Oil palm and soybean: Two paradigmatic deforestation cash crops

Deforestation of tropical forests took place at a rate of 10–16 million hectare per annum during the last two decades, and is showing no signs of slowing down. 16% of the whole Amazon forest has already disappeared and every day, another 7,000 hectares of forest is lost – a surface of 10 kilometers by 7 kilometers. The causes are complex and often interrelated, but among them is the role of large-scale commercial agriculture.

In recent years, some of the fastest expanding crops in the tropics have been oil palm and soybean primarily planted as export driven large scale monocultures. Globally, the oil palm area increased by 43% (10.7 million hectares) and the soy area by 26% (77.1 million hectares) during 1990-2002. Government policies have facilitated this expansion which has occurred primarily in Indonesia and Malaysia (for oil palm), and in Argentina, USA and Brazil (for soy). In Brazil, in 1940 there were only 704 hectares of soy fields, by 2003 there were 18 million hectares.

The most direct impact of this process has been the deforestation of approximately 2 million hectares of tropical forest in the case of Indonesia by 1999, and the loss of vast areas of forests in the Centre-West region of Brazil to make way for oil palm or soy plantations. Pesticides and herbicides inherent to these monocultures kill off the last vestiges of biodiversity able to co-exist with the plantations, and significantly diminish the chances of habitat restoration. In Indonesia and Brazil, oil palm and soy companies have been linked to devastating forest fires, that in 1997-98 alone destroyed over 11.7 million hectares of forest and other vegetation in Indonesia, and 3.3 million hectares of forest and other vegetation within the northern Amazonian state of Roraima, Brazil.

Soybean is a crop very suitable for capital intensive, large scale cultivation. The main products derived from soybeans are soy meal (the world’s main oil meal for animal feed) and soy oil (the world’s most consumed vegetable oil). Only a small part of the global harvest is processed as whole bean for human consumption, mostly in Asia. The growing demand for cattle feed in Europe has driven the production of soybean, but recently also by a growing market in China for the production of oil.

Brazil is the second biggest producer (50 million tons or 26% of world production in 2003) world wide, after the US (38%). Argentina, Paraguay and Bolivia have market shares of 18%, 2% and 1% respectively. Other big producers are China and India (8% and 2% respectively).

Soybean is traditionally grown in temperate and subtropical regions worldwide, but now is expanding into tropical regions. The Amazonian region is being directly impacted as new high-yielding tropical soy varieties have been specifically developed for expansion in this region. According to data from Brazil’s National Institute for Space Research, the annual rate of forest loss in the Amazon increased by 40% in the year 2002, resulting mainly from pressure to replace forest with soy agriculture and cattle ranching.

Argentina shifted to the production of genetically modified soybeans, and it is assumed that until 2003 the expansion of the soy area has been at the expense of other agricultural crops, while now 75% of

the soy area growth is assumed to take place in the humid parts of the Chaco region, and the remaining 25% in the Atlantic forest in Misiones Province.

In Bolivia, soy will expand by converting Chiquitano (dry) forests, while in Paraguay it will do so in the Atlantic forest. In Paraguay, although formally illegal or severely restricted, genetically modified soybeans are increasingly planted, a process which has also happened in Southern Brazil.

Soybean trading and crushing in the four South American soybean production countries is dominated by a limited number of large, international commodity trading companies, being Archer Daniels Midland (ADM), Bunge, and Cargill (the three are based in the United States and control 80% of the European soybean crushing industry), and Louis Dreyfus, France. Although these trading companies usually don't invest in soybean growing as such, their influence on the expansion of the sector is very large. Soybean farmers are often very dependent on these trading companies for seed, credit, and other inputs.

The financial stakeholders of the four main soy trading and crushing companies mentioned above are ABN AMRO Bank (The Netherlands), Bank of America (United States), BNP Paribas (France), Citigroup (United States), Commerzbank (Germany), Crédit Agricole (France), Crédit Lyonnais (France), Crédit Suisse (Switzerland), Deutsche Bank (Germany), HSBC Bank (United Kingdom), ING Bank (The Netherlands), IntesaBci (Italy), J.P. Morgan Chase & Co (United States), Rabobank (The Netherlands), Société Générale (France).

Oil palm is native to Central Africa, where its cultivation as a staple crop is central to the livelihoods of millions of small scale farmers. But elsewhere in the world it has become big business, grown mainly on large-scale plantations. Palm oil is a vegetable oil derived from oil palm. It is the world's second most consumed edible oil (after soy), and has a huge range of uses –from shampoo to chips to frozen foods to cosmetics.

Commercial oil palm plantations have spread throughout the tropics, being most significant in South East Asia, particularly Malaysia, Indonesia, and Papua New Guinea, where it is a major driver of the destruction of tropical forests. Industry figures show that nearly half (48 per cent) of South East Asian oil palm plantations are created on some kind of primary or secondary forest land. The use of fire to clear that land was also a major cause of the forest fires that ravaged Indonesian forests and cast a devastating smog over the entire region in 1997.

Oil palm planting has also led to enormous human suffering and the destruction of forest lands that communities rely on. In Indonesia, oil palm plantations are associated with the displacement of forest peoples from their land. A serious imbalance of power exists between these communities --who have no formal right to their traditional land-- and the companies that are granted leave by the Government to convert the forest to plantations (see "The Bitter Fruit of Oil Palm", at http://www.wrm.org.uy/plantations/material/oilpalm.html).

According to the FAO, forest cover in Indonesia and Malaysia declined by 12 per cent in the 1990s. In the past much of this loss has been blamed on so-called slash-and-burn practices by local communities and on the activities of logging companies exploiting the forest for timber or pulpwood. The role of palm oil plantations has gone relatively unacknowledged also because industry sources argue that there is very little "direct" forest destruction involved in their operations since oil palm plantations are usually located in areas that have been logged previously.

Indeed, much of the forestland cleared to make way for oil palm plantations has been previously

logged and may be viewed by outsiders as “degraded” and therefore valueless. This, however, ignores that those “degraded” forests often still provide a habitat for an array of species, which is destroyed when the forest is substituted by oil palm. Research has shown that an oil palm plantation can support only 0 – 20% of the species of mammals, reptiles and birds found in primary rainforest. Those species that are able to survive cannot find sources of food in the new environment of the plantation and frequently come into conflict with humans in and around the plantations. Workers and villagers encounter elephants, orangutans, tigers, porcupine and wild boar for some time after forest clearing. The results are often serious and sometimes fatal.

The global significance of forest destruction in terms of biodiversity and climate change should not be underestimated, but it is the local communities who most immediately feel the impact of its destruction. They depend on these forests, often managed under the community's traditional law, for their subsistence and cash income, as well as for cultural and religious practises. Deforestation completely overhauls their entire way of life.

Economies of scale demand that an oil palm plantation is at least 4,000 hectares in size in order to be able to feasibly operate a crude palm oil mill that processes the fresh fruit bunches from the plantation estates. In Southeast Asia an average individual plantation company manages a plantation area of 10,000 – 25,000 hectares. These companies are mostly part of larger agribusiness holdings, with plantation estates ranging from 100,000 to 600,000 hectares in several provinces and countries.

Apart from Malaysia, Indonesia and PNG, oil palm projects are developed in many other countries including the Philippines, Vietnam, Cambodia, Thailand, Burma, India, Solomon Islands, Kenya, Tanzania, Congo, Cameroon, Nigeria, Liberia, Guinea, Ghana, Cote d'Ivoire, Guyana, Brazil, Colombia, Ecuador, Nicaragua, Costa Rica and Mexico.

Present concerns on the social and environmental impacts of soybean and oil palm plantations are being heightened by the fact that further growth of both crops in those and other countries is predicted.

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