

Summary of the publication “New Paths to the same destination: the false solution of agrifuels”

The unconditional defense of the supposed sustainability of Brazilian ethanol in particular, and of agrifuels in general, within the context of worldwide financial, food, energy and climate crises is counterproductive to a necessary debate and advancement of an energy transition process towards a society more in tune with the planet's ecological limitations. In the present publication the elements of this strategy are separately analyzed as part of the real solution for the enormous social and environmental challenges now facing humanity.

In the arena of the considerations and reversals of worldwide debates on agrifuels and the expansion of energy monocultures in Brazil, the text analyzes the relationship between increased production and world trade expectations of ethanol, and the price of foodstuffs, climate justice, the demand and impacts of the auto industry as well as disputes over land. It demystifies the parlance used for furthering rural development, of land availability, ecological zoning guarantees within the context of agrarian conflicts, of certification and the frustrated expectations of social inclusion in an agri-exporter model.

Lastly, it points out ways and challenges of an energy transition that calls for a new agricultural model, the revision of patterns of consumption, a process of concentrating economies and shortening distances between the producer and the consumer, as well as sovereignty of nations over their territories.

Reversals in the agri-energy offensive

Over the last few years, various facts have been causing increased concerns about the effects of agri-fuel production on the environment and society. The most recent preoccupation is the worldwide rise in food prices. Many factors contributed to this: high petroleum prices, a continuing increase in consumption - especially of meat - in countries like China, climate changes that increasingly cause problems for agriculture.

According to the report by the Organization for Economic Co-Operation and Development (OECD) and FAO (Food and Agriculture Organization of the United Nations), on the Perspectives for Agriculture between 2008-2017, agrifuels were responsible for approximately one third of the price increase of grains and vegetable oils in 2007/2008. The FMI analysis estimates that almost half of the price increase of the main agricultural food products was caused by agrifuel production in 2006-2007.

Brazil: blind faith in exports

In international negotiations, the Brazilian government demands the removal of existing trade barriers, in order to consolidate its leadership in the export of these products. In international forums, government representatives also try to hinder debates on the problems caused by agrifuels. The government alleges it acts thus to “avoid the creation of unreasonable barriers” to free trade.

In following this strategy, the Brazilian government seeks to promote the supposed sustainability of agrifuels and, through an agreement on international standards and specifications, open the way for product certification. Meanwhile, the production and export of Brazilian ethanol rapidly increase. In 2007, the value of ethanol exports practically doubled in comparison with 2005. The perspectives are that within five years exports of Brazilian ethanol should triple.

Certification or change?

The awareness on the part of the government as well as of sector businessmen, that the conquest of new markets for ethanol would require environmental certification led to an immediate reaction. The Ministry for Agriculture announced the implantation of ecologic-economic zoning areas, restricting and delimiting areas for sugarcane plantations. The mere announcement of only a few of its aspects already causes great controversy. At present, the liberation of areas in the Pantanal for plantations is greatly disputed.

In promoting measures such as zoning and certification, the government is not considering an extremely important fact for our future. The expansion of sugar cane plantations, together with other energy crops such as soy and eucalyptus, is already displacing various other crops and also some cattle raising activities, to new areas. Cattle raising is expanding more rapidly into the Amazon region, at the cost of more deforestation.

Brazil: cane or food?

Official studies announce that new areas will expand principally in the Cerrado ecoregion. The demarcation of these territories does not take into account the importance of the *chapada* (tableland) region's predominant ecosystems, which are responsible for the renewal of Brazil's most important river basins. The federal government's arguments also confirm the existence of "free lands" for energy producing monocultures within a scenario of a global crisis of food production and heightened social conflicts over agrarian reform. In the State of Mato Grosso do Sul, one of the pivotal agrifuel expansion areas, conflicts over land increased by 143% between 2003 and 2006.

The expansion of agrifuels has transformed land occupation in Brazil, and started of a new driving force to increase agricultural frontiers. All over the country social and environmental impacts are multiplying: increased conflicts over land, exploitation of indigenous tribes and slave work conditions, decreased production of food crops, displacement of cattle raising activities, increased deforestation and ousting of farmers from their land.

The declarations of the Brazilian government proclaiming ethanol as the solution for the problem of climate change, must give way to the global threats of food and energy shortages resulting from increasing conflicts over land. IBGE data for the period 1990 through 2006, show a decrease in the production of the country's basic food products such as rice, beans and manioc, as a result of the expansion of sugar cane plantation areas.

Food crisis: half truths, half lies

After sugar cane, corn, beetroot, soy and other food crops were used as fuels, many protests were raised denouncing the growing threat of hunger in the world. Due to this, the European Union is today being pressured by civil society to review its ambitious aims for the substitution of fossil fuels. It is also a known fact that Europe does not have the natural resources to meet these objectives with its own agriculture. And that countries like Brazil could certainly supply a significant part of the agrifuels necessary for Europe to fulfill its objectives. The Brazilian government and agribusiness representatives, in their eagerness to export large quantities of agrifuels ignore the fact that the production of ethanol or biodiesel in Brazil is in any way related to the crisis.

The global availability of food is certainly sufficient to supply all humanity. At the same time, however, many factors contribute towards the increase of production costs, consumption, and reduce the supply of various food products.

Not only the Brazilian government, but also the industrial and financial sectors argue, not always correctly, that other factors are to blame. We shall analyze a few of these: "it is the fault of

European and American food subsidies”: it is argued that these subsidies discourage food production in countries like Brazil. However, besides not being a new fact, on the contrary Brazil’s agribusiness production and exports increase year by year; “humans are to blame, especially the Chinese who are eating more”: in actual fact, the Chinese have not lacked for food in many decades. The truth is that people’s income in China, and in many other countries, has increased thereby changing food habits. Meat has become an important item in their diets, and as a portion of the cattle is raised in enclosed areas, the consumption of soy and corn also increases. The transport of these products around the world also requires increased fuel consumption; “petroleum prices are to blame”: certainly, this fact increases the cost of food transport, which in turn increases the price to the consumer. Petroleum is still used for producing pesticides and fertilizers, thereby raising production costs of food. But this cost is far from being a determining factor of food prices. If this were the case, how to explain, for example, the decrease in international sugar prices during the same period?

We can conclude that the use of agrifuels is not, in itself responsible for this scenario, but it definitely contributes to aggravating the food crisis.

Agrifuels, aggravating climate injustice

Clothed in green propaganda, the substitution of fossil fuels by agrifuels in developing countries is, ironically, treated as a domestic means to reducing emissions. But what is done “at home” is only the exchange of fuels in pumps. The impacts of agribusiness expansion are felt by the rural populations that endure in the south.

There are still many doubts regarding the potential of agrifuels for reducing greenhouse effect gas emissions, such as the amount of fossil energy necessary to produce one unit of renewable energy, for example, from corn. Recent studies mentioned in the publication estimate that the production of cane ethanol in Brazil from appropriated Cerrado areas, requires at least 17 years of production to recuperate the carbon loosed into the atmosphere. Whereas the appropriation of Amazon Forest areas for the cultivation of soy - the main crop used for Brazilian biodiesel - will require 319 years to revert carbon emissions. Another study shows that converting forests, turf areas, woodland-savanna areas or pastures to the production of agrifuels in Brazil, in Southeast Asia and the U.S., generates a carbon debit 17 to 420 times more than fossil fuels. Lastly, besides these numbers and within the overall complicated global emission count, it is also necessary to calculate the emissions from the use of petroleum derivates and raw materials used in the production and distribution of agrifuels within the framework of agribusiness; those associated with the necessary infrastructure and with expansion, including highways, waterways, trucks, alcohol ducts, tanks and ports; as well as with the growing auto industry itself.

There are, doubtless, many solutions advocated in the search to reduce greenhouse effect gases, central among which are energy efficiency and waste reduction. Therefore, bringing the energy source closer to the consumer and using the available residues locally are basic criteria for energy, environmental and climate sustainability, which, however, are not taken into account by the agri-exporting strategy of the Brazilian government.

More liquid fuels: for what and for whom?

Just the emissions resulting from the expansion of the automobile sector in Brazil, thanks to the efforts to renew the existing fleet with “flex” cars, would be sufficient to neutralize the supposed climatic benefits from the partial substitution of fossil fuels by ethanol. Considering the growing Brazilian production of automobiles, which was 2,391,354 cars in 2007, and that the specific emission of CO₂ (carbon dioxide) from the production of steel is approximately 1.3439 t CO₂ per ton, if we add to these the emissions represented by the production of cars in terms of the use of iron ore, coke, manganese ore, fuel oil and electricity, we conclude that the emissions resulting from the production of steel used for the manufacture of cars would be over 2,8 million tons of CO₂. As a comparison, this would be more than the 2,5 tons which PROINFA (Programa de Incentivo das Fontes de Energia Renováveis no Brasil) supposedly saves in a year.

The agriculture model: what rural development is this?

Soy and sugar cane are the two main raw materials used for agrifuels in Brazil. Together, these crops occupy approximately 29 million hectares. Also important are the so-called green deserts, eucalyptus and pine monocultures, the wood of which is partly used for fuel. In terms of area planted, these artificial forests today come fourth in Brazil, after soy, corn and sugar cane. In 2007, they covered 5,56 million hectares and are rapidly expanding. Their presence is responsible for a long list of damaging consequences to the environment, among which we can mention: the pollution and decrease of available water sources, soil contamination by pesticides and herbicides, soil compacting by heavy machinery, destruction of native vegetation areas, contamination of rivers and springs, atmospheric pollution due to clearing cane plantations through burning, and destruction of biodiversity.

Increased mechanization is also reducing jobs. As well, these monocultures frequently occupy areas previously farmed by family farmers.

Sugar cane: The issue of work conditions of cane cutters leads to a great dilemma. On the one hand, living conditions of the workers is often very precarious, and the work itself is grueling, endangering their health after only a few years. On the other hand, growing mechanization of this activity, in the absence of governmental policies to re-use this manpower, generates unemployment.

In the absence of any territorial planning or studies of impacts on the part of the federal government, some municipalities located in the areas where sugar cane plantations are expanding, are making their own legislation to regulate and reduce the negative effects of this expansion.

“Where there is sugar cane, jobs are few and far between”, is a constant complaint of local mayors. Therefore, many of these municipalities are delimiting areas for sugar cane plantations.

The clearing of cane plantations through burning, which occurs on approximately 80% of these, is the most visible environmental problem of this sector.

Soy: The amount of soy production in the hands of large trading companies, allows them to control international prices. These companies form a type of purchasing oligopoly and dictate market prices. The same situation will probably develop with ethanol, since the Brazilian government has repeatedly been pressuring to make it a negotiable commodity in world markets. With this, the relative control the Brazilian government may exercise over ethanol prices in the internal market will also suffer.

Territorial conflicts: water and biodiversity

In the present national scenario, where many speeches have been made in defense of ethanol production, it becomes necessary to understand the territorial problems and conflicts caused by the sugar-alcohol sector, such as: illegal deforestation, suppression of riparian areas, the practice of burning to clear land, contamination of water resources and excessive use of water. The sector, on average, consumes 1.83 m³ of water to process one ton of sugar cane. Thus, in order to achieve the enormous harvest of 2007/2008, approximately 895,196,962 m³ of water were consumed, corresponding to a volume sufficient to supply 5,329,000 households during one year, or approximately 18,650,000 people.

The expansion of cane monoculture, coupled with the lack of legal reserves, jeopardizes the reproduction of species and threatens the maintenance of ecosystems biodiversity. For these reasons, the practices adopted by the sugar-alcohol sector are very distant from the production of a socially just and environmentally sustainable fuel.

Are sugar cane plantations expanding only over degraded areas?

The Brazilian government and the associations of rural producers affirm that agriculture in general, and sugar cane in particular, will extend into areas of pastures and degraded land. The numbers referring to such areas escalate, seeming to prove the existence in Brazil, of millions and millions of hectares of degraded land. Embrapa informs that Brazil has 200 million hectares of degraded land areas. According to the Ministry of Agriculture, this number is 70 million hectares, and the Ministry for the Environment estimates a total of 30 million hectares.

The large monocultures in Brazil among which the largest are soy, sugar cane and eucalyptus, cause the degradation not only of the plantation areas, but neighboring areas as well. This occurs even while sugar cane plantations seek to expand into more valorized areas, close to large consumer centers where easier logistics are available, or may be expected, to transport the product. A good example is the State of São Paulo, where the Mata Atlântica has disappeared years ago. There are practically no more areas available in the State for new farming activities, and the expansion of one crop occurs in detriment of others. When sugar cane comes on the scene, cattle raising disappears. The solution is to confine livestock, feeding the cattle with products grown in the region, such as cane, orange and peanut residues, as well as sorghum and corn. However, with higher land prices in the State of São Paulo, cattle producers have no alternative but to go to the Amazon region where land is cheaper.

Agri-ecologic zoning: identifying possibilities and hiding conflicts

A study carried out re zoning practices in the northern Brazilian States, concluded that this procedure was unable to anticipate or accompany local “development” expansion dynamics. The social and environmental transformations were so rapid, that the surveys became obsolete even before they were concluded or published.

Considering that a static and homogeneous view of land still pervades the methodology for zoning it is possible to imagine that the agri-ecological zoning for sugar cane, far from restricting the expansion of this monoculture, will act as a guideline for investments for exploiting nature. Apart from this, the economic and ecologic zoning in Brazil carried out as a technical interference project in land areas, as a rule, neglected to include the participation of local communities, non-governmental organizations and social movements. This is repeated in the case of sugar cane zoning practices

The objectives of zoning for cane production were not to restrict the expansion of this monoculture, deforestation or concentration of land in the hands of a few. On the contrary, it is a map, which enables better investment possibilities to be visualized, serves as a guide for public financing, and creates an ecologic shielding for agri-fuels.

Certification of agrifuels - a smoke screen to hide consumer unsustainability

In spite of the innumerable social and environmental problems analyzed up to now, various agri-fuel certification proceedings are under way, which are submitted as warranties for guaranteed sustainability to international agri-fuel markets. In other words, this emphasizes the issue of climate injustice since it forces those countries less responsible for climate changes to environmentally adapt themselves to a supposed solution so that industrialized countries can reduce the emissions of their transport sector, without reducing their consumption.

In the case of sugar cane, the industries benefiting most from the growing market of environmental adaptation are: agriculture equipment industries because, through increasing mechanization, they prevent the degrading manual labor involved in harvesting cane; biotechnology industries that develop new varieties capable of adapting to different regions, and transgenic species more appropriate for ethanol production; and pesticide and other agricultural material industries, the consumption of which increases with the agri-energy boom.

Here we come to a crucial point in the debate: the certification projects consider only the supposed quality of production without, however, addressing the problem of ever increasing plantation expansion. And the amount of land required for the production of agri-fuels necessary to supply an increasing consumption of energy, is the core of the dispute between agri-fuels and food.

The biggest environmental and social problems of monocultures are caused more by their present rate of expansion, than by their production processes. No certification project proposes solutions for impacts due to deforestation, loss of habitats or social conflicts caused by the displacement of agricultural activities to other regions; more far-reaching and urgent social problems such as higher food prices, are not addressed by the certification projects; and these projects are the initiative of consumer countries, ignored by the great majority of people in the producing countries where communities that are directly affected by the impacts caused by the expansion of agri-fuels are completely unaware of, and do not participate in the preparation of the so-called criteria for sustainability; these certification projects are developed for international markets. Thus, they do not affect monocultures or production processes, which supply internal markets, as is the case of Brazil.

Good intentions and disasters of the inclusion of family farming in Brazilian agri-energy policies

In spite of the “good intention” of the Programa Nacional de Produção e Uso do Biodiesel (*National Program for Production and Use of Biodiesel*) launched in 2004, for benefiting family farmers, some rules are counterproductive and controversial, for example: small producers cannot sell their harvest to different producers, being dependent on one sole buyer; small producers have been invited to participate in such business ventures merely as farmers and producers; the government is remiss in encouraging the creation of biodiesel production cooperatives; there is no concrete initiative allowing small producers to organize themselves and become *de facto* biodiesel producers (and not merely of raw materials), thereby achieving a more significant participation in the process- including technology -.

The picture is no different in the case of ethanol production from sugar cane. The original version of Proálcool foresaw that no plant could process more than 50% of its own cane production, and had to purchase at least 50% of the raw material used from other producers. This document was overruled, as a condition for obtaining FMI loans at the end of the 1960´s.

Diversification and location: an agriculture less dependent on energy and more energy self sufficient- the real solution for the food and climate crisis

The food and energy crisis, encouraged a series of new studies of the present model of agriculture, which is characterized by the high consumption of petroleum. These studies have made clear the challenges of a transition to an agricultural model wherein production and distribution would consume less energy, would drastically reduce its contribution towards global warming and contribute to the preservation of natural resources such as soil, water and biodiversity.

In 2008, the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) was published, a three year study on the state of industrial agriculture. This study demonstrated that large-scale industrial agriculture is unsustainable because it depends on cheap petroleum, has negative effects on ecosystems and aggravates the growing shortage of water. Therefore, monocultures should be substituted by ecosystems that combine food production with the preservation of biodiversity, thereby preventing contamination of water resources and assuring a food supply to the poor. The final analysis, supported by 60 countries, confirms other studies, which emphasize the urgent need for changing the present model of agricultural production.

To reach this result, IAASTD explains how it came to this conclusion: the expansion of extensive monoculture, with large-scale use of chemicals and irrigation is leading humanity to structural impasses; expensive and monopolized seeds, trade cartels, heavy technologies developed only for these large-scale monocultures, soil sterilization, depletion of aquifers - these tendencies are today presented in all their alarming vicious circle aspects of unstructuring. The document's proposals support family farmers and social structures for rural survival, as well as the reinstatement of innovative technologies in conformity with traditional processes.

In summary, the report clearly shows that the increases in productivity with industrial agriculture were achieved at unacceptable social and environmental costs. The text strongly criticizes, not only present agricultural practices, but also biotechnology industries and their transgenics. A fundamental fact is that the analysis found no conclusive evidence showing that transgenic products increase productivity.

The World Bank Annual Report (that participated in the institutional panels of IAASTD) on World Development categorically states: "the best way to reduce poverty through agricultural development, is to increase the productivity, profits and sustainability of family farmers".

The need for a new energy policy in times of petroleum peaks and the growing consciousness and reality of climate changes, is indisputable. And this must be accompanied by sweeping agrarian reforms, new country/city relations, less urbanization - to reduce pressure on local natural resources and distribute food and energy demands over larger land areas. All this requires the development of an alternative project to petroleum-dependent agriculture. For this, it is necessary to include the topic of energy in political debates on production organization and consumption for a post-petroleum era.

The urgency to implement rules for a trade system under new principles, guided by objectives such as the development and strengthening of local economies and markets, agri-ecological agricultural systems, acceptable and healthy work conditions, and an assured food supply, will bring about real solutions resulting in a stable food production and distribution to meet global demands for food.

Self Dominion over energy sources in the transition to post-petroleum societies

The "entrance" to addressing self-sufficiency and dominion, over energy, is to rid us of the fantasies about agrifuels and adopt a critical view of agri-energy. Local, renewable, decentralized and popular sources of energy should be adopted. Even if in a post-petroleum society various agri-energy sources be used, it will be necessary to broaden this debate in search of an overall, complete, view of the global energy situation, considering the diversity of sources and alternatives, options and management of demand as well as the social, economic and environmental implications which this transition will bring about.

Energy policies cannot be dissociated from environmental policies, not in terms of minimizing impacts, but in terms of re-thinking the natural limits of our energy demands as a whole.

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