local and global demand. Governor Obeid has offered investors a zero rate of interest on any credit required to take this project forward. The Provincial State will pay interest on bank loans, provide exemption from all taxes charged by the Province and, together with the University, it will make itself responsible for all the costs of technological investment made by small and medium-sized businesses[XXXV].

In January 2007, Brazil announced the Programa de Acceleracion de Crecimiento (PAC – the Acceleration of Growth Programme). This plan includes a reduction in tax and investments of 236.000 million dollars during the next four years. Through a variety of measures, it plans to construct 46 biodiesel and 77 ethanol plants by 2010[XXXVI].

PAC will agree an increase in credits for the transport infrastructure and for the expansion of sugar cane, soya, castor oil and eucalyptus plantations. It has also raised a reserve of 9.100 million dollars for the biofuels sector until 2010[XXXVII].

6. Carbon credits

Both governments and investors believe that, in the short-term, external financial resources for investments in biofuel programmes could be obtained through Carbon Trading. This formula was introduced by the Kyoto Protocol in the 1990s and is also known as the Clean Development Mechanism (CDM). Legislation to promote 'biofuels' in Argentina[XXXVIII], Paraguay[XXXIX], and Uruguay[XL], refer to the possibility that projects may benefit from CDMs.

Within the carbon bonds system industrial companies based rich countries, and which emit large quantities of carbon dioxide (CO_2) have to finance projects to capture or reduce carbon emissions in the countries of the Third World and credit these reductions as if they had taken place in their own

countries. An example of this would be an Argentine company producing biofuel from soya oil could say that it is reducing its CO_2 emissions. It can then sell this reduction to companies in rich countries who are required to reduce their greenhouse gas emissions. Theoretically the projects that put themselves forward for investments through carbon bonds have to demonstrate that they contribute tot he country's sustainable development, that they reduce greenhouse gases, and that they have the approval of the designated national authority.

To date, CDMs have not considered projects for the production of agri-fuels at an economically viable scale. Specialists have found that these projects pose the problem of how to quantify their reductions in CO_2. One of the difficulties is that it is possible that agrofuels producers and consumers can both claim reductions, and therefore they would be counted twice. Also, there is no certainty about the total emissions of greenhouse gases produced by industrial crops[XLI].

In June 2005, the Argentine Environment Minister, Atilio Savino, welcomed some of the major representatives of the soya and maize producers to a meeting on Climate Change. This meeting was also attended by Hernan Carlino, the Head of the Office for Clean Development in Argentina, and the current President of the accreditation board for projects looking for investment from the United Nation's CDM. During this meeting, he explained the opportunities available for agrofuels through the Kyoto Protocol: 'With the creation of carbon restrictions, there is an appearance of some very interesting alternative business opportunities. The carbon market is growing at an accelerated pace and biofuels feature among the eligible projects. Businesses in the developed world have to reduce their emissions or buy certificates from businesses producing renewable fuels, or those who develop processes to improve their levels of emissions'.

Santiago Lorezatti, the Coordinator of AAPRESID[8] is the person in charge of the certification for the direct sowing project[XLII] and he is also working on its inclusion into the carbon market. At the above meeting he asked about the possibility of proposing crops instead of carbon as an alternative way to gain entry into the emissions trade. Carlino responded that 'the proposal did not count with the support of any influential international 'members', but that they would attempt to initiate the debate again given the importance it had for the nation as a world leader in direct

[8] Asociacion Argentina de Productores de Siembra Directa - The Argentinian association of producers using direct sowing methods.

sowing. Nonetheless, he made it clear 'that any project which implies an intensification of any kind of livestock rearing could enter into the "mechanism of clean development", as it would imply less emissions of methane and CO_2. Later in the chapter I will provide an explanation of the synergy between intensive agriculture and intensive livestock rearing in relation to the production of agrofuels[XLIII]. In August 2007, soya farmers using direct sowing methods organised the 15th AAPRESID Congress entitled 'Reinvention and Future Perspectives'. Within the publicity for this event, the organisers stated: 'the programme for the well-known AAPRESID Congress[9] has been organised around the following themes: the current issues of climate change, biofuels, soil biology, environmental management, and the production processes. The last person to speak at this congress was Santiago Lorenzatti.

A time of much speculation

Recently, I have closely followed a number of articles within the Latin American press about the construction of numerous biodiesel plants. It is clear that the agrofuel industry is taking off, particularly in the production of ethanol. Nonetheless, speculative investment has not yet stabilised, and the complaints made by the European Biodiesel Board are evidence that the optimal commercial area for the energy commodities has not yet been decided. The demand within the European Union and the increasing complaints from a number of social sectors regarding the unviable nature of agrofuels has created an environment of confusion for investors[XLIV]. During mid-2007 there were a number of examples that illustrate the situation of investment for the construction of both small and large production projects.

In August 2006, I visited the Province of Chaco in Argentina. I had been motivated by an announcement made by the wife of the Governor of the Province and a national Senator regarding the creation of a significant number of small biodiesel plants[XLV]. My search was in vain, as the people I interviewed within departments dedicated to the environment/climate change, agriculture and industry within the Provincial government did not know what I was talking about. Nevertheless, in October 2006, the first provincial plant, which was the property of a local cooperative, was inaugurated[XLVI].

In 2006, the economic group led by George Soros announced a project in Argentina for the production of milk, which would be integrated to the

[9] AAPRESID has been part of the Directorate of the Round Table on Responsible Soya since 2006.

production of ethanol[XLVII].In March 2007 the group announced that the project would be moved to Brazil, where three ethanol plants were to be constructed. INFOBAE, a local right-wing newspaper, gave the reasons given for this move as 'the decision by Soros to include biofuels into the business, and to do this in Brazil rather than Argentina was taken after learning that Brazil is the world's largest ethanol producer and had recently set up a strategic agreement with the USA'[XLVIII].

In June 2007, an investment of US$190 million was publicised for the creation of a 'Mega complex for Agri-Energy' in the locality of Timbues on the shores of the Parana River in Santa Fe, Argentina. The purpose of this enterprise was the milling of soya and the production of oil and biodiesel. It required US$40 million for the biodiesel plant, and US$150 million for the oil production plant. Projections were for a capacity of 12.000 tonnes per day (3 million tonnes per year). This placed it as one of the largest plants in the country, and in the world[XLIX]. This new corporate alliance had been made by the Green Fuel Corporation, a Spanish company created in 2003 to operate within the field of bio-energy. The corporation's major shareholders are the Spanish State-run company Endesa (electricity), Tecnicas Reunidas (engineering), and Tepro (rural consultants) [L], the Noble Group, which is financed through British and Chinese capital and is engaged in trading in commodities. To date, only Noble has become involved in the production and shipping of grain through the ports of Buenos Aires and Santa Fe.

This group has recently diversified its investments and has added to its portfolio control of 15% of the carbon emissions bonds as a mechanism of 'clean' finance set out in the Kyoto Protocol[LI]. It has also added Raiser to its portfolio, a firm whose principal activity is the trade in hydrocarbourants and who operates with Repsol YPF. Noble's other business interests include fertilisers and the trade in grain[LII]. What is most incredible is that this enormous company which is publicised within the national and provincial press with great pomp, and described by businessmen as 'a holistic project' as it encompasses everything from grain production to shipping the final products, has been aborted. In reality, the commercial society that had been advertised did not exist. The Noble Corporation explained their position less than a month before the great announcement: 'We want to make it clear that Noble was neither associated, nor involved in the construction of a biofuel plant and an oil refinery within its production complex at Timbues in Gran Rosario'[LIII].

On the 13th of August 2007, the Paraguayan daily, ABC, published an article entitled 'Mega project or mega drain?' an eye-catching summary

of the announced investment by the 'Biodiesel International Corp.'[LIV]. The article questions the corporation's 100 million dollar investment in the construction of one or two biodiesel plants within the region of Itapua. ABC alleges that the cost of these plants is much less than the stated figure. On the 14th of August, this same newspaper published another article stating that, as proof of he competence and seriousness of the investors from the 'Biodiesel International Corp.' the Minister for Industry and Trade, Jose Maria Ibanez, showed them a photograph of an impeccable processing plant, which according tot he Minister, was owned by the business in the USA. Among other things, we have discovered that the plant in the photograph is located in Germany and belongs to another company'[LV].

Because of the above, it is difficult to describe for certain what quantities of money have actually been invested to date, or to be certain of the location or capacity of many of the biofuel plants which have already been announced publicly as companies in development.

Brazil's expansionist policies

It is well-known that Brazil is being promoted as the 'bountiful nation' because of its early development in the production and massive scale use of biofuels[LVI]. This new Brazilian profile is not only promoted by Brazilians, it also counts on the decisive support of the USA to convert the country into a global centre for the transfer of technology and biofuel development. Brazil is playing the role of overseer of the global capital within the agri-fuels sector by establishing trade relations and technological transfers between the countries of the South in order to further the interests of the North. For this reason, the IADB is in discussion with the Brazilian government to 'facilitate the transfer of technology and assistance and to allow other countries in the region to benefit from the experience and knowledge that Brazil has acquired within this field[LVII].

With the creation of the Commission Interamericana de Etanol (IEC – the InterAmerican Ethanol Commission), Brazil has strengthened its position in relation to agri-fuels. The IEC is co-directed by Moreno, the President of BID; Jeb Bush, the ex-Governor of the State of Florida and brother of the current US President; and by Roberto Rodrigues, the President of the Consejo Superior de Agronegocios (the Higher Council for Agribusiness) of the Federation of the Industries of the State of Sao Paolo, and ex-Minister of Agriculture for Brazil. The mission of this new organisation is the dissemination of information about the ethanol market, the facilitation

of private investment, and most importantly, the promotion of a biofuel market within this hemisphere.

As mentioned above, in May 2007 Brazil signed a Memorandum of Understanding with Paraguay for technological, industrial and commercial integration in the production of biodiesel and ethanol between both countries. Brazil proposed for its neighbour 'a coordinated participation in negotiations for the development of a global model in biodiesel quality and the establishment of a common position at international fora'. It also proposed development of suitable infrastructure and logistics to enable the integration of biodiesel into the trade arena, both internally and externally, as well as inside and outside the regions. The agreement confirms that part of the Paraguayan production of energy commodities will be sold in Brazil.

In Bolivia, the Foro Boliviano sobre Medioambiente y Desarrollo (FOBOMADE – the Bolivian Forum for Environment and Development) published a study entitled 'Biofuels in Bolivia?'[LVIII] which states 'biofuels in Bolivia are part of the Brazilian strategy to consolidate its landowners in Santa Cruz, and the implications of this. These implications arise from Brazil's expansionist foreign policy'. The study also adds that Brazil's interest in Bolivia lies in the agribusiness, as can be explained by the large numbers of Brazilian producers in Paraguay. Between 1994–1995 Brazilian soya producers made up 19,6% of all growers, and in the period between 1999-2000 this figure rose to 31,9%, and overtook figures for Mennonites and nationals. Today's market for Bolivian soya has Brazilians as the main producers. Venezuela is the main buyer of Paraguayan soya and insists on this being GM-free, but the Brazilian soya produces in Santa Cruz want to open trade with Brazil for GM soya.

Another extremely interesting point mentioned by the FOBOMADE study relates to the Brazilian advances into the Andean countries through regional infrastructure projects. The study maintains that 'in order to facilitate the conversion of lands destined for agri-business, and transport links to these, Brazil has incorporated the Iniciativa para la Integracion de Infraestructura de Sudamerica (IIRSA, the Initiative for the Integration of South American Infrastructure)'. These infrastructure projects are 'planned to consolidate the occupation of Amazonia by converting Amazon forests to intensive crop production o for export. Among the specific interests being financed and promoted by IIRSA are the agribusinesses (the large Brazilian soya producers). These are interested in pushing their produce through to the Pacific ports of Chile and Peru, and gaining access into

Andean Amazonian where they intend to cut down the forests of Northern Amazonian, resulting in the loss of income for harvesters, crushers, transporters, and even financial institutions, traders and certifiers, etc.'

Below is a detailed explanation of one of the principal South American infrastructure projects, which is related to Brazilian expansion as much as the advance of global agribusinesses are related to regional economic activity.

The Paraguay-Parana waterway

The river basin of the Plata River has a territory of 3.100 km^2. This area is shared by five countries: Argentina, Brazil, Uruguay, Paraguay and Bolivia. The inter-governmental project for this waterway proposes to convert 3.400 kilometres of navigable rivers for 'convoys' of 20 or more barges, and of 16 or more barges to Asuncion del Paraguay in the North[LIX].

This project was initially proposed in 1989, and is known for the negative feedback it has received from various studies carried out to assess its environmental impact. The project has lain 'dormant' for a number of years, but recently commercial interest has been revitalised, as the countries within the River Plata basin who are producers of raw materials, such as soya, maize, timber, cellulose and minerals, also have a tremendous external debts to repay and they can pay the interest on this solely through the delivery of raw materials. Biofuels are another reason why the States of the Southern Cone need to act quickly. The Corporacion Andina de Fomento (CAF, the Andean Development Corporation) carried out a feasibility study on the development of the waterway in 2004-05 which identified around 48 infrastructure projects for roads, ports and railways.

In spite of this historical lack of attention to the project by member countries of the Paraguay-Parana waterway its navigability has improved in some areas thanks to dredging and cleaning work, and the use of navigation buoys. According to the Fondo Financiero para la Cuenca del Plata (FONPLATA, the Financial Fund for the Plata River Basin) the private sector has invested some US$500 million and the public sector has carried out improvements to port facilities and transport. During the last few years freight on the waterway has risen from 700.000 tonnes to 8 million tonnes of grain and general produce [LX].

FONPLATA is a member of IIRSA, and is financing projects relating to the infrastructure of the waterway in the Port of Santa Fe, the Multi-purpose

port at Pilar, Nodo Clorinda – Asuncion, and Punte Bermejo – Neembucu. IIRSA[10] was created by IADB, CAF and FONPLATA[LXI], and comprises a series of planned works to facilitate the conversion of lands destined for agribusiness. Among the planned works is the hydro-electric dams, whose function is to generate electricity, and the improvements tot he rivers of the Amazon to make the navigable by deep-hulled crafts of an adequate size to transport products to the global markets[LVII].

The Port of Santa Fe is situated at the centre at the heart of the Paraguay-Parana waterway and is the furthest port that ocean-going ships can reach. Its geographical position has turned it into a centre for the transfer of loads to and from the countries through which the waterway passes. The Province of Santa Fe has the most important industrial hub for oleaginous crops in the world, and as a consequence, it has the potential to convert itself into one of the most important centres for the production of soya-based biodiesel. The oil industry is putting pressure on governments by declaring that the infrastructure of the waterway is making a loss, and that if the problems with the river ports are not resolved within the next five years they will be overwhelmed, and the sea ports will be at the limit of their capacity[LXIII]. In order to provide support for the activity created by soya, IADB has given the government of the Province of Santa Fe credit worth 50 million dollars to re-design the communications system towards the terminal ports of adjoining Rosario, from Timbues to Arroyo Seco. This plan comprises approximately 50 work projects, of which 7 have already been initiated: 3 have been completed through funding from the Provincial government, and the remaining 4 have been financed through national government funds[LVLV].

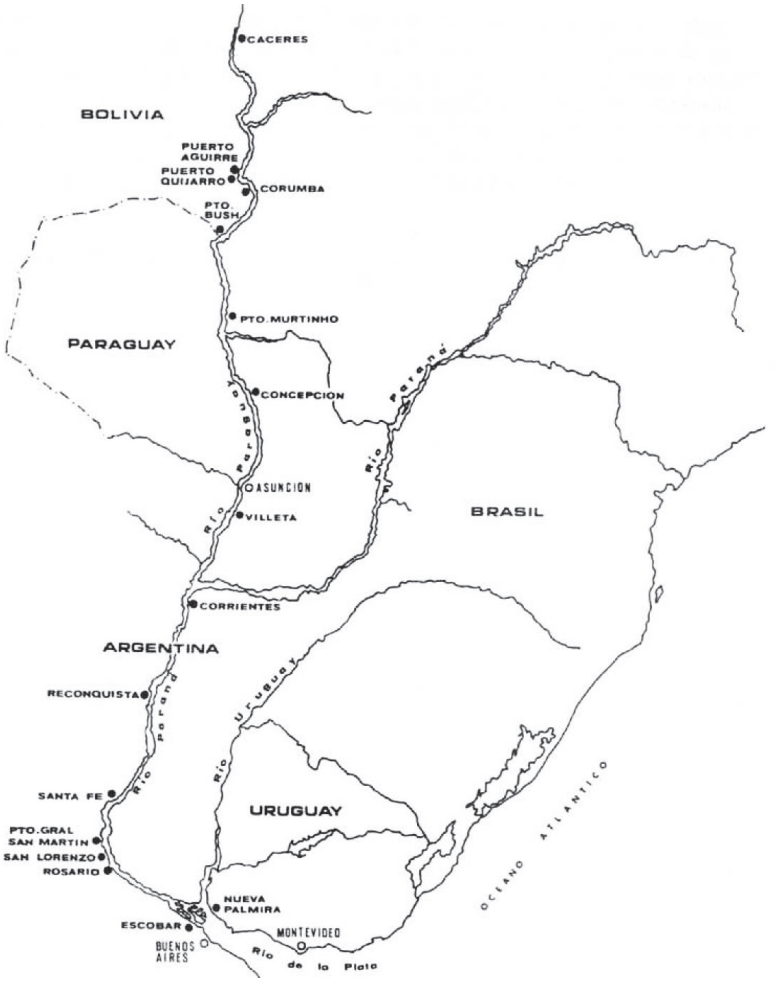
There are many social organisations that refer to the Brazilian soya producers' capital as the main impulse for the waterway. This fact is confirmed with the Memorandum of Understanding signed in May 2007 between Brazil and Paraguay. The document states that there is a proposal to carry out an evaluation of the necessary adjustments to the infrastructure to enable logistic and trade integration for agrofuels destined for the internal market and the external market, within the region and beyond.

If the IIRSA plans are continued, the waterway will continue to threaten an environmental disaster of sizeable magnitude for the region. Potential

[10] IIRSA is subdivided in a number of sectors: Andino, Andino del Sur, Capricornio, the Waterway Parana-Paraguay, Amazonas, Escudo Guayanes, the Sur, Interoceanico, Central, Mercosur-Chile, and Peru-Brasil-Bolivia.

impacts have been forecast for some years by the Environmental Impact Studies carried out by IADB, and recently, an analysis of the soya model, including resource extraction, has been carried out by the specialist Elba Stancich.

Map of the Plata River Basin



Source: http://www.oas.org/dsd/publications/unit/oea33s/p447.JPG

Biodiesel imports for the European Union

According to Senator Roberto Urquia (of the Justice Party of Cordoba), who is also the President of the oil refinery Aceitera General Deheza, 'As Argentina is the first world exporter of vegetable oils, it is part of the select group of countries (such as Malaysia and Indonesia) that could make up the deficit between production and consumption of oils which will affect the European Union'[LXV].

Exports from agribusinesses estimate that the EU will require 24 million tonnes of biofuels. Despite the fact that on a global scale, Europe is the largest producer of biodiesel (6 million tonnes), it will not be able to supply enough to make up the obligatory mix of 5,75% biofuel by 2010[LXVI]. The EU recognises that in order to meet these goals it will need another 9 million tonnes of biodiesel, in addition to what is already being produced[LXVII]. The quantity will rise again in 2020 when the level of mix is due to be 10% if the EU is going to conform to the legal obligations for biofuel additions[LXVIII]. The majority of cars within the EU have diesel engines, and this is the reason for the prediction that 80% of biofuels consumed after 2010 will be biodiesel, and the remaining 20% will be ethanol.

The Spanish example is useful in describing the level of development within the industry in the EU. In Spain there are currently 12 biodiesel plants and 4 ethanol plants. Sales have only increased by 19% this year, although production has increased by 44%. The biofuel producers do not believe that this situation is sustainable within the time allocated. In a bid to find a solution to over-production, businesses are asking for the immediate introduction of the compulsory additions[LVIX]. Meanwhile, a huge collaborative project is being planned by REPSOL-YPF, Bunge Iberica and Acciona. This was announced at the end of 2006[11]. The joint press release from the companies involved predicts that the plants will be installed next to the seaports of Cartagena and Bilbao, where Bunge Iberica has its depot for oleaginous grain, and where it is also in close proximity of the oil refineries. Bunge will provide soya seeds to Acciona, who will be the company responsible for producing the fuel which will later be mixed in the REPSOL refineries[LXX].

It is difficult to define the market within the Southern Cone, as it is impossible to map the precise location or size of the biofuel plants in this

[11] One of the principal characteristics of the enterprise for the production of biofuels is the new type of cross corporate alliance between the energy industry and the agri-businesses.

area. The situation is exactly the same within the EU. Neither is there any idea of what will happen in the future: whether biofuel production will take place outside Europe, or whether they will be manufactured within the EU from imported raw materials.

Certification of biofuels

European public opinion is aware of the loss of forests in order to make way for Palm oil in Asia and soya in South America. To appease their conscience and to please consumers, the EU is juggling with a number of possibilities to provide certification for biofuels.

In June 2006, the European Energy Ministers invited the European Commission to develop a certification system to guarantee that raw materials (biomass) is produced in a sustainable manner according to European environmental, social, and technical standards. These standards would be applied to production, such as imported biomass[LXXI]. In parallel to the work of the European Commission, the governments of Belgium, Holland and the United Kingdom are setting 'environmentally sustainable' criteria for biofuel certification.

The criteria selected by Belgium and the United Kingdom focus specifically on the production of raw materials with low emissions of greenhouse gasses. The aim of certification is to demonstrate that biofuel use contributes towards the mitigation of global warming. Holland is the only country whose certification criteria include environmental, social and economic elements. As part of the quasi-private sector represented by the World Economic Forum at Davos in June 2007, the Laussane Polytechnic and the World Wildlife Fund (WWF) inaugurated a 'round table on sustainable biofuels'[LXXIII]. This round table brought together governments, businesses, and NGOs in order to set up criteria and standards for biofuel production. The round table was chaired by the WWF, and participants consisted of representatives from British Petroleum, the Dutch Department for the Environment, the Forest Stewardship Council (FSC), UNTAC, Berkeley University, Bunge, the Swiss Federation of Oil Refineries, Petrobras, Shell, and Toyota[LXXIV].

For the Laussane Polytechnic, the Dutch government and the European Union biofuel certification should be based on examples of good practice from the previous round tables on soya and palm that had been organised by the WWF, and the timber certification scheme used by the FSC. Nonetheless, as many organisations with the South and the North are

aware of, these experiences have not succed, they attempt to apply the certification to large-scale monocultures in far away countries where this type of production is uncontrollable [LXXV]. Although agrofuel certification has not yet been implemented, various governments are initiating negotiations around this issue. The corporations and governments of Argentina and Brazil are aware of the EU's environmental requirements. On a recent trip to Europe, Lula de Silva announced the setting up of ethanol certification[LXXVI]. In Brazil and Argentina, businessmen and governments are 'reinventing soya production' to bring it into line with the 'sustainable' biofuel market. The Agricultural Attache at the Argentine Embassy in Brussels wrote in an internal memo that the European Commission had requested that the Argentine government should investigate the issue of biodiesel imports to Europe from a certification perspective [LXXVII]. This same official defined the issue of certification as a 'bottleneck that needs to be faced up to', and as a consequence the attitude of the soya producers is changing. An example of this can be seen in the annual AAPRESID congress held in August 2007, which was entitled 'AAPRESID Reinvention and Future Perspectives'. The theme of the congress can be interpreted as a preparation for European certification[LXXVIII].

There are examples within Europe of joint certification projects for biofuels. One of these is the experiment with soya biodiesel form Argentina taking place in the British fishing fleet, where biodiesel is being used to power the motors of the fishing boats. The government department responsible for fisheries in Britain has set up the project in collaboration with Regentec and Camborne School of Mines to develop fuel to supply the fishing boats[LXXIX]. This project is financed by the EU and the British government and aims to produce biodiesel from used oil and soya from Argentina. According to personal correspondence from Biofuelwatch,[12] Argentinean soya will be provided by 'a local company that works with an NGO that is opposed to forest clearing for soya plantations in Argentina'.

Science regards the production of soya biodiesel as a positive step, considering the current situation of energy balances and greenhouse gas emissions. Leaving aside the catastrophic effects that monocultures have on societies and the environment, these hypothetical balances do not take into account the atmospheric emissions created by the increased use of nitrogenous fertilisers on the soils and on so-called marginal lands proposed for crops of soya and maize[LXXX]; the burning of pasture land

[12] Biofuelwatch is a British organisation which observes the global development of biofuels. www.biofuelwatch.org.uk

and the degradation of forests; the use of water for crop irrigation; the release of chemical residues, emissions from natural wetlands; emissions from compacted soils; and the emissions from the energy required to manufacture and transport pesticides, seed, and other agricultural inputs.

In 1998, when the first life cycle analysis for soybean was published, all these aspects had already been proposed as issues to take into account. To date no academic or public institution has followed the recommendations, nor carried out any detailed assessment on soya cultivation in South America. This would need to be done in situ and not as desk research. All that scientists and governments are doing it is to recapitulate on a 1998 life cycle assessment on soya, which was carried out in the USA (see above), which acknowledges the existence of a large number of uncertainties[LXXXI].

The weakness of the analysis on this issue can be seen in the document providing the technical recommendations on biofuels for the officials and politicians of the British government, which states that biodiesel from Argentinean soya is the most beneficial for the climate, as it only uses 878 kilograms of carbon dioxide (not 877 or 800 kg) to produce the raw material, and that this quantity of emissions place Argentinean soya in an advantageous position when compared with soya from the USA or Brazil[XXXII].

The superficial nature of this, and other studies, demonstrate that many scientists dedicated to identifying methods for mitigating global warming, are merely playing an irresponsible game with the future of our plant, in collaboration with agroindustry, the governments of the North and their allies in the South.

Conclusion

The speed with which corporate interests are settling into the energy and climate crisis are unknown. Under the premise that current atmospheric problems and the end of the oil reserves will have to be resolved through new technologies and economic growth, their only rationale is profit.

This is why those governments that respond to corporate demands have created public policies for compulsory blending with biofuels. The new legislation promoting biofuels mentioned above, was set up with no consideration for the effects it has on our regions: monocultures,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toxic pesticides and herbicides, biotechnology, rural evictions, loss of biodiversity, and demineralised soils are just some of the known impacts.

The infrastructure plans of the IIRSA waterway are approved knowing what these constructions imply for environment and local societies. Investment funds speculate on the stock exchange supported by multilateral credit banks, always searching for cheap lands to destroy. In turn, politicians applaud these investments and offer the paradigm of 'bread and circus for the people' who do not understand the problem and who suffer the consequences of this plundering, whilst being paid for this with a few coloured beads. Some international bodies and some of the scientific world work together at the bidding of the corporates to 'legitimise' the need for agrofuels.

The neo-dependence of the North American and European metropolis can be compared to the Spanish colonisation period, when gold and silver were extracted and communities within the exploited territories were subjected to the whims of the servants of the crown. The puppet leaders of the South gain their power through speeches which become contradictory when put into practice. The obligations acquired through external debts do no more than entrap the population. Within South America, examples such as those of Brazil, Argentina and Paraguay make us aware of governments which betray the mandate given to them by the population, and who give themselves willingly to the demands of the agribusinesses.

The acute problem posed by global warming is not being heeded by these new industries, and this borders on madness. In our particular case, they insist on promoting green deserts of GM soya as carbon sinks. I repeat: there is a growing body of evidence detailing the destructive impacts of this on climate, biodiversity, local communities and food sovereignty. These are described in other sections of this book, such as the campaign against the biofuels trade[LXXXIII,LXXXIV].

Given the seriousness of the climate change crisis, there is an urgent need for honest politicians and communities to oppose these initiatives, as well as a through scrutiny of the terrible social and environmental impacts (including atmospheric impacts) which are attributed to biofuel production[LXXXV].

The possibility of an energy and climate crisis provides us with an opportunity to propose a different world which dispenses with fuel as

a means of feeding local trade and individual transportation within the large urban areas.

This proposal involves an economic decrease on a global level, and through this, a move towards the development of real local communities that serve the needs of local populations, and where priority is given to food sovereignty, the use of public transport, and the generation of electricity through solar and wind energy. All the above form part of the basis for a new social paradigm through which the Grupo de Reflexión Rural, and many other organisations and social movements are proposing for the social and economic transformation of the planet.

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