
Trees, forests and climate in Buenos Aires

The Conference of the Parties (COP4) of the Climate Change Convention will be meeting during the first two weeks of November in Buenos Aires. Much of the discussion will concentrate on the role of forests as carbon sinks and many negotiations will include deals between Northern and Southern countries on how to trade emissions and sinks: we emit, you sink.

While the whole world expects that COP4 will bring about solutions to global warming, the fact is that many Northern governments --and particularly the major emitters-- will try to trade much of their emissions instead of limiting them at source. On the other side, many Southern governments will be eager to sell their sinks at the best price possible. If it weren't tragic it would be funny: humanity is facing a major threat and governments are tinkering with figures and money instead of implementing real solutions.

Apart from the above, there are a number of further problems which confuse the whole issue, namely the definition of forests, the confusion between carbon reservoirs and sinks, the reductionist view of forests, and the question of whether tree plantations can be carbon sinks.

The climate change negotiations are based on the FAO's definition of forests. According to this organization, a forest is "an ecosystem with a minimum of 10 per cent crown cover of trees and/or bamboos, generally associated with wild flora, fauna and natural soil conditions, and not subject to agricultural practices." The term 'forest' is further subdivided, according to its origin, into two categories: natural forests and plantation forests. Natural forests are "a subset of forests composed of tree species known to be indigenous to the area", while plantation forests are subdivided into: a) "established artificially by afforestation on lands which previously did not carry forest within living memory" and b) "established artificially by reforestation of land which carried forest before, and involving the replacement of the indigenous species by a new and essentially different species or genetic variety."

Amazingly enough, such definition has gone basically unchallenged until now. Any lay person can see that a plantation is not a forest, but the "experts" confuse the issue and define any area covered with trees as being a "forest". The only case in which a plantation could be termed a forest is that in which an area originally covered by forests is replanted with trees and shrubs original to the area. However, this category is explicitly not included in the definition of plantation forests!

From our perspective, tree plantations have only one thing in common with forests: they are full of trees. But the two are essentially different. A forest is a complex, self-regenerating system, encompassing soil, water, microclimate, energy, and a wide variety of plants and animals in mutual relation. A commercial plantation, on the other hand, is a cultivated area whose species and structure have been simplified dramatically to produce only a few goods, whether lumber, fuel, resin, oil, or fruit. A plantation's trees, unlike those of a forest, tend to be of a small range of species and ages, and to require extensive and continuing human intervention. Plantations are much closer to an industrial agricultural crop than to either a forest as usually understood or a traditional agricultural field. Usually consisting of thousands or even millions of trees of the same species, bred for rapid

growth, uniformity and high yield of raw material and planted in even- aged stands, they require intensive preparation of the soil, fertilisation, planting with regular spacing, selection of seedlings, weeding using machines or herbicides, use of pesticides, thinning, mechanised harvesting, and in some cases pruning.

The above is not an idle or academic discussion. Accepting the FAO's definition implies accepting plantations as a substitute for forests and therefore accepting that, being "forests", they have a positive social and environmental role to play. This is totally false. It is well documented that large-scale industrial tree plantations have already proven to be detrimental to people and the environment in a large number of countries and in many cases they have been a major cause of deforestation. We therefore demand of the FAO --and those who accept its definitions-- that "natural forests" be called simply forests (primary and secondary) and "forest plantations" be called tree plantations.

A second important confusion is that between carbon reservoirs and carbon sinks. A full-grown forest is a carbon reservoir. Its carbon intake through photosynthesis is balanced with its carbon emissions. The amount of carbon contained in a forest is basically the same all the time. If the forest is destroyed, the stored carbon will be released --sooner or later-- to the atmosphere, thus contributing to the greenhouse effect.

Forests that have been cut and are regrowing can be very efficient in capturing carbon (both in trees and undergrowth) and therefore, as part of many other equally important functions they perform, they can be considered as carbon sinks. As trees grow, their intake of carbon is higher than their emissions, thus having a net positive balance regarding the amount of carbon dioxide (the main greenhouse gas) in the atmosphere.

On the other hand, tree plantations --which are being publicised as the main carbon sinks-- have yet to prove this role. In general terms, any area converted to tree plantations should until proven otherwise be regarded as a net carbon source and not as a carbon sink. In numerous cases, plantations have replaced either primary or secondary forests and this has meant the release of more carbon than that which the growing plantation can capture, even in the long run. There is a second crucial issue: will these plantations be harvested or not? If harvested, then they would at best be no more than temporary sinks, capturing carbon until harvest and then releasing most of the captured carbon in a few years (in some cases even in months) as the paper or other products of the plantation are destroyed. If not harvested, then tree plantations would be occupying millions of hectares of land which could be dedicated to much more useful purposes, such as providing people with food. There is yet another issue concerning the changes that a plantation introduces to the local environment. Converting wetland to plantation can, for instance, result in the release of important amounts of carbon dioxide from the soil.

There are therefore many uncertainties about the assumption that plantations anywhere can be carbon sinks for any length of time longer than the early period of fast growth --and perhaps not always even then. This "common sense" assumption needs to be supported by research before plantations are accepted as carbon sinks.

The distinction between carbon reservoirs and sinks is not a theoretical discussion either. The conservation of a forest cannot be seen as a measure to mitigate global warming, but as a measure to avoid increasing the problem. A forest can be compared with an oil deposit underground. If the oil is kept there, the current situation will not improve, but it will not be aggravated. Therefore, forest conservation should be seen as a necessity to avoid further problems.

On the other hand, it is true that secondary forest regrowth can have a beneficial effect. However, until now, governments and "experts" have emphasized plantations (and not secondary forests) as one of the main solutions to global warming. This is linked to the above discussion on the definition of forests as well as to the discussion that questions the reductionist approach to forests.

At the climate change level, forests are being seen strictly as carbon stores; at the forestry level, forests are seen as wood for industry; at the agricultural level as obstacles to crops; at the pharmaceutical level as potential medicinal plants. Such approaches are all wrong if each is considered in isolation, because forests contain all those potential functions, but only as long as they are viewed as a whole and not as divisible parts. When they are seen and treated as having just one function, then the consequences are negative impacts to local societies and to local environments.

Such an approach is obviously present in the following argument, already being promoted by some "experts": given that primary forests are only carbon reservoirs --and not sinks-- then it makes sense to cut them, to convert them into durable goods (whereby the carbon within will remain locked in the wood until the "durable goods" are destroyed) and to plant a fast growing tree monoculture instead (which will supposedly retrieve extra carbon from the atmosphere). As economists would say: a win-win solution. But forests are not only carbon reservoirs. They perform a number of environmental and social functions which cannot be replaced by those of any plantation. The win-win situation becomes a lose-lose one for local peoples, water catchments, local flora and fauna, agricultural production, etc.

The reductionist approach of seeing forests and trees as carbon reservoirs and sinks is also antagonistic to the policy of biodiversity conservation to which the world's governments have committed themselves, particularly when large-scale plantations are promoted as a major solution to the problem. This contradiction was noted by the Conference of the Parties of the Biodiversity Convention (Bratislava, 1998) which "notes the potential impact of afforestation, reforestation, forest degradation and deforestation on forest biological diversity and on other ecosystems, and, accordingly, requests the Executive Secretary to liaise and cooperate with the Secretariat of the United Nations Framework Convention on Climate Change to achieve the objectives of the Convention on Biological Diversity." Translated, the message is: you are looking at forests and plantations only from your own narrow viewpoint and forgetting that forests (and not plantations) are essential for biodiversity conservation.

Both from a social and environmental perspective (including but not limiting the issue to climate change), we strongly support forest conservation, including primary and secondary forests. But we equally strongly oppose the conversion of forests, forest lands and grasslands to supposed "carbon sink" monoculture plantations, which entail only one (dubious and unproven) positive impact (the capture of carbon dioxide) and a much larger number of negative impacts on peoples' livelihoods and on their environment.

COP4 should thus focus on the emissions side of the equation (limiting the use of fossil fuels, including the much-promoted natural gas). This would involve real commitments to reductions from Northern countries. On the reservoir side of the equation, it should support other ongoing international processes aimed at forest conservation. Regarding sinks, it should only provide incentives for secondary forest regrowth in all countries of the world --and not just in Southern countries-- with the involvement of local communities willing to have an opportunity to bring their forests back. And put the crazy idea of covering millions of hectares of fertile lands to "carbon sink" tree plantations where it belongs: in the dustbin.

