



LULUCF emissions and the disappearance of the forests: A situation as dramatic as ever

In its overall assessment of greenhouse gas emissions (GHG), the IPCC estimates in its 5th report that the land use and land-use change and forestry sector (LULUCF) is an important sector, responsible for 20 to 25% of global greenhouse gas emissions. Soil contains between 1500 and 2400 gigatonnes of CO₂, about two to three times the amount of carbon in the atmosphere. The balance between release and storage of carbon in soil is crucial to maintain the climate balance, and the different scenarios envisaging carbon neutrality by the middle of the 21st century all rely on the capacity of forests, grasslands and wetlands to store a portion of the CO₂ emitted. Maintaining forests is also a challenge in terms of biodiversity, rain regulation and local communities.

«There is no need to cut down forests to produce more food» is the message hammered out by FAO in its 2016 report entitled «Forests and agriculture: challenges and opportunities for land use». According to the FAO, deforestation in the tropics and subtropics is mainly due to large-scale commercial agriculture (40%) followed by local subsistence agriculture (33%), infrastructure (10%), urban expansion (10%) and mining (10%), «with, however, significant regional variations».

Head Editor • *The Climate Chance Observatory team*

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1 • THE LULUCF SECTOR: EVER-DIFFICULT ESTIMATIONS

More complex to calculate than the CO₂ emissions linked to fossil fuel combustion, their aggregations are highly uncertain as underlined for example by the Global Carbon Project in its “Global Carbon Budget” and which propose two figures separating LULUCF from the rest of the other sources of emissions. This margin of error can reach 30%, as shown by the Carbon Budget Global Carbon Project chart, which estimates 2016 land use emissions at 4.6GtCO₂eq (see Figure 1).

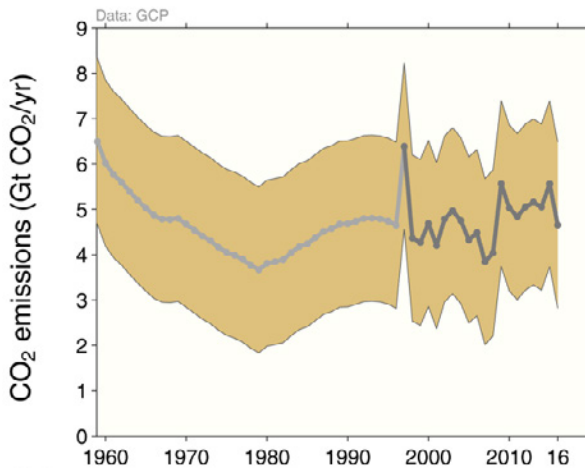


FIGURE 1: ESTIMATES FROM TWO BOOKKEEPING MODELS, USING FIRE-BASED VARIABILITY FROM 1997

Lecture: “Land-use change emissions are highly uncertain. Higher emissions in 2016 are linked to increased fires during dry El Niño conditions in tropical Asia”

Sources: [Houghton and Nassikas 2017](#); [Hansis et al 2015](#); [van der Werf et al. 2017](#);

[Le Quéré et al 2017](#); [Global Carbon Budget 2017](#)

In its annual report on trends for GHG emissions «*Emission Gap Report 2017*», the United Nations Environment Programme (UNEP) highlights the doubts existing on the data provided by the States, quantifying at 3GtCO₂eq the differences between scientific estimates and the aggregation of the data from the national reports. The

role of soils in emissions offsetting policies of other sectors, with the associated financial flows, also leads States to overestimate their carbon sinks potential, including in Europe. **According to a recent study (Luftalla et al., 2018), the conversion of forests and grasslands to soils rich in organic carbon generates a CO₂ flux from soils to the atmosphere corresponding to 10% of anthropogenic greenhouse gases. The fight against deforestation is therefore one of the major challenges of climate stabilisation.**

Since few countries provide annual figures for their land use-related emissions, and forests are often the main contributors to CO₂ fluxes (CITEPA), we have chosen to focus mainly on trends for forest cover, well documented worldwide. Trends for other categories of land use, such as the disappearance of grasslands and wetlands, the growth of artificial areas or cultivated land, would however require a dedicated analysis of their respective factors.

The causes of deforestation are particularly diverse and heterogeneous depending on the country and the continent: from urban sprawl to the development of intensive agriculture, from the firewood needs of the local populations to drilling for oil, or again from cutting down trees for precious woods to mining activity. In the particularly significant losses recorded in 2016, up 51% compared to 2015, forest fires also played a significant role: Brazil lost 3.7 million hectares, more than triple that in 2015. Portugal lost 4% of its forest area, and in Canada, the high-profile Fort Murray fire resulted in the loss of 600,000 hectares (Global Forest Watch estimates). Given such diversity of causes, we have chosen to scan the situation by continent, without seeking to be exhaustive, but by going over some major facts of recent years. This panoramic sweep, hardly optimistic in view of the figures, will cross-reference different tools used for the maintenance of forests, certifications, compensation mechanisms and so on, in a field where debates between players on the impact of these mechanisms are sharp.

United Nations strategic plan for forests

The seriousness of the situation, with an estimated loss of 13 million hectares of forest per year (UN figure), has led the United Nations to adopt a strategic plan for forests. This Strategic Plan was adopted by the Economic and Social Council (ECOSOC) on 20 January 2017 on the recommendation of the United Nations Forum on Forests, before being approved by the General Assembly on 27 April. It is based on six objectives and 26 targets, which are, as recalled by the President of the General Assembly Mr Peter Thomson, directly related to those of the 2030 Agenda for Sustainable Development.

The objectives are to end the reduction of forest cover by sustainable forest management; to enhance the economic, social and ecological benefits derived from forests; to significantly increase the surface area of protected forests and sustainably managed forests; to mobilise substantially larger financial resources; to promote governance frameworks for sustainable forest management; and to strengthen cooperation, coordination, coherence and synergies as far as the questions of forests are concerned.

Source: Economic and Social Council (ECOSOC)

TEXT BOX 1

2 • THE RESUMPTION OF TROPICAL DEFORESTATION

After a lull in the early 2010s, deforestation accelerated again in 2017, the second most devastating year in contemporary history after 2016. According to the report published by the Institute of Hydrology, Meteorology and Environmental Studies of Colombia (IDEAM), Brazil, the Democratic Republic of Congo, Indonesia, Madagascar, and Malaysia have suffered the biggest losses in 2017.

• **BRAZIL: SEE-SAW DEFORESTATION** • Brazil lost more than 6000km² of forest cover in 2017, albeit a bit less than in previous months (7989km² between August 2015 and July 2016), but much more than the encouraging results of previous years (the Brazilian Ministry for the Environment). According to the estimate of the National Institute for Space Research (INPE), deforestation had reached its lowest level in 2012, with 4571km² of forest cut down, compared with the peak of 27,700km² in 2004. This deceleration in one year was however welcomed by President Michel Temer, in power since 2016, who was pleased that the deforestation curve had reversed after three years of increases. The intervention of the Brazilian President was also an attempt to respond to the threat from the Norwegian government – the main contributor – to halve its contribution to the fund for the preservation of the Amazon rainforest in 2017, compared to the \$100 million paid in 2016.

The causes of this deforestation are known: keeping livestock and agriculture, and notably soybean exports. The port of Lorient, in France, also received the biggest cargo of soya in its history on 25 September 2018: 63,000 tonnes of soybeans from Brazil and Argentina were landed in one go by the Chloé freighter flying the flag of the Marshall Islands. This unloading aroused the anger of anti-GMO activists who demonstrated on the site, denouncing the transgenic and glyphosate resistant soya destined as Breton pig feed, and making reference to the wish of the region of Brittany – the owners of the port – which has still not been acted on, who in 2004 had passed a motion on the limitation of imports of GMO products.



Low carbon agriculture in Brazil?

Faced with criticism over its climate policies and the increase in its greenhouse gas emissions due to its agricultural sector, the Brazilian government, in partnership with the Brazilian Agricultural Research Institute (Embrapa), is highlighting its strategy for «Low Carbon Agriculture» (the ABC Plan). It is a Crop-Livestock-Forest Integration (ILPF) technique that alternates cattle breeding during the dry season with growing legumes in the summer on a plot where eucalyptus trees can also be planted. which generate income from felling, enrich the land, capture emissions of gases emitted by cattle and give them shady areas... The organic matter of the cattle allows them to nourish the soil and the nutrients to be retained in the earth. Developed in 2005 by Embrapa in the Centre-West region, this technique has already been applied on 11.5 million hectares in about ten years. The goal? By developing this technique on 55,000 hectares by 2030, the aim is to reduce greenhouse gas emissions by almost 300 million tonnes of CO₂ equivalent, or almost 13% of Brazil's total emissions in 2016. But no authority has been in control of the effectiveness of the implementation so far, and of the €5.3 billion unlocked, only €3.6 billion were used...

Source: La Croix, 11 February 2017

TEXT BOX 2

• OTHER AMAZON BASIN COUNTRIES •

In this report we publish a study on Peru, a country strongly committed to the facilitation of the climate convention, but struggling to curb deforestation on its territory, despite commitments made at COP21. It is not the only one causing anxiety. In Colombia, deforestation doubled in just one year in the Amazon part, reaching 2200km² in 2017 i.e. the surface area of Luxembourg (Source: IDEAM, 2018).

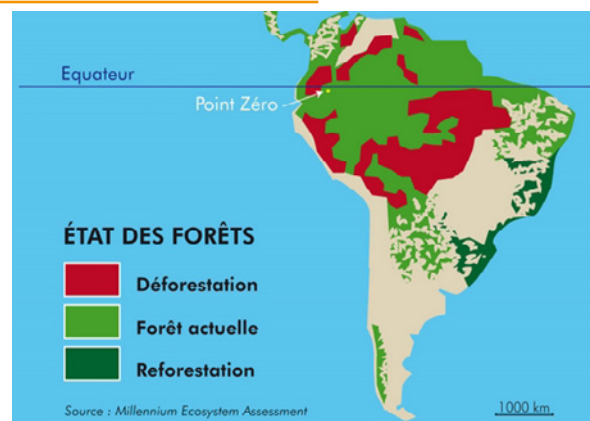


FIGURE 2. STATE OF LATIN AMERICAN FORESTS IN 2012

(Source: Millennium Ecosystem Assessment)

Colombia's supreme court rules in favour of an NGO on behalf of its international commitments

In January 2018, 25 children and young people prosecuted the Colombian State, accompanied in their initiative by the NGO Dejusticia, which styles itself as an «*investigation-action*» centre. The group demanded that the government guarantee their fundamental rights to life and the environment, and respect their constitutional rights. The Colombian Supreme Court has ruled in favour of the young plaintiffs. On 5 April 2018, it recognised the Colombian Amazon as a «*subject of law*». The government was served an order to prepare an action plan to preserve the forest in four months. Among the failings of the Colombian State identified by the Supreme Court, the fact that the severity of deforestation has not been measured to its true extent, «*despite the many international commitments*» of Colombia, emphasises the issue of greenhouse gas emissions.

Source: Dejusticia Centre for Legal and Social Studies

TEXT BOX 3

The reasons for this deforestation repeat themselves from one country to the next: logging and agriculture, mining activities and the depletion of land that leads farmers to clear new ones. Oil drilling is another important factor of deforestation, including the creation of roads and infrastructures leading to sites for the exploitation of deposits, which open the way to other exploitations (wood, gold panning, etc.). Symbolising this race for oil and currency, in August 2013, the Ecuadorian President Rafael Correa authorised the exploitation of hydrocarbons in the Yasuni Natural Park. This exceptional reserve, created in 1979, was classified as a World Biosphere Reserve by UNESCO in 1989. It covers 982,000 hectares in the Aalto Napo basin and is home to two indigenous groups living in voluntary isolation: the Tagaeri and Taromenane. Rafael Correa attempted to bury the Yasuni ITT project launched in 2007, which proposed to abandon drilling for 900 million barrels of oil on condition of an international contribution of \$3.6 billion, half of the shortfall for the country. The fundraising, managed by the UN, has raised only \$13 million, and \$116 million in borrowers' notes (Lavaud JP, Mediapart 2016). On 7 September 2016, the Ecuadorian government launched drilling for the deposit despite the mobilisations of environmental defenders and associations for the defence of indigenous peoples from this region. In Venezuela, and especially in Bolivia, where President Morales has also authorised oil exploration in several major reserves, the situation is being repeated with the mobilisations of indigenous communities failing to block projects.

• **ACCELERATING DEFORESTATION IN AFRICA** • According to the FAO, deforestation on the African continent is the fastest growing in the world, faster than in the Amazon rainforest. It estimates that this loss of forest area is of the order of 3.1 million hectares per year, in the last five years. In its 2016 report «*State of the World's Forests 2016*», it underscores the particularity of the African continent, where many poor households are adopting «low-risk, low-yield» farming and income-generation strategies, and where subsistence farming remains the main driver of deforestation. Large-scale commercial agriculture accounts for one-third of Africa's deforestation, compared to an average of 40% in all tropical and subtropical countries.

The situation remains very different between the countries of the Congo Basin, with a profile known as «high forest canopy, low deforestation» (CEFD) where deforestation is still localised, but where the main threats are now concentrated, and the catastrophic situation in West Africa, where it exceeds 2% per year with the forest having lost about 85% of its original area.

A country, such as the Ivory Coast, which has a special feature in this report, has lost almost all of its primary forest and its remaining classified forests continue to be invaded by illegal plantations, principally cacao. The Ivory Coast now has the highest rate of deforestation on the continent according to the REDD+ Ivory Coast report, 2017. Between development issues with the possibility of resources linked to export crops for poor people, and weak States, the situations remain very difficult to control; even if governments multiply statements about their desire to preserve or restore their forest cover, while looking towards climate finance, in particular linked to the REDD+ mechanism.



Emissions trading systems: Prospects for the forestry sector?

In 2015, forest carbon projects accounted for 29% of the volumes traded, and ranked second, just behind renewable energy development projects. Taking into account the credits exchanged on both the voluntary and compliance markets, the main projects are the REDD+ projects, followed by improved forest management projects. While REDD+ projects largely dominate the international voluntary

market, the improved forest management projects are mainly present in the compliance markets, principally in California and Australia. Despite a significant and continuous decline since 2011, the prices achieved by forestry projects remain higher than the average observed for the entire voluntary market (\$5.7/tCO₂e_q for forestry projects compared to an average of \$2.8/tCO₂e_q for 2015, a historic minimum).

Source: [French Agriculture Academy \(AAF\)](#)

TEXT BOX 4

As part of the Central African Forest Initiative (CAFI), two conventions have been signed; one with the Democratic Republic of Congo, the other with Gabon for \$18 million to protect the country's forests and accelerate the fight against climate change. «This agreement is a big step forward. Gabon commits to measures that, once implemented, will preserve 98% of its forests», said Vidar Helgesen, Norwegian Minister of Climate and Environment and President of CAFI. «CAFI is proud to support this ambitious but pragmatic plan, which aims to ensure that the economy of a middle-income country grows while preserving its invaluable natural capital, for the Gabonese and for the whole world.» (Source: UNDP)

In the Democratic Republic of Congo (DRC), alerted by NGOs including Greenpeace, on 6 March 2018, CAFI publicly announced that it will suspend funding to the government until illegally re-allocated timber licences are revoked. The DRC Ministry for the Environment had reinstated three timber licences owned by Chinese companies, SOMIFOR and FODECO, for a total of 6500km² (an area equivalent to that of the French department of Drôme). Two of these concessions encroach on 145,000km² of recently discovered peatlands containing some 30 billion tonnes of carbon, with a significant risk of methane emissions associated with the opening of this massif to logging (Greenpeace, 2018).

The Central African Forest Initiative (CAFI) for Sustainable Forests in Africa

CAFI is a collaborative partnership that brings together the Central African countries: Cameroon, Gabon, Equatorial Guinea, Central African Republic, Republic of Congo, Democratic Republic of Congo, and a coalition of donors: Germany, South Korea, France, Norway, the Netherlands, the United Kingdom and the European Union, and finally Brazil as South-South partner.

Partners' commitments are formalised through the CAFI Declaration. CAFI is a unique initiative that supports national strategic and holistic domestic investments in REDD+ and low-emissions development, while focusing on Central African countries with high forest cover. Its purpose is to recognise and preserve the value of forests in the region so as to mitigate climate change, reduce poverty and contribute to sustainable



FIGURE 3 THE CENTRAL AFRICAN FOREST IN FIGURES

Source: CAFI infographic

development.

CAFI's support is focused on:

- The development and implementation of **National Investment Frameworks (NIF)** validated at the highest level by national institutions whose mandate is cross-sectoral;
- Funding based on the achievement of programmatic and political milestones as set out in letters of intent;
- Donor coordination and alignment of assistance with the NIFs of partner countries;
- Inclusive participation of all stakeholders
- CAFI support goes through the CAFI Fund, a trust fund managed by the UN Multi-Partner Trust Fund Office.

TEXT BOX 5

• **TRENDS FOR THE TIMBER INDUSTRY IN AFRICA** • The trend for logging in Africa is also an important piece of information. At the start of 2018, the Africa branch of the Rougier Group filed for bankruptcy. A listed family company, Rougier is one of the oldest and biggest timber companies in Africa. Its first okoumé tree operations started in the 1950s in Gabon; it is also present in Cameroon, Congo and, since 2015, in the Central African Republic (CAR). The total area owned by the Rougier Group is over 2.3 million hectares and it employs 3000 people, mainly in Africa. It should totally or partially divest itself of its operational activities on the continent, except in Gabon. Other forestry companies, most of them European, have had to sell some of their assets in recent months. The Wijma Cameroon Group, with Dutch capital, had to sell four of its five timber licences in Cameroon in 2017 to a competing company (Vicwood SA, with headquarters in Hong Kong). The Italian company Cora Wood SA, a well-known plywood manufacturer established in Gabon, had to sell one of its concessions to a Chinese company.

This mutation is a concern. It would mean for Alain Karsenty, researcher at CIRAD, and who has published a long article on the subject: *«the end of a cycle opened by the first forest management plans in the 1990s, and which continued with the revival of the “good forest management” certification» (the Forest Stewardship Council label, FSC) some 15 years later. It was then thought that sustainable forest exploitation of the natural forest – reconciling economic profitability, ecological dimension and social progress – had demonstrated its feasibility in Central Africa, despite the well-known governance problems in this region (...). However, the profitability of exploiting natural forests has relied, until now, on the collection of a handful of species well known to timber consumers (...). The advantage of this extremely selective exploitation is that the forest is scarcely damaged by taking rarely more than, on average, one or two trees per hectare, i.e. 10 to 12m³ (...). European dealers, formerly essential in African timber operations and industry, are gradually yielding their assets to Asian investors. While Malaysian operators have been present in Central Africa since the mid-1990s, Chinese companies have entered the industry properly since the 2000s, and more recently Indian investors, including the multinational Olam, have made their presence known in Gabon and Congo. These operators have significant capital and the markets in which they operate accept qualities sometimes lower than those demanded by European buyers (...). European operators are wondering if they are on a level playing field with some of their Asian competitors. Large European companies have gradually complied with legal standards by preparing forest management plans, made compulsory by the new generations of forestry laws that appeared in the years 1990-2000. Some of them went further, adopting a rigorous logging certification, the FSC. This label is important to gain or maintain market share in certain Western markets sensitive to environmental issues (in Northern Europe, in particular) and hope for a higher purchase price for the timber thus labelled. Certification is therefore an investment that drives companies to self-regulate in order not to lose*



the label whose implementation in the field is regularly checked by independent auditors. However, apart from Olam, which bought a large concession already certified in north Congo from a Danish company in 2011, no Asian-owned operator has seriously sought, at least until now, to obtain the FSC label for its permits.”

Source: <http://www.willagri.co.m/2018/06/28/la-crise-de-la-filiere-europeenne-du-bois-tropical-en-afrique-centrale/>

In this situation, which sees the threat of progression from exploitation of a specific species to a more complete deforestation, the decision of Gabon against the trend of the sector cannot go unnoticed. Gabonese President Ali Bongo Ondimba has announced that Gabon will withdraw logging permits from any operator that is not engaged, between now and 2021, in a process of certification of the Forest Stewardship Council (FSC), with 2022 as the cut-off year. Gabon, which has not exported logs since 2009, but already provides some of the processing in its territory, is principally targeting markets in Northern Europe, where certification is necessary.

Other threats weigh on African forests without us being able to detail them all here. Illegal deforestation to provide softwood for Africans (timber exploited by large international companies being too expensive for local populations and reserved for export) is a developing phenomenon, leading to specific programmes financed, for example, in the framework of REDD+ in the Ivory Coast. Deforestation related to firewood is well known, and initiatives to control it are numerous without so far demonstrating any significant impact. As for many African cities in development, the search for firewood today requires traveling great distances, which also causes an increase in its price. Finally, the risk of land grabbing is real, as shown by the arrival of the Korean company Daewoo Logistic in Madagascar, where it took out a 99-year lease on 1.3 million hectares, creating a major political crisis.

• **MALAYSIA AND INDONESIA** • Malaysia, which derives 11% of its GDP from the exploitation of palm oil, has not reduced its rate of deforestation in 2017 according to [the estimates of the NGO Global Forest Watch](#).

In **Malaisie** from **2001** to **2015**, **91%** of tree cover loss occurred in areas where the dominant drivers of loss resulted in **permanent deforestation**.



2000 tree cover extent | >30% tree canopy | these estimates do not take tree cover gain into account

FIGURE 4. LOSS OF THE FOREST CANOPY IN MALAYSIA BETWEEN 2001 AND 2015 SOURCE: GLOBAL FOREST WATCH, 2018.

Source: Global Forest Watch, 2018

On the other hand, Indonesia has decided to significantly reduce its deforestation, with a moratorium on forests introduced by the Indonesian government in 2016. This has enabled the reduction of deforestation by 88% in the primary forest areas of protected peatlands. This political will has also resulted in the application of stricter laws and media coverage of the arrest of logging company managers. Finally, weather conditions, notably wet weather, have also played a role in reducing forest fires on the archipelago (Source: Global Forest Watch). The many toxic fires and clouds, with strong consequences for human health, were also driving forces in the Indonesian government's decision.

Indonesia Primary Forest Loss

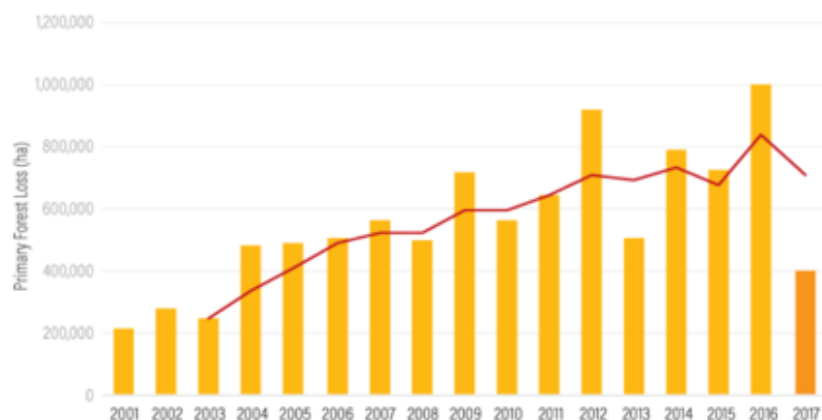


FIGURE 5. LOSS OF PRIMARY FORESTS IN INDONESIA (IN HECTARES).

Sources: World Resources Institute / Global Forest Watch

Indonesia comes to the aid of its peatlands

A team of European and Indonesian scientists, offering satellite imagery and an aerial mapping system to prevent peatland fires ravaging forests in Indonesia, won a \$1 million (€900,000) prize in 2017 awarded by the Indonesian government. These organic-rich wetlands contribute annually to forest fires in the South-East Asian archipelago. To fight against this scourge, the government launched this competition, to which more than 40 teams of scientists applied, with participation from experts in remote sensing from all over the world, according to the organisers.

The winners, the international peatland mapping team with scientists from Indonesia, Germany and the Netherlands, have developed a method combining an airborne laser mapping

system and ground measurements to determine the depth and the extent of the wetlands and peatlands. This technology should enable increasing the measures taken to protect the peat – a particular and fragile ecosystem – and prevent forest fires. The Indonesian authorities have already tightened peatland protection legislation to prevent the conversion of carbon-rich soils into plantations, particularly for palm oil, which fuels the devastating annual forest fires during the dry season.

Drainage of these waterlogged lands to extend oil palm plantations increases the risk of peat fires that are very difficult to control, and the Indonesian government has also tightened water management legislation to avoid their drying out.

Source: Le Figaro with the AFP

TEXT BOX 6

The destruction of primary forests, particularly on the island of Borneo, threatening orangutans, has become one of the great symbols of harm to the environment in the world, generating questions about consumption patterns via the question of palm oil.

In June 2018, the European Parliament voted in favour of banning palm oil for agro-fuels as early as 2021 – a deadline postponed until 2030 after a difficult negotiation with the European



Commission – but their consumption should have begun to decrease in 2023. In France, the authorisation of the oil company Total to use 300,000 tonnes of palm oil for its La Mède refinery also provoked huge controversy, highlighting public awareness of this issue.

Malaysian and Indonesian producers, who account for 85% of the world's production, are paying close attention to European debates, using the weapon of commerce to threaten European countries, primarily France, with retaliation that would limit access to palm oil in their market.

3 • REFORESTATION

On a global scale, the balance is still very clearly negative, but reforestation is nevertheless an important element of the global forest canopy action, even if these replantings rarely equal the rich biodiversity of the deforested territories.

The figure above shows a net loss of forest area in tropical zones in each of the three five-year periods between 2000 and 2015. By contrast, temperate zones recorded a net increase in forest area during each of these periods. Finally, only relatively minor changes were observed in boreal and subtropical forest zones.

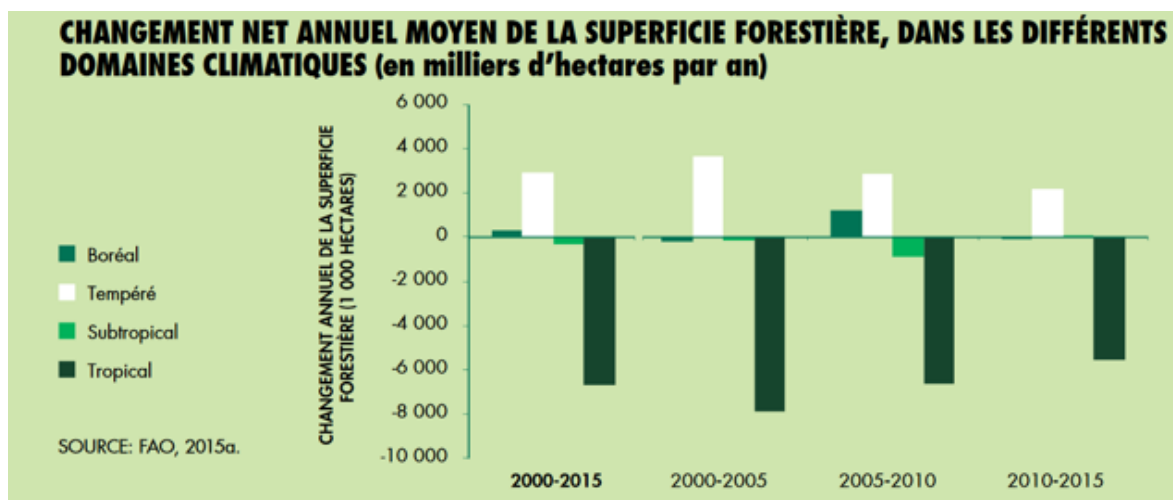


FIGURE 6. AVERAGE ANNUAL CHANGES IN FOREST AREAS BY GLOBAL REGIONS BETWEEN 2000 AND 2015

Source: FAO, 2016

• **THE COMPLEXITY OF EUROPEAN ACCOUNTS IN THE LULUCF SECTOR** • The European Commission's report to the European Parliament and the Council of 7 November 2017 provides a relatively positive overview of the LULUCF sector in Europe, with a view to achieving the European Union 2020 climate objectives: «In 2015, according to the information provided, the LULUCF sector of the Union has, through its carbon sink function, absorbed 305Mt of CO₂ equivalent (cropland and pasture included). The credit recorded, which represents the difference between the reported value and a baseline scenario, increased from 115 to 122Mt of CO₂ equivalent between 2013 and 2015. This credit is largely due to forest management (see Figure 4). The Union therefore remains on track to ensure that its LULUCF sector is not in debit and is likely to meet the commitment under the Kyoto Protocol.»

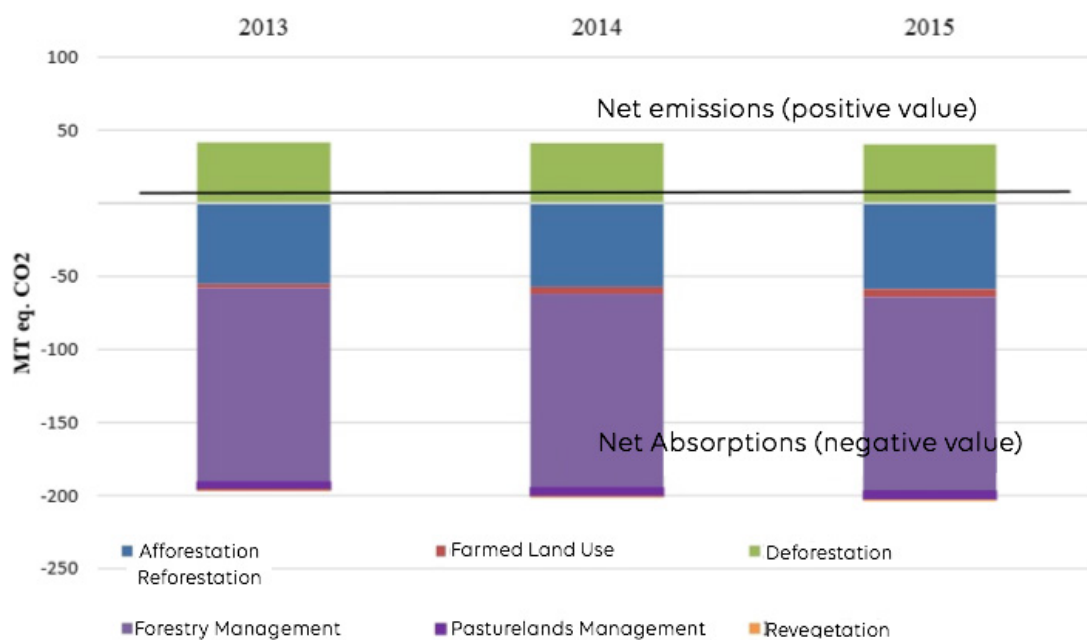


FIGURE 7: EMISSIONS AND REMOVALS RECORDED FOR LULUCF BY ACTIVITY FROM 2013 TO 2015

«It should be noted that LULUCF accounting will be cumulative for the period 2013-2020; therefore, the full accounting results cannot yet be calculated and are thus provisional. However, as mentioned above, there is currently no significant risk of non-compliance at Union level.» concludes this communication from the European Commission.

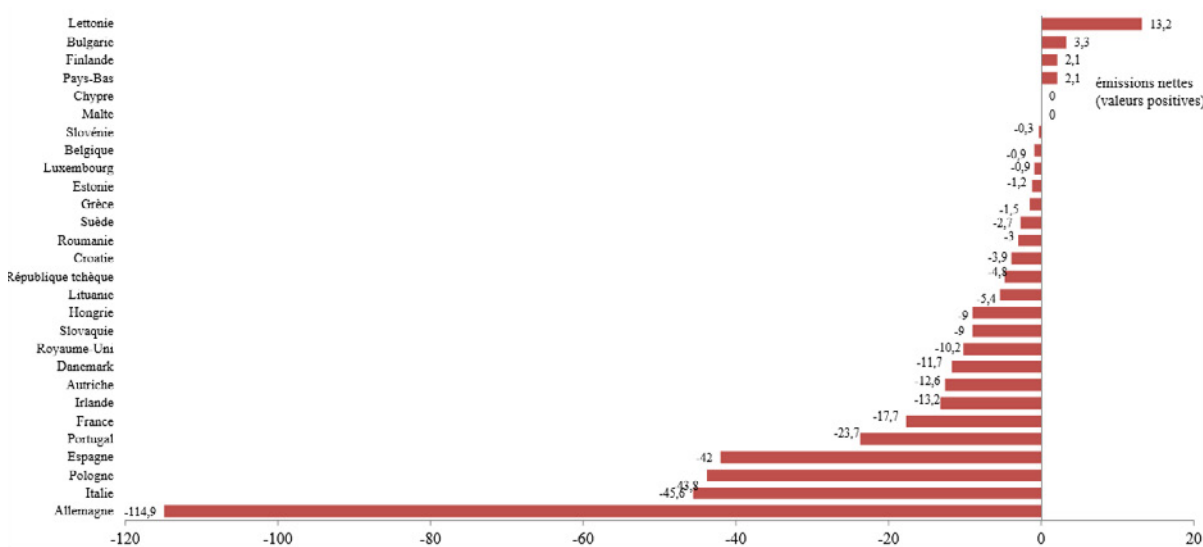


FIGURE 8. PROVISIONAL ACCOUNTING OF LULUCF CUMULATIVE NET EMISSIONS AND REMOVALS BY EU MEMBER STATES BETWEEN 2013 AND 2015

Source: European Commission, 2017

This Commission communication is nonetheless tempered by another internal note, which shows how governments have recovered carbon credits by exaggerating the logging targets of their forests and thus posting a positive but «fictitious» rate of preservation (it is considered that preservation efforts qualify for credits). But these fictitious credits are not trivial: they were then used to offset the emissions of polluting sectors, under the Kyoto Protocol. «This scam has gone on for too long. Member States must be serious about their forests and correctly calculate the impact of their management practices on the climate» declared the NGO [FERN](#), specialising in these forest issues. It considers that this laissez-faire approach could reduce the European emission reduction



result by 3 to 7 points compared to the 40% reduction target by 2030 (Euractiv 2018). The European Union has issued a new regulation in 2018, which should reduce this risk.

The new European regulation

On 30 May 2018, the European Union published a new regulation (2018/841) on taking into consideration greenhouse gas emissions and removals resulting from land use. The preamble to this regulation emphasises that Member States must ensure the conservation and enhancement of the forest sinks and reservoirs needed to meet the European Union's commitments to the Paris Agreement.

To maintain the carbon stocks of forests and other natural areas, the regulation stipulates that Member States should make sure that the LULUCF sector does not produce net emissions and strengthens long-term sinks. Member States will provide two forest plans at the end of 2018 for the 2021-2025 period and in 2023 for the 2026-2030 period, which will be aggregated at the European level. Member States are allowed to use part of the forest credits created by improving storage to offset their domestic emissions, but with a European ceiling corresponding to 10% of the sink. Today, the annual European «net» sink is estimated at around 30MtCO₂.

TEXT BOX 7

• **THE RACE FOR TREES IN INDIA AND CHINA** • In 2009, China announced its intention to build «The Great Green Wall of China», the largest ecological project in the world, to extend over 4480km and designed to curb the progression of the Gobi Desert, to combat global warming and restore deforested land. According to the observatory Global Forest Watch, 8 million hectares of forest were lost between 2001 and 2016 in China. Only 6% of the country's forests are primary, 57% are of natural origin and 37% are planted, estimates the observatory.

The Chinese authorities have planned, for 2018, reforestation of about 84,000km², and the newspapers of the whole world echoed the mobilisation of the People's Liberation Army. According to China Daily, **60,000 soldiers were moved from the northern borders of the country to the central part of China, reassigned to planting trees. Zhang Jianlong, Chairman of the Public Forestry Administration was able to point out that, between 2012 and 2017, the equivalent of €68.3 billion were spent to replant trees in the country, bringing the total area of forests in China to 208 million hectares.** Voices have been raised in the past to emphasise that this effort has not always been done by integrating biodiversity issues, and that few species have been used, with significant losses on the plantations.

India is not to be outdone by its neighbour, and is committed to increasing its forest area by 95 million hectares by 2030, a project put forward in the [Paris Climate Agreement](#) and is estimated to cost about \$6.2 billion. But in this race for the record, India has managed the feat of planting 66 million trees, of 20 different species, in 12 hours. As in China, communication was assured and Shirvraj Singh Chouhan – Chief Minister of the State of Madhya Pradesh, where these plantations were carried out – was able to declare: *«the world is talking about global warming and climate change, but Madhya Pradesh has taken a concrete step to deal with it».*

Pakistan has succeeded in planting no less than a billion trees

This project, dubbed «The Billion Tree Tsunami», was launched in 2015 in Khyber Pakhtunkhwa Province in North-Western Pakistan, located between Afghanistan, Iran and India. Between 2000 and 2010, Pakistan lost 430,000 hectares of forest. Today, Pakistan has a forest cover of between 2 and 5% of its area. This is the lowest rate on the Asian continent. This project, started in 2015, aims to restore 350,000 hectares of old forests. Indeed, for several decades this region has suffered significant deforestation related to human activities that has exacerbated the consequences of natural disasters. In 2016, sudden floods hit the province, killing dozens

of people. For three years, more than 16,000 workers worked tirelessly to plant trees of 42 different species and promote the natural regeneration of the forest. As a result, by August 2017, several months ahead of schedule, 1 billion trees had been planted, half of them by the general public, covering the hills of Khyber Pakhtunkhwa province.

Pakistan's Prime Minister Imran Khan has announced that 100 million trees will be planted by 2023, when his term ends. From August 2019, the «[Rung Do Pakistan](#)» campaign is already planning to plant 1.4 million trees on 1400 hectares.

Source: WWF Pakistan

TEXT BOX 8

Thus, Asia appears today as one of the regions of the world intervening most in the reforestation of the planet.

• **REFORESTATION IN AFRICA** • While increased deforestation is occurring throughout the African continent, a number of countries are also symbols for the reclamation of soil quality, with the support of the United Nations Convention on Desertification, whose role is often unknown (this is the third convention planned by the Rio Earth Summit in 1992, with the framework agreements on climate and biodiversity).

Often cited as an example, Rwanda is halfway to reaching its goal of 30% reforestation in 2020, or 2 million hectares of degraded land to restore. In this country characterised by its high population density, the highest in Africa, overexploitation of the land resulted in the loss of a significant part of the forest canopy in the 1990s. Since the commitment was made in 2011, all regions have been involved, and planting days have been set up to mobilise the population. "Rwanda's National Forest Planting Day and Season" is a programme supported by IUCN, a Belgian technical cooperation and a joint Rwanda/Netherlands platform on the management of water resources (Fonerwa, 2018).

Reforestation actions are also being undertaken in many other African countries, such as Ethiopia, Togo, and Senegal with the great green wall project supported by the African Union...

An important initiative was launched at COP 21 to reclaim, by 2030, the equivalent of 100 million hectares of forests and agricultural land that has become unproductive in Africa. Supported by the African Union, the German Ministry of Cooperation and the World Resources Institute and named AFR100 for «African Forest Landscape Restoration Initiative», this initiative, originally brought by Ethiopia, Democratic Republic of Congo, Kenya, Niger, Uganda, Burundi, Rwanda, Liberia, Madagascar, Malawi, and Togo, today brings together 26 African countries. At the last meeting of the technical partners, in August 2018, the commitments made by the States amounted to 91.4 million hectares, through specific projects, many of which remain to be financed (€1.3 billion according to CIRAD experts, also a partner of the initiative).

CONCLUSION

The continuing destruction of tropical forests is one of the most serious environmental threats today, in terms of both climate and biodiversity. While the Indonesian moratorium will have to be carefully monitored elsewhere in the world, the situation remains critical, with increased risks for recent political developments or the strengthening of the role of companies with little regard for certification. If they do not represent all the LULUCF emissions, forests are an essential element of carbon capture; they are essential for the credibility of carbon neutrality scenarios by 2050. Building an international coherence between their preservation, growing demand for biofuels and changing dietary habits remains a challenge that the world still fails to meet.

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