
Industrial teak tree plantations in Ecuador: occupying and destroying fertile lands and water sources

Teak is a native tree from Southeast Asia, and it played an important role in colonialism in that region. British loggers extracted most of the native teak from Northern Thailand in the 19th and 20th centuries. They also carried out violent teak extraction campaigns in Burma, which continued in the post-colonial era, this time at the hands of the Burmese state (1). In Burma, teak was at the centre of a colonial employment system for agroforestry and plantation activities, called *taungya*, which began in the latter half of the 19th century. This system allowed the Karen and other indigenous groups to grow crops among young teak trees that had been planted on cleared lands—under the condition that they take care of the trees and eventually leave the land. *Taungya* later expanded to other countries. In Indonesia, where this tree is not native, teak plantations were established over 200 years ago (2). Due to its natural resistance to climatic factors, teak wood is highly valued for the construction of outdoor furniture and mainly luxury boats; hence, there is great demand for this tree.

Thailand's current policy on teak is complex and corrupt. After its extraction was banned in 1989, the teak supplying Thai sawmills presumably comes from illegal seizures and from logging on sites intended for hydroelectric dams. But in fact, this teak is mixed with illegal imports from the Salween River region in Burma, as well as from plantations managed by the Parastatal Forest Industry Organization and other state companies. The Forest Stewardship Council (FSC) encourages this type of looting and corruption in the teak industry through its Thai teak certification programs.

The over-exploitation of these native forests—which are found only in India, Laos, Myanmar and Thailand—and the increasing global demand for teak, have led to the establishment of industrial teak plantations in other countries. Teak is now known to be planted in about 36 tropical countries, and the area planted with teak is growing in Benin, Ghana, Nigeria and Tanzania in Africa; Costa Rica, El Salvador, Guatemala, Nicaragua and Panama in Central America; Ecuador and Brazil in South America; and India, Indonesia, Myanmar and Laos in Asia (3). The main global buyers of teak are China (42 per cent), India (37 per cent), Japan (5 per cent) and France (4 per cent). (4)

The expansion of teak plantations in Ecuador

Ecuador is one of the ten most diverse countries in the world. Among Latin American countries, it also has one of the highest deforestation rates proportional to its geographic area. According to the Ministry of the Environment, the main cause of this deforestation is the expansion of the agricultural frontier. However, recent studies point out that small-scale peasants' crops, which feed the country, have not increased. Meanwhile, there has been a rapid growth in agribusiness—African palm, sugarcane and eucalyptus, pine and teak plantations—which is obviously the cause of this deforestation. In this context, Ecuador exported 190,000 square meters of teak wood in 2014, with all the environmental impacts that this entails. The Ecuadorian government is responsible for the promotion and expansion of teak in the country—which undermines agricultural biodiversity—and for the supplanting of native ecosystems, such as the dry forests in Guayas and Manabí provinces.

Teak plantations in Ecuador are not intended for domestic consumption. All of the teak is exported.

Exports to India account for 95 per cent of all the teak in Ecuador—between 150 and 160 thousand tons per year— which translates into about US \$30 million worth of profit for the industry. There are very few economic benefits for the areas where teak is produced, due to the small amount of labour it requires, producers' non-existent social investment, and the loss of food sovereignty and water scarcity that this industry causes.

In 2015, the Ecuadorian Ministry of Agriculture (MAGAP) announced plans to develop 100,000 hectares of teak by 2017. In 2016, teak exports grew significantly in the first half of the year—by 52 per cent in tons and 30 per cent in the value—as compared to 2015, which also was a year of growth (5). According to official data, Ecuador currently has around 50,000 hectares of teak; but according to the Ecuadorian Association of Teak and Tropical Wood Producers (Asoteca), there are 200,000 hectares of this tree (6). The discrepancy between MAGAP's and Asoteca's figures reflects under-accounting and a lack of updated information. Over 90 per cent of these plantations are in Guayas, Manabí, Esmeraldas and Los Ríos. Meanwhile, in the longer term, timber producers and businesses are projecting to have about one million hectares of teak plantations between 2032 and 2042 (7). Official data on the number of hectares planted are not clear; even less so are the environmental impacts, given that the State does not exercise any kind of control over these plantations.

MAGAP's Incentives Program for Commercial Reforestation defines itself as "a non-reimbursable economic transfer, which the Ecuadorian State gives (...) to individuals or legal entities, communes, associations and productive cooperatives to disburse and/or reimburse part of the costs of setting up and maintaining a forest plantation." "The program will provide economic incentives to individuals and legal entities [private companies] of up to 75% of the cost of set-up, and up to 75% of the cost of plantation maintenance in the first four years." (8)

MAGAP ensured that from 2011 to 2016, over US \$53 million have been invested to set up 52,395 hectares of forest plantations through this program (9). Of this total, almost 20,000 hectares are teak, as it is the forestry species which has expanded the most. Most of these resources have been allocated to private companies.

Devastating Effects

In Guayas Province, the area with the greatest number of teak plantations in the country (mostly in the Balzar area), the teak landscape is desolate.

On a teak plantation there are no animals. Local peasants attest that the trees do not even serve as shelter for birds: 'no birds nest here.' Teak trees do not interact positively with the environment, because due to their rapid growth, they absorb large amounts of water and nutrients. They also require agrochemicals.

The Indian government requires that teak logs and planks be fumigated with methyl bromide at the point of origin. The use of methyl bromide is banned in Ecuador due to its high toxicity. Therefore, Ecuador has proposed fumigating with aluminium phosphide, a highly dangerous element. When aluminium phosphide comes into contact with the air, it releases a gas called phosphine, which is very toxic to the human body. From a public health perspective, this pesticide is to blame for high rates of fatal diseases among affected populations and spaces. Using this chemical to meet industry demands thus implies a very high risk to workers, neighbouring towns and the environment.

At its fourth and final harvest, when it is 20 years old, Ecuadorian teak maintains live roots—just like eucalyptus. These roots generate offshoots, which are all cut except for one. The remaining shoot

grows, and in just eight years acquires the height and diameter of a 20-year-old tree. In these eight years, the tree absorbs the minerals and water that it initially did in 20 years, accelerating processes of erosion and the drying up of rivers with each growth cycle. According to local testimonies, this regrowth can apparently be endless.

Companies tend to the growth during the first three years of the plantation, and the first five meters of the tree's shaft, which is where 60 per cent of the value of the wood lies.

It takes four people per hectare for the initial planting of the trees. Then in the first three years of intensive work, three people are hired. From the fourth year on, the industry usually only needs one person to take care of hundreds of hectares of teak trees. This worker usually settles on the plantation with his family, in the middle of a green desert, with no possibility of having a social life or sharing with the village or community. "I have plantations here from 2001, and for which I only pay the field boss; they are 14-year-old plantations and do not need maintenance."

The Ecuadorian organization Acción Ecológica, together with the World Rainforest Movement and the Chilean organization Mapuexpress, toured Balzar (Guayas Province) in 2016. To our surprise, we found that most of the trees on the teak plantations, as well as the ground, showed traces of having been burned. It seemed as if a fire had swept through and reached at least 80 centimetres up on each trunk. The ground was also blackened, and instead of fallen leaves, we only found ashes.

Peasants burn the teak plantations at least once a year, believing that it gives the heart of the trunk—the only valuable part of this wood—a better colour. The more yellow, the higher the price it fetches. "We burn it so that the wood is harder, more finished...and has more colour. Because nowadays they are not buying the white wood. They are not buying wood that is really white inside anymore. They only buy the ones with colour. That is why we burn them year after year, so that they obtain more colour." At the same time, this clears the ground of fallen leaves, and thus lowers costs, as it is not necessary to hire personnel for this task. However, according to local peasants' testimonies, the fires worsen the air, which fills with smoke and particles, causing an increase in respiratory illnesses during the "burning season."

Furthermore, local people say that two years after setting up plantations, the level of rivers and wells has fallen, the soils are very eroded, and the regeneration period is very long: "Before, when there was no teak, there was water all the time. Now that teak is here there is no water."

"When teak is extracted, the land is unprotected and has no minerals. We have to pull out all the roots, and teak is a plant with deep roots. It goes six meters deep. The first root that goes down goes really deep. After pulling out the teak it is very difficult to recover that land. We have to grow "sicapé," a small plant that must be watered. That restores the land. It is a bean, but not edible; a legume. Cattle can eat it."

According to locals, teak leaves that fall on the ground do not decompose, and this inhibits the growth of other plants; thus there are no food crops around plantations, much less inside them. One can plainly see that the soil is very pale yellow in colour and dusty. "The areas end up devastated; there is no food left and nowhere even to grow a tomato. So people have to go to the markets. That's the problem." "It is predatory, it ruins everything in the soil. It leaves the land barren. And if there is a teak tree next to another plant—corn, for example—the other plant will not grow. Birds cannot even build their nests in teak trees."

In Balzar, peasants have teak plantations mostly because they feel forced to, not because they want

to. This is due to the rapid natural expansion of this tree. Peasants say that the tree's seeds sprout on their own very quickly, and that both trees that have grown and those that have been cut down can generate new trees. Peasants are resigned to the fact that, year after year, teak gains ground on their food crops. Importers pay a lower price for teak from peasants, since it is wild (it reproduces alone, not on a plantation) and thus has knots, rather than being straight and having the yellow hue they seek. "My father took seeds from the first teak tree they brought here. Before that, there was no teak, but it began to invade on its own. He did not plant anymore. It invaded on its own."

On our field visit to Balzar we visited the largest teak company in the area. The owner and manager told us that when establishing a plantation, the most important thing was to acquire the best possible land, with high productivity and specific mineral and water conditions. In other words, despite the fact that the Inter-Ministerial Decree—signed in 2012 between the Ministry of the Environment and the Ministry of Agriculture—states that forest plantations must be grown on degraded lands or lands in the process of desertification, degraded lands are not actually bought or used for this purpose.

Reflections

Because it is an exotic species, teak in Ecuador could be classified as an invasive plant, since it has no biological controls or other species to compete with. Because it takes over more and more land and the available water, this tree should be considered a threat to the country's native ecosystems.

Teak plantations are growing at an alarming rate worldwide, and most are financed by the governments of producing countries. This is to the detriment of small-scale peasants, forest inhabitants, and forests themselves—which, at least in Ecuador, are disappearing to make room for this species.

By occupying the best agricultural lands, teak plantations are causing erosion and water shortages, and they are undermining the traditional farming lifestyle. Meanwhile, policies aimed to strengthen food sovereignty, and maintain, restore and repair forests are poor or practically non-existent. Isn't it time to stop supporting forest-based mega industries, and start strengthening small-scale peasants, rural populations and people who inhabit forests?

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* Testimonies are from personal interviews taken with members of the Federation of Agricultural Centres in Guayas (FECAOL, by its Spanish acronym), from November 2016.

- (1) Raymond L. Bryant, "Consuming Burmese Teak: Anatomy of a Violent Luxury Resource," 2009.
- (2) Nancy Peluso, Rich Forests, Poor People, 1992
- (3) <http://www.fao.org/news/story/en/item/129569/icode/>
- (4) Trade Map in PROECUADOR, MERCOSUL, 2013
- (5) EL COMERCIO newspaper, visited on July 20, 2017.
<http://www.elcomercio.com/actualidad/exportaciones-madera-crecimiento-teca-ecuador.html>
- (6) El Universo journal, visited on July 20, 2017.
<http://www.eluniverso.com/noticias/2015/05/13/nota/4867046/ecuador-pasa-primer-lugar-ventas-teca-india>
- (7) El Universo journal, visited on July 20, 2017.
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(8) MAGAP, 2016 p. 6

(9) MAGAP, 2016 Incentives Program for Commercial Reforestation. The Incentive is Effective!
<http://ecuadorforestal.org/wp-content/uploads/2014/06/SPF-FOLLETO-PIF-2014-050614.pdf> ; and
MAE, March 2014, Forest Restoration Plan.
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