



WHERE THE SOYA MEETS THE PIGS

Globally it is estimated that on-the-farm activities in the primary agriculture contribute with 15% of the global emissions of greenhouse gasses. On the-farm activities include a combination of methane, nitrous oxides and CO2. The above figure does not include emission from energy used for driving the farm machinery and emissions connected to the production of fertilizers and the transport of all the inputs including the soya feed.

Even more important is that emissions related to land-use and land-use changes are not included. In developed countries, land-use-change has already occurred and, therefore, does not contribute largely to the emissions. However, in developing countries, it is estimated to contribute with 33% of emissions and, in the least developed countries, it is by far the most important contributor, estimated to be 62%. (Data from 2000).

When raising the demand on agrofuels by setting minimum targets or the use of these (as has been done in the EU and the US, for instance) the North is pushing even more to these trends. In Denmark, the "Green Growth" plan is equally cynically playing into this trend by promoting an agricultural system, that demands input of vast quantities of feed from the South, specifically, in the Danish case, from Argentina.

It is therefore highly problematic that, when calculating the emission from the Danish meat production, the emissions relating to land-use-changes abroad are not included. This default is repeated, when calculating the claimed emissions reductions obtainable through the use of agrofuels.

A few decades ago, the pork production around the world, including in Denmark, was part of a small mixed-production. Farmers that produced several different crops used pigs to consume the excess of grain and other by-products. Nowadays, pig production is leading the big business instead of being a part of the integral farm system. The industry is proud to talk about the production chains that are dedicated to pork

production – but not always so proud to let the public in to have a look. The current global trend for swine industrial production is to work with separate operating units and geographical locations for each phase of the process. These units are usually vertically integrated with the production units, packing plants, meat processing, food service units and retail sales outlets. All integrated into the same corporate structure. The feed mixtures for pigs contain several ingredients, soybean meal, wheat, barley, fish meal, sunflower meal, palm oil etc. Our focus in this folder is the relation between the undesirable effects of the production of soybean (in Argentina in this case) and the equally undesirable effects of the industrial pig production (in Denmark in this case). Although this report focuses on just two countries, Denmark and Argentina, soya and pigs are produced in the same manner in other world regions. This is only one of many tales.

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THE INDUSTRY'S PROPOSED FALSE SOLUTIONS TO CLIMATE CHANGE

Rather than addressing the real problems of excess consumption in some parts of the world – both regarding the consumption of animal products in our food and regarding our use of transportation by private cars – politicians and companies from all over are proposing a number of false solutions that will do more harm than good. Following this path it will increase the pressure on the land immensely – which again will lead to social and environmental destruction and also will affect the climate severely. This havoc also includes new land-use-changes due to the growth in demand that the false solutions will provoke.

SOYBEAN CHEMICAL NO-TILL AGRICULTURE FOR CARBON SEQUESTRATION

Transgenic herbicide resistant soybean is cultivated in a no till system which means avoidance of ploughing and high use of herbicides to destroy the weeds. According to the International Panel for Climate Change, the conversion from conventional tillage to no-till systems leads to a 10% increase in the estimated sequestration of carbon in the soil. However recent studies have cast doubt on these claims, as the evidence for increased carbon sequestration in no till systems is not compelling and long term accumulation of organic matter is negligible. These minor benefits – if any – cannot outweigh the extra high use of weed-killers. Nor can they be used as an excuse for further land-grabbing.

SOYA AND BIOTECH SOLUTIONS FOR THE CLIMATE

The multinational firm Monsanto has launched, for 2012, new soybean varieties resistant to draught, with the aim to pilot the seeds in Paraguayan Chaco region. The biotech story line is that the new seeds will give better yield in the order of 15%, compared to current varieties available in the country. Monsanto wants to develop efficient production in the arid zone of Paraguay. However, conversely to the biotech claim, scientists are recognising that those varieties will not be attainable in the foreseeable future.

Monsanto takes advantage of the large availability of land in the Western region of the country. The president of Monsanto South America stated that the current motivation for the purchase by large companies of land in Paraguay has to do with the imminent approval of the drought resistant seeds.

In Paraguay and Argentina the advancement of Soybean monocultures are often associated with human rights violations and land grabbing. In Paraguay, until recently, there were extensive common lands. The investing companies take advantage of the corruption that flourishes in the region, while environmental regulations and human rights are not respected.

CERTIFICATION SCHEMES

To ensure that the production of soya and biofuels is 'sustainable', EU institutions and national governments are currently designing certification schemes for what they call a sustainable production of biomass. Among them are the certifications proposed by the Round Table for Responsible Soya (RTRS) and the scheme created by the Argentinean no-till Association producers "Agricultura Certificada".

Both schemes are legitimising genetically engineered (GE) soya, which is designed to be produced with large (and increasing) amounts of agrochemicals – at the cost of people and the environment. Contrary to what is expected from a certification scheme, these proposals are worsening the problem as they do not offer a solution for the grave impacts of soya production while at the same time this is the impression that consumers will get.

Agricultura Certificada is a trade mark, which is tailor made to the carbon market, created by the soya producers and supported by Monsanto. And RTRS is supported by WWF, who are at the same time still claiming to be opposed to genetically engineered crops.

BIODIESEL

Soybean oil for biodiesel is considered by some to reduce greenhouse gas emissions and mitigate climate change when compared with fossil fuel. However, the atmospheric impacts of soybean cultivation, for which field data are scarce, are based on in vitro studies. It is difficult to measure nitrous oxide (N₂O) emissions as they are highly variable, both during and between seasons. To date, research on what occurs during soy plant defoliation has been lacking. In the autumn, the leaves are lost on the field, just at the time of major rains. The leaves decompose very quickly, bringing the nitrates to the soils which then form N₂O. In 2004, the Second National Communication on greenhouse gas emissions from agricultural activities acknowledged that "it is assumed that the agricultural residues are buried, however conclusive information still does not exist about the possible emissions from (then) 14 million hectares under no-tillage".

The recent CDM Executive Board meeting in Bangkok approved the first direct inclusion of biofuels in CDM. A UNFCCC CDM site can be found for the first project application(s) based on this new methodology. The new methodology is for CDM projects "that reduce emissions through the production, sale and consumption of blended biodiesel that is used as fuel, where the biodiesel is produced from:

- (a) Waste oil/fat; and/or
- (b) Vegetable oil that is produced with oil seeds from plants that are cultivated on dedicated plantations established on lands that are degraded or degrading at the start of the project activity.

BIOGAS

The Danish government has launched a long term plan for the agricultural sector named "Green Growth". The plan stipulates that in 2020, 40 percent of farm animal manure should be used for energy in the form of biogas. The plan proposes that in time, all farm animal manure should be used as energy source. The economic approach of the plan was well spelled by the Minister for Food, Agriculture and Fisheries: "We will remove both the current limit on the number of animals on a farm and the requirement that a farmer must have a certain amount of land for the number of animals on his farm. A competitive agricultural sector needs free reins to take advantage of the benefits of large-scale operations and better opportunities for raising capital. This is something Danish agriculture must have."

Obviously, the minister has no considerations about the producer countries behind this new vision, nor about the climate or even nature in Denmark.

FURTHER READING

- www.aseed.net/
- www.biofuelwatch.org.uk/
- www.corporateeurope.org/
- www.econexus.info/
- www.grr.org.ar/
- <http://lasojamata.iskra.net/>
- www.noah.dk/
- www.regenwald.org/
- www.toxicsoy.org/

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Pigs and Soya production: a contribution to the planetary inferno



Soya in Argentina

The Agro-Industrial Complex: Agribusiness and the financial sector speculating in agriculture are clear about what their aims are; they want to make big money, no matter what the environmental or social costs are. In the primary production of soya in Argentina, the agro-industrial complex consists of producers of seeds, fertilizers, pesticides and farming machinery, and some large companies that own or rent the land for cultivating it. It is forecast that the demand for agricultural equipment will increase.



Seeds: 18 million hectares of land (more than 50% of Argentina's agricultural land and more than 4 times the total area of Denmark) are currently cultivated with genetically modified (GM) glyphosate-resistant soya, the so-called Roundup Ready Soya.



Fertilizers: Soil deficiencies are addressed by an increased use of synthetic and inorganic fertilizers, whose production is energy intensive and whose use causes greenhouse gas emissions. In 2008, a total of 2.60 million tonnes of fertilizers were sold and, of these, nitrogenised fertilizers accounted for 1.31 million tonnes, even though soya is a nitrogen fixing plant when grown in its natural habitat in Asia.



Pesticides: Soy is the crop responsible for most of the huge growth in agrochemical use in Argentina. In the 1990s, annual sales of glyphosate in Argentina were one million litres compared to 180 million litres in 2007. The glyphosate tolerant GM Soya was introduced with the promise that one single herbicide would be able to control all weeds and that herbicide use could be reduced. This has not been the case; the appearance of herbicide-resistant weeds and new infestations leads to an increase in the quantity and types of pesticide used. In 2007, the herbicide glyphosate had a 70% share of the trade.



Machinery: Farm equipment makers are benefiting from Argentina's agriculture boom. Argentina produces almost all of its soybeans in a no-till cropping practice. Machinery used for the no-till soya production includes tractors, sowing machines, spraying equipment (often from aeroplanes) and harvesting machines.

Transport

Energy for transport /emissions:
Lorry: 0,06 g CO₂/kg/km
Container boat: 0,01 g CO₂/kg/km
Distance Argentina – Denmark: approximately 12.000 km
Harbour: The soya for the Danish market the harbour of Aarhus



Transport: In Argentina soybeans have to be moved throughout the postharvest system which consist in soybeans transport from the harvest fields to the drying site, from there to storehouses or to collection centres, from there to the processing industries or to bigger central storage buildings, from these industries or storage buildings to the shipping to wholesalers or retailers for final marketing. The main type of transport used to move soybeans within the country it is by road.



Harbour: In Argentina, there are two main harbour areas for transport, the first area is a 90 km strip located south and north of Rosario, on the left side of the river Paraná (300 hundred kilometres from Buenos Aires city) and the second main area for oceanic transport is the harbour terminals south of Buenos Aires.

Pig factories in Denmark

The Agro-Industrial Complex: In the Danish pig industry, the agro-industrial complex mainly consists of producers and retailers of animal feed, seeds, fertilizers, pesticides and farming machinery, swine farmers, and slaughter-houses. The pig density in Denmark is larger than anywhere else in the world. All year around Denmark has a pig population of approximately 13 million pigs – more than double the number of human beings. Approximately 21 million pigs are currently slaughtered in Denmark yearly. Denmark controls some 20% of the world market in pork meat and exports most of its food production.

Medicine: In Danish farming, pigs are the largest group of animals. It is also the group to which the majority of medicines is used, namely nearly 80% of the total consumption for livestock. The amount used is so big that resistance against antibiotics is increasing.

Animal feed: The average of soya meal content in the mix of pig feed it is 19.35%. Pigs require a little over a half kg of soybean meal per kg of pork. In 2007 the Danish Pigs consumed nearly 2 million tonnes of soy meal approximately 2/3 of which is grown in Argentina, which occupies approximately 470.000 ha. On top of that, approximately 80% of the Danish corn and plant production is used as fodder for farm animals, primarily pigs and cattle.



Colonisation: Some 1,500 Danish farmers have invested in Eastern European countries where the prices on land are low. Farmers seek foreign pastures, because they find the opportunities to expand in Denmark are too restricted due to tough environmental regulations and high prices on land. They invest in building large pig, cattle and grain farms. And there have been incidences of serious pollution connected to these farms. Another danger is that, in the tracks of these new factory farms, the rural exodus in Poland will increase.

Export: The Danish export of pig meat is of approximately 2 million tonnes. Pork meat export makes up approximately half of the total agricultural export and 4-5% of the total Danish export.

The 5 main importing countries are: 1. Germany, 2. United Kingdom, 3. Poland, 4. Japan and 5. Italy.

All of these countries – especially the European ones – have a large consumption of meat. The average per capita meat consumption in these European countries are all above 200 g per capita per day.

SOYA



Deforestation: In Argentina, as elsewhere, the clearance of native forests and grasslands is closely linked to past and present agricultural expansion. Deforestation is carried out by machines, using fire, or through aerial applications of herbicides. Each of these methods of clearance will have significant negative impacts for the indigenous communities and ecosystems, as well as for the climate, due to huge emissions from land use changes. From 2002 to 2006, the forest clearance increased by a 42% in relation to the period 1998 to 2002.



Loss of biodiversity: Whenever forests or grasslands are taken over by monocultures of soya, biodiversity losses occur. Furthermore, the quantity of substances sprayed by terrestrial and aerial means has negative impacts on biodiversity, water and human and animal health. In the soil, glyphosate and other agrochemicals have been reported to be toxic to some non-target species in the soil – both to beneficial predators (i.e. spiders, mites) and to detritus feeders (such as earthworms).



Water: Water eutrophication is caused, among other things, by runoff of fertilizers applied in agriculture. The increased levels of nitrogen and phosphorus found in several South American river basins are linked to the increase of soybean production. Eutrophication affects the aquatic environment to the point where aquatic life can no longer be sustained. In addition, researchers express concern about current RR soybean agricultural practices, which rely heavily upon continuous additions of glyphosate and other agrochemicals. These substances are altering the structure and function of many natural aquatic environments as well as causing harm to aquatic organisms, including fish.



Soil depletion: In the Argentinean soya region, continued increase in yields of soybean crops has led to massive soil nutrient depletion. Nitrogen deficiencies are especially high, despite the ability of soybeans to fix nitrogen biologically, given the right conditions.



Soil compaction: In the central Pampas region of Argentina is widespread and severe due to the lack of turning of the soil, the continuous use of the land, and the use of heavy equipment during seeding and harvest, all of which are associated with no-till agriculture.



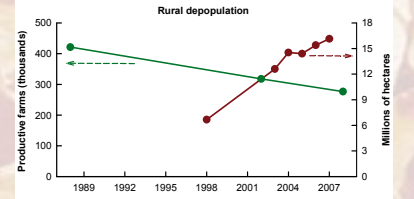
Human health: Evidence from local groups has pointed to a high incidence of cancers, skin and respiratory diseases, allergies, leukaemia, miscarriage, congenital deformities and many other illnesses in people living near crop-spraying areas, and a recent scientific study has confirmed birth malformations well above the normal rates in soya producing regions. Pesticides are, among other ways, spread through the air when sprayed from the aeroplanes and through the water – including drinking and washing water – from the run-off in the fields.



Rural exodus: The preliminary figures from the last Argentinean rural survey, carried out during 2008, indicated a continuous trend of a massive exodus from the countryside to the outskirts of large cities. The data shows that rural depopulation has gone hand-in-hand with the expansion of soy cultivation. People migrate from rural to urban areas when farmers, agricultural workers, and their families, find they can no longer make a living from the land.

OUTPUT

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 oils from the oil palm, sunflower, rape, cotton, castor oil, jatropha and soya. In the case of soya, the seeds contain approximately 20% oil. Soya is the most important cash crop currently cultivated in Argentina, and the crop that both agribusiness and government are focusing on as the principal feedstock for biodiesel. In April 2009, the country exported more than 85,000 tonnes of biodiesel to the EU, twenty times more than it had shipped the same month the year before.



Loss of rural jobs: The adoption of GM non till agriculture and the expansion of the agricultural frontier has had an impact in rural employment. For instance, normally only 1 or 2 workers are employed to cultivate 500 hectares of soy bean. Between 1988 and 2002, over 250,000 rural jobs were lost.

HABOUR

HABOUR

PIG FACTORY



Greenhouse Gas Emissions: Danish primary agriculture is estimated to contribute with 15% from on-the-farm activities + 3% from land-use + 2% from mobile sources; adding up to approximately 20% of the total Danish emissions. On-the-farm activities include a combination of methane, nitrous oxides and CO₂. Emissions associated with the production of fertilizers and the transports of the inputs, including the soya feed, are not included; nor are emissions from the energy used for driving the farm machinery.



Poor animal welfare: Although the Danish agricultural sector usually claims a high level of animal welfare, conventional pig farms are so poor that a large number of dead animals must be disposed from the farms and further 93,000 animals discarded annually in the slaughterhouses. The pigs are forced to live a life that is so far from their natural living conditions, that it is causing them inhumane suffering.

For more photos, see Anima's non-guided tour to Danish pig stables. <http://anima.dk/kampagner/landbrug/danskladbrug2008/>



Biodiversity has for a long time been suffering from large intensively grown areas on drained soils, where only few wild species survive due to intensive use of pesticides. Plants, birds and animal life all suffer. Biodiversity is even further threatened due the excessive amount of nitrogen nutrients everywhere which affect ecosystems on land as well as in the waters and the oceans. Plant societies are changing towards nitrogen-loving species and nutrient-poor habitats are suffering. In the inland-waters and at sea eutrophication leads to severe lack of oxygen, excess algae growth and changes in the ecosystems in both fresh waters and sea waters.

Industrialisation: When looking at the figures from the last 20 years, the increased industrialisation is evident. The average number of pigs per farm is continuously growing. Whereas, in 2008, 60% of the pigs came from farms with more than 5,000 pigs, this figure was only approximately 6% in 1988. Equally fast, the number of pig farms is reduced. The number of pig farms is less than 1/5 of what it was 20 years ago.

Out-sourcing jobs in the industry: The annual yearly production of pigs is 27.4 million pigs, including export of 1 million live slaughter pigs and sows + 5.3 million live piglets. Slaughtered in Denmark are 21.1 million pigs. But this figure is changing. A growing trend for the Danish pig producers is that they avoid the Danish slaughterhouses and instead drive their pigs further south to German slaughterhouses, which employ poorly payed workers from Eastern Europe. This is just the latest incidents in a long trend of centralisation within the pig slaughtering and manufacturing industries.

Rural Exodus: Looking at the development in the agricultural industry, the figures are very clear: for instance the number of pig slaughterhouses have fell from 60 in 1970 (owned by 54 companies) to only 10 in 2008 (owned by only 2 companies). Following the trends of industrialisation in the primary agricultural production and the centralisation in the agricultural industry, schools, libraries and other social institutions in rural areas are also centralised and moved to the bigger towns.

Debt: The Danish farmers are highly indebted and the debt is growing every year. By the end of the year 2009 the debt was of 350 billion DKK, which means that each farmer on average owes 27 million DKK (equivalent to more than 3 million Euros). In response to the financial difficulties, the farmers look for ways to increase the production as well as for new forms of income, i.e. from biomass or biogas for energy.