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## The reduction of world forests erodes their ability to store carbon and conserve biodiversity

According to the first results of FAO's "[Global Forest Resources Assessment 2020](#)", world forests cover slightly more than 4 billion hectares equivalent to roughly one third of the Earth's total land area. Almost half (45%) of these forests are tropical.

Let's recall here that approximately 500 million people, among the poorest of the planet, including around 150 million indigenous people, who depend on the use of forests for their subsistence [\[read\]](#).



### A slowed reduction of forest areas

When comparing the current forest area with results from past assessments, FAO estimates that 178 million hectares disappeared since 1990, which is equivalent to the size of Libya or around seven times the size of the UK. This impressive decrease occurred at a rate of almost 8 million hectares per year between 1990

and 2000, in contrast to “only” little less than 5 million hectares per year between 2010 and 2020.

The FAO explains this slower decline of forest area by a deceleration of deforestation, an increase of reforestation and a natural expansion of forests. Let’s remind readers that deforestation is mainly due to the extension of subsistence and plantation agriculture.

This result may be a surprise to the public who is often given the impression that the decrease of the forest area would be faster, particularly when one refers to the staggering figures relating to massive fires affecting forests and pastures in the world: it is estimated that between 350 and 450 million hectares of forests and pastures burn every year (corresponding to more than 3.8% of the global land area) and release between 2 and 4 billion tonnes of carbon in the atmosphere [\[read\]](#), to be compared to total greenhouse gas emissions of around 50 billion tonnes of CO<sub>2</sub> equivalent per year. To understand this apparent contradiction, it is important to know that a great part of burned forests follows a process of natural regeneration.

### **Relative weight of different forest categories**

It is important to remember that world forests are overwhelmingly made of naturally regenerating forests (93% of the total) and that only 7% of the total area (or 290 million hectares) corresponds to planted forests. Let’s however note that, while naturally regenerating forests are on the decrease, planted forests are increasing.

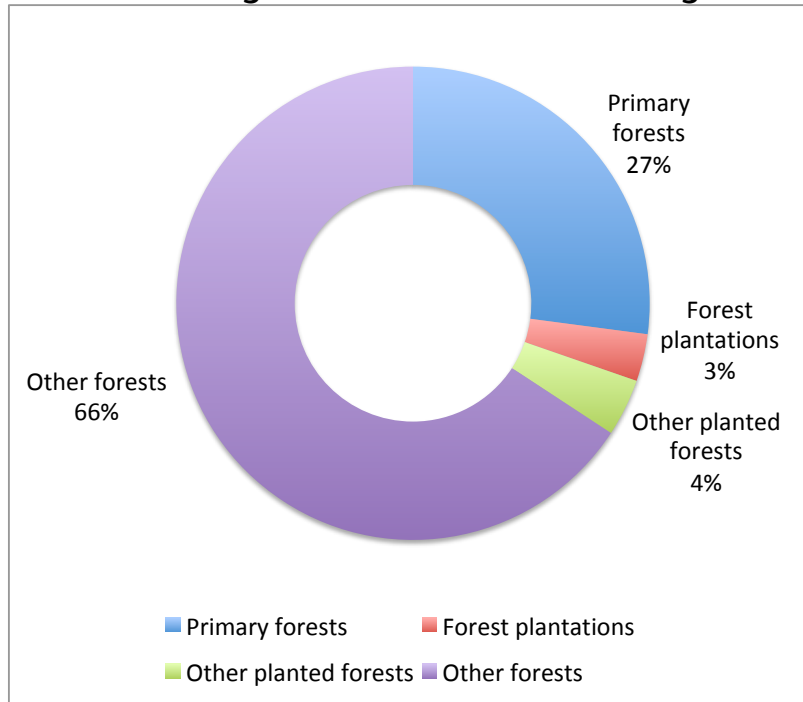
It is Africa who lost most forests between 2010 and 2020 (less 3.9 million hectares), followed by South America (less 2.6 million hectares), while Asia, Oceania and Europe have seen their forests expanding.

Out of the total of around 4 billion hectares of forest:

- 1.1 billion hectares are covered by primary forests that have diminished by more than 80 million hectares since 1990. These forests are composed of native species in which there are no clearly visible indications of human activities and where the ecological processes have not been significantly disturbed. The majority of these forests (61% of the total) are found in Brazil, Canada and Russia;
- 131 million hectares are under forest plantations (they are mostly located in South America);
- 159 million hectares are covered by other planted forests.
- The rest are other forests (2.7 billion hectares).

It is important to note that, if planted forests contribute generally to an increased productivity, they are poorer in terms of biodiversity, whether plant or animal, because they are often monoculture (particularly in case of forest plantations).

### Relative weight of different forest categories



Source: FAO 2020.

### Different forest uses

Protected areas cover 726 million hectares of forest (18% of the total) and they are mainly in South America where they represent 31% of forests.

The very large majority of forests are under public property and 22% are private (increasing).

1.15 billion hectares of forests are primarily used for production of wood and non-wood forest products. Moreover, 749 million hectares are used in multiple ways, including for production.

In addition, 424 million hectares are mainly intended for biodiversity conservation and 399 million hectares for soil and water protection. These two categories have been increasing over the last ten years.

### The forest biomass and carbon stocks have been declining since 1990

Despite an increase of growing stock of trees by unit of area, the total stock of trees diminished from 560 billion m<sup>3</sup> in 1990 to 557 billion m<sup>3</sup> in 2020. Total forest biomass has been in slight decrease since 1990 and the total stock of carbon in forests went from 668 billion tons in 1990 to 662 billion tons in 2020.

This means that forests are not acting as carbon sinks as well as in the past and contribute less to the combat against climate change while many agree to say that they could play a key role in this effort.

## Conclusion

According to the work conducted by the FAO:

- Forests are shrinking in the world, although at a slower rate;
- Planted forests grow but remain quite limited;
- Private property of forests developed to reach more than one fifth of the total
- Forest dedicated to conservation of biodiversity and protection of soils and water are increasing but only represent around 20% of the total;
- The forest biomass and carbon stock are in slight regression.

From these results, it appears essential to act so as to better protect forests, reinforce their role as carbon sink and biodiversity reserve. From this last point of view, one may regret that FAO's work does not add any new qualitative elements on the evolution of forests and on the biodiversity it shelters, and that it is limited to purely qualitative aspects. Information on the evolution of biodiversity is available [here](#).

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To know more:

- FAO, Évaluation des ressources forestières mondiales 2020 - Principaux résultats. FAO 2020.

Selection of past articles on [hungerexplained.org](https://hungerexplained.org) related to the topic:

- What causes massive forest fires : greed or poverty? 2019.
- Life plagued by human madness: we must change our paradigms, objectives and values, 2019.
- Côte d'Ivoire decides to work with chocolate majors for a more sustainable management of tropical forests: should we be concerned? 2019.
- 100 000 premature deaths in South-East Asia: we are all responsible, but we prefer to look elsewhere, 2016.
- In India, a first "environmental referendum" saves the Dongria Kondh, 2014.
- Forests: rural communities caught between markets and the objective of conserving the planet, 2013.