South Africa: Grassland ecosystem destruction by tree plantations

South Africa boosts an area of 1.5 million hectares of tree plantations, mostly composed of eucalyptus and pine trees, as well as a lesser area of Australian wattle. These plantations have resulted in an important number of social and environmental impacts, most of which were highlighted during a symposium held last June 10 in Pietermaritzburg, organized by the local NGO coalition Timberwatch.

Most of the impacts of tree plantations in South Africa are common to numerous countries throughout the world. However, the country has its own specificities, of which perhaps one of the least common is that plantations are occupying native grasslands. In this case, plantations are not a cause of deforestation through substitution of forests by plantations. Many people might therefore see these plantations as having less negative impacts than those implemented in forest areas. But they would be wrong. As Professor Braam van Wyk -one of South Africa's most respected botanists- clearly demostrated in his presentation at the Timberwatch Symposium, tree plantations are destroying South Africa's native grasslands, which are one of the most biodiverse ecosystems on Earth, thus being a major factor of plant biodiversity loss. At the same time, those grasslands are the home of an enormous number of animal species, which are increasingly disappearing together with the grasslands they depend upon.

South Africa is therefore an exception to the rule (as are Argentina and Uruguay), in the sense that its main problem is not deforestation but afforestation. South Africa is not "planting forests" -as foresters like to portray their large-scale tree planting activities- but destroying grasslands that have evolved through millions of years. Such destruction is taking place in two ways: 1) Through large-scale monoculture tree plantations and 2) Through the invasion of alien tree species into the grasslands.

In South Africa, tree plantations are implemented on a very large scale, and are concentrated in the higher rainfall areas of the provinces of Kwazulu-Natal and Mpumalanga. Few plant species are able to survive under the tree canopy and therefore few animal species are able to find food in them. At the same time, other conditions for survival and reproduction of wildlife become so modified by plantations, that many animals are forced to migrate in order to survive. Some of them are able to adapt to different environments and therefore manage to survive, though in smaller numbers. Others don't find the necessary conditions and disappear. Moreover, fire frequency is reduced in any natural grassland that may remain among plantations. Since the grasslands and their associated fauna are fire-adapted, regular burning is essential for maintaining their full biotic diversity.

As stated above, South Africa has 1.5 million hectares of plantations. Additionally, it has 1.6 million hectares of what local people call "jungle gum" and "jungle wattle". These "jungles" consist of a number of alien tree species which have invaded the grasslands and are creating havoc throughout the country. Although the predominant species gives them their name ("gum" is the generic term used for eucalyptus and "wattle" for several species of Australian acacia, notably Acacia mearnsii and A. dealbata), they are composed of a large number of invasive species, which are spreading in both grasslands and forest (which is very limited in extent in Southern Africa). Eucalyptus globulus and E. grandis (from Australia), Pinus patula and P. elliottii (from Mexico and the US respectively),

Melia azedarach (from Asia), Solanum mauritianum and Lantana camara (from temperate South America), Jacaranda mimosifolia (from subtropical South America) and many others are occupying increasing areas and negatively affecting plant and animal diversity, as well as causing a reduction in the availability of water in rivers and streams..

All the above problems are the result of the introduction of tree species to a country dominated by grasslands. Such mistake could be understandable in the past, but today -when the world has declared its concern over biodiversity loss and governments have made commitments to address the problem- it becomes unforgivable. In South Africa, much of the blame lies within forestry companies and the forestry professional community. Will grasslands be saved or will the whole country become a "jungle"? Given the vested interests at stake, much will depend on the work of civil society organizations and the government to put a halt to the spread of plantations and to find viable solutions to the already created problems.

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