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Should we reforest the Amazon?

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While the flames are far from extinguished and the fires continue to ravage the Amazon rainforest (a situation echoed across Central Africa, Siberia and Indonesia), the pronouncements and initiatives to prepare for the aftermath are already multiplying. This blog post deciphers the ecological and socio-economic issues related to the reforestation of these ecosystems.

Forest conservation, a necessity

Most of the responses to the Amazon crisis seem to focus, in addition to emergency action to extinguish the blaze, on the “reforestation” of what has been lost, with the idea of reversing the deforestation dynamic—almost no one denies its importance and impacts on biodiversity and climate—even though most of the fires have been intentionally started to clear forest for agricultural land. “Reforestation” suggests that it is possible to “repair” what has been destroyed. This idea has gained so much traction that a [study](#) published in *Science* last July stated that planting billions of trees could be a solution to fight climate change. However, replanting trees in regions where the forest has burned is often not the best way to restore damaged ecosystems, and therefore not the best use of funds or international mobilisation efforts triggered by the surge of outrage caused by the fires.

If forests are so important, and if their destruction induces so much emotion, it is because everyone is aware that what is lost is either gone forever or very hard to replace. The fundamental “value” of “natural”¹ forests is immeasurable in more ways than one: forests and forest biodiversity are literally priceless.

There are three main arguments for preserving or restoring forests:

- their climatic function, i.e. their role as carbon sinks (forests are the planet’s second most important carbon sinks after the oceans), and also their role in oxygen production;
- their ecological role as a habitat for thousands of plants and animal species, particularly insects, many of which are not found elsewhere, which makes them key global biodiversity hotspots, and also their essential role in water cycles and soil conservation;
- their “heritage” function, i.e. the way in which they constitute a heritage that is both physical (in terms of resources or as a home to indigenous people) and spiritual, i.e. in terms of cultural significance, such as traditions, living spaces or sacred places, and places where certain ethnic groups and cultures exist, and which disappear along with the forests.

Careful conservation, beyond the forest itself

From a purely climatic perspective, considering only carbon accounting, plantations may seem like a viable option. By using fast-growing trees, with effective monitoring in the early years, forest plantations can be short-term carbon sinks. However, the quantities of stored carbon following these initial years will remain far below that which was stored by the tropical forests they replace. Furthermore, [a number of recent studies](#) focusing on the long term show that these plantations have a much lower efficiency compared to natural forests in terms of capture capacity. Indeed, the IPBES has shown that intact forest represents only 20% of tropical forests, but accounts for 40% of the carbon stored by this resource.²

From an ecological point of view, in areas that remain surrounded by natural forest, the most efficient (and least expensive) way of restoring forests is to let them regenerate naturally. This is especially true for tropical forests, including in the three major global forest basins: the Amazon, the Congo Basin and the Southeast Asian massif. Even burned soil is fertile, containing many seeds that can withstand fire. Some tree species are also capable of producing new shoots after being almost completely burned. Above all, wind and wildlife play a role in dissemination from the surrounding edges, ultimately restoring ecosystems to a relatively similar state to that which was lost. Whereas planted forests often consist of a limited number of species (sometimes even monocultures, such as eucalyptus plantations), which usually have a low ecological value.³ Even with efforts to diversify seed types, it is almost impossible to replicate systems such as the Amazon rainforest, which has nearly 300 tree species per hectare on average, and sometimes more than 600 (in contrast, European forests number between 10 to 15 species per hectare). However, natural regeneration takes a long time. For this reason it is vitally important that we diligently

protect the rich forests that continue to exist today across the planet; and the international community must mobilize its efforts towards this objective.

Finally, from a heritage point of view, the recreation of what has been lost is an illusion. Of course, it is true that a community's reforestation efforts are likely to reinforce its sense of attachment to the forests in question. In France, "planted" forests such as the Tronçais or Landes forests are now intimately associated with the natural and historic heritage of the country. However, we should not forget that the Amazon forest also represents, and possibly above all, the heritage of indigenous communities. The recent IPBES global assessment on biodiversity has shown a direct link between the preservation of lifestyles of indigenous peoples and local communities and biodiversity conservation; it also showed that the loss of these lifestyles would result in economic and social fragility for these communities.⁴ As [Philippe Descola](#) underlined, such communities are the first to suffer from the loss of these forests, and all efforts to restore the forest, whatever they are, can only be envisaged in close collaboration with these communities and their representatives.

In conclusion, the general momentum towards the reforestation of the Amazon is a positive signal that reflects humanity's growing attachment to the world's forests, and a willingness to take action that for too long has been lacking. However, we must exercise caution given the scientific knowledge and the particular situation of Amazon ecosystems which, although severely damaged by these episodes, remain extremely resilient and capable of self-regeneration. Massive reforestation can be an ineffective solution, and constitute a diversion from where our attention should really be focused, i.e. public and private policies that will bring an end to deforestation and facilitate the natural regeneration capabilities of the forest, particularly by preventing the agricultural conversion of burned land, which is especially crucial for areas that once benefited from protected status in regard to indigenous communities. These policies (and our consumer behaviour) should firstly aim to limit agricultural expansion, which is related (especially for the Amazon) to an excess of industrial animal products in our diet. In terms of public policies, this would imply the definition of a protected status for forests and natural areas, compatible with the rights of forest peoples, and to enshrine them in law by involving all stakeholders concerned. It will then be important to establish or reinforce effective tools to enforce these laws: agencies, legal services and the means for monitoring, observing and policing.

In Brazil, since the 2012 reform of the Forest Code, the rules that supported the protection of forests have been weakened. Since Jair Bolsonaro came to power, the resources allocated to these protective measures have been drastically reduced, by decreasing the budget of specialized agencies or redefining their mandates. In this country, but also in Bolivia and Colombia, in Central Africa and in South-East Asia, it is therefore essential to preserve the last great masses of natural forests on the planet. While international co-operation appears necessary, these efforts cannot succeed without a continuous and respectful collaboration with the States concerned, but also, in ways still to be invented, with indigenous communities and forest peoples.

¹ This concept is open to debate because even the most remote "natural" forests have undergone changes due to human action. Nevertheless this term is useful to distinguish from "planted forests", the structure of which is determined by tree plantations, often done once and using a single or a small number of species.

² <https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

³ Idem, chapter 2.

⁴ Ibid., chapter 2, section 2.1.5.1.