
Deforestation by agriculture and cattle-raising

Tropical forests have been inhabited for thousands of years by communities that made use of them for subsistence in many ways, including agricultural activities. It was a type of agricultural production that took into account crop interactions and was carried out in such a way that not only did it prevent destruction of the forest but was able to be in harmony with it. The communities promoted areas where a diversity of species useful for human consumption were concentrated, within a diverse scenario, but which did not undermine the forest's biological bases. Some studies indicate that approximately 12 per cent of the Amazon forests are the "result of prolonged management by pre-historic populations."

However, following Colonial intervention, the colonized countries –the Third World– were incorporated into the world market and an agricultural model was introduced that weakened indigenous land tenure and resource management systems. Whether in Latin America, Africa or Asia, the colonizers' common intention was to convert previously self-sufficient economies into zones for agricultural production aimed at exports, placing the emphasis on "productivity" understood as the maximum output of a main crop, accounted for independently from the rest of the ecosystem. Thus crop and forage rotation, extensive animal husbandry with scant genetic diversity were implanted and later a series of technological innovations were applied to agriculture, which led to the manufacture of chemical fertilizers, machinery and motors (see the article on the Green Revolution in this same issue), which further entrenched this productive model.

Even when the countries achieved political independence, the model did not change and in general terms they remained captive of trade and economic dependency on the markets of the North, with the complicity of the national elites in power –both economic and political– and the decisive promotion of international bodies such as the World Bank and FAO. This dependency has progressively increased, creating instability, poverty and environmental degradation of the Third World countries' agricultural systems.

The expansion of agriculture and cattle-raising has been identified as one of the main causes of deforestation and forest degradation in various countries around the world. In the case of agriculture, it is a two sided factor leading to both direct and indirect deforestation.

Agriculture or commercial plantations are usually an agricultural business practiced by companies. Through a concession agreement, the purchase of land or informal occupation, the companies take over the land with the intention of converting it to other uses. In the case of tropical zones, this possession extends to forests which are converted for the plantation of trade crops such as sugar cane, oil palm, rubber, coffee, cocoa and tropical fruit (bananas, citrus fruit, etc.). In this case direct deforestation is carried out by the companies to convert the forests into agricultural zones. For example, in Indonesia, the extension of oil palms has increased in an amazing way over the past few years, to the detriment of forests and the fallow bushes that grew after slash and burn agriculture. The experience of Indonesia with oil palms has been repeated in many other tropical countries over the past years.

However, commercial agriculture also produces indirect deforestation insofar as the commercial farms occupy the more fertile and best located lands in the valleys, displacing the increasing rural population that depends on agriculture for subsistence. Without access to agricultural lands in their immediate area and generally within the framework of unemployment, small farmers are evicted and must migrate, very often to less fertile and productive lands or to forest areas. During the seventies, the oil palm cooperatives that settled in the valleys along the northern coast of Honduras led to the displacement of thousands of small farmers and cattle raisers towards the steep wooded slopes and mudflow lands which they deforested to install their farms and grazing lands. The tragedy is that most of these lands are not suitable for long-term agriculture or grazing as once the forest cover has been removed the area becomes exposed to erosion and to the loss of minerals and nutrients, resulting in an impoverished soil. It is for this reason that subsistence agriculture practiced in tropical forests resorts to the migrant "slash and burn" system, as burning contributes nutrients to the soil for a while, and migrating to other areas after a few years allows the forest to fully re-establish itself.

In addition to the negative environmental impacts common to all forms of deforestation, commercial agriculture brings with it a series of problems related to the use of chemicals such as fertilizers, pesticides and weed-killers that have a detrimental impact on the workers' health, contaminating crops, soil and groundwater. For example, in banana plantations, pesticides are used on the plants and the soil for pest control. But they also kill other living organisms and are harmful to the health of the ecosystem. The banana plantations also use irrigation dykes and underground pipes to transport water, altering the land's hydrological balance. Once a crop produced under an intensive system in a forest zone is abandoned, many years -even centuries- may go by before the forest is able to grow again, if it ever does.

In a similar model to that of commercial agriculture, cattle-raising has developed as an industrial type of production, centred on limited genetic diversity, aimed at export to the markets of industrialized countries for the production of hamburgers in fast food chains and the production of frozen meat products. The expansion of cattle-raising has also been promoted by the World Bank and the Inter-American Development Bank, as well as through tax incentives and has been closely linked to land concentration. The ranchers occupy large areas of forest which they themselves log or purchase on-farm "improvements" (cleared land) made by the small farmers. In the past the ranchers preferred zones of dry forest because it is easy to manage for cattle-raising and as grazing land, but later extensive logging of the tropical rainforest both in South and Central America took place.

Ecological destruction caused by cattle-raising programmes is long term and often irreversible. Soil nutrients are rapidly depleted and the land is invaded by toxic weeds. In a few years the land is so degraded that it must be abandoned.

Article based on information from: "A Brief History of Agriculture", <http://www.planetaorganico.com.br/enhistor.htm> ; "Asuntos forestales. Deforestación: Bosques Tropicales en Disminución", <http://www.rcfa-cfan.org/spanish/s.issues.12-5.html> ; Throwing a Monkey Wrench into the Industrial Farm Machine", Eco-Logical, <http://www.grinningplanet.com/2004/04-06/industrial-agriculture-1-article.htm> ; "Saving What Remains", <http://www.mongabay.com/1002.htm> ; "Rainforest Destruction. Causes, Effects & False Solutions", World Rainforest Movement, 1999.

