

# Forests in south-east Asia

## Can they be saved?

### SUMMARY

Nowhere in the world are forests shrinking faster than in south-east Asia. Rapid population growth and economic development put intense pressure on the environment. Between 1990 and 2020, an area larger than Germany was deforested, over half of it in Indonesia.

Land clearing for agriculture is the main cause of deforestation. Driven by booming global demand, oil palm plantations have spread into formerly forested land, especially in Indonesia and Malaysia, which are the world's largest producers. Logging, much of it illegal, is also a serious threat to the region's forests.

Deforestation destroys the habitats of iconic large mammals such as the orang-utan and tiger, as well as thousands of lesser-known, but still vital, animal and plant species; it also contributes to climate change. Smoke from fires on forested and cleared land causes economic disruption and thousands of premature deaths.

Worrying though all this is, there are tentative signs of change. With international encouragement, south-east Asian governments are becoming increasingly aware of the importance of balanced development. Significant efforts are being made to protect forests and to make timber and palm oil production more sustainable. Perhaps reflecting such efforts, the pace of deforestation in most countries has come down slightly since a mid-2010s peak. However, it is too early to say whether this improvement can be sustained.

The EU has played a leading role in helping south-east Asian countries to curb deforestation, for example by helping them to tackle illegal logging. It has also revised its biofuels policy to ensure that European demand for palm oil does not exacerbate the problem.



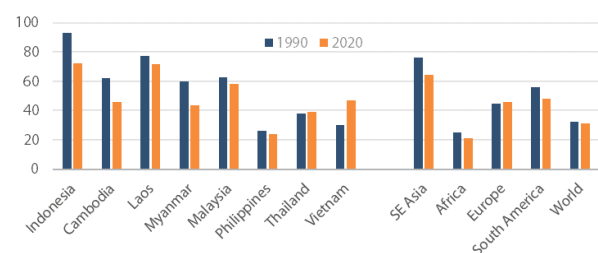
*An oil palm plantation and rainforest.*

### In this Briefing

- Deforestation trends in south-east Asia
- What causes deforestation?
- Why is deforestation a problem?
- How can deforestation be stopped?
- The EU and south-east Asian forests

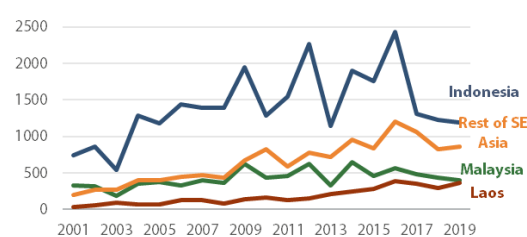
## Deforestation trends in south-east Asia

Figure 1: Forest area, 1990-2020  
(% of land area covered by forest)



Source: [UN Food and Agriculture Organization](#).

Figure 2: Tree cover loss, 2001-2019  
Thousand hectares (1000 ha = 10 km<sup>2</sup>)



Source: [Global Forest Watch](#).

Forests are shrinking faster in south-east Asia than anywhere else in the world: According to the UN Food and Agriculture Organization (FAO), between 1990 and 2020 the region lost [376 000 km<sup>2</sup>](#), more than the land area of Germany, or nearly one-sixth of its forests. The two worst affected countries were Indonesia and Cambodia, which lost one-fifth and one-quarter respectively (Figure 1).

However, there are also tentative signs that the pace of deforestation, after peaking between 2010 and 2016, has slowed down somewhat (Figure 2). Indonesia, which has lost more trees than the other nine south-east Asian countries combined, is showing signs of finally getting to grips with the problem, with significantly less deforestation: in 2019, it lost 12 000 km<sup>2</sup>, a huge area but still only half its 2016 peak of 24 000 km<sup>2</sup>. Malaysia, the second worst affected country, also showed some signs of improvement. It is still too early to say whether this trend can be sustained.

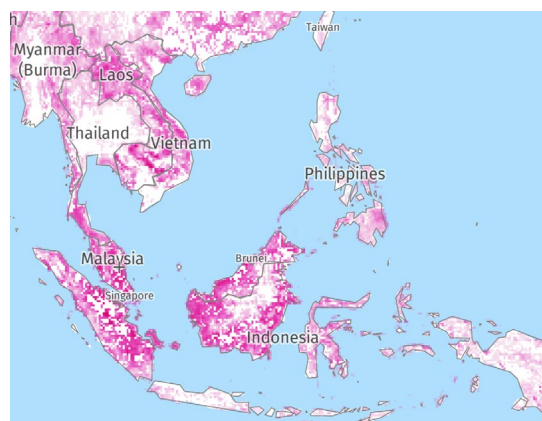
### What causes deforestation?

South-east Asia, with a land area slightly smaller than that of the EU-27, has a population of nearly 670 million, growing at a rate of around [1 %](#) a year. At the same time, economic growth has clocked over [5 %](#) a year over the past decade. A large, growing and increasingly affluent population, together with booming global demand for south-east Asian exports such as palm oil, timber and rubber, is putting pressure on the region's natural resources. Traditionally, the environment – mentioned nowhere in Malaysia's 1991 [Vision 2020](#) national development strategy, for example – has not been a priority for south-east Asian governments; only recently has sustainability begun to shape national policies.

The causes of deforestation differ from one country to another. In Indonesia and Malaysia, the main driver is permanent conversion of forest into farmland, whereas in Thailand and Myanmar, logging is a more significant factor (however, the two activities are not mutually exclusive, as farmers often move into logged areas). In northern Vietnam, most forests are lost to shifting cultivation, in which farmers clear small areas of forest and move on a few years later once the soil loses its fertility. In south-east Asia as a whole, [73 %](#) of deforestation is commodity-driven (permanent farming and – to a much smaller extent – mining), 19 % is due to logging and 8 % to shifting agriculture. Just 0.28 % of tree cover loss is caused by urban expansion.

Map 1: Tree cover loss, 2009-2019

■ area of significant tree cover loss, 2009-2019



Source: [Global Forest Watch](#).

## Agriculture

Palm oil is the main commodity associated with south-east Asian deforestation. Since 2000, Indonesia and Malaysia, the world's two biggest producers, have added an average [3 700 km<sup>2</sup>](#) a year of new plantations between them, while global [consumption](#) has more than doubled.

Growing demand for palm oil has to do with its usefulness as an economical and versatile ingredient in products that include foodstuffs, cosmetics and biodiesel. For the same amount of land, oil palms yield up to [nine times](#) as much oil as other crops such as soybean or rapeseed. Palm oil generated [8.8 %](#) of Indonesia's exports and [3.4 %](#) of Malaysia's in 2019. It is claimed that the sector provides direct employment for nearly [1 million](#) in Malaysia and [4 million](#) in Indonesia, often in remote rural areas where alternative work is scarce.

Malaysian [government](#) and [industry](#) representatives defend the sustainability of the crop, arguing that oil palms are planted on land that is either unused or converted from other crops such as rubber, rather than in place of forests. However, several studies claim that large areas of forest have been cleared for oil palm plantations. In 2013, the European Commission [estimated](#) that between 1990 and 2008, 55 000 km<sup>2</sup> was lost in this way (an area nearly twice the size of Belgium), an average annual rate of 3 000 km<sup>2</sup>. Of this, 31 000 km<sup>2</sup> were cleared in Indonesia, and 14 000 km<sup>2</sup> in Malaysia.

Although they have received less attention than palm oil, other more traditional tropical crops can also have a devastating impact. In Cambodia, companies grow rubber, sugar and pulpwood on huge [economic land concessions](#) granted by the government. As well as causing deforestation, such activities have also displaced rural communities. Land-grabbing was one of the human rights issues raised by the European Union in its decision to partially suspend Cambodia's duty-free exports to EU markets under the [Everything but Arms](#) preferential trading scheme.

## Forest fires

Every year, large areas of forest are destroyed by fires. Some are wildfires, but in Indonesia, the worst-affected country, the [vast majority](#) are reported to be deliberately started. For small-scale 'slash and burn' farmers, fire is a [cheap](#) way of clearing land, and the ashes can be used to fertilise the soil, which is abandoned a few years later after it stops being productive. Evidence

### Can palm oil be sustainable?

Responding to consumer concerns about deforestation, many companies (for example, in the [UK](#)) offer products that are either free of palm oil or use only sustainably sourced palm oil. The most widely used certification scheme is that of the international Roundtable on Sustainable Palm Oil ([RSPO](#)). To be RSPO-certified, palm oil must not come from land that has been cleared by fire or destroying primary forest. Moreover, since November 2018, new plantations may not be established on peat soil.

Opinions on the RSPO are divided. The World Wildlife Fund sees the scheme as an '[essential tool](#)' in the drive to ensure that palm oil does not cause deforestation. On the other hand, Greenpeace [claims](#) that RSPO standards are not strict enough and that in any case not all participants in the scheme meet their commitments.

Besides, just 19 % of global palm oil production is certified as sustainable. The two biggest export markets for south-east Asian palm oil are China and India, where sustainability is less of a priority for consumers than in Europe, where [74 %](#) of palm oil is RSPO-certified.

Map 2: Forest fires, August-November 2015  
Visible Infrared Imaging Radiometer Suite fire alerts



Source: [Global Forest Watch](#).

suggests that larger palm oil companies also sometimes clear forests by fire, despite their [claims](#) not to do so.

Agriculture-driven deforestation is the cause as well as the effect of many large-scale fires. Peat soils are created when vegetation decomposes in waterlogged conditions. Indonesia is thought to have [225 000 km<sup>2</sup>](#) of peatland, one of the largest areas in the world. Growing on waterlogged soil, peat forests do not easily burn. However, when the land is cleared and drained to prepare it for agricultural cultivation, it becomes more flammable. Peat fires can spread underground and are extremely [difficult](#) to put out. In 2015, fires spread across [26 000 km](#) of land, mostly on the islands of Kalimantan and Sumatra – an area nearly the size of Belgium (Map 2).

## Logging

Like palm oil, timber is a valuable commodity and a major export for south-east Asian countries. In natural forests, harvesting timber selectively and in limited quantities gives forests time to regenerate. However, not all logging is sustainable: clear-cutting, in which swathes of trees are felled indiscriminately, leaving behind large areas of deforested land, is a common [practice](#).

South-east Asian timber exports come not only from natural forests, but also from industrial plantations. Between 2001 and 2016, an estimated [15 %](#) of the forests lost in Indonesia were cleared to make way for such plantations. On the other hand, mature plantations also help to [preserve](#) natural forests by providing an alternative, renewable source of timber.

## Why is deforestation a problem?

### Biodiversity loss

South-east Asia is home to around [one-fifth](#) of the world's species, and is one of the most biologically diverse regions on the planet. However, as deforestation destroys natural habitats, large mammal species such as orang-utans, elephants, tigers and rhinoceroses together with thousands of lesser-known (and in some cases, still undiscovered) animals and plants are at risk of being lost for ever.

The highest concentrations of biodiversity are found in **primary** forests – forests that have either never been disturbed by human activity or have been left alone for long enough to fully recover. Between 2001 and 2019, south-east Asia lost [150 000 km<sup>2</sup>](#) of primary forest. Slightly over [one-third](#) of south-east Asian forests are still in this category.

Not all tree-clearing leads to permanent deforestation. Left to themselves, cleared areas will [regenerate](#) spontaneously within a few decades. Indeed, many of the region's supposedly [virgin](#) forests have probably been cleared at some point or other in their history. However, it can take **secondary forests** (i.e. forests that have grown back on cleared land) [thousands](#) of years to recover their original biodiversity. There is even bigger biodiversity loss in man-made plantations; compared to natural forests, oil palm plantations have around [three-quarters](#) fewer animal species.

### Timber certification schemes

To curb illegal logging, Indonesia's SVLK (timber legality assurance) scheme requires exporters to prove that their timber has been produced from legal and sustainable sources. Under the EU's 2014 [voluntary partnership agreement](#) (VPA) with Indonesia, SVLK-certified timber is considered to meet EU standards and can therefore access European markets. A second VPA has been concluded with Vietnam but has not started operating yet; Thailand and Laos are also negotiating VPAs.

National licensing schemes, such as the SVLK, cover exports to all countries, not only to the EU, and should in theory make it impossible to export unsustainable illegal timber. However, huge volumes of south-east Asian timber escapes such controls by being smuggled across borders. Much of it ends up in China, or even – after being 'laundered' as legal timber – in Europe. Some NGOs claim that Vietnam has become a major [hub](#) for laundering illegal timber from countries such as Laos or Cambodia.



## Climate change

Forests are an important carbon sink. Clearing forests significantly increases carbon dioxide levels; not only are felled trees no longer able to absorb carbon but they also release previously stored carbon into the atmosphere when burned or left to biodegrade. Altogether, tropical deforestation contributes around [one-fifth](#) of the world's greenhouse gas emissions; this largely explains why Indonesia's emissions relative to the size of its economy are [higher](#) than any other large country.

For several weeks in 2015, Indonesia was also the world's [top emitter](#) in absolute terms, overtaking the US and China as fires raged across millions of hectares of forest. As explained above, many of the fires were in formerly forested areas with peaty soil. Peat is particularly high in carbon; on average, Indonesian peat forests store [12 times](#) more carbon than other tropical forests on mineral soil. As a result, carbon emissions from Indonesian peatland fires are [far higher](#) than equivalent areas of forest fires in the Amazon.

Eventually, the capacity of cleared land to absorb carbon is regenerated as trees grow back. According to one [study](#), naturally growing secondary forests had recovered 90 % of the biomass (i.e. amount of living vegetable matter, by weight) lost by land-clearing after 66 years. However, plantations tend to have much less biomass ([-80 %](#), in the case of oil palms) and therefore less carbon absorption than the forests they replace. Draining peaty soil in preparation for planting not only increases the risk of fires but also causes peat to decompose, releasing carbon dioxide into the atmosphere over a period of many years.

## How can deforestation be stopped?

### A change of mind-set?

It has become increasingly clear that deforestation has economic as well as environmental costs. In their natural state, forests deliver multiple economic benefits. Trees provide [protection](#) from floods and landslides; in the longer term, they also curb climate change, to which countries such as the Philippines, Vietnam, Thailand and Myanmar are particularly [vulnerable](#). Malaysia's forested national parks are among the country's top attractions, helping the tourist sector to generate nearly [15 %](#) of GDP. Conversely, deforestation heightens the risk of forest fires, which, as already mentioned, have repeatedly caused severe economic damage in Indonesia. Taking these factors into account, one [analysis](#) suggests that in most countries, the additional costs caused by deforestation outweigh the economic benefits of increased agricultural production.

Growing awareness of the need for sustainable development, both as an economic and an environmental imperative, has encouraged a gradual change of mind-set in south-east Asia, as in other parts of the world. Deforestation is increasingly seen as a serious problem; governments and other stakeholders are now making determined efforts to tackle it.

### International initiatives to protect forests

South-east Asian countries have signed up to a series of international commitments, including the 1994 UN [Framework Convention on Climate Change](#) (UNFCCC). Given that forests play a major role in climate change, the parties to the convention negotiated REDD+ ([Reduced Emissions from Deforestation and Forest Degradation](#)), a scheme under which developing countries receive financial

### South-east Asia's haze problems

Every year, Indonesian forest fires spew out huge clouds of smoke. Again, the problem is particularly acute on peat, which produces the most noxious particles. The resulting haze spreads across the region, closing down schools, businesses and airports, and keeping people indoors. The World Bank estimates that the forest fires of 2015 and 2019 cost Indonesia 1.8 % and 0.5 % of GDP respectively, due to both direct damage caused by fire and to haze-related disruption; neighbouring countries suffered smaller but still significant losses – [0.2 %](#) for Singapore in 2015. Even more serious is the health impact of respiratory problems caused by haze: in 2015 as many as [100 000](#) premature deaths in south-east Asia. Haze is also a cause of tensions between Indonesia and its neighbours; in 2015, Singapore's foreign minister [expressed](#) anger at Jakarta's 'complete disregard' for the people of the region.

support and rewards for efforts to curb deforestation. One such funding mechanism is Norway's [International Climate and Forest Initiative](#), with up to 3 billion Norwegian kroner (€280 million) a year for partner countries (in south-east Asia: Indonesia and Vietnam).

REDD+ is enshrined in the 2016 [Paris Agreement](#) as a significant tool to reduce carbon emissions and mitigate climate change. To contribute to the Paris Agreement's objective of limiting global warming, [Indonesia](#) aims to cut annual deforestation to less than half its current level, while [Vietnam](#), [Cambodia](#) and [Myanmar](#) have pledged to increase the area of land under forest cover.

The UNFCCC is flanked by the 1993 [Convention on Biological Diversity](#), which aims to preserve ecosystems and species. In 2010, the parties to the convention agreed to the more specific [Aichi Biodiversity Targets](#), which include halving deforestation rates by 2020, with significant reduction of forest degradation and fragmentation, and restoring 15 % of degraded forests. [Goal 15](#) of the UN's 2015 [sustainable development goals](#) emphasises the need to sustainably manage forests, halt deforestation and restore degraded forests.

The 2014 [New York Declaration on Forests](#) aims at halving the rate of natural forest loss by 2020, and ending it altogether by 2030. The goals of the 2011 [Bonn Challenge](#) are similarly ambitious: restoring 150 million hectares of the world's deforested and degraded land by 2020, and 350 million hectares by 2030. Both initiatives have been signed by governments, NGOs and companies, including from south-east Asia.

## National measures

So far, there has been little progress in south-east Asia towards the above objectives, and deforestation rates remain high. Nevertheless, international commitments have encouraged governments to take actions that, if followed through, could help to improve the situation. For example, [385 000 km<sup>2</sup>](#), around one-tenth of the region's forests, is now in protected areas such as national parks and nature reserves.

Some of the strongest measures have been taken in **Indonesia**, under intense international and domestic pressure to bring forest fires under control. In 2011, Indonesia placed a temporary moratorium on forest-clearing for logging or agricultural purposes in primary forest and peatland; in 2019, this became [permanent](#). Since the peak fire year of 2015, concession-holders are required to protect areas with a peat layer of 3 metres or thicker, and to rehabilitate those which have already been cleared. A Peatland Rehabilitation Agency has been set up to oversee restoration of 25 000 km<sup>2</sup> of peatland. After a second wave of fires in 2019, the Indonesian government [closed down](#) dozens of plantations and threatened those responsible with legal action (however, past [experience](#) suggests that few companies are ever prosecuted and fines are rarely collected).

Indonesia has also made efforts to address other aspects of deforestation. New [regulations](#) and procedures have made it somewhat easier for indigenous communities to acquire legal rights to traditional lands. As of 2017, 190 km<sup>2</sup> of forest had been officially recognised in this way – a small step towards curbing land-grabbing by loggers and oil palm planters in community forests.

Stronger protection for Indonesia's forests has yielded [results](#): while Indonesia still lost over 10 000 km<sup>2</sup> of tree cover a year between 2017 and 2019, this is a considerable improvement on the previous three-year period, when tree clearing averaged around double that, peaking at 24 000 km<sup>2</sup> in 2016. As a reward for this progress, in May 2020 Norway [announced](#) that it would pay Indonesia US\$56 million. This sum represents the first instalment of a total US\$1 billion promised by Oslo in 2010 as an incentive for Jakarta to reduce deforestation.

In line with its commitments under the Aichi Biodiversity Targets, in 2011 the **Philippines** launched a [national greening programme](#), which after a successful first phase now has the ambitious goal of re-planting trees on all remaining degraded former forestlands (some 71 600 km<sup>2</sup>) by 2028. This approach has its limitations: newly replanted forests do not fully compensate for the loss of more

biodiverse primary forests, which are still being cut down. Nevertheless, by 2028 the country hopes to bring down the net loss of natural forest to zero.

In 1989, **Thailand** became one of the first countries to [prohibit](#) logging in natural forests, while **Myanmar** has [banned](#) exports of teak from natural forests since 2014. For its part, **Malaysia** has a long-standing [pledge](#) to keep at least 50 % of its land area under natural forest cover.

## Why government measures often fail: Policy incoherence

Government measures do not always have the desired impact. One reason is that, like their counterparts all over the world, south-east Asian governments often struggle to reconcile economic and environmental objectives. Political leaders may well understand the need to preserve forests, but they are also under pressure to deliver jobs and growth. For example, Indonesia is building a new [highway](#) across Papua, as part of its plan to bring prosperity to this impoverished and restive region. So far, Papua has kept more of its natural forests than other parts of the country, but this could change once the new road opens up remote areas to activities such as agriculture.

Recently, Indonesia has taken several steps that could undermine its forest protection efforts. In July 2019, it [watered down](#) its requirement for plantations to preserve and restore peatland, by narrowing its scope to only the areas with the deepest peat layers. The government is [currently](#) considering restructuring the country's Peatland Restoration Agency once its mandate expires in December 2020 – potentially, a further blow to the country's peatlands.

Even when designed to protect forests, government actions can often have unintended effects. Indonesia's requirement to rehabilitate cleared peat forest may [encourage](#) some plantations to set fires, in order to destroy evidence of non-compliance. The country's ambitious biofuel [targets](#), included in its climate change [commitment](#) under the Paris Agreement, are another example; given that palm oil is the main feedstock for biodiesel, these risk causing further deforestation.

## Rule of law problems

Spreading over vast tracts of often sparsely populated land, south-east Asian forests are not easily policed. Enforcement challenges are exacerbated by deeply rooted corruption. Indonesia, Vietnam, Thailand and the Philippines all have low scores (less than 50 out of 100) in Transparency International's [Corruption Perceptions Index](#), while Cambodia, Myanmar and Laos are among the most corrupt countries in the world. High compliance costs (for example, Indonesian companies can spend [US\\$10 000](#) per hectare per year on restoring peat forests) and lucrative profits create strong incentives to evade government rules.

Loggers routinely flout restrictions on harvesting timber in natural forests: in 2013, 60 % of Indonesian timber was [estimated](#) to be illegal, compared to 35 % for Malaysia, and a massive 80 % for Laos. Law enforcers and activists are often powerless against well-connected, sophisticated and sometimes violent [criminal networks](#).

The gap between legal safeguards and what happens in practice is reflected in the situation of nominally protected areas such as national parks. For example, forests in Sebangau National Park in Kalimantan, a critically important habitat for orang-utans, are [reported](#) to have been cleared by loggers and oil palm plantations. In Sumatra, [half](#) of the mostly man-made fires that caused the 2015 haze crisis were in protected zones. One [study](#) suggests that in south-east Asia as a whole, there is little or no difference between deforestation rates in protected and unprotected areas.

## The EU and south-east Asian forests

Preventing deforestation has become a major priority for EU development cooperation. For 2014-2020, the EU allocated [€15.6 million](#) for **FLEGT** (Forest Law Enforcement, Governance and Trade) in Asia, mostly in south-east Asia. FLEGT [projects](#) help partner countries to stamp out illegal logging, for example through improved monitoring and legal reforms, and by involving key stakeholders

such as companies, civil society and local communities. By facilitating timber exports to the EU markets, the EU's voluntary partnership agreements with south-east Asian countries provide a strong incentive for FLEGT (see box on Timber certification schemes above).

In parallel with FLEGT, the EU's **REDD** Facility (Reducing Emissions from Deforestation and Forest Degradation) received €8 million of European funding for worldwide projects in 2011-2017. The focus is on land-use governance – helping partner countries to prevent deforestation by managing the allocation of land for purposes such as conservation, agriculture and forestry.

Five EU countries, together with the UK and Norway, have signed the Dutch-led [Amsterdam Declarations](#) on deforestation and sustainable palm oil. Although not a signatory of the declarations, Belgium is one of several other countries that have [committed](#) to using only certified sustainable palm oil. However, there are no EU-wide restrictions barring unsustainable palm oil. This could change soon: as part of the **European Green Deal**, which aims to make the EU carbon-neutral by 2050, in December 2019 the European Commission [promised](#) regulatory and other measures to promote imports that do not involve deforestation and forest degradation.

In 2009, the EU's Renewable Energy Directive set a target of 10 % of transport fuels in Member States to come from renewable sources by 2020. Critics of EU **biofuels policy** argue that this target has boosted demand for palm oil; at present, [two-thirds](#) of EU imports are used as biodiesel feedstock. [Studies](#) show that when forests are cleared for plantations, palm oil-based biodiesel produces more greenhouse gas emissions than fossil fuels (however, this does not apply to oil from plantations on land that is already degraded). In response to such concerns, in 2018 the EU amended its [Renewable Energy Directive](#). As a result, biofuels from crops such as palm oil that carry a high risk of deforestation will no longer count towards the biofuels target from 2030 on.

Indonesia and Malaysia have responded sharply to what they see as unfair EU restrictions on palm oil. In December 2019, [Indonesia](#) filed a dispute with the World Trade Organization, arguing that the amended Renewable Energy Directive is discriminatory, and [Malaysia](#) plans to do likewise. Palm oil-related tensions stand in the way of, for example, an EU-Malaysia [trade deal](#).

The European Parliament supports EU efforts to preserve the world's forests. It has repeatedly expressed concerns about deforestation as a threat to the climate and biodiversity, for example in its 2017 [resolution](#) on palm oil, its January 2020 [resolution](#) on the European Green Deal, and a 2020 [report](#) on the EU's role in protecting the world's forests, due to be voted during the Parliament's September 2020 plenary session (rapporteur: Stanislav Polčák, EPP, Czechia). The latter report welcomes EU efforts to curb deforestation but wants to see more ambition. In particular, it calls for an 'EU legal framework based on due diligence, in order to ensure sustainable and deforestation-free supply chains for products ... on the EU market'.

## DISCLAIMER AND COPYRIGHT

This document is prepared for, and addressed to, the Members and staff of the European Parliament as background material to assist them in their parliamentary work. The content of the document is the sole responsibility of its author(s) and any opinions expressed herein should not be taken to represent an official position of the Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

© European Union, 2020.

Photo credits: © Richard Carey / Adobe Stock.

[eprs@ep.europa.eu](mailto:eprs@ep.europa.eu) (contact)

[www.eprs.ep.parl.union.eu](http://www.eprs.ep.parl.union.eu) (intranet)

[www.europarl.europa.eu/thinktank](http://www.europarl.europa.eu/thinktank) (internet)

<http://epthinktank.eu> (blog)

