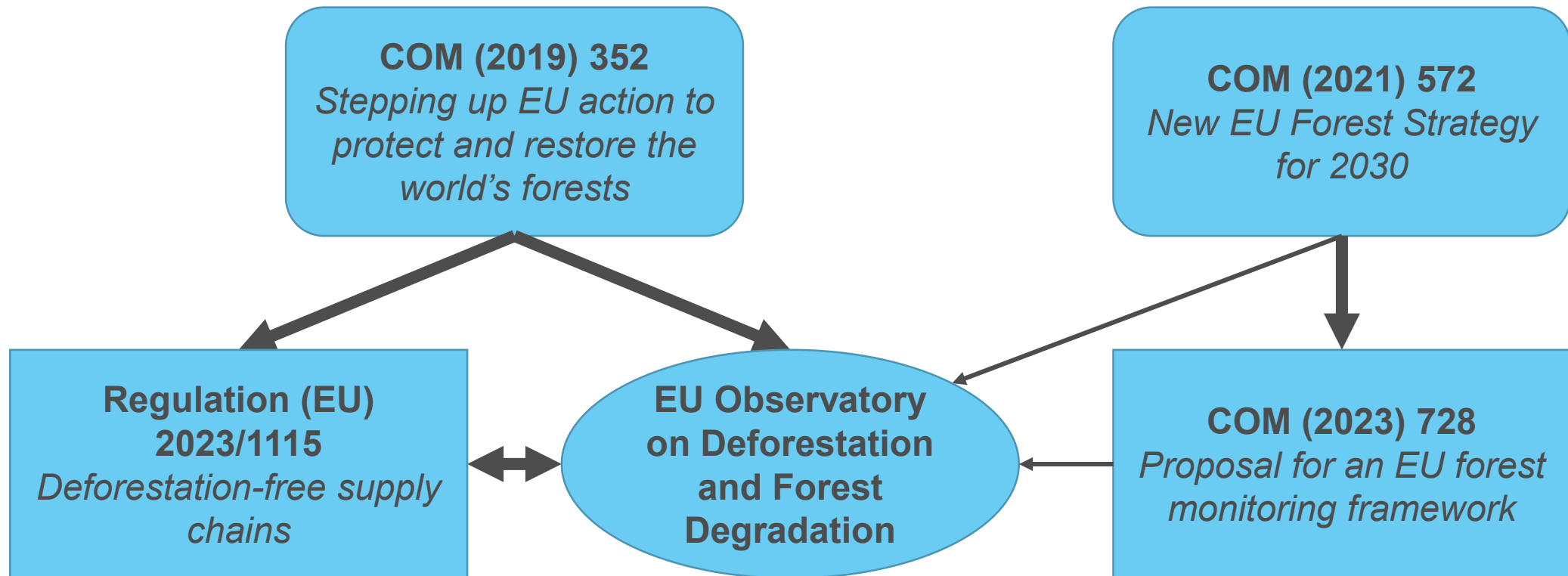


Introduction

Alessandra Zampieri, Director
Greet Janssens-Maenhout, Head of Unit

EU Observatory on Deforestation and Forest Degradation in the Policy context



“EU Observatory on deforestation, forest degradation, changes in the world’s forest cover, and associated drivers” – Legal basis

Introduced in COM(2019) 352 final “Stepping up EU Action to Protect and Restore the World’s Forest” as action by the Commission

- “The Commission will [...] establish an **EU Observatory on deforestation, forest degradation, changes in the world’s forest cover, and associated drivers**. The objective of this is to **facilitate access to information on supply chains** for public entities, consumers and businesses.”

Noted in Regulation (EU) 2023/1115 on Deforestation-free supply chains:

- “The EU Observatory should **facilitate access to information on supply chains** for public entities, consumers and business, **providing easy-to-understand data and information** linking deforestation, forest degradation and changes in the world’s forest cover to Union demand for, and trade in, commodities and products. The EU Observatory should thus **support the implementation of this Regulation by providing scientific evidence** with regard to global deforestation and forest degradation and related trade.”
- The EU Observatory should:
 - Provide for land cover maps, including with time series since the cut-off date
 - Provide for a range of classes allowing landscape composition
 - Participate in the development of an early warning system combining research and monitoring capacity.
 - Cooperate with the competent authorities, relevant international organisations and bodies, research institutes, non-governmental organisations, operators, traders, third countries and other relevant stakeholders
 - Be operational as soon as possible.

“EU Observatory on deforestation, forest degradation, changes in the world’s forest cover, and associated drivers” – Legal basis

Noted in EUDR FAQ Question 61: “When will the EU Forest Observatory be operational? How is this going to help companies implement the Regulation?”

- Build on already existing monitoring tools to **support the implementation of this Regulation by providing scientific evidence, including land cover maps on the cut-off date.**
- A tool to help companies to ensure compliance the EUDR, for example to assess the deforestation risk.
- Will **cover all forests worldwide**, including European forests
- In coherence with e.g. the proposal for an EU forest monitoring framework and the Forest Information System for Europe (FISE).

Noted in COM (2021) 572 “New EU Forest Strategy for 2030”

- will **develop Earth-Observation-based monitoring tools for forests** that may be operationalized by Copernicus and taken up by FISE as part of the integrated forest monitoring system.

Noted in COM (2023) 728 “Proposal for a monitoring framework for resilient European forests”

- Link to the EU Observatory on Deforestation, Forest degradation and Associated Drivers

Implemented by the JRC

Co-legislators view on global forest monitoring

EU Council (ST 15151 2019 INIT)

- Welcomes observatory announcement in COM(2019) 352
- Build on existing tools and mechanisms
- Consider feasibility of early alert mechanism for areas at risk of deforestation

European Parliament (P9_TA(2020)0285)

- Welcomes observatory as announced in COM(2019) 352
- Monitoring of production and trading of commodities associated with deforestation
- Underlines role of research and monitoring programs such as Copernicus for early warning systems

Presentation of the main components of the EU Observatory on Deforestation and Forest Degradation

Frédéric Achard

Components of the EU Observatory on Deforestation and Forest Degradation

Global forest monitoring

Global forest cover 2020

Forest attributes

Forest cover changes and drivers

Tropical moist forest

Production and Trade of Commodities

Production from FAO

Trade flows

'Biotrade' tool

Tools for Forest Monitoring

Near real time disturbance analysis

Landscape patterns analysis

EU forest tree species distribution

Spatial reference data for forest disturbances in EU

'IMPACT' Image processing toolbox

JRC has c. 30 years of experience in Global Land Cover mapping

Published by: **EUROPEAN COMMISSION**
Information for Europe
Joint Research Centre

In association with: **UNEP**

On behalf of:
 The Global Land Cover Partnership

Global Land Cover for the Year 2000

Land cover classification produced with data acquired in 2000 from the VEGETATION instrument, onboard the SPOT4 satellite.

Developing the land cover classification maps for Europe is in cooperation with the United Nations Environmental Programme and the Food and Agriculture Organization, in the context of the Global Land Cover Partnership.

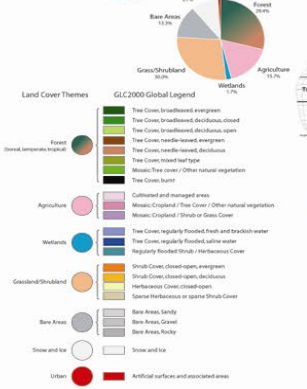
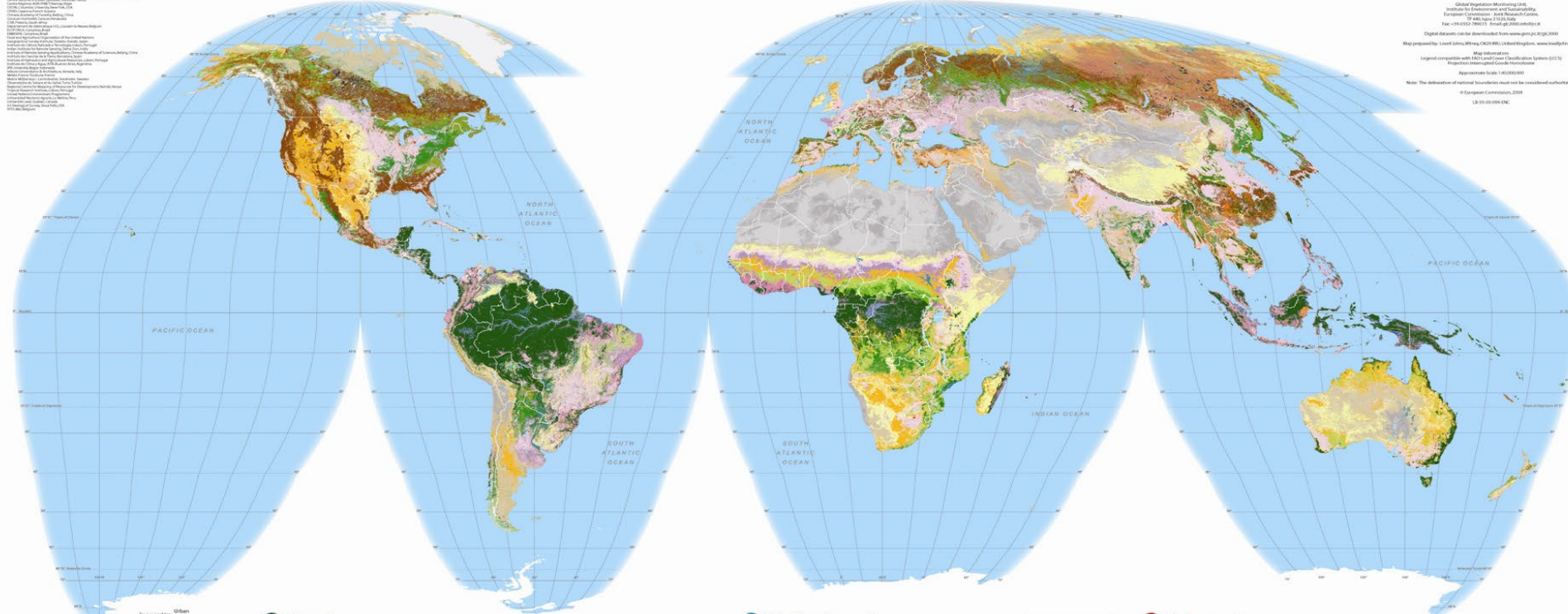
Edited by:
 G. Bonaventura, A. Buisson & S. Beaudoin

For more information, please contact:
 Global Land Cover Partnership
 Global Population Monitoring Unit
 National Institute of Research for the Environment and Geology
 100 rue de la Ferrière, 11500 Châlons-en-Champ
 France - 03 25 63 21 22 (fax)
 Fax: +33 (0)3 25 63 21 22
 Email: gmlcp@cea.fr

Digital elevation data for land cover mapping are from SRTM30 PLUS
 Map prepared by: Lucretia Schmitt, Ph.D., UNEP/WHO/FAO, Land Use/Remote Sensing, www.biodid.com

Map Information:
 Legend: compatible with ArcGIS and/or ArcView
 Project: International Geospatial Reference System (IGRS)
 Agreements: scale 1:80000000

Note: The delineation of national boundaries does not represent official information.
 © European Commission, 2004
 LB 03 00 000-EN-C



Forest Forests cover almost one third of the Earth's land surface. They range from the broad-leaved evergreen tropical rainforests in the equatorial belt, to the boreal forests of Russia and Canada. Forests play an important role in regulating our climate through their influence on energy water and gas exchanges with the atmosphere and through acting as a source and sink in biogeochemical cycles. They also a key part in our social, cultural and economic lives and are home to some of the most remote, inaccessible and largely 'untouched' forests of our planet, yet these regions are increasingly a focus for many economic activities.

Broad-leaved deciduous and needle-leaved evergreen forests largely make up the temperate forests of the world. The history of human presence in these regions means that only fragments of natural forest remain, and the majority of the world's largest tropical rainforests are found in the Amazon basin of South America, the Congo basin of Central Africa, and on the continent and islands of Southeast Asia. They cover an area approximately 1.5 times the size of Australia (11.5 million km²). The tropical rainforest contains the most diverse life forms on Earth, providing habitats for at least half of the world's plant and animal species, and for a large number of medicinal plants. The use of plant world's medicines used today come from tropical rainforests, and the full extent of this biological resource has yet to be determined.

Boreal forests are the largest continuous forest area on Earth. They are located in North America and Northern Eurasia in areas where the summer temperatures rarely if ever rise above 10°C. They contain mostly needle-leaved evergreen forest types, such as spruce and pine in Canada and Scandinavia, or needle-leaved deciduous forest types, such as larch in Siberia. The boreal forests contain some of the most remote, inaccessible and largely 'untouched' forests of our planet, yet these regions are increasingly a focus for many economic activities.

Grass/Shrubland Grasslands and shrublands cover almost the same land area of our planet as is covered by forests. The grasslands of the world are found in hot and cold climates, over all continents, in extensive areas of grasslands can be seen in Africa, the prairies of North America, the Llanos and Pampas of South America, the outback of Australia, and the steppes of Central Asia, extending into Central Europe.

Grasslands and shrublands are part of environmental gradients from desert to grass and forest. The grasslands can be fairly seen in the Sahel region of Africa, south of the Sahara desert, which consists a component of grassland underneath the shrub tree, as well as scattered shrub within grassland. These landcover types make up the savannas of Africa and South America, which are maintained by regular seasonal burning. It is estimated that more than 2.5 million km² of grasslands and shrublands from these fires is recovered by new plant growth in subsequent years. Nevertheless, the scale of these fires is such that they are important role in the global biogeochemical cycles, and they are also an important part of the world's land cover types are also an important part of the world's environmental gradients from desert to grass and forest. The grasslands can be fairly seen in the Sahel region of Africa, south of the Sahara desert, which consists a component of grassland underneath the shrub tree, as well as scattered shrub within grassland.

Wetlands Wetland ecosystems represent only a tiny fraction of our planet's surface, but they play a disproportionately large role in the global hydrological cycle. Wetlands are hot spots of biodiversity, providing nesting grounds for migrating birds, and a home for reptiles and amphibians. Wetlands cover a large range of landcover conditions. They can be flooded, seasonal, or permanent wetlands, such as the flooded savannas of the Pantanal in South America and the Georgia temperate forests of the United States. Wetlands also include the flooded edges of the salt lagoons of western Russia or flooded lowlands of Australia.

Nigeria wetlands of Southern Sudan, mangroves, like the mangroves of Bangladesh are dense coastal forests, inundated by the sea water. Swamp forests, such as in the Congo basin of Central Africa, or Amazon basin of South America, are created by regular freshwater flooding.

Agriculture 15.7% of the Earth's land surface is responsible for feeding most of the people most of the time. Human ingenuity has overcome natural limitations to grain food crops in almost all conditions. Agriculture in Asia from across all continents, the gain in food from North America, the production of food from Europe, and the rice fields of Asia in Kazakhstan, the large areas in northern India, eastern China, and southern Brazil are particularly notable.

Agricultural lands used for both subsistence farming within the home producer food to be her own family, and commercial agriculture, where the food is produced for national or international markets. Large commercial agricultural areas are found in the Americas, and Europe. There these are the most important areas in the world. The global report and report of food to the consumer markets of the developed world means that the most important type of land product is available, during any season. This has been made possible, for example, by the use of 80% of the world's freshwater for irrigation. On the other hand, inappropriate agricultural practices can have catastrophic environmental consequences such as desertification and erosion, and affecting the quality of our water in the ground, in rivers, in lakes, and in the sea.

Urban Urban areas are home to 3 billion of the world's 6 billion inhabitants, but they only cover 0.2% of our planet's land surface. Urban areas have experienced almost a 10-fold increase in population since the last century, with the most rapid increase in the last few decades. The world's urban population is projected to increase from 37% to 55% by the year 2050, while the situation in Europe and North America will remain much as it is today.

The process of urbanization is usually related to economic growth, and typically goes hand in hand with large changes in social, political and demographic conditions. Improvements in communications and infrastructure have connected urban centres around the world, creating a global network of cities. The urban areas accounts for half of the global population, and regional economies. In the developing world people continue to move to urban areas either because of the perceived economic and social benefits, pull factors, or to escape hardship in rural areas (push factors). Due to the migration of people to urban areas and out of rural areas, the urban population is projected to increase by 33% in the next 50 years. This has a profound impact on the way in which the world's urban areas are managed.

In addition to the effects on the world's economic and social life, urban areas directly influence the planet's climate system. Each city, urban areas are a local source of energy consumption, and thus a source of pollutants and greenhouse gases. The world's urban areas are a local source of energy consumption, and thus a source of pollutants and greenhouse gases. The world's urban areas are a local source of energy consumption, and thus a source of pollutants and greenhouse gases.

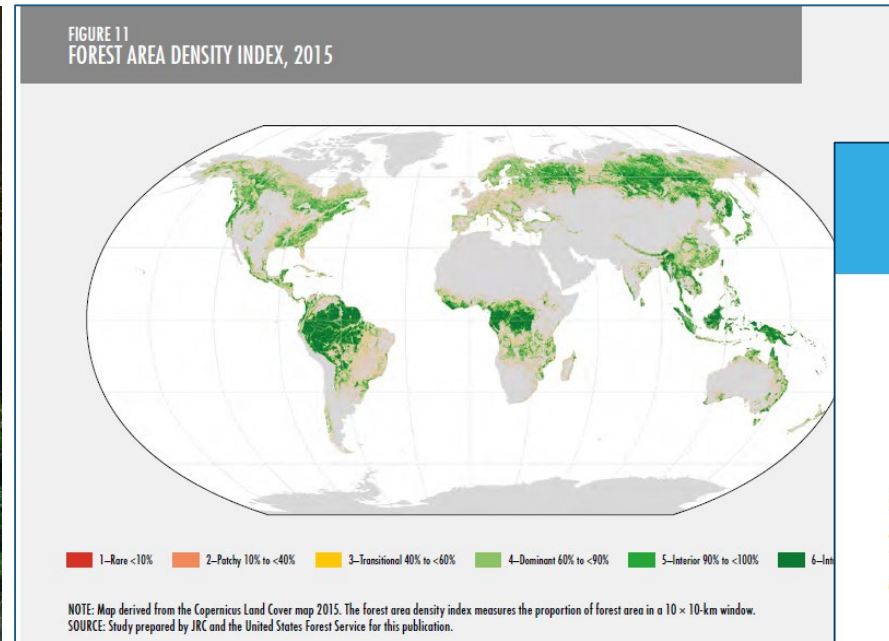
Bare Areas 23% of our planet's land surface has little or no vegetation (Desert, Snow and Ice). Deserts are areas that experience small amounts of rainfall. The Sahara is the world's largest desert followed by the Gobi desert of the south of Mongolia and the north of China. Because of the harsh conditions, there is very little population density, and most of the land is used for nomadic herding.

Deserts are amongst the least well managed and monitored land cover types, as they play an important part in our climate. Deserts can also impact surrounding areas, for example, the desert locust can cause severe damage to agriculture and settlements in neighbouring regions.

They are home to globally important minerals, as well as specific plants, animals, and the extreme hot or cold. Parts have been adapted by having very low but renewably fast growing periods on the sea coast of an in the desert. The desert animal life is a hot desert is usually nocturnal, camouflaged, small animals, which look themselves from the sun by burrowing into the ground.

Snow & Ice Around a third of the Earth's land surface can be covered seasonally by snow, and 10% of the land is permanently covered. The largest expanse of ice in the world is found in the ice sheets of Antarctica. As well as liquid ice, ice and snow are also found in the mountainous regions of the world, in ice-caps and glaciers. The snow not only play an important role in the global climate system, by affecting solar energy and absorbing carbon temperatures, but are also the largest store of freshwater in the world and affect soil moisture and run-off. While only 2% of the world's water is stored in ice, the frozen water is a vital part of the water cycle. The snow cover also plays an important role in determining permafrost regions. The advance and retreat of glaciers advance and retreat. The advance and retreat of glaciers advance and retreat. The advance and retreat of glaciers advance and retreat.

Global analysis of forest attribute layers



JRC scientific experience in global monitoring of forest cover

- Annual maps of evergreen forests over tropical biome at 30m resolution
- Identification of changes: deforestation, forest degradation and regrowth
- Characterisation of forest disturbances over time (1990-2022)
- Scientific outcome co-authored by scientists from INPE (Brazil) and CIFOR (Indonesia)

SCIENCE ADVANCES | RESEARCH ARTICLE

ENVIRONMENTAL STUDIES

Long-term (1990–2019) monitoring of forest cover changes in the humid tropics

C. Vancutsem^{1*}, F. Achard¹, J.-F. Pekel¹, G. Vieilledent^{1,2,3,4}, S. Carboni⁵, D. Simonetti¹, J. Gallego¹, L. E. O. C. Aragão⁶, R. Nasi⁷

Accurate characterization of tropical moist forest changes is needed to support conservation policies and to quantify their contribution to global carbon fluxes more effectively. We document, at pantropical scale, the extent and changes (degradation, deforestation, and recovery) of these forests over the past three decades. We estimate that 17% of tropical moist forests have disappeared since 1990 with a remaining area of 1071 million hectares in 2019, from which 10% are degraded. Our study underlines the importance of the degradation process in these ecosystems, in particular, as a precursor of deforestation, and in the recent increase in tropical moist forest disturbances (natural and anthropogenic degradation or deforestation). Without a reduction of the present disturbance rates, undisturbed forests will disappear entirely in large tropical humid regions by 2050. Our study suggests that reinforcing actions are needed to prevent the initial degradation that leads to forest clearance in 45% of the cases.



Use of JRC scientific outcomes to improve the understanding of impacts of tropical forest changes on the Climate

nature geoscience

Article

<https://doi.org/10.1038/s41561-023-01137-y>

Comparable biophysical and biogeochemical feedbacks on warming from tropical moist forest degradation

Received: 28 April 2022

Accepted: 27 January 2023

Published online: 02 March 2023

Check for updates

Lei Zhu¹, Wei Li^{1,2}, Philippe Ciais³, Jiaying He¹, Alessandro Cescatti⁴, Maurizio Santoro⁵, Katsumasa Tanaka^{3,6}, Oliver Cartus⁵, Zhe Zhao¹, Yidi Xu³, Minxuan Sun¹ & Jingmeng Wang¹

Tropical forests have undergone extensive deforestation and degradation during the past few decades, but the area and the carbon loss due to degradation could be larger than the losses from deforestation. Degraded forests also induce biophysical feedback on climate, as they sustain less cooling from evapotranspiration. Here we estimate the biophysical and biogeochemical temperature changes caused by tropical moist forest degradation using high-resolution remote sensing data from 2010. Degraded forests, including burned, isolated, edge and other degraded forests, account for 24.1% of the total tropical moist forest area. The land surface temperature of degraded tropical moist forests is higher than that of nearby intact forests, leading to a warming effect of 0.022 ± 0.014 °C over the tropics. The cumulative carbon deficit of degraded forests reaches 6.1 ± 2.0 PgC, equivalent to a biogeochemical warming effect of 0.026 ± 0.013 °C. Forest degradation caused by anthropogenic disturbances from 1990 to 2010 induces a daytime warming effect of 0.018 ± 0.008 °C and a carbon deficit of 2.3 ± 0.8 PgC. These values are of the same order of magnitude as those due to deforestation. Our results emphasize the importance of accounting for the combined biophysical and biogeochemical effects in mitigation pledges related to reducing forest degradation and the restoration of tropical forest.

Article

The carbon sink of secondary and degraded humid tropical forests

<https://doi.org/10.1038/s41586-022-05679-w>

Received: 25 April 2022

Accepted: 16 December 2022

Viola H. A. Heinrich^{1,2}, Christelle Vancutsem^{3,4}, Ricardo Dalagnol^{5,6,7}, Thais M. Rosan², Dominic Fawcett², Celso H. L. Silva-Junior^{8,7,8}, Henrique L. G. Cassol^{9,8}, Frédéric Achard¹⁰, Tommaso Jucker¹¹, Carlos A. Silva¹², Jo House¹, Stephen Sitch², Tristram C. Hales¹³ & Luiz E. O. C. Aragão^{2,5}

Check for updates

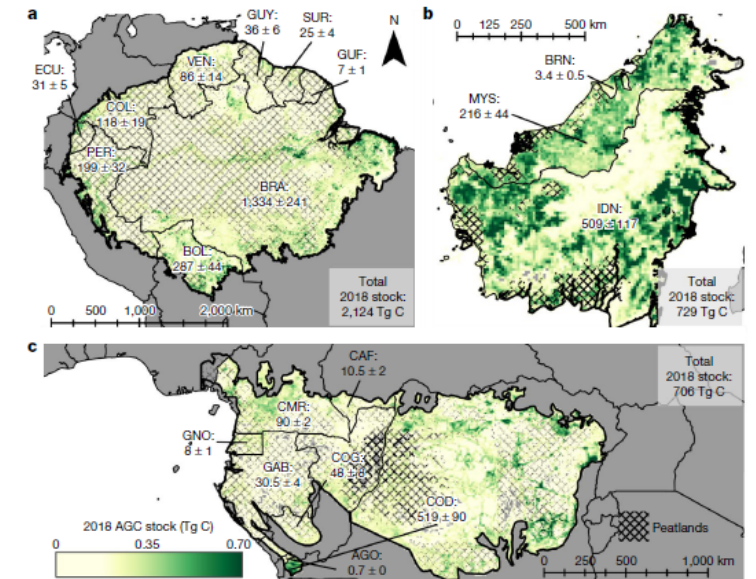
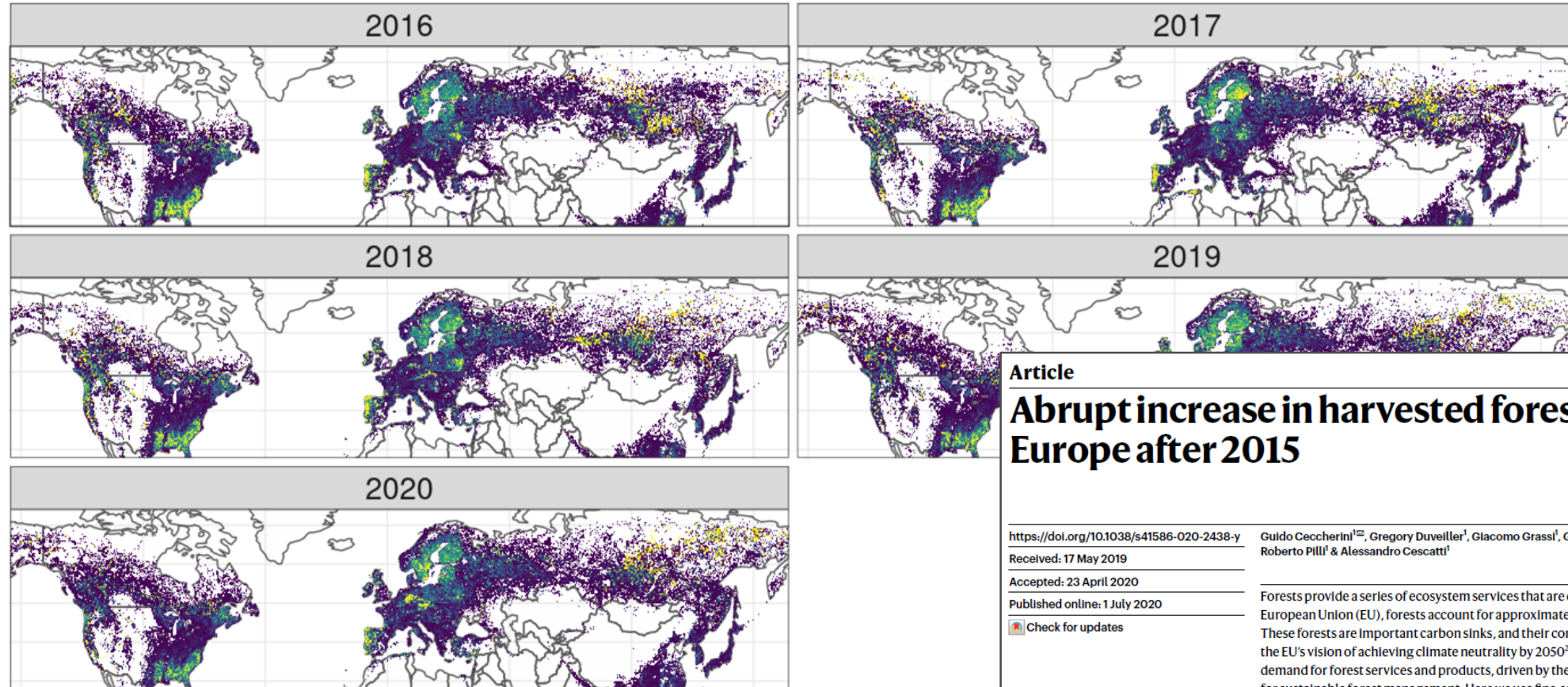


Fig. 3 | The modelled 2018 carbon stock in recovering forests (degraded and secondary forests) in the three main tropical forest regions. The carbon stock shows the total carbon that has accumulated since the last disturbance event using the region-wide regrowth models developed in this study for the Amazon (a), Borneo (b) and Central Africa (c). Values of the carbon stock (in Tg C) are aggregated to 0.1° grid squares and show the sum of degraded forests (Extended Data Fig. 6) and secondary forests (Extended Data Fig. 7), together representing recovering forest. Regions of peatland have been highlighted (see Methods) and are denoted by the hatching. Annotated values denote the

AGC stock and associated 95% confidence interval as estimated in this study using the Monte Carlo simulations per country, expressed using the ISO3 code for each country. Map created using ESRI's ArcGIS Pro (2.6.0). AGO, Angola; BOL, Bolivia; BRA, Brazil; BRN, Brunei; CAF, Central African Republic; CMR, Cameroon; COD, Democratic Republic of the Congo; COG, Republic of the Congo; COL, Colombia; ECU, Ecuador; GAB, Gabon; GNO, Equatorial Guinea; GUF, French Guiana; GUY, Guyana; IDN, Indonesia; MYS, Malaysia; PER, Peru; SUR, Suriname; VEN, Venezuela.

Global monitoring of harvest rate in clear-cut felling



Harvested Forest Per Year [%]



Article

Abrupt increase in harvested forest area over Europe after 2015

<https://doi.org/10.1038/s41586-020-2438-y>

Received: 17 May 2019

Accepted: 23 April 2020

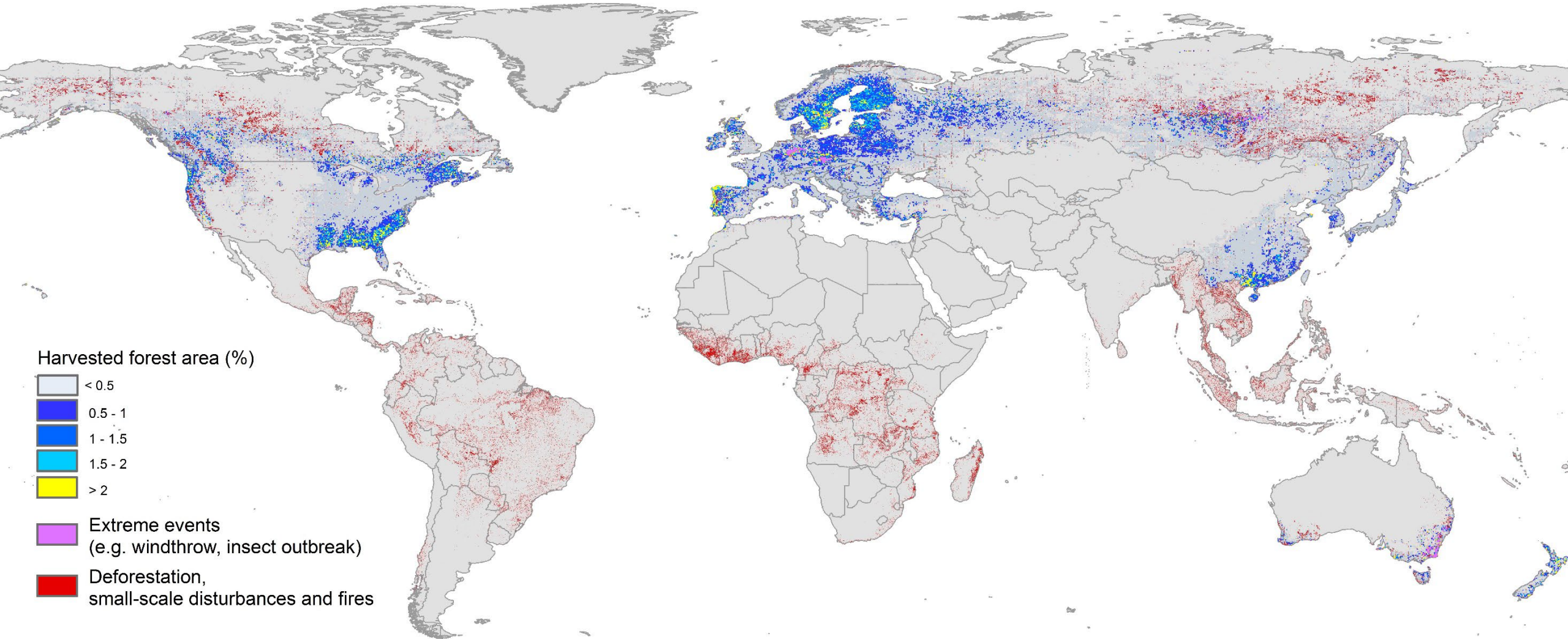
Published online: 1 July 2020

Check for updates

Guido Ceccherini^{1,2}, Gregory Duvellier¹, Giacomo Grassi¹, Guido Lemolne², Valerio Avitabile¹, Roberto Pilli¹ & Alessandro Cescatti¹

Forests provide a series of ecosystem services that are crucial to our society. In the European Union (EU), forests account for approximately 38% of the total land surface¹. These forests are important carbon sinks, and their conservation efforts are vital for the EU's vision of achieving climate neutrality by 2050². However, the increasing demand for forest services and products, driven by the bioeconomy, poses challenges for sustainable forest management. Here we use fine-scale satellite data to observe an increase in the harvested forest area (49 per cent) and an increase in biomass loss (69 per cent) over Europe for the period of 2016–2018 relative to 2011–2015, with large losses occurring on the Iberian Peninsula and in the Nordic and Baltic countries. Satellite imagery further reveals that the average patch size of harvested area increased by 34 per cent across Europe, with potential effects on biodiversity, soil erosion and water regulation. The increase in the rate of forest harvest is the result of the recent expansion of wood markets, as suggested by econometric indicators on forestry, wood-based bioenergy and international trade. If such a high rate of forest harvest continues, the post-2020 EU vision of forest-based climate mitigation may be hampered, and the additional carbon losses from forests would require extra emission reductions in other sectors in order to reach climate neutrality by 2050³.

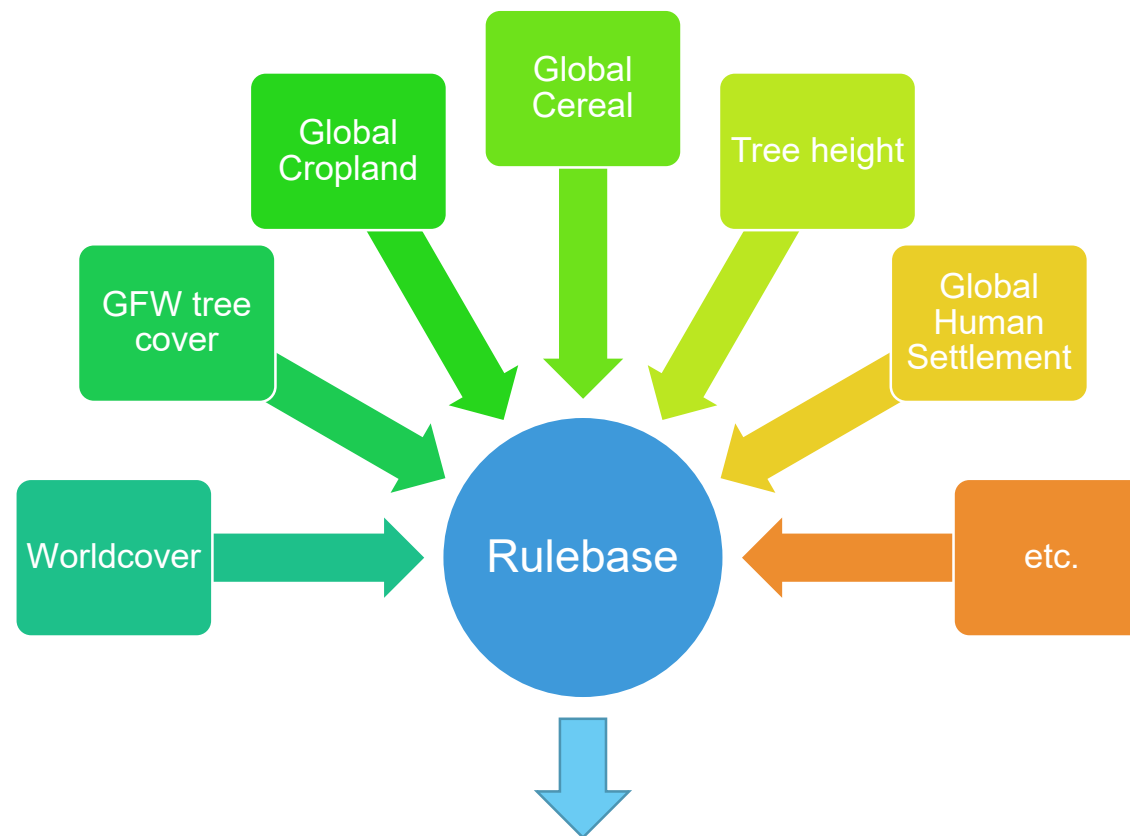
Global map of forest harvest rates and deforestation for year 2020



Presentation of Global forest map 2020

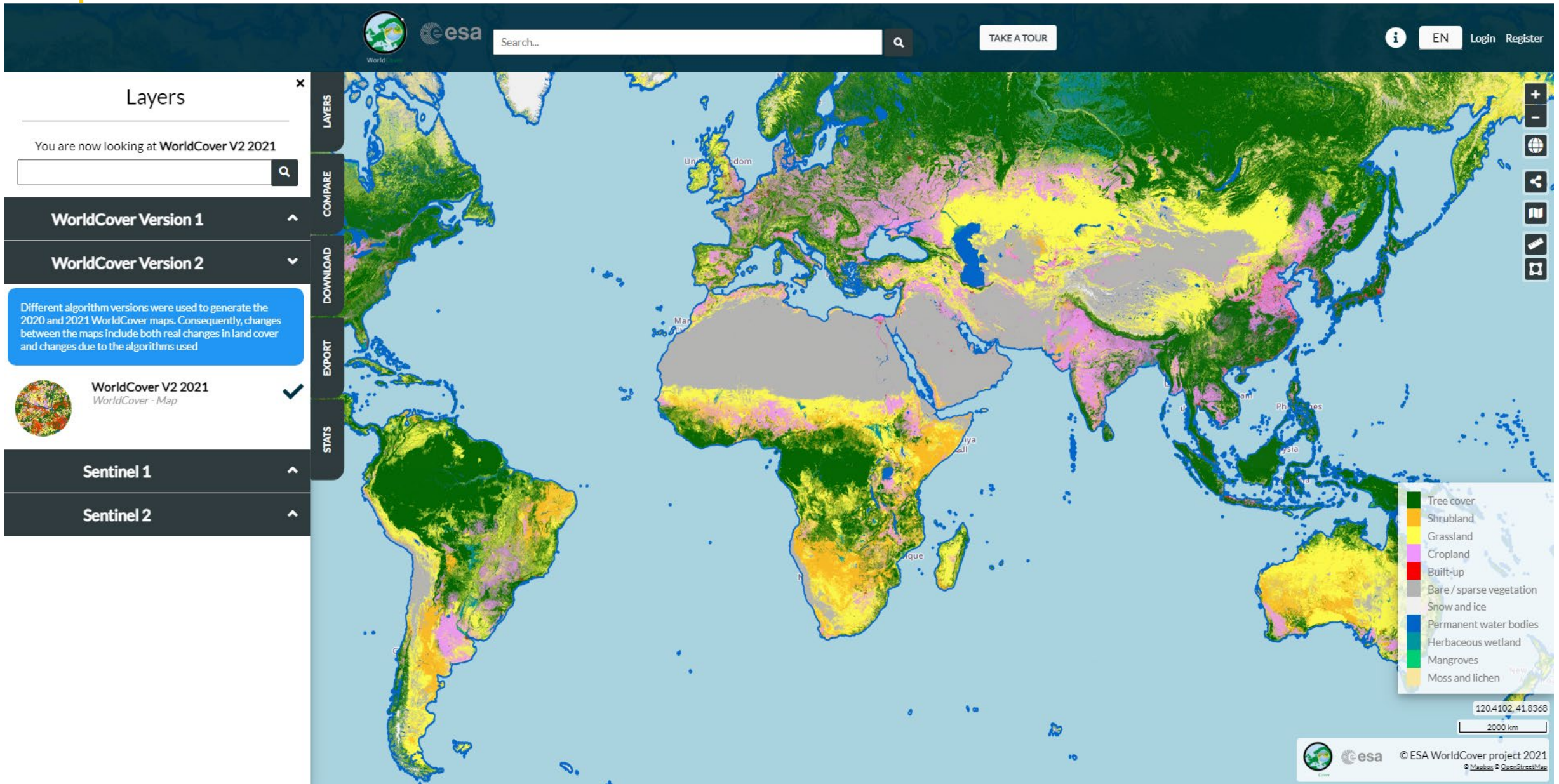
René R. Colditz

New Global forest cover map for year 2020 (version 1)

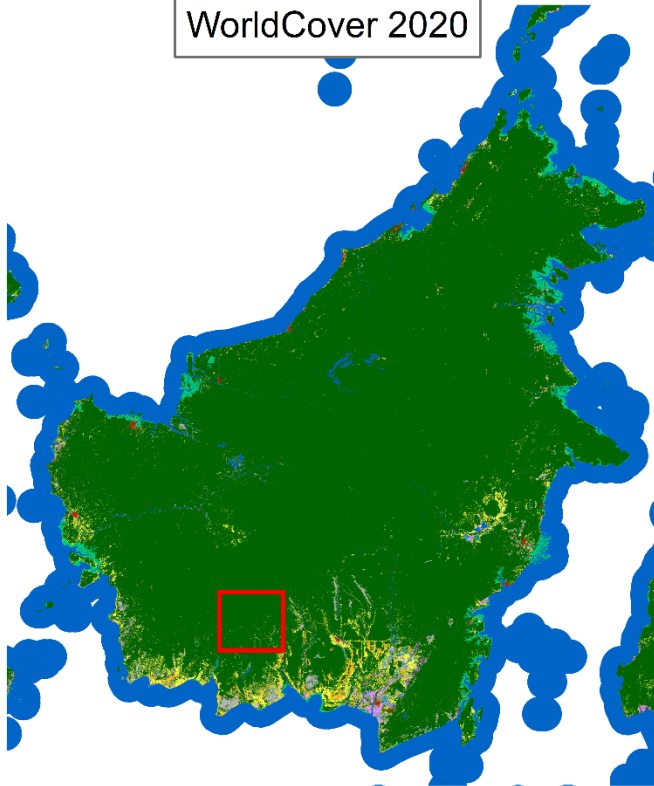


Global forest cover map of standing trees at 10m resolution for year 2020

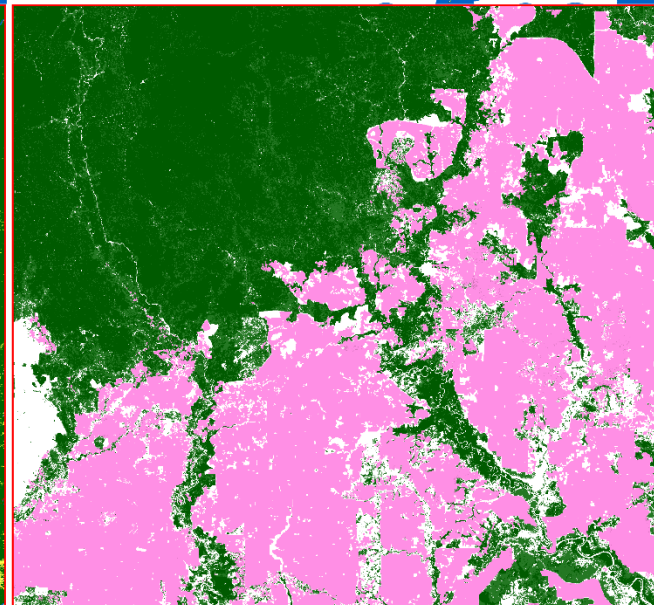
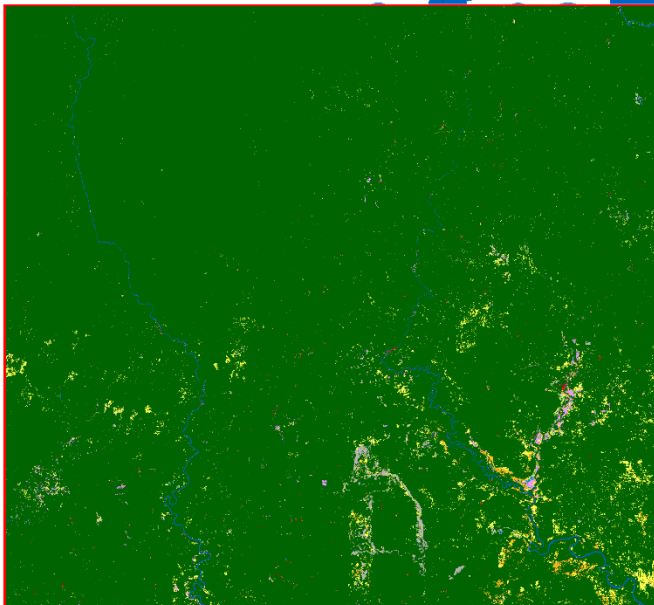
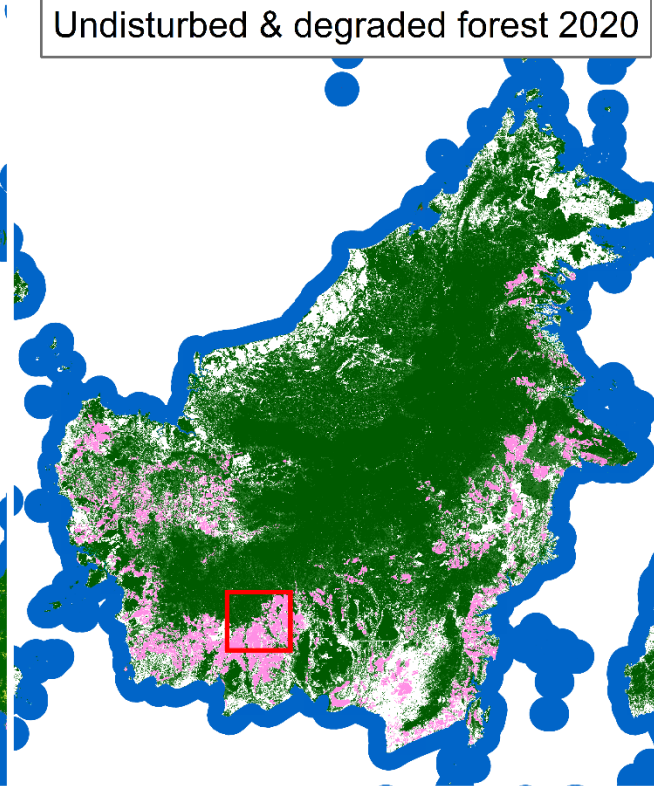
First input layer: ESA Worldcover map for year 2020



WorldCover 2020



Undisturbed & degraded forest 2020



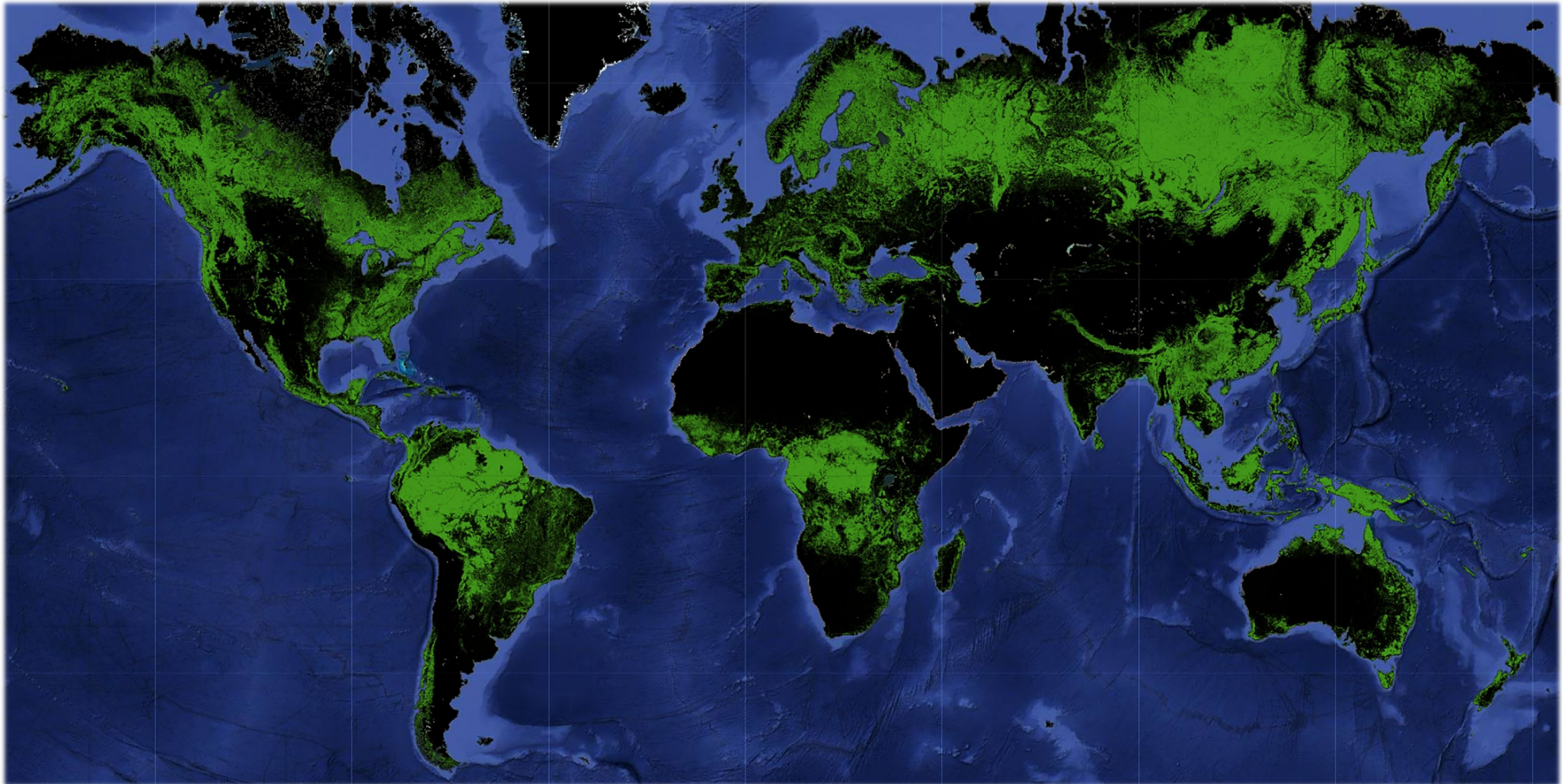
Tree Cover # Forest Cover

(4) 'forest' means land spanning more than 0,5 hectares with trees higher than 5 metres and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ, excluding land that is predominantly under agricultural or urban land use;

(5) 'agricultural use' means the use of land for the purpose of agriculture, including for agricultural plantations and set-aside agricultural areas, and for rearing livestock;

(6) 'agricultural plantation' means land with tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agroforestry systems where crops are grown under tree cover; it includes all plantations of relevant commodities other than wood; agricultural plantations are excluded from the definition of 'forest';

New Global forest cover map for year 2020



Industrial oil palm plantations are excluded



Geographic coordinates: 111.593040 East; 0.242370 South

Pastures and soybean fields are excluded



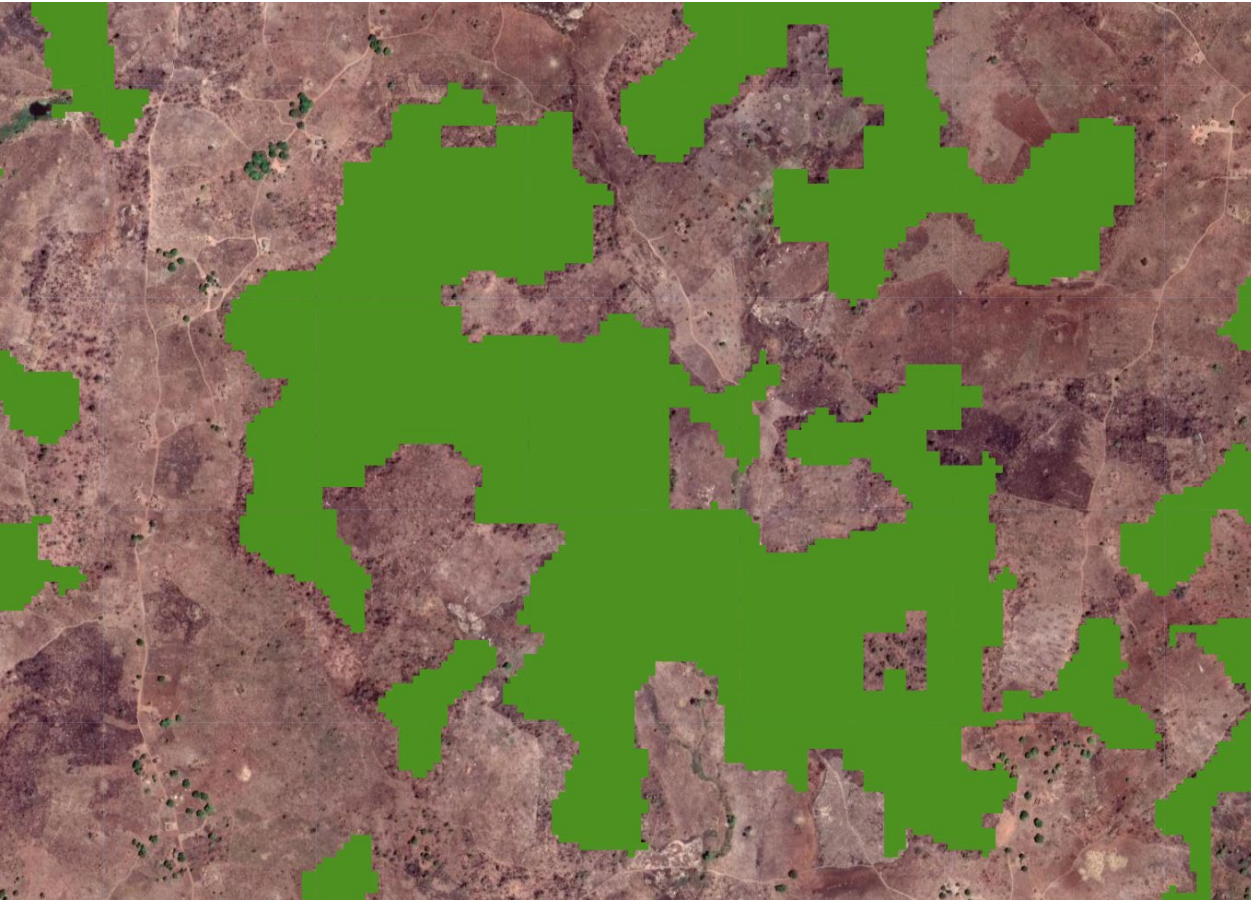
Coordinates: 47.273440 West; 3.026360 South

Good accuracy for forest mapping in structured landscapes



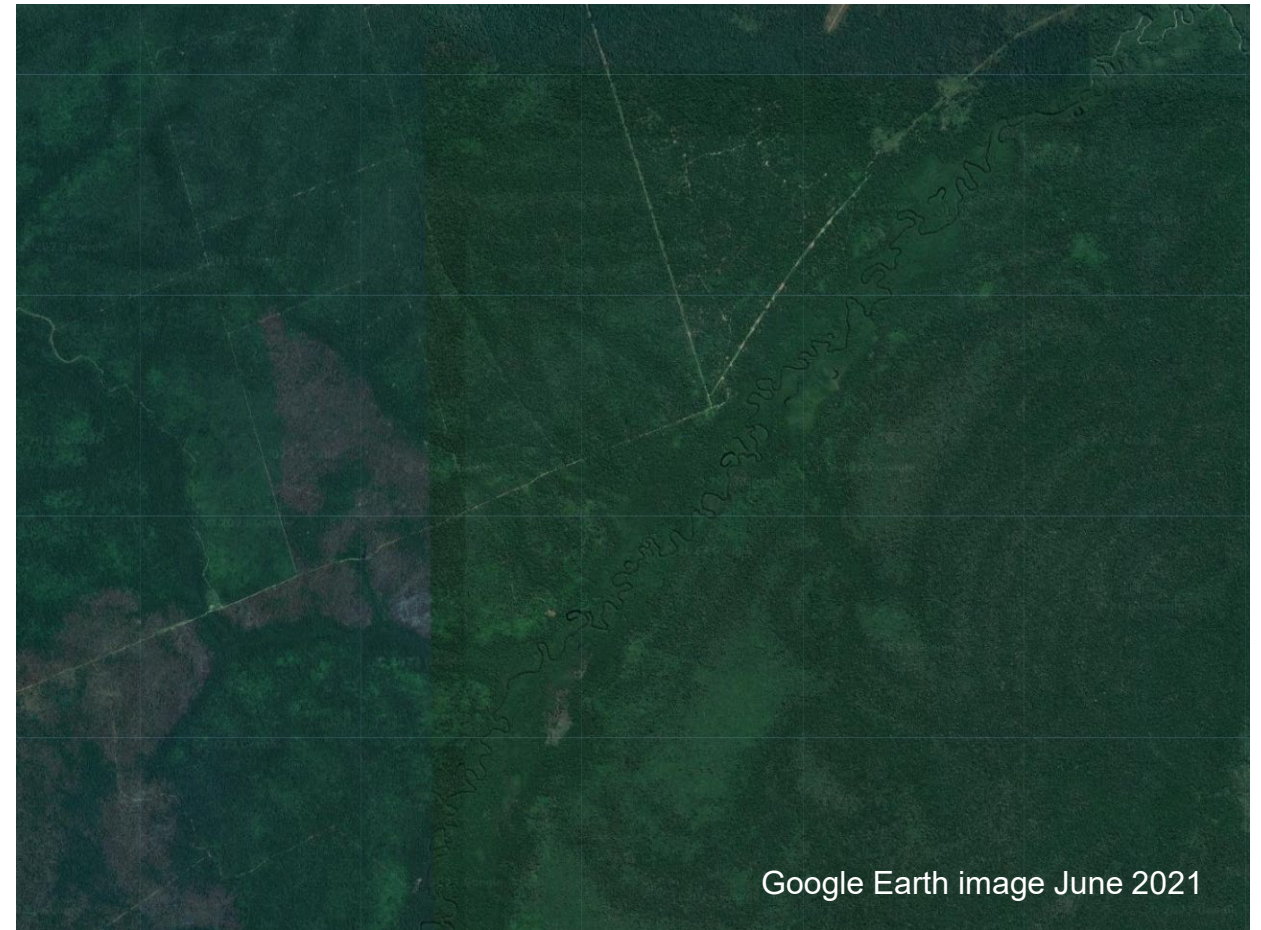
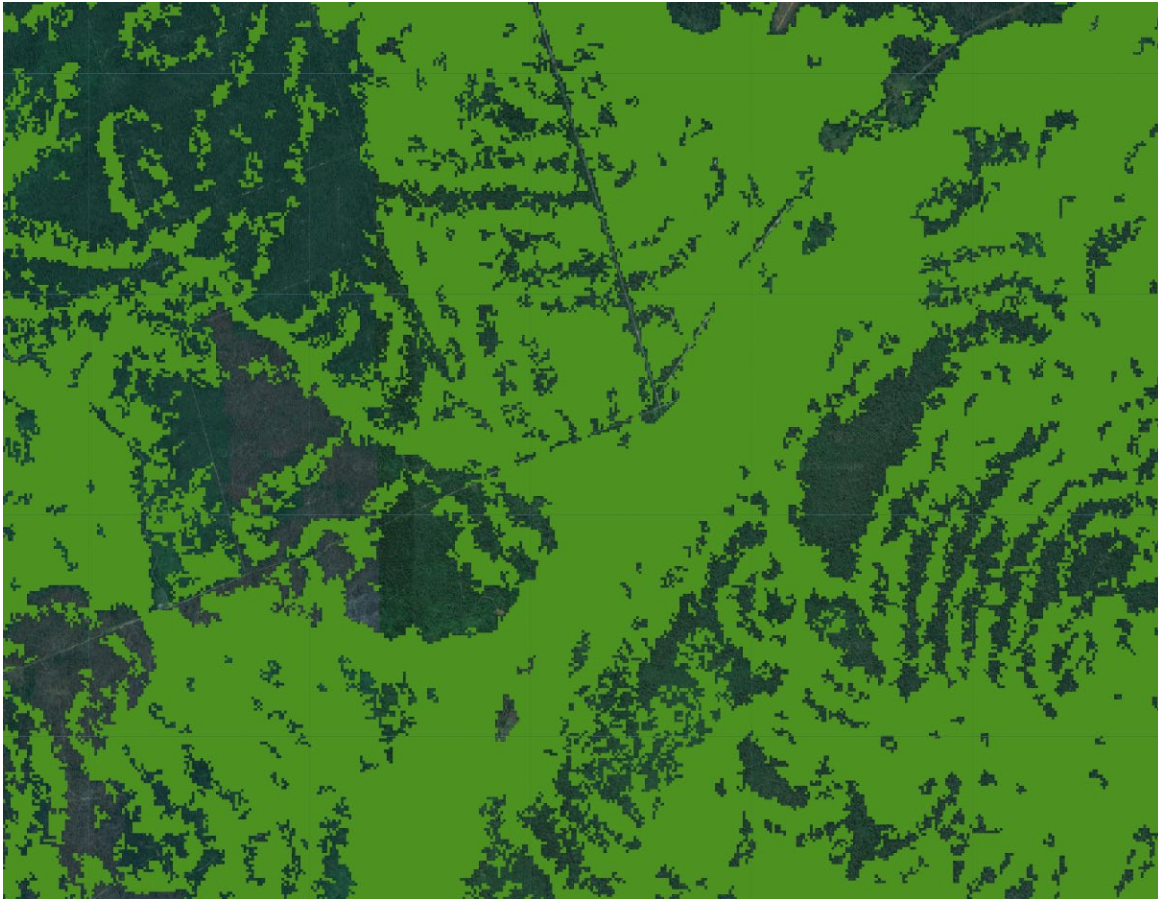
Geographic coordinates: 3.405465 West; 48.166844 North

Mapping of open and dry forest areas



Geographic coordinates: 35.854637 East; 16.414390 South

Recently burned forests do not appear as forests due to absence of standing trees



Coordinates: 56.822290 West; 13.025240 South

Challenges in excluding agricultural tree plantations such as Cocoa plantations



Google Earth image March 2022

Role of global forest map in context of EUDR

Non
mandatory

- Legal text does not prescribe the use of this or any other map by operators/traders (or Competent Authorities) to inform their risk assessment

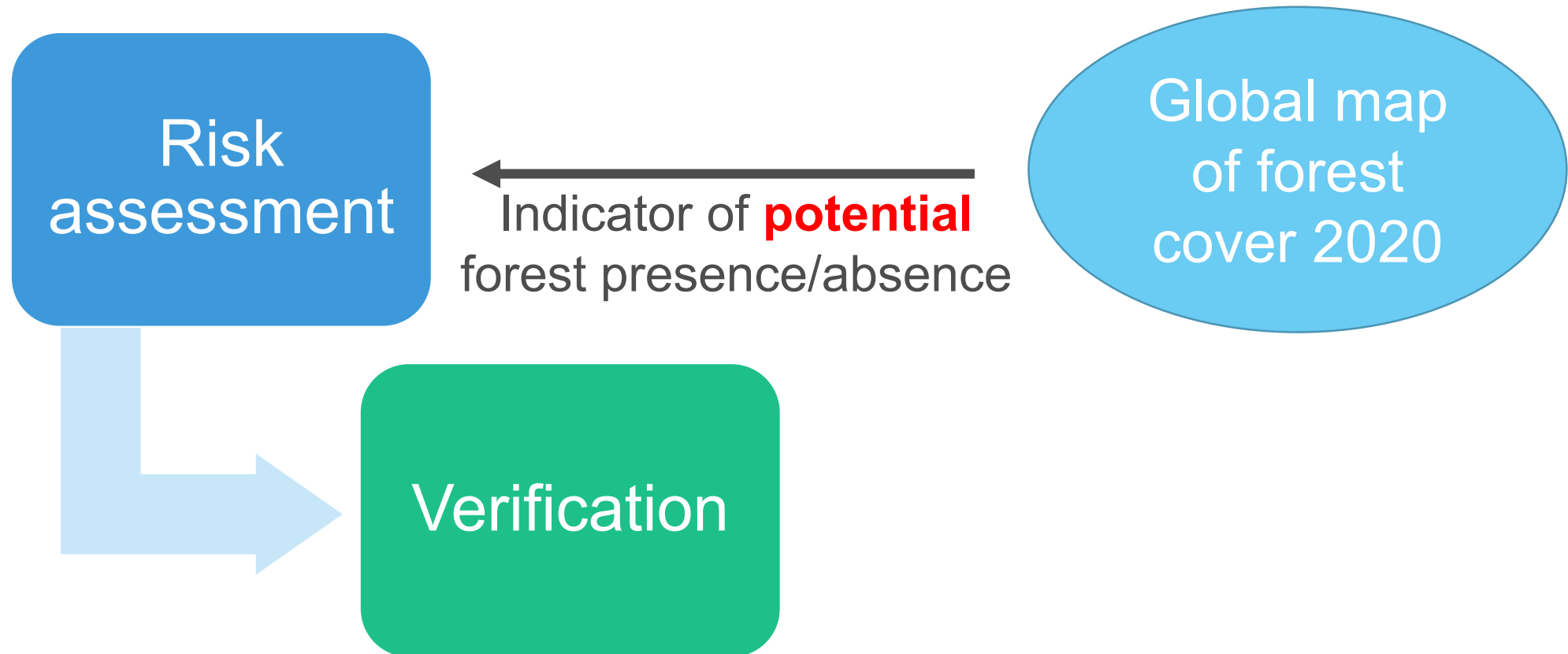
Non-
exclusive

- The Observatory – provided by the Commission free-of-charge – is one of many tools
- Other maps may have advantages compared to the information on the Observatory
- The regulation does not prescribe the modalities of and for map use

Legally non-
binding

- The map is one of many tools that may be used to inform the risk assessment
- The use of map does not guarantee compliance

How can the global forest map 2020 be used in EUDR?



Presentation of the component on production and trade of commodities

Mirco Migliavacca

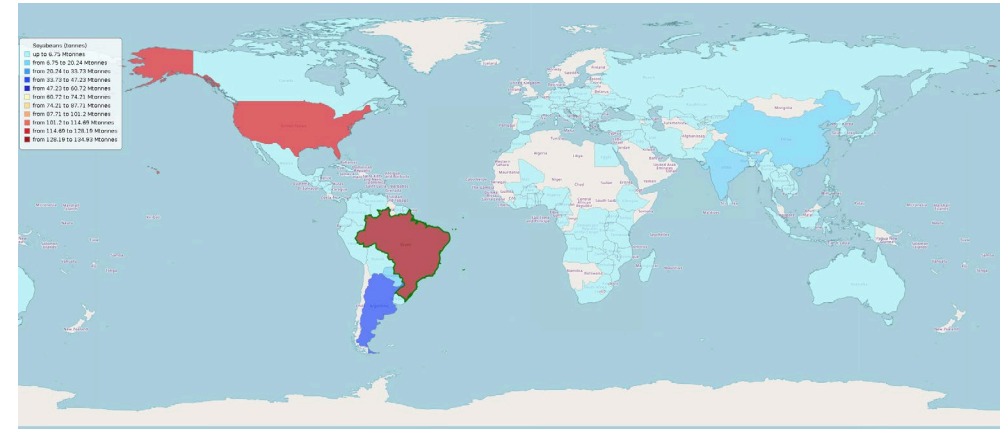
Monitoring production and trade flows

Wall to wall statistics/indicators:

- Production quantity and area harvested for each commodity (FAOSTAT)
- Trade flows from producing country and EU-27 and countries bilateral trades (FAOSTAT and UN COMTRADE)

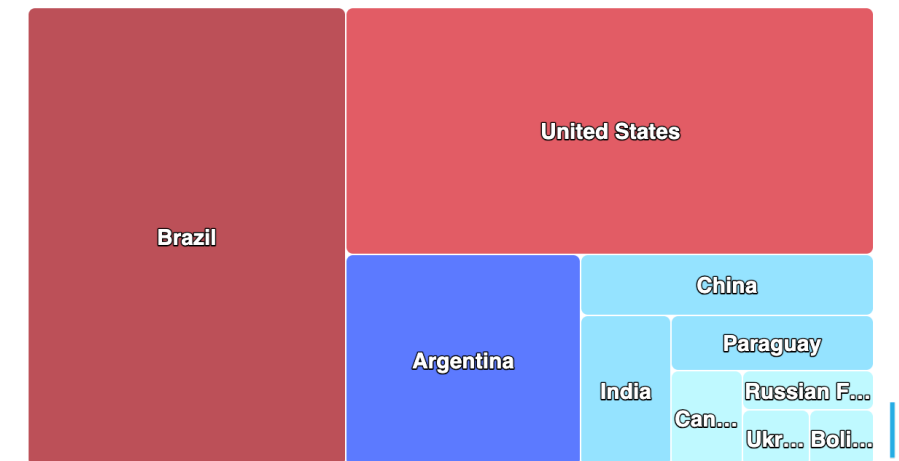
Provide timely information to Observatory about **production and area harvested** for the EUDR commodities (including maize)

Example of production quantity of one commodity (soybeans) in the year 2021 (data source: FAOSTAT)



Example of tree map showing the top 10 producing countries for one commodity (soybeans) in 2021 (data source: FAOSTAT)

Top ten countries for average production quantity of Soyabeans in 2021-2021



Biotrade: A Python package to access and analyse the international trade of bio-based products

Paul Rougieux¹, Selene Patani², and Mirco Migliavacca¹

¹ European Commission, Joint Research Centre, Ispra, Italy ² JRC Consultant, ARCADIA SIT s.r.l., Vigevano (PV), Italy [✉] Corresponding author

DOI: 10.21105/joss.05550

Monitoring production and trade flows

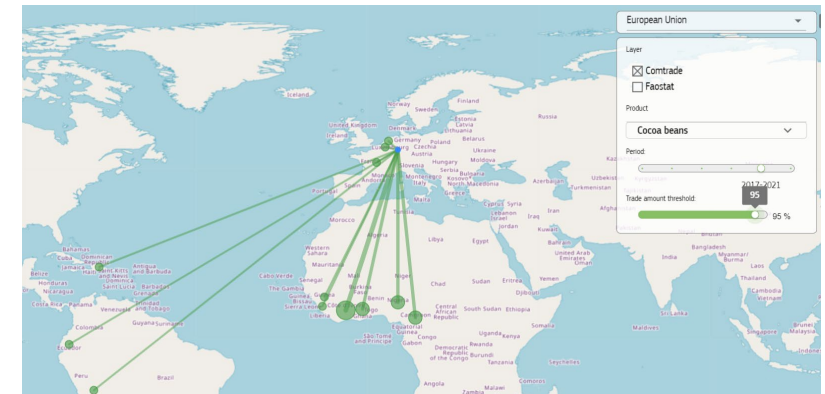
Wall to wall statistics/indicators:

- Production quantity and area harvested for each commodity (FAOSTAT)
- Trade flows from producing country and EU-27 and countries bilateral trades (FAOSTAT and UN COMTRADE)

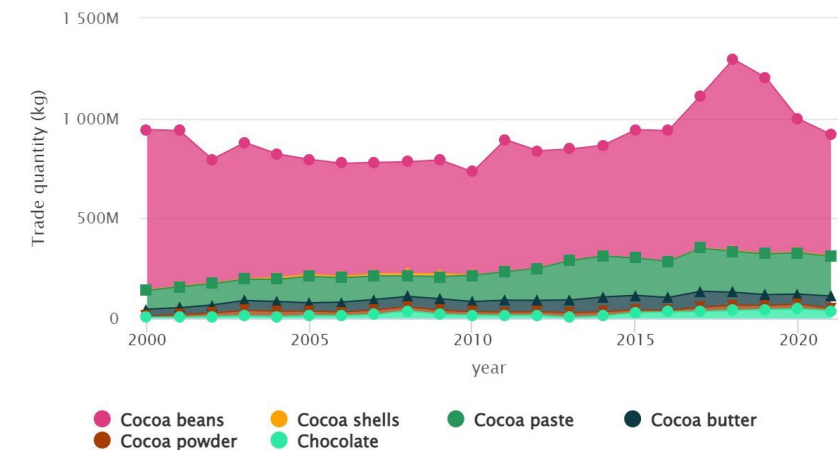


Provide timely information to Observatory about **trade flows** of products in the **Annex I** of EUDR

Example of trade flow of one commodity (cocoa beans) imported by EU-27 between 2017-2021 (data source: UN Comtrade). Only flows summing up to 95% are reported



Example of time series of annual quantity of cocoa products imported by EU-27 from a third country (Cote d'Ivoire) from 2000 to 2021



Biotrade: A Python package to access and analyse the international trade of bio-based products

Paul Rougieux¹, Selene Patani², and Mirco Migliavacca¹

¹ European Commission, Joint Research Centre, Ispra, Italy ² JRC Consultant, ARCADIA SIT s.r.l., Vigevano (PV), Italy Corresponding author





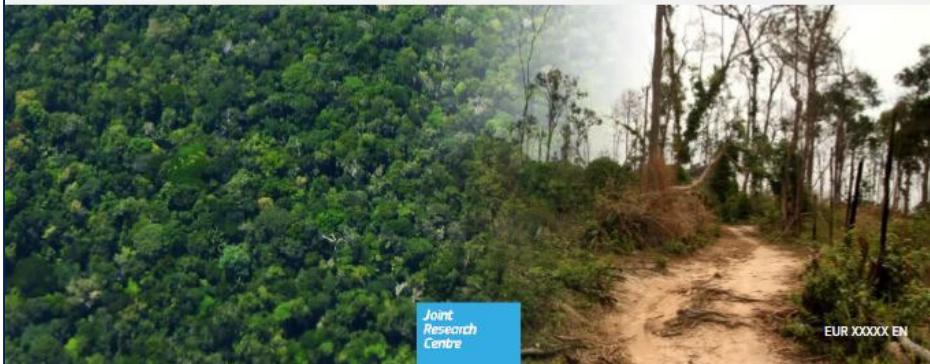
JRC SCIENCE FOR POLICY REPORT

Deforestation and Forest Degradation in the Amazon

Update for year 2022 and link to soy trade

Beuchle, R., Bourgoïn, C., Crepin, L., Achard, F.,
Migliavacca, M., Vancutsem, C.

2023



Joint
Research
Centre

EUR XXXXX EN

New science for policy report on deforestation and forest degradation the Amazon

- Updated forest cover change estimates for all Amazon countries
- Updated statistics related to the Brazilian INPE-PRODES and INPE-DETER forest cover change programs
- Comparison of statistics from JRC and INPE with other data sources
- **Case Study on the link between Brazilian soy trade and deforestation in the Amazon**
- Overview on new relevant scientific publications related to the Amazon forests

<https://publications.jrc.ec.europa.eu/repository/handle/JRC134995>



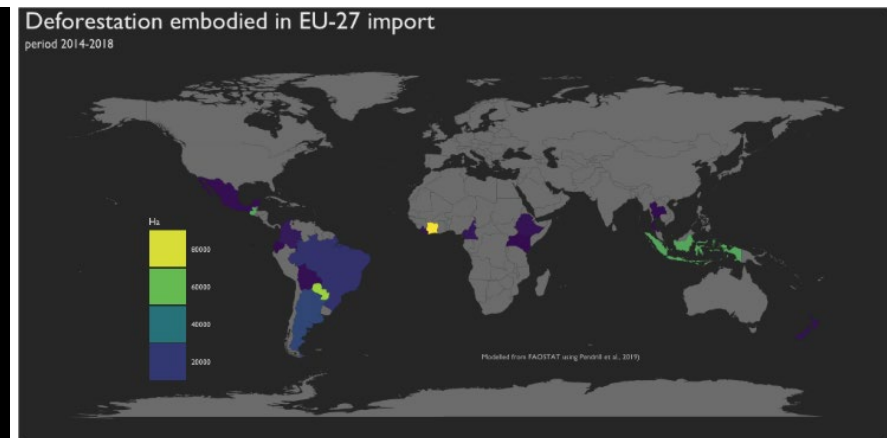
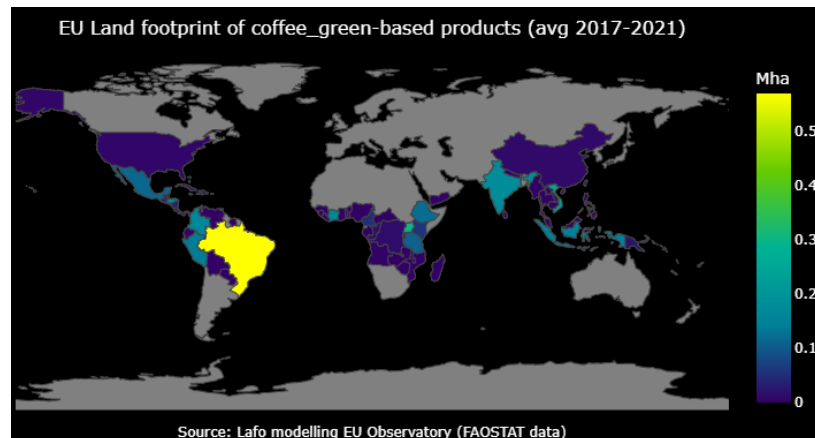
Next steps for component on production and trade of commodities

Land footprint

- How much pressure does the EU put on other countries by consuming products and commodities listed in the EUDR?
- Land footprint is the area of land required to meet the EU imports and consumption of bio-based products
- Physical model based on trade flows and FAO coefficient (De Laurentiis et al., 2022; Bausano et al., 2023)
- To be extended to maize and rubber

Deforestation embodied in EU consumption

- How much deforestation is embodied in the trade and consumption of the Annex I products?
- Global land use balance model (Pendrill et al., 2019; Migliavacca et al., 2023)
- Earth observation data and FAO statistics



Online demonstration of the Web portal

<https://forest-observatory.ec.europa.eu>

An official website of the European Union How do you know? ▾

 **EU observatory on deforestation and forest degradation**

About the observatory ×

The EU Observatory on deforestation and forest degradation aims to monitor changes in the world's forest cover and related drivers. Besides providing access to global forest maps and spatial forest and forestry-related information, this Observatory will facilitate access to scientific information on supply chains, linking deforestation, forest degradation and changes in the world's forest cover to Union demand for commodities and products. Data and information provided on this Observatory play a supporting role but do not assure compliance or imply non-compliance with EU Regulations, other legal frameworks or commitments, or international agreements.

Frequently asked questions

Want to know more? [Click here](#) or contact us: jrc-forest-observatory@ec.europa.eu



-  GLOBAL FOREST MONITORING
-  PRODUCTION AND TRADE OF COMMODITIES
-  EU TOOLS FOR FOREST MONITORING

European Commission

Next steps for the EU Observatory on Deforestation and Forest Degradation

Global forest mapping 2020

Technical report on global forest map version 1 by March 2024

Version 2 of the global forest map to be released by end of year 2024

Integration of forest types relevant for forest degradation of EUDR (e.g. naturally regenerating forests) by end 2024

Production and trade of commodities

Land footprint of EUDR bio-based products by end 2024

Deforestation embodied in trade and consumption by end 2024

Global early warning system to be developed from 2025

Web Platform of the EU Observatory on Deforestation and Forest Degradation

Technical references to sources of maps

Frequently asked questions document

Web links for the access / download of datasets

Any question or comments to be addressed at :

jrc-forest-observatory@ec.europa.eu

Thank you

<https://forest-observatory.ec.europa.eu>



© European Union 2023

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.