



## Reforestation

Deforestation accounts for 10-30% of global annual CO<sub>2</sub> emissions. Forests are felled to make room for agriculture, often monocultures of certain crops or cattle fields, and to answer our demand for timber products. When trees are cut down, they not only stop capturing CO<sub>2</sub>, they release captured carbon back into the atmosphere when burnt or left to rot. Approximately 5 soccer fields of forest are cut down every minute. In Brazil, an area larger than Germany has been deforested since 1990. Lowland forests and forests close to roads and rivers are most at risk of deforestation. However, conservation efforts are more frequently focussed on areas less at risk of deforestation such as deep forest areas hard to access.

Degradation of habitats goes along with a degradation of ecosystem services. Changing forests into agricultural lands or empty clear cut fields takes away an array of services. Carbon capturing abilities of secondary forests are not equal to primary, un-cut forests. It was estimated that it would take at least 50 years for secondary forests to build up similar carbon capturing abilities. The removal of CO<sub>2</sub> from the air is not the only ecosystem service lost. Forests play important roles in tropical rainfall cycles. Forests manage water tables, soil erosion and soil health. When large areas of forests have undergone a change in land-use, a change in rainfall and local water cycles can be observed. Agricultural lands and clear cut areas are under threat of erosion and decreased soil health and productivity.

With more people moving into previously forested areas for agricultural activities there has been a rise of vector borne diseases such as malaria. More intensified agriculture has increased crop yields but also has increased pesticide and herbicide use. Often these chemicals are sprayed on crops by airplanes and spread to inhabited areas around the fields which cause health problems for local populations. Rural populations are losing access to forests that provide them with additional benefits such as cheap fruits, medicinal herbs and plants and more economic stability through the use of the forest.

Globally tropical rainforests are biodiversity hotspots. Rural communities benefit from the diverse flora and fauna to provide food, timber wood and medicines. Biodiversity is important to maintain ecological functions of ecosystems. Deforestation is a big driver of biodiversity loss that further decreases ecosystem services and function.

Reforestation of abandoned pastures and clear cut areas can help reverse some of the negative impacts of deforestation. Reforested areas can host 30%-80% of biodiversity of primary forests and help preserve endangered species. Planting trees can counter soil erosion, improve soil health, help prevent flooding and capture atmospheric CO<sub>2</sub> in live biomass and in the soil. A single tree in the tropics can sequester 22kg of CO<sub>2</sub> on average every year. The average CO<sub>2</sub> footprint of industrialised countries is 10 ton per person per year. That is 455 trees per person.

Restoration of lost and degraded forests has a multitude of benefits for local communities beyond CO<sub>2</sub> sequestration. A return of native biodiversity can increase access to cultural and medicinal flora as well as natural resources such as rubber and timber. One hectare of healthy tropical rainforest is estimated to be worth US\$117 000. Yet, annually we cut down 4.3 million hectares of primary forest. Deforestation rates have actually been increasing since 2014, the year the UN declaration of forests was signed in New York. Stopping deforestation and expanding reforestation efforts could have an equal impact as taking all passenger vehicles off the road when it comes to lowering our CO<sub>2</sub> footprints. Plant trees and help save the world, today!