Are tree monocultures a solution to global warming?

The Kyoto Protocol, agreed in December 1997, has been criticised for its market-oriented approach, since it tends to establish a trading system to buy and sell carbon emissions. Tree plantations have gained a major role in relation to this issue because of their supposed condition of carbon sinks. The Protocol established that afforestation is one of the activities that Annex I countries can undertake to achieve their “quantified emission limitation and reduction commitments” for greenhouse effect gases (Art. 2). It also stated that “removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation, since 1990, measured as verifiable changes in carbon stocks” are to be considered by Annex I countries to meet such commitments (Art 3.3.). According to the Framework Convention on Climate Change (UNFCCC) this group includes industrialised countries and ex-planified economy countries, in process of transition to a market economy.

The so-called Clean Development Mechanism (CDM), defined by the Kyoto Protocol in Article 12 as a form of cooperation between both groups, provides a way by which Northern countries will be able to comply with their commitments, simply through the establishment of extensive tree monocrops in the South. When a public or private entity of an Annex I country invests in a plantation project in the South, it is the investing country that will receive emission reduction certification for the project. As a matter of fact this provision, that goes together with the net approach, means that industrialized countries are freed of their responsibility to cut their carbon emissions in a significant way, while the South will offer their territory to projects aimed at capturing them, which will bring negative environmental consequences with them, as tree monocrops do. On the other hand it is not fair that those countries historically responsible for global warming would now receive assistance from poor countries. This is “foreign aid” upside down, isn’t it?

Let’s take the case of the tree plantation project promoted by the Dutch FACE Foundation (Forests Absorbing Carbon Dioxide Emissions). This organisation aims to plant 150.000 hectares of trees to absorb CO2 equivalent to that emitted by a modern 600 MW coal fired power plant. Half of this area has been set up in the Ecuadorian Andes. Far from promoting the use of native species, the project is based on eucalyptus and pines. Even though these exotic species grow slowly in that environment, FACE justifies their use by saying that most of the native species in Ecuador have disappeared because of deforestation and that local people’s knowledge about them have been lost with the forests themselves. This is however untrue and the only reasonable argument to justify the use of exotics is that they are easier and cheaper to plant.

Large-scale monoculture plantations are known to be detrimental to the environment , both in natural forests and in grassland ecosystems: decrease in water yield at the basin level, acidification and loss of permeability of soils, nutrient depletion, alteration in the abundance and richness of flora and fauna. Nevertheless, there is an aspect of plantations that is perhaps not so well known: their social and cultural effects. Indigenous peoples and local communities that live in the forests are suffering encroachment of their lands by plantation companies and are forced to leave them, losing their lands and livelihoods, what means undermining the material and spiritual basis of their respective cultures. In many cases, plantations require the previous destruction of the natural forests. The case of the

Tupinikim and Guarani indigenous peoples in Espirito Santo, Brasil, is paradigmatic. After a long and unequal struggle to recover their ancestral lands, taken away by Aracruz Cellulose to establish eucalyptus plantations for pulp production, they were recently forced to sign an agreement that reduces significantly the area of their lands, to the benefit of the company. In the Portuguesa state of Venezuela, Smurfitt Cartons is dispossessing local peasants of their lands and destroying and replacing riverine forests with eucalyputs, pines and gmelina monocrops. Oil palm plantation companies in Sumatra, Indonesia, are expropriating local peoples' lands, which has resulted in civil unrest, since they are willing to defend their lands and livelihoods. Similar situations involving either eucalyptus and/or oil palm are also frequent in Sarawak, Malaysia, where indigenous peoples are being dispossessed of their traditional lands to make way to plantations and are fighting back to defend the forests. In Chile, large-scale pine plantations have expelled peasants from their lands and substituted the forests that provided to people's livelihoods. The list of local communities affected by tree plantations is indeed very long and the above are just a few examples to prove the social and environmental destruction that this "solution" can imply if implemented at an even larger scale.

Other global processes --as the Convention on Biological Diversity and the Intergovernmental Forum on Forests-- are now warning about the potential impacts of tree plantations on forest biological diversity and on other attributes of natural ecosystems. Even the Kyoto Protocol itself mentions that Annex I countries "shall strive to implement (their) commitments ... in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties" (Art. 3.14). However, actions are going in the opposite direction to words. National inventories of greenhouse-effect gases that every state has to prepare for monitoring its situation in relation to the commitments of UNFCCC consider the increase of tree plantation areas --called "planted forests"-- as positive for the global environment and include carbon capture by plantations in their respective budgets. Such methodology was adopted without taking into account the mentioned negative impacts nor the regional or local features that can affect the calculation. The net effect of a plantation on carbon intake--once all the variables are taken into account-- is still at the hypothesis stage.

In sum, the promotion of tree monoculture plantations under the CDM by the ongoing global process on climate change has a weak scientific basis. From a political, social and environmental perspective, far from being a solution to the problem, they contribute to consolidate a scheme that is threatening people and the environment worldwide. A change in this approach is urgently needed. Article 9 of the Kyoto Protocol itself considers the possiblity of implementing such changes "in the light of the best available scientific information and assessments on climate change and its impacts, as well as relevant technical, social and economic information". But, of course, this is not a matter of wording but of political will. Shall the COP4 in Buenos Aires be another lost opportunity?