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COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	18 November 2021
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2021) 326 final PART 2/2
Subject:	COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT REPORT minimising the risk of deforestation and forest degradation associated with products placed on the EU market Accompanying the document Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010

Delegations will find attached document SWD(2021) 326 final PART 2/2.

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EUROPEAN
COMMISSION

Brussels, 17.11.2021
SWD(2021) 326 final

PART 2/2

COMMISSION STAFF WORKING DOCUMENT

IMPACT ASSESSMENT REPORT

minimising the risk of deforestation and forest degradation associated with products placed on the EU market

Accompanying the document

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010

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ANNEX 1: PROCEDURAL INFORMATION

1. LEAD DG, DECIDE PLANNING/CWP REFERENCES

The Directorate General for Environment of the European Commission is the lead Directorate General for this impact assessment accompanying a legislative proposal on 'Minimising the risk of deforestation and forest degradation associated with products placed on the EU market'.

The Decide planning reference is PLAN/2019/6251.

2. ORGANISATION AND TIMING

An Inter-service Group to steer and provide input for the evaluation was set up in 2019 with representatives from the Directorate Generals for Environment (ENV); Climate Action (CLIMA); Energy (ENER); Agriculture and Rural Development (AGRI); International partnership (INTPA); Regional and Urban Policy (REGIO); Legal Service (SJ); European Neighbourhood Policy and Enlargement Negotiations (NEAR); European Civil Protection and Humanitarian Aid Operations (ECHO); Internal Market, Industry, Entrepreneurship and SMEs (GROW); Health and Food Safety (SANTE); Employment, Social Affairs and Inclusion (EMPL), Mobility and Transports (MOVE); Justice and Consumers (JUST); Trade (TRADE); Taxation and Customs Union (TAXUD); Economic and Financial Affairs (ECFIN); European Anti-fraud Office (OLAF); Research and Innovation (RTD); Joint Research Centre (JRC-Ispra) and the Secretariat General (SG).

The group met 5 times during the impact assessment process.

Figure 1 ISG meeting dates and topics of discussion

DATE	*TOPICS OF DISCUSSION*
22/10/2019	1st ISG meeting: Discussion on the follow-up to the 2019 EU Communication on "Stepping up EU Action to Protect and Restore the World's Forests", including the identification of DGs, units and colleagues in the lead for each measure of the Annex 1 to the Communication, and agreement on the implementation table covering all these measures. ENV briefly presented the current state of play on Council Conclusions, including the most important comments the Presidency received from MS and the next steps.
08/07/2020	2nd ISG meeting: Discussion on and approval of the last versions, taking on board all comments previously submitted by the ISG, of the Deforestation Impact Assessment and the EUTR/FLEGT Regulation Fitness Check questionnaires and consultation strategies for the online public consultations.

22/01/2021	3rd ISG meeting: Presentations were made on the state of play of two tasks of the consultants' study: Task 2 "Support the study for a Fitness Check of the EUTR and FLEGT Regulation" and Task 3 "Identification and analysis of demand-side measures to reduce the impact of products placed on the EU market". The SG clarified the scope of the EUTR/FLEGT Regulation Fitness Check. All DGs were invited to provide any additional data and evidence for the Fitness check, including INTPA on financing, and elements on forest degradation to beef up the Impact Assessment. ENV clarified the preliminary choice of commodities to be tackled because of their possible impact on forests.
25/03/2021	4th ISG meeting: Discussion on the state of play in the preparation of the Staff Working Documents on the EUTR/FLEGT Regulation Fitness Check and on the Deforestation Impact Assessment. The discussion also covered the latest consultants' report on the study on "EU policy on forest products and deforestation".
07/04/2021	5th ISG meeting: The ISG continued the discussion on the Staff Working Documents on the EUTR/FLEGT Regulation Fitness Check and on the Deforestation Impact Assessment, focusing in particular on how the latest comments/suggestions made by line DGs have been integrated/addressed in the latest draft circulated.

3. CONSULTATION OF THE RSB

Changes resulting from the first RSB opinion

The RSB scrutiny meeting took place on 5 May 2021 and issued a negative opinion on 7 May 2021. To address the weaknesses of the impact assessment identified by the RSB in its opinion (Section B: Summary of findings), the following changes were introduced to the SWD:

Figure 21 Changes introduced into the Impact Assessment

RSB meeting comments	Reflection in text
The report does not sufficiently take into account the lessons learned from the fitness check of the EU Forest Law Enforcement Governance and Trade and the EU Timber Regulations, especially regarding the effectiveness of due diligence.	Text boxes 1 and 2, which present the findings of the Fitness Check respectively on the FLEGT Regulation (Chapter 2.3.1) and on the EUTR (Chapter 5.3). The lessons taken from the Fitness Check are also explicitly referred to in the definition of options and further exploited in the assessment of effectiveness of options. In Chapter 8 the report also outlines the proposed way forward for both Regulations as a result of the establishment of the new system.
The report lacks clarity on the content of the options, how they were selected, how they relate to existing measures and how they are expected to address the problems. It does not include options for some relevant policy choices.	This is done through a dedicated Annex 6, outlining the policy options screened in the preparatory phase of this Impact Assessment. Section 5.4 also includes a description of the methodology and the criteria used in the viability screening to assess those policy measures and select the five final policy options whose potential impacts were studied in detail. A graphic summary of the initial viability screening of policy measures has also been added.
The report does not sufficiently assess the expected impacts of the policy options, especially on consumer prices, trade flows, third countries and SMEs.	The report includes new evidence in Chapter 6.1.1 (environmental impact), Chapter 6.1.2 (economic impact) and Chapter 6.1.3 (social impact) qualifying the expected impact in terms of trade flows, third countries and SMEs. While not analysed in detail, as part of the costs assessment, the report acknowledges that the initiative might impact consumer prices.

The report is not clear on how effective this initiative can be in reducing deforestation and forest degradation globally.	The general objective of the initiative is to minimise the EU's contribution to deforestation and forest degradation worldwide thus reducing the EU contribution to GHG emissions and global biodiversity loss. Chapter 4 also clarifies that this initiative contributes to a broader goal of reducing deforestation and forest degradation globally only if all measures announced in the 2019 Communication are successfully developed. Effectiveness is explicitly assessed for all considered options. In addition, the report now includes a new Chapter 6.1.4 on leakage.

On top of the above listed main recommendations of the RSB, the amended SWD also addresses the more detailed set of comments made by the RSB in Section C -What to improve- of its opinion in the relevant sections of the impact assessment.

Changes resulting from the second RSB opinion

After resubmission, the RSB issued a positive opinion with reservations on 22 July 2021. To address the weaknesses of the impact assessment identified by the RSB in its opinion (Section B: Summary of findings), the following changes were introduced to the SWD:

Figure 22 Changes introduced into the Impact Assessment

RSB comments	Reflection in text
The report lacks clarity on the precise content of the preferred option.	More detail has been added to explain how the preferred option is expected to work, particular attention to the country benchmarking system (Chapter 5.3.2.)

The report is not sufficiently transparent on how the options compare against the assessment criteria. The scoring of the options is not clearly justified.	Further explanations have provided on the options discarded after the initial viability screening (Chapter 5.4) and the rationale behind the assessment of the five main policy options (Chapter 5.3.)
The report does not sufficiently present the methodologies used for estimating environmental benefits and enforcement costs.	The methodology for estimating the enforcement costs has been explained in detail on Chapter 6.2. With regards to environmental impacts, a clear reference to the effectiveness analysis of the Fitness Check, which is attached to the inter-service consultation, has been added.

On top of the above listed main recommendations of the RSB, the amended SWD also addresses the more detailed set of comments made by the RSB in Section C -What to improve- of its opinion in the relevant sections of the impact assessment.

4. EVIDENCE, SOURCES AND QUALITY

The impact assessment was supported by the study: "Impact assessment on demand side measures to address deforestation" as a key deliverable of the service contract "*EU policy on forest products and deforestation"* commissioned by the European Commission (DG Environment) under the Framework Contract ENV/F1/FRA/2019/0001. The objective of the study was to support an impact assessment on demand-side measures in order to increase supply chain transparency and minimise the risk of deforestation and forest degradation associated with products placed on the EU market. The study 1) presented findings on the problems and drivers to forest loss and degradation, 2) identified the objectives to tackle these issues at EU level including a mapping of existing policies and initiatives, an intervention logic along a subsidiarity analysis, and 3) proposed operational definitions for 'deforestation-free' supply chains. Finally, the study

identified, described and analysed several policy options and their impacts in addressing deforestation and forest degradation.

Stakeholder consultation and targeted data collection were an important element of the exercise (see Annex 2 to this SWD).

ANNEX 2: STAKEHOLDER CONSULTATION

INTRODUCTION

This report is the synopsis report for all stakeholder consultation activities undertaken as part of the impact assessment of demand-side measures to address deforestation and forest degradation. In line with the Better Regulation requirements, this report provides an outline of the consultation strategy, documents the consultation activities undertaken, presents the stakeholder groups that participated and describes the methodology and tools used to process the data gathered. The results of each consultation activity are briefly presented.

CONSULTATION STRATEGY

The consultation strategy was developed at the start of the study. The consultation had two objectives:

- To ensure that all relevant stakeholders are identified and are given the opportunity to take part in the consultation activities; and
- To gather stakeholder opinions on the potential additional measures at EU level.

Due to the restrictions introduced in response to the Covid-19 pandemic, all of the consultation activities were undertaken virtually (e.g. stakeholder meetings were organised as virtual events.)

The relevant stakeholders groups that have been targeted in this consultation are listed below.

- EU Member State authorities.
- Third-country stakeholders.
- Farmers, both large-scale agri-businesses and small-scale local producers, including livestock producers, both large and small.
- Logging, wood-processing companies and forest owners.
- Businesses operating with commodities associated with deforestation and forest degradation.
- Traders working with supply chains potentially associated with deforestation.
- Consumers and consumer organisations.
- Civil society organisations and non-governmental organisations.
- International organisations.
- Citizens.

The consultation strategy was implemented through the use of several consultation tools. These tools and the way the responses received were analysed are presented below.

I. Feedback on the inception impact assessment.
II. Online public consultation (OPC).
III. Targeted stakeholder consultation through interviews and focus groups.

All the consultation activities carried out provided valuable input for the impact assessment. The information gathered through the consultation activities complemented evidence gathered from other strands of the project (e.g. literature review) and allowed to triangulate evidence for the impact assessment.

I. FEEDBACK RECEIVED ON THE INCEPTION IMPACT ASSESSMENT

The inception impact assessment was opened for public feedback from the 5 February 2020 to 4 March 2020. A total of 99 responses from 23 countries were submitted through the online portal and the categories of these respondents are shown in Figure 2.1.

Figure 1 Overview of categories of respondents (N=99)

A general assessment of the responses is that the Commission seeking to minimise the EU's contribution to deforestation and forest degradation worldwide and promote the consumption of products from deforestation-free supply chains in the EU is very welcome. In general, there is a strong preference for legal, binding regulatory action with many respondents also reporting non-regulatory measures and voluntary actions to compliment such regulatory action. A broad overview of the themes identified are presented in Table 2.1.

Figure 2 Summary of the main issues to be addressed according to the respondents and number of times the issues were mentioned

Themes identified	Number of respondents who mentioned the issue
Supporting or against EU action	• 87 responses supported EU action. • 11 responses were unclear on their support. • No responses were against EU action.
Supporting regulatory measures	• 63 responses supported regulatory measures. • 34 responses were unclear on their support. • 2 responses did not support regulatory measures.
Proposed regulatory measures	• 65 responses proposed regulatory measures.
Supporting non-regulatory measures	• 62 responses supported non-regulatory measures. • 9 responses were unclear on their support. • No responses did not support non-regulatory measures.

Themes identified	Number of respondents who mentioned the issue
Non-regulatory measures proposed	• 71 responses proposed non-regulatory measures
Advice against particular measures	• 31 responses recommended against measures.
Factors for consideration and assessment criteria	• 43 responses proposed factors for consideration and assessment criteria.
Discussion of definitions	• 9 responses discussed definitions.

II. ONLINE PUBLIC CONSULTATION

The online public consultation questionnaire had two parts, one targeting all public stakeholders, and the other one being more specific with questions directed at expert stakeholders. The consultation was carried out in all official EU languages, it contained both open and closed questions. It addressed forward-looking options about demand-side measures, which should ultimately contribute to addressing deforestation and forest degradation associated with products placed on the EU market. The respondents were not obliged to answer all questions.

The consultation period started on 3 September 2020 and ended on 10 December 2020, lasting 14 weeks.

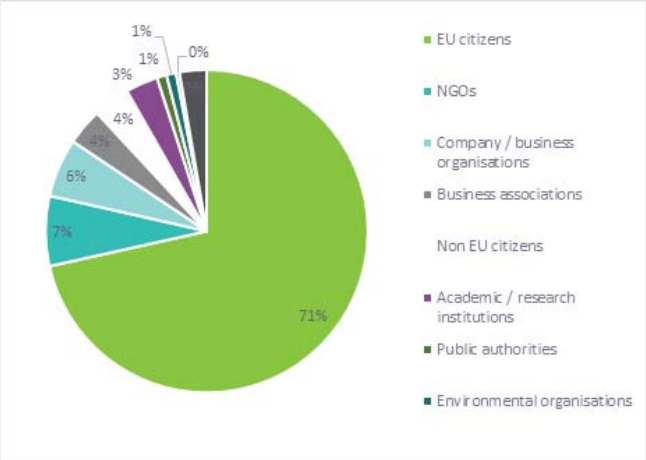
In total, 1,194,761 public responses were obtained during the consultation period. This number was driven to a large extent by a campaign carried out by a group of NGOs[1] using pre-filled questionnaires. This makes the consultation the second most popular in the history of EU consultation.

Of the 1,194,761 responses, 1,193,611 responses have been identified by the European Commission as submitted through the campaign. These responses were identified using a methodology known as "key-collision clustering algorithm". As required by the Better Regulation guidelines[2], the campaign responses were segregated and analysed separately. This avoids overall results being distorted by the large number of campaign responses. The content of the pre-filled questionnaire submitted as part of the campaign can be consulted online[3].

The remaining 1,150 responses are further broken down in this report on the open public consultation and presented in the figure below.

[1] https://together4forests.eu/about
[2] The responses were analysed in line with the requirement of Tool #54 of the Better Regulation toolbox
[3] https://together4forests.eu/news-resources/answers

Figure 3 Overview of categories of respondents (N=1,150)

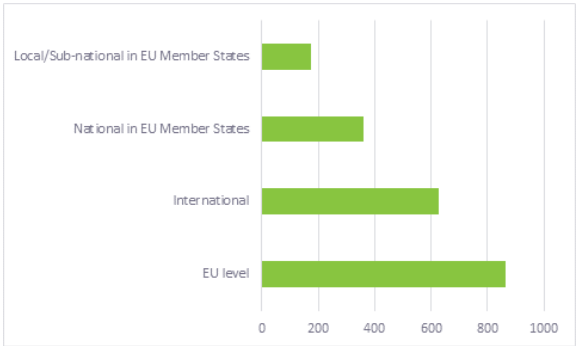


A total of 997 (86.7%) respondents defined their country of origin as being an EU Member State, whereas the remaining 153 (13.3%) of respondents defined their country of origin as not being an EU Member State. Responses were not obtained from individuals from every Member State.

Key points from the OPC analysis include:

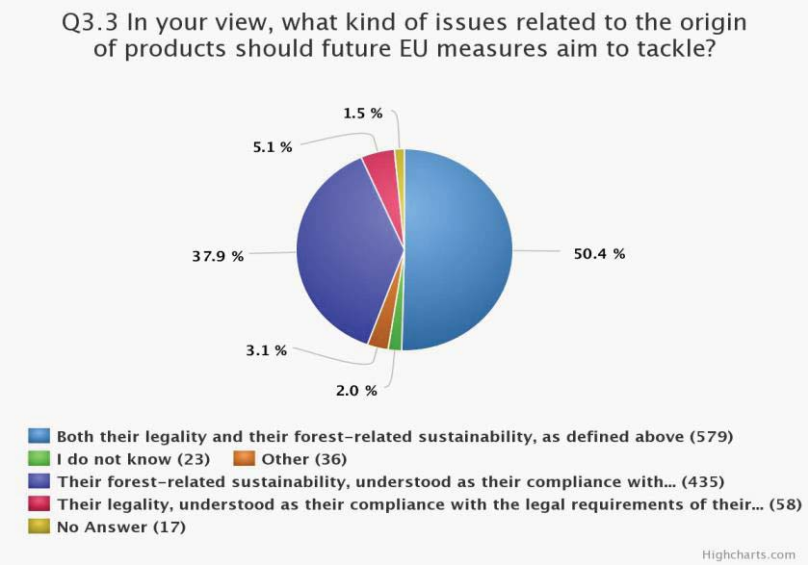
- Action is supported mostly at EU level, followed closely by international level.

Figure 4 Views from respondents on level best suited to take action



- Most respondents (81%) agreed that an EU-level intervention on EU consumption could reduce global deforestation and forest degradation "much" or "very much."
- Most respondents (88%) indicated their preference for tackling the sustainability of products based on an EU definition of deforestation-free, rather than just their legality.

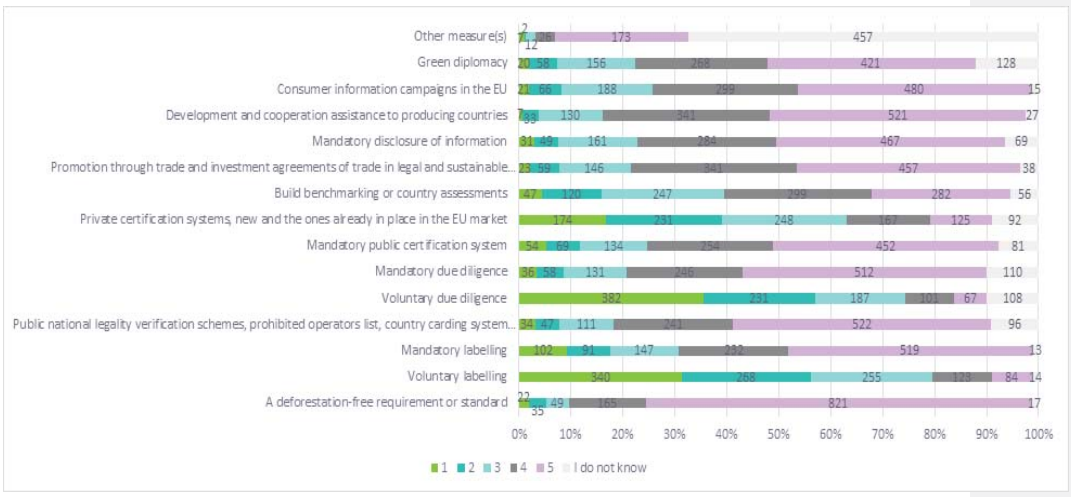
Figure 5 Views on deforestation-free definition



- In terms of policy measures, support was stronger for a deforestation-free requirement or standard that products must comply with to be placed on the EU market.
- Some binding measures — such as mandatory product-specific due diligence, mandatory public certification or the system in place to fight illegal, unreported and unregulated fishing — have high and similar levels of support.
- Some voluntary measures — such as voluntary due diligence, private certification and voluntary labelling — receive the lowest rates in the survey.

Figure 6 Respondents were asked to rate each policy measure on a scale of 1 to 5, 1 representing not suitable at all and 5 representing completely suitable.

Note: The total number of responses varied with the measure assessed as follows: A deforestation-free requirement or standard that commodities or products in their product category must comply with to be placed on the EU market (1,109), Voluntary labelling (1,084), Mandatory labelling (1,104), Public national legality verification schemes, prohibited operators list, country carding system and export ban to the EU (1,051), Voluntary due diligence (1,076), Mandatory due diligence (1,093), Mandatory public certification system (1,044), Private certification systems, new and the ones already in place in the EU market (1,037), Build benchmarking or country assessments (1,051), Promotion through trade and investment agreements of trade in legal and sustainable products (1,064), Mandatory disclosure of information (1,061), Development and cooperation assistance to producing countries (1,059), Consumer information campaigns in the EU (1,069), Green diplomacy (1,051) and Other measure(s) (677).



- A majority of businesses support EU measures as they could reduce unfair competition from rivals that don't care about deforestation-free supply chains.
- Public authorities respondents associated public national certification schemes, a mandatory public certification system and development and cooperation assistance to producing countries with the highest costs.
- Most measures proposed in the questionnaire have an overall positive response form third countries. The least supported measures are voluntary labelling, voluntary due diligence and private certification systems already in place in the EU market.
- On the scope of the EU intervention, there was a stronger support for a large scope encompassing a large number of products including all (or nearly all) that have a potential to be linked to deforestation and forest degradation.
- The biggest obstacle identified for effectively implementing deforestation-free supply chains in companies was that "deforestation-free products are more expensive."
- Leakage was identified as a potential issue; however, responses were mixed on the issue, with many respondents not knowing the extent to which the measures could have unintended impacts to other ecosystems.
- Most respondents indicated there is a way to encourage companies and suppliers to "clean" their supply chains not just for their sales in the EU market but also for other markets, preventing supply chain divergence.
- Animal-based food and non-food sector and plant-based food and feed sector are considered the highest contributors to deforestation and forest degradation via the goods and services they provide on the EU market.

III. TARGETED CONSULTATIONS

The key objective of the targeted consultation was to complement and validate the information gathered from the literature review. It built up an evidence base through the collection of data and opinions from relevant stakeholders in order to inform the Impact Assessment of each policy response. This task was fundamental in order to gather robust quantitative and qualitative data, rather than only individual opinions.

Stakeholder Meetings

Two meetings were held on October 2 (2020) and February 25 (2021) focusing on the impact assessment. These meetings are part of the Commission Expert Group/Multi-Stakeholder Platform on Protecting and Restoring the World's Forests, including the EU Timber Regulation and the FLEGT Regulation. Over 120 representatives from member states, the business community and NGOs are part of the platform. Third countries and international organizations are also invited to the platform as observers. Both meetings were used to update participants on progress and request their inputs on the legislative work. In the first, attendees took part in a specific workshop. In the second, they responded to a list of tailored questions, both orally and in writing later on.

The meetings covered, among others, the following topics:

- Definition of 'deforestation free'; and specifically the issue of forest degradation;

- Products and commodities to be covered by potential demand-side measures;
- Possible measures (e.g. country benchmarking; due diligence; verification systems, etc;

The feedback from such a wide range of stakeholders was very rich and often contradictory, as could be expected.

Some stakeholders recommended the use of Accountability Framework Initiative (AFI) definition for 'deforestation-free', as it goes beyond the one used by FAO, however other argued in favour of the FAO definition (as it enjoys more acceptance of the international community.) Some expressed concerns with definition of 'negligible risk'. Some stakeholders made the case that considerations such as human rights and forest conflict with indigenous groups should be incorporated in the definition. Some stakeholders argued that it is important to get definition of 'deforestation-free' right, building on ongoing initiatives, not to undermine progress made so far (including High Carbon Stock Approach). Some argued that the focus should be on land-use change, to avoid association of deforestation with wood-working industry only. Peatlands and compliance with WTO rules mentioned were mentioned.

On the scope, some participants argued that avocado, leather, natural rubber, dairy, sugar cane, corn, wheat should be added to list of commodities covered by the potential regulation and that restricting the list could distract from wider sustainability concerns and lead to unwanted consequences. Some made the case that embedded risks need to be considered (e.g. pork and chicken imports may have an embedded risk due to their consumption of soy and corn) and risk thresholds need to be defined. Some argued that imposing restrictions on downstream companies was complicated as ingredients used and proportions not always clear. A point was made that, if derived products were to be included too, HS codes could be useful in the early stages of processing a specific commodity but may not be appropriate further down the supply chain. Some preferred using thresholds to ascertain how much of a commodity is contained within a product. Risk assessments need to be flexible as drivers of deforestation may change with time, and big discrepancies with regard to risk at sub-national levels. Some wanted to focus on products/commodities with highest deforestation risk to start with, while others favoured a more encompassing approach. Some favoured cross-commodity approach to ensure that impacts from one commodity are not moved to another. Some argued that there's a need to keep in mind subsistence farming, interactions in landscape, country of origin of commodity. The issue of leakages was raised.

On policy options, there were conflicting views regarding the country card approach and concerns about state-to-state level approach were raised. One suggested to put in place a carding system at subnational level, since national level not always relevant to assess deforestation risk. Others argued that combining landscape measures and carding system might be good solution. Some pointed out that incentives could be included (in addition or instead of carding systems) by linking deforestation free value chains with REDD and result-based payments. Some said a country-rating system might help identify which companies need inspection. Some argued that wider sustainability concerns (e.g. slavery) should be incorporated into whatever measures the EU decides to adopt. Some said the experience with the IUU approach in fisheries was cumbersome and slow to implement, with many loopholes present to ensure compliance.

On "verification" systems, some argued these should be implemented in all measures, and that implementation features should be considered. Some argued that this risks leading companies to abdicate their responsibility by shifting the choice to consumers. Some argued that only labelled products should be allowed on the EU market. Many argued that certification schemes should not replace a proper risk assessment, and certifying bodies need to be controlled by authorities. Public legislation cannot depend on private certification schemes, which may change their sustainability criteria over time. Certification schemes can support risk assessments and they promote sustainability, but only to a certain degree and not as a stand-alone measure. Some made the case that labelling may have very limited impact.

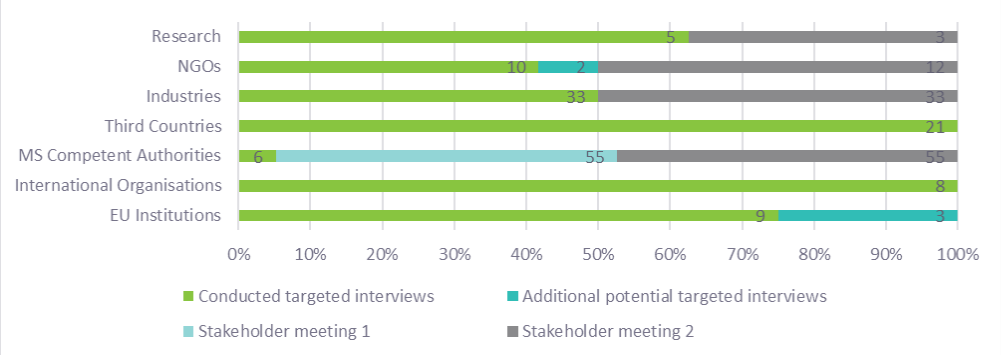
On due diligence, some defended that key findings from the EU Timber Regulation implementation, the fitness check and studies looking at the due diligence mechanism should be applied if this measure is selected. One participant argued that a risk-based approach would limit the burden on companies. Others said that financial institutions should be involved as they could support investments to change the deforestation curve. Some participants discussed that, although a due diligence system can be effective, it can also be difficult to enforce and burdensome. Some argued that incorporating a system differentiating a risk of deforestation in different areas could be more effective. Some participants said due diligence legislation could disengage smallholders because of the associated burden, which could in turn lead to additional deforestation from loss of livelihood. Some said that terminology such as "negligible risk" in the EUTR is ambiguous and difficult to enforce.

Interviews and focus groups

Along with the targeted consultation interviews there were a series of stakeholder meetings. A list of stakeholders was identified for the targeted consultation through stakeholder mapping. Priority was given to stakeholders most impacted by the implementation of the proposed policy options and measures. A sufficiently wide and diverse selection of interviewees was made to ensure a well-represented stakeholder group was selected. All interviews took place remotely. Written responses to the questionnaire were also received. Stakeholders were asked to review the inputs provided and to submit additional literature and data, when relevant. Anonymity in responses was assured to them. Finally, stakeholders were asked whether they agree for their feedback to be shared with the DG Environment.

An overview of the audience reached by all activities is presented in the figure below. Figure 2.6 shows the number of participants by stakeholder type, including the written responses, for each consultation activity. Altogether 49 entities or organisations and 92 individuals were consulted via the interviews and focus groups.

Figure 7 Participants by stakeholder type for the consultation activities (without OPC)



Source: own analysis of groups of participants per consultation activity

Some of the key points from the interviews include:

- On the deforestation-free definition, interviewees raised that it is critical to use an existing definition rather than come up with a new one. They also considered it desirable to include forest degradation, but no interviewee came up with a quantifiable and measurable way to monitor this. Focusing on land-use was found as the most pragmatic approach.
- On the scope, interviewees agreed that the cross commodity approach was good, and that a combination of commodities based on those with the most impact at global level and those where EU consumption is higher should be covered. Interviewees mostly agreed that bulk commodities and derived products that contained them should be under scope. However, concerns were raised by interviewees on how this could be done in practice — and some argued that it might be more practical to cover all products than trying to select only some of them. On that basis, some interviewees recommended to focus only at commodity level.
- On the objectives, the interviewees agreed with the objectives set out. While some interviewees noted that these might be ambitious and could be more targeted, others indicated that the objectives could be extended to cover social issues and human rights, which are difficult to disentangle from deforestation issues.
- On measures, interviewees mainly support mandatory due diligence with an emphasis on learning from the EUTR and not replicate weaknesses (e.g. burdensome paperwork requirements or blurry legal definitions (e.g. on negligible risks)). The interviewees expressed some interest for IUU inspired measures but were less familiar with the features and process. Finally, some stakeholders recommended a tiered approach in the due diligence with gradual requirements based on a specific classification of countries or commodities.

ANNEX 3: WHO IS AFFECTED AND HOW?

SUMMARY OF BENEFITS AND COSTS

Overview of Benefits - Preferred Option	
Type	***Direct benefits***
Environmental	• The effectiveness in curbing EU-driven deforestation and forest degradation is estimated to be at the high end above 29%. • The environmental benefits are expected at the high end above the following minimums: a) At least 71,920 hectares of forest saved from EU-driven deforestation and forest degradation annually starting in 2030. b) At least 31.9 million metric tons of carbon fewer emitted to the atmosphere due to EU-driven deforestation every year, which could be translated into economic savings of at least 3.2 billion EUR annually. • It is also expected to contribute to preserving biodiversity decisively and achieving the specific objectives of the EU intervention.
Economic	• Operators sourcing commodities and products from 'low-risk' countries would benefit from higher demand for commodities and products from countries assessed to be 'low-risk' • Producers implementing more sustainable production practices expected to gain share in the EU market and •
Social	• Public access to benchmarking might provide valuable information to NGOs, academia and policy makers and would facilitate decision-making, innovation and research relating to deforestation, forest degradation and trade • Positive impact on: land tenure; governance and capacity building in administration; participation of local communities and civil society; preservation of cultural heritage of indigenous peoples; income distribution, social protection and social inclusion; and workers

Overview of costs – Preferred Option

Overview of Benefits - Preferred Option	
Type	***Direct benefits***
	health and safety.

	Citizens/Consumers		Businesses		EU Administration		Third countries	
Frequency of cost:								
	One-off	Recurrent	One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
Direct costs	N/A	Minimal increase in price of products possible The costs increase will be lower for consumers purchasing 'low risk' products than for those purchasing 'high risk' products	Costs of between 5 000 and 90 000 EUR per operator for setting up the DDS	Total costs for the tiered DDS are estimated to range from 158 to 2,354 million EUR per year SMEs might be disproportionately affected; however, the two-tiered DDS would be particularly beneficial for SMEs as they would benefit from lower costs of the simplified DDS by placing products derived from low-risk supply chains	**EU level**: Cost of initial implementation (e.g. developing guidance to MS and operators and traders) Establishment of the benchmarking system: 337,000 EUR	Total costs of implementation and enforcement for all Member States authorities: 18 million EUR per year **EU level**: maintenance of the benchmarking system: 168,000 EUR per year	N/A	Possible economic impacts resulting from changes in trade flows
Indirect costs	N/A	Potentially reduced choice of products.	N/A	Additional costs on producers passed to operators and traders.	N/A	N/A	N/A	Costs of DDS requirements and environmental compliance could be carried down the supply chain.

Annex 4: Analytical methods

The methodological approach to prepare this Impact Assessment was designed to meet the requirements of the Better Regulation Guidelines. The approach can be divided into two relatively independent parts – data collection and analysis.

1. DATA COLLECTION:

Data collection relied on the following main steps:

a. Extensive literature review.
b. Consultation of stakeholders, namely:

- Feedback to the Inception Impact Assessment
- An online public consultation (OPC)
- Targeted interviews
- Stakeholder meetings, through the expert group/multi-stakeholder platform on Protecting and Restoring the World's Forests, including the EUTR/FLEGT.

a. Literature review

A literature review was performed to initiate the data collection and to provide a solid background to this Impact Assessment. As the work on this Impact Assessment was carried out largely in parallel to the Fitness Check on EUTR and FLEGT Regulations, to avoid fragmentation of data, the literature review has been a transversal activity within the two exercise, through a flow of information between the Fitness Check and Impact Assessment, where similar issues were considered.

The literature review started with the identification of 'information and data' needs for the overall project along with the identification of relevant data sources. The literature review included materials from a wide range of stakeholders, including industry, government, researchers, and NGO. Key data sources for this assignment included:

- Existing policy reports from the European Commission and other public bodies;
- Academic papers;
- Techno-scientific publications;
- Database, in particular data from COMTRADE, COMEXT and EUROSTAT to support the quantitative assessment; and
- Other grey literature, such as position papers, press releases, etc.

The identified literature was subject to a preliminary screening that determined the availability and reliability of information. A final list of relevant references was then identified, allowing a critical assessment of the information gathered.

b. Consultation activities

Following the consultation strategy several stakeholder consultation activities were carried out the results of which have been systematically integrated into this Impact Assessment. (See Annex 2 for a synopsis of consultation activities.)

Feedback to the inception Impact Assessment

The inception impact assessment was opened for public feedback from the 5 February 2020 to 4 March 2020. A total of 99 responses from 23 countries were submitted through the online portal.

As the feedback provided on the inception Impact Assessment is in an open-ended format, to help the analysis of the answers, a semi-automatic, qualitative data analysis software ATLAS.ti was used to facilitate the analysis. ATLAS.ti is a semi-automatic, qualitative data analysis software specifically designed to efficiently perform analysis on underlying constructs, relationships and patterns deriving from any type of open text. To use the software, all responses were translated into English. Based on a sub-set of responses, a group of key themes on which respondents focused, was identified, and complemented by other key words from the policy area. This allowed to produce a descriptive statistics (as reflected also in Annex 2) on a given theme. This was followed by a more detailed analysis of themes to provide a deeper meaning to the descriptive statistics (and to feed into the follow up work).

Online public consultation

A 14-week online public consultation was carried out on between 3 September 2020 and 10 December 2020. The online public consultation questionnaires was broken into two parts, one general and one more specific with questions directed at more expert stakeholders. The consultation was translated in all EU languages.

In total, 1,194,761 public responses were obtained during the consultation period. This number was driven to a large extent by a campaign carried out by a group of NGOs using pre-filled questionnaires. Of the 1,194,761 responses, 1,193,611 responses have been identified by the European Commission as submitted through the campaign, using a methodology known as "key-collision clustering algorithm". The content of the pre-filled questionnaire submitted as part of the campaign can be consulted online. This makes the consultation the second most popular in the history of EU consultation.

Once the responses were cleaned of the campaign data, and the final data quality check was run, analysis of the 1,150 unique responses was carried out using Excel. For the analysis of open questions and submitted position papers, ATLAS.ti was used (see above for explanation of the software).

Stakeholder meetings

A series of stakeholder meetings took place virtually, during the Multi-Stakeholder Platform on Protecting and Restoring the World's Forests. The aim of these meetings was to gather further information on some of the key challenges encountered in the project and it also provided the opportunity to elaborate upon emerging findings. A first series of meetings took place on 1 and 2 October 2020. A second series of meetings took place on 24 and 25 February 2021. On 1 October, 55 competent authorities from Member States gathered, and they were joined by other stakeholder organisations, third-country representatives, international organisations, and EU representatives on 2 October. A total of 103 participants attended the meeting on 2 October. Advanced findings were presented to participants of the Multi-Stakeholder Platform on follow-up meetings on 24 and 25 February 2021.[4] Results of the discussion fed into the Impact Assessment.

Targeted interviews

[4] Relevant information regarding the European Commission's Expert Group/Multi-Stakeholder Platform on Protecting and Restoring the World's Forests, including the EU Timber Regulation and the FLEGT Regulation can be found in the following webpage: https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3282

Interviews were carried out to complement the outcome of the other consultation activities, including the online public consultation, and results of the desk research. Eventually 7 focus groups and 17 individual interviews were carried out covering 49 entities or organisations and 92 individuals. Targeted interviews covered the following categories of stakeholders': Research, Non-Governmental Organisations, Industries, Third Countries, Member States Competent Authorities, International Organisations and EU Institutions. The criteria for their selection were: the impacts the initiative would have on them if (not) adopted, their expertise and balance between diverging stakes.

The interviews took place either through teleconference conversations or, in limited cases, through written responses. Interview guidance were tailored according to the background and expertise of each of the stakeholder groups, using only open questions. The interview guide developed for teleconference conservations and focus groups was used as a basis for the written responses.

2. ANALYSIS

- Analytical approach

Detailed methodologies for the analysis, related assumptions and impact on robustness of conclusions are described throughout the relevant chapters.

- Triangulation

Triangulation of primary (consultation) and secondary (literature) data was carried out in order to validate the research, through the use of a variety of methods to collect data, with different types of samples and different methods of data collection. Its purpose was both to cross-validate data as well as capture different dimensions on the same topic. The objective was to compare data gathered (in particular from databases such as COMTRADE, COMEXT, Eurostat, and extracted from literature review), perceptions (from interviews and stakeholder meetings), observations (from the online public consultation) and documentation (written evidence from the literature), using transversal analysis and experts' judgement. Feedback received was reviewed and cross-referenced with responses collected from various engagement methods in order to validate and assess its quality and identify any possible trends and patterns or highlight inconsistencies. This allowed to ensure that the data and evidence on which the assessment is based is good.

- Robustness

There are clear limitations to the analysis, which can be only as strong as the data and evidence behind it. Where assumptions were made in the absence of hard data and/or to allow calculations, the caveats are explained in the Impact Assessment. The assumptions made impact calculation made. The Impact Assessment does not provide precise calculations, it rather provides an order of magnitude of problems and impacts and their expected direction of travel. This provides sufficiently robust information for the decision making process.

ANNEX 4 DETAILED SCREENING OF MEASURES

[The notes in this annex are end notes at the end of the document. This formatting issue will be solved.]

1.1 1. Deforestation-free requirement or standard

Measure	**A deforestation-free standard that products and commodities linked to deforestation and forest degradation must comply with to be placed on the EU market, as well as a prohibition, in line with EU international commitments[5], of placing on the market products that do not comply with the standard.**
Who does what	**The European Commission** proposing the standard. The EU would need to define the standard and the criteria behind it (on the basis of a clear and verifiable "deforestation free" definition) and establish a framework/legislative basis in which products that do not comply with the given standard would be prohibited on the internal market. **Member States** (public authorities) in the implementation of this standard. This would include monitoring and compliance checks by a competent authority. **Economic operators** (businesses) placing products on the EU internal market would have to make sure their products, sourcing and production processes comply with the European standard.
What/ type of instrument	The standard may be accompanied by a binding, regulatory process.
Legal and technical feasibility	Standards are already present in European legislation, suggesting a high legal and technical feasibility (see Regulation (EU) 1025/2012 on European standardisation and the Communication "A strategic vision for European standards").[6] They are tools that generally aim at achieving a high level of consumer and environmental protection (which is a shared competence of the EU), as well as innovation. Also, prohibitions of commodities or products according to certain criteria already exist in the EU. For example, the Regulation 1829/2003 on Genetically Modified Food and Feed[7]).[8,9] The EU's legislation and policy on GMOs is designed to prevent any adverse effects on the environment and the health and safety of humans and animals (in line with Articles 168, 169, and 191 of the TFEU, and the precautionary principle embodied in EU legislation).[10] A monitoring structure would have to be defined. There are different examples to draw lessons from. In the GMO system, the European Food and Safety Authority (EFSA) conducts the risk assessments on a case by case basis. In the EU rules on pesticide residues in food (MRL legislation), the EFSA sets the level of pesticides accepted and MS competent authorities analyse pesticide residue levels to ensure compliance.[11] In the EU regulation to prevent, deter and eliminate illegal, unreported and unregulated fishing (IUU Regulation, see below), third countries are responsible for issuing catch certificates of vessels under their banner, while MS competent authorities and the Commission control those catch certificates and the monitoring systems in place in third countries. In due diligence systems (DDS), such as the EU Timber Regulation and the Conflict Minerals Regulation, private companies are required to apply risk assessment and mitigation tools to ensure compliance of products with certain criteria, whereas MS competent authorities are tasked with monitoring the actions taken by private companies. Furthermore, economic operators may face technical constraints to apply the standard in complex and long supply chains where information may be difficult to gather and traceability difficult to attaint. It could also require producers to adapt and shift their supply chains. Depending on the coverage of products and commodities (and the geographic areas in which the latter are grown), economic operators may face difficulties accessing resources that are not linked to deforestation and forest degradation. A potential shift in demand from one sourcing region to another may also affect third countries.
Coherence with EU and	No issues of compatibility with EU and international legislation were detected. To meet the requirements of the World Trade Organisation (WTO), the measure would need to be non-discriminatory (to avoid an unfair advantage to commodities or

5 Including for example NY Declaration on Forests, the CBD Action Plan on Customary Sustainable Use, UN Framework Convention on Climate Change (incl. the Paris Agreement), and UN Sustainable Development Goals.

6 European Commission (2011), A strategic vision for European standards: Moving forward to enhance and accelerate the sustainable growth of the European economy by 2020, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2011:0311:FIN.

7 EU (2003), Regulation (EC) No 1829/2003 of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (Text with EEA relevance), https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32003R1829.

8 European Commission (n.d.), GMO Authorisation, https://ec.europa.eu/food/plant/gmo/authorisation_en.

9 Papademetriou, T. (2014), Restrictions on Genetically Modified Organisms: European Union, https://www.loc.gov/law/help/restrictions-on-gmos/eu.php#:~:text=While%20marketing%20and%20importing%20GMOs,on%20health%20and%20the%20environment.

10 Papademetriou, T. (2014), Restrictions on Genetically Modified Organisms: European Union, https://www.loc.gov/law/help/restrictions-on-gmos/eu.php#:~:text=While%20marketing%20and%20importing%20GMOs,on%20health%20and%20the%20environment.

11 https://www.efsa.europa.eu/sites/default/files/interactive_tools/efsapesticides11.png

Measure	**A deforestation-free standard that products and commodities linked to deforestation and forest degradation must comply with to be placed on the EU market, as well as a prohibition, in line with EU international commitments[5], of placing on the market products that do not comply with the standard.**
international policy commitments and objectives	products produced domestically, the criteria should apply both abroad and domestically) and be based on concrete, science-based considerations.
Effectiveness	A deforestation-free requirement could be effective, particularly if it is mandatory (and linked to prohibition in cases of non-compliance), and depending on the scope of products and commodities covered as well as the enforcement system in place. As an example based on other policy instruments in place, the EU sets limits on the maximum residue levels (MRLs) for pesticides and other active substances in and on food products that are placed on the market. Out of 91,015 samples analysed in 2018, 4.5% exceeded the MRL, of which, 2.7% were considered non-compliant.[12] A similar level of compliance was found in 2015.[13] Effectiveness will also depend on the scope of the products and commodities covered and the enforcement system selected (see above legal and technical feasibility.)
Efficiency	The resources required to implement this measure will depend on its design features, such as the scope of products targeted, enforcement mechanisms and the complexity of the standard's requirements. In other examples of mandatory standards in the EU (e.g. MRLs or GMOs), the EU and MS are responsible for authorising the placement of products (e.g. containing or having residues of certain pesticides or contaminants) on the EU market, and for conducting regular checks to verify compliance. However, compliance checks for deforestation-free products will not be conducted in laboratories. The methods used to verify links between products and deforestation/forest degradation may have implications on the resources needed to successfully monitor compliance with the standard. Compared to measures based on the legality in the country of origin, compliance with a deforestation-free standard could be relatively more straightforward (see section 4.4), relying on traceability and satellite monitoring tools. In spite of that, private operators and public authorities in charge of enforcement could face a relatively high administrative burden and costs to ensure compliance. This is because economic operators would have to review complex supply chains to be able to trace the commodities that are included in their products. Producers of raw commodities may also face a burden to demonstrate compliance with the standard. Costs for monitoring and enforcing the policy measure could rise as well if a third-party auditor will be involved.
Risks around implementation	Potential risks could include the lack of unanimity on a deforestation-free standard, which could lead economic operators and third countries to challenge the standard chosen by the EU. This sort of difficulty could be overcome by relying as much as possible on criteria that already have the backing of the international community via international organizations (such as the FAO) or international treaties (such as the United Nations Framework Convention on Climate Change, UNFCCC.) Moreover, it could be difficult to monitor compliance with the standard, including the difficulties to trace the origins of certain commodities. The potentially large scope of products that could be covered by this measure may place a large burden and cost on affected economic operators and can be seen as a risk of implementation. Leakage concerns (with deforestation and forest degradation shifting to substitutes that are not covered by the standard) may also arise, for example using agricultural lands to produce commodities destined to the EU market and further deforestation of other agricultural production. Finally, product prices may increase due to the standard's implementation (particularly if alternative options that are not linked to deforestation and forest degradation are limited). SMEs may have difficulties to fulfil environmental criteria as set out by the standard.[14]
Compatibility to be combined with another measure	A standard per se could hardly work as a stand-alone measure. Rather, it will rely on other policy measures that would guarantee enforcement. These could be verification/certification schemes (that would certify some of the requirements of the standard), mandatory labelling (to communicate compliance with the standard), DD (that would task private operators with implementing the standards), and measures relating to trade agreements (where the standard could bind third countries.)
Feedback	A deforestation-free standard was the object of abundant feedback from stakeholders. This was the most popular policy measure (among the 14 proposed) in the open public consultation of the impact assessment, with 74% of respondents considering it "completely suitable" to address the problem of deforestation (higher than any other.) The measure has also received feedback via targeted consultation interviews, position papers and the workshops organized within the Commission Expert Group/Multi-Stakeholder Platform on Protecting and Restoring the World's Forests, including the EU Timber Regulation and the FLEGT Regulation. This forum channelled discussions on the best options for deforestation-free criteria that the EU should uphold, with many stakeholders voicing support for the criteria of the FAO and those of the Accountability Framework. The EP report calls for setting a uniform standard based not only on legality, but also on sustainability. [15]

12 https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2020.6057

13 https://www.efsa.europa.eu/sites/default/files/discover/pesticides_report_2015_en.pdf

14 European Commission (2013), The impact of EU consumption on deforestation: Proposal of specific Community policy, legislative measures and other initiatives for further consideration by the Commission, https://ec.europa.eu/environment/forests/pdf/3.%20eport%20policies%20proposal.pdf.

15 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	**A deforestation-free standard that products and commodities linked to deforestation and forest degradation must comply with to be placed on the EU market, as well as a prohibition, in line with EU international commitments[5], of placing on the market products that do not comply with the standard.**
Overall assessment	Positive. This policy measure is part of all proposed policy mixes in section 5.3.

1.2 2. Voluntary labelling

Measure	Voluntary labelling (e.g. similar to organic labels for organic products)
Who does what	**The EU** would define the label and the deforestation-free criteria on which it will be based, as well as the monitoring and enforcement system, possibly issuing EU wide guidance on the use of the label for those who decide to employ it (similar to the organic food label[16,17]). **Economic operators** (businesses) placing products on the EU internal market that seek to apply the label would have to make sure their products, sourcing and production processes comply with the deforestation-free criteria. **Member States** (public authorities) would be responsible to monitor (only) those economic operators that decide to employ voluntary labelling. **Consumers** would be entrusted to boost demand for deforestation-free products based on knowledge. EU-wide information campaigns might be needed to increase the intake of labels by companies and the consumption of labelled products by citizens.
What/ type of instrument	In the example of the EU organic label, the principles, aims and means of labelling was defined through a binding regulation. [18,19]
Legal and technical feasibility	There are already a number of labelling systems in place in the EU, such as the EU Ecolabel or the Organic Logo, suggesting high feasibility. Informing consumers about products that exist on the internal market or that enter the internal market and that have an impact on deforestation and forest degradation is a shared competence of the EU, in line with its environmental objectives. In this sense, the subsidiarity principle would be met. Regarding the proportionality principle, the label must demonstrate that it is relevant, that it can have a positive impact on decreasing deforestation and forest degradation, and that there are no less restrictive means available to achieving the same results. Furthermore, in line with the EU Unfair Commercial Practices Directive (2005/29/EC), environmental claims must be specific, accurate, and unambiguous, and must be supported by evidence.[20] Producers would need to amend their packaging and be able to support the claims they make with evidence, to be presented to a competent authority if/when requested. If certification is involved, certification would be done by certification bodies, while monitoring and supervision would be attributed to public authorities (in MS and third countries) and the EC. In the case of the EU organic label, products go through nearly 60 certification companies that the EU has licensed around the world. The EC supervises these companies to see if they comply with EU rules. Another enforcement possibility would be for companies willing to use the label to be required to conduct DD and mitigate risks along the supply chain according to rules set up by the EU and for MSs and the Commission to monitor enforcement.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected, although the measure might present a partial overlap with the EU Ecolabel for certain product categories (such as paper). Otherwise, according to EU legislation, labelling, advertising and product presentation must not be such as it could mislead a purchaser to a material degree (as per the EU Unfair Commercial Practices Directive 2005/29/EC and Communication on EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs[21]). Additionally, the requirements of the WTO would need to be respected (cf. p. 137).
Effectiveness	The overall effectives of the measure will depend on two factors: Company intake and consumer awareness — as well as how much that awareness influence consumption patterns. For companies, voluntary labelling could be a tool to entice more environmentally conscious consumers by means of distinguishing their products from those of companies without deforestation-free supply chains. The level of acceptance among companies could likely depend on the costs of compliance with the requirements as well as the potential benefits. As an example, around 70,000 products and services, from baby clothes to electrical appliances, carry the EU Ecolabel. The 2017 Fitness Check (FC) of the EU Ecolabel notes that there is higher uptake of the label in countries with strong national and regional labels and that uptake is higher for some product categories than for others (there is limited information as to why this is the case). Barriers to uptake include: costs of compliance, lack of recognition, and lack of awareness.

16 https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/organic-logo_en

17 https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/legislation_en

18 https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/legislation_en

19 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0848&from=MT

20 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32005L0029

21 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:341:0005:0011:en:PDF

Measure	Voluntary labelling (e.g. similar to organic labels for organic products)
	As for consumers, evidence suggests that they generally trust food-related labelling (which will be relevant for any deforestation-related scheme), particularly when it is based on a third-party certification scheme (as opposed to self-certified schemes).[22] At the same time, consumer knowledge of associated EU rules is often low, and labelling can sometimes confuse consumers.[23, 24] Furthermore, the proliferation of both public and private labels adds complexity to consumer choices, a phenomenon known as labelling fatigue. Several experiments in the USA suggested sales of the two most popular coffees rose by almost 10% when they carried a Fair Trade label as compared to a generic placebo label[25, 26].
Efficiency	The costs of the system will likely depend on company intake as well as the compliance and monitoring system put in place. The FC on the EU Ecolabel notes that the cost is relatively low for MS, and does not highlight a significant burden for companies and the European Commission — although the Commission's costs result from communication activities and criteria development/revision, and the latter is time consuming.[27] In contrast, the organic food label has been found to require a lot of manpower to enforce and monitor – the organic food certification system relies on certification by nearly 60 certification companies that the EU licences, that are in turn supervised by the EC through annual audits of all actions undertaken by the certification bodies. In addition, DG AGRI undertakes on-the-ground audits annually. It is reported that this structure requires significant resources for monitoring by the EC.[28] Costs to companies are likely to vary but since this would be a voluntary scheme, only those that consider the cost-benefit ratio to be appealing would implement the measure.
Risks around Implementation	Low company intake and lack of awareness by consumers — and therefore extremely low impact of the policy measure to curb the EU's forest consumption footprint — are obvious risks this measure will face. . There are also risks related to potential loopholes and uneven implementation, if insufficient resources are allocated to monitoring and supervision (both at MS and EC levels). The experience of the organic food label shows that the system is as reliable as the ability of the Commission to effectively monitor certifying organisations and ensure that they comply with the required standards when certifying organic products sold on the EU market.
Compatibility to be combined with another measure	Voluntary labelling would need to rely on other policy measures for ensuring compliance. The measure can be implemented as part of verification systems (with/without minimum requirements for placing on the market based on an EU standard), which can include labelling (and also certification), both public and private. It could also be implemented via a that the companies taking part in the scheme would need to implement, and which public authorities will need to oversee.
Feedback from stakeholders, MSs, third countries and the EP [29]	Voluntary labelling was the object of abundant feedback from stakeholders. It was widely rejected in the open public consultation, with 56% of respondents stating the measure was either "not suitable at all" or "somewhat not suitable." The measure is widely opposed by stakeholders in general, and particularly NGOs, as reflected on the position papers analysed and targeted interviews conducted within this impact assessment. There is broad consensus that voluntary schemes, such as voluntary DD or voluntary labelling, have failed to attain the desired results in terms of reducing deforestation. The EP report also opposes voluntary labels, stating that policy measures that depend only on consumer choice unduly shift the responsibility to purchase deforestation-free products to consumers. Nonetheless, deforestation-free labelling and certification are considered a potential means to increasing supply-chain transparency.
Overall assessment	Negative.

1.3 3. Mandatory labelling

Measure	Mandatory labelling (e.g. similar to nutritional information labels on food products)
Who does what	**The European Union** would be in charge of defining the content of the label and the requirements for its use (i.e. scope of commodities to be covered, definition of deforestation-free, enforcement mechanisms, as well as EU-wide guidance on the use of the label to support implementation at MS level, possibly issuing harmonised pictograms to be

22 https://ec.europa.eu/info/publications/voluntary-food-labelling-schemes-study_en

23 https://ec.europa.eu/info/publications/voluntary-food-labelling-schemes-study_en

24 This was also brought up in our stakeholder workshop on October 2nd, 2020.

25 https://www.researchgate.net/publication/281890516_Consumer_Demand_for_Fair_Trade_Evidence_from_a_Multistore_Field_Experiment

26 https://link.springer.com/article/10.1007/s10806-016-9604-0

27 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1505209798054&uri=CELEX:52017DC0355

28 Labelling - Organic Food - Short Analysis

29 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Mandatory labelling (e.g. similar to nutritional information labels on food products)
	used throughout MSs (e.g. size and design). **MSs** (public authorities) would be responsible for implementing and enforcing the legislation, checking that products are correctly labelled. They could also be required to communicate on the new label to support education of the general public. **Economic operators** (businesses) placing products on the EU internal market that seek to apply the label would have to make sure their products, sourcing and production processes comply with the deforestation-free criteria. They would be required to amend their packaging to include the new label. Depending on the enforcement mechanism selected, the choice of the correct label to apply would require a verification of their supply chain or it could be done via DD obligations for companies. **Consumers** would be entrusted to boost demand for deforestation-free products based on knowledge about their potential impacts on deforestation and forest degradation.
What/ type of instrument	A mandatory labelling requirement would require a binding legislation.
Legal and technical feasibility	Mandatory labels are already implemented in the EU in some sectors such as energy-related products or allergen declarations on food and cosmetic products, which suggests high feasibility. Informing consumers about products that exist on the internal market or that enter the internal market is shared competence of the EU, in line with its environmental objectives. In this sense, the subsidiarity principle would be met. Regarding the proportionality principle, the label must demonstrate that it can have a positive impact on decreasing EU-driven deforestation and forest degradation, and that there are no less restrictive means available to achieving the same results. Furthermore, in line with the EU Unfair Commercial Practices Directive (2005/29/EC), environmental claims must be specific, accurate, and unambiguous, and must be supported by evidence.[30] The criteria to assign the label must be verifiable and implemented at MS level and by economic operators.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected. However, the WTO requirements would need to be respected (cf. p. 137).
Effectiveness	Studies show that mandatory labelling on food products has led to healthier food choices and product reformulations by the industry[31], but their power to nudge consumers can sometimes be seen as limited[32]. Based on the experiences of other labels, factors that influence the effectiveness of mandatory labelling include consumer awareness about the problem that the label is trying to address (in this case deforestation and forest degradation), as well as awareness about the label (and harmonisation across the EU)[33]. This appears to be a success factor of the energy efficiency label for household appliances (consisting of a comparative scale from A to G). According to a Special Eurobarometer study, the label is recognised by 93% of consumers and 79% consider it when they are buying energy efficient products.[34] Although mandatory labelling may be more effective than voluntary labelling (which is dependent on market uptake), experts are still concerned whether labels alone can deliver on EU deforestation and forest degradation reduction ambitions.[35,36] There is also concern that the multitude of existing labels can cause confusion amongst consumers, and that relying on consumer choice shifts the burden of responsibility away from producers.[37]
Efficiency	The cost-benefit balance may be problematic due to the need to monitor and audit the use of the label and the wide-ranging products/commodities that the label would have to be placed on. Costs may outweigh the benefits if consumers are not aware of the label and if they do not value its message (as an important decision-making factor in comparison to price) The efficiency of the measure may be challenged if many products are included in the scope for which low risk of deforestation is expected in their region or product category. Furthermore, in the context of combining it with a deforestation-free requirement whereby only compliant products

30 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32005L0029

31 Shangguan et al., 2019, https://pubmed.ncbi.nlm.nih.gov/30573335/

32 Ikonen et al., 2019, https://link.springer.com/article/10.1007/s11747-019-00663-9

33 Iraldo and Barberio, 2017, https://pdfs.semanticscholar.org/7f35/2fc43dbeae011730b69092f93fa1f4adcea3.pdf

34 https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/about_en

35 https://www.europarl.europa.eu/doceo/document/A-9-2020-0179_EN.html

36 This was also reflected in the consultation with stakeholders that took place on October 2nd, 2020.

37 https://www.europarl.europa.eu/doceo/document/A-9-2020-0179_EN.html

Measure	Mandatory labelling (e.g. similar to nutritional information labels on food products)
	could be placed on the market, the labelling would only be used for information purposes, and its costs more difficult to justify.
Risks around Implementation	Monitoring issues are similar between voluntary and mandatory labelling, but mandatory labelling requires a larger quantity of products to be labelled and its mandatory component is expected to increase enforcement needs. If the labelling scheme's design relies a lot on the Commission's monitoring ability this will substantially increase the workload of the Commission. Furthermore, monitoring the enforcement of the labelling requirements will increase MS workload. Both might result in a weak monitoring system, loopholes and fraud. A key issue is how to build up economic incentives for operators to comply with the rules. Moreover, there is a risk for economic operators to be disproportionately affected. On the consumer side, there is a risk of overloading them with labels and in consequence, a risk of the label not providing sufficient incentives to consumers. Moreover, it could shift the responsibility away from producers.
Compatibility to be combined with another measure	A mandatory labelling requirement could be implemented as part of a verification system (with/without minimum requirements for placing on the market) based on an EU standard. The measure can also be combined with DD, an IUU-like instrument, or country benchmarking, in support of transparency, communication, and outreach to consumers.
Feedback	Mandatory labelling was the object of abundant feedback from stakeholders. In the Open Public Consultation, 47% of respondents judged the measure to be "completely suitable" to address the issue of deforestation and forest degradation and another 21% considered it "somewhat suitable". The EP's report takes the view that labelling is not sufficient to halt deforestation on its own: "third-party certification and labels alone are not effective in preventing forest and ecosystem-risk commodities and products from entering the Union internal market; […] third-party certification can only be complementary to, but cannot replace, operators' thorough mandatory DD processes". [38]
Overall assessment	Positive. The measure could be more efficient when combined with other measures (for example mandatory due diligence).

1.4 4. IUU like approach

Measure	**Public national legality verification schemes, prohibited operators list, country carding system and a potential export ban to the EU (a replication, with the necessary adaptations, of the EU legislation in place for illegal, unreported and unregulated (IUU) fishing)**
Who does what	The **European Union** will be responsible to set up the legislation and relevant provisions. The system will be composed of several parts: deforestation-free criteria; a requirement for producing countries to establish a 'sustainable origin' certification scheme (mirroring the catch certification of the IUU), a monitoring system of the certificate, a list of contravening operators (principle of "name and shame", also, additional penalties could be attached to being listed) and a country carding system. The latter will allow for the EU to issue formal warnings (yellow card) and to ban from the EU market (red card) products from countries that fail to comply with provisions of the certification scheme. Yellow cards do not have legal consequences but rather trigger a dialogue process between the country and the Commission **Producer countries** will need to issue and validate certification, guaranteeing for example the origin and weight of each consignment, the geo-location of the plantation, etc., along with in agreement with a 'deforestation free' standard defined at EU level; EU authorities will check these certificates to verify that shipments are lawful. The **MSs** will monitor the sustainable origin certification scheme. **Economic operators** are responsible for providing making sure their products comply the deforestation-free criteria, for providing the documentation to obtain certification in the country of origin and for trading only with products having the sustainable origin certificate in order.
What/ type of instrument	This would take the form of a new mandatory legislation.
Legal and technical feasibility and proportionality	The EU IUU fishing system is unique in its kind, hinting at some difficulties to replicate the system for the objectives set out in this impact assessment. In addition, the problem of deforestation differs from that of illegal fishing in several key features: a) Production of several key commodities linked to deforestation is much more concentrated in a few countries, making an import ban more consequential; b) There is no international treaty on deforestation setting out obligatory provisions for countries to comply with; c) supply chains associated with

38 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Public national legality verification schemes, prohibited operators list, country carding system and a potential export ban to the EU (a replication, with the necessary adaptations, of the EU legislation in place for illegal, unreported and unregulated (IUU) fishing)
	deforestation are generally more complex, making monitoring and enforcement more difficult. However, no obstacle that cannot be overcome has been detected. There is an existing body of international law addressing deforestation and forest degradation and while these are not legally-binding, they could enable the EU to address these issues through regulatory measures.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected. However, the WTO requirements would need to be respected (cf. p. 137). The lack of a multilateral agreement to rely on is not an insurmountable obstacle. .
Effectiveness	The IUU system enjoys a good reputation among NGOs and other stakeholders but there is a lack of precise quantitative information on its effectiveness. The only reports identified related to its performance are from NGO IUU Watch. This factor has limited potential effectiveness forecasts for an adaptation of this system to the forest field (see section 6.6.) It is worth noting, however, that the country card system is credited by DG MARE as having the biggest impact in the fight against illegal, unregistered fishing.
Efficiency	The costs of this system – as compared to DD or public certification, for example – will partially be outsourced to producing countries in charge of establishing robust certification systems that make sure commodities sold within the EU comply with certain criteria. Some economic operators will also have comparatively lower costs as they will only check the certificates already attributed (rather than verifying themselves via due diligence that the bought products comply with those criteria.) The EU and MSs will bear the implementation, monitoring and enforcement costs. Some information has been identified on the personnel and other implementation costs of the current IUU Regulation (applied to fishing). It is reasonable to assume that an IUU like provision for fighting against deforestation and forest degradation would have requirements in the same order of magnitude, although we do expect efficiency gains due to replicating an existing and successful system.
Risks around implementation	As described above in the feasibility analysis, there are substantial differences between the fishing market and the global product market potentially considered by this EU intervention on deforestation. The risks identified relate to those differences: a) Potential rifts with trade partners; b) challenges before the WTO; c) or the difficulty for the European companies of finding new supply chains if big producers are imposed an import ban. The current IUU Regulation system for fisheries is seen positively by the Commission and NGO (IUU Watch) as it does not overload European companies and operators with excessive administrative burdens and legal uncertainties generally linked to DD obligations. [39] The system established by the IUU Regulation puts responsibility on third countries to do the necessary reforms and enforcement work. A key benefit of this measure is that it replicates an existing regulatory mechanism that has already been in place for a decade, from which the Commission, as well as MSs can learn in terms of preparing a legislation and setting up the system.
Compatibility to be combined with another measure	The approach presented in the IUU Regulation could work as a stand-alone measure or be combined with other measures.
Feedback	The IUU fishing approach is not considered as part of the EP report. In the Open Public Consultation, nearly 50% of respondents judged the measure to be "completely suitable" to address the issue of deforestation and forest degradation and another 23% considered it "somewhat suitable". Feedback from stakeholders in several workshops indicated that the adaptation to the forest field may be challenging but not impossible.
Overall assessment	Positive.

39 Communication from DG MARE, http://www.iuuwatch.eu/member-state-implementation/

1.5 5. Voluntary due diligence

Measure	Voluntary due diligence
Who does what	There are a range of ways a voluntary DDS could be established. **A group or a range of representative economic operators** could establish a voluntary framework covering the main provisions and standards of a voluntary DDS, including relevant provisions for monitoring. Design within a stakeholder platform may ensure participation and uptake of the system. Alternatively, the DDC could be designed by the European Commission. The enforcement could relate to the granting of a voluntary DDS status or removing this status in the case of non-reporting. To ensure accountability, a publicly available registry of participating operators would be established. **The European Commission** could provide technical support in developing the DD framework principles and reporting requirements to ensure the approach of the voluntary DDS is appropriate and would lead to effective changes. **Economic operators** would voluntarily establish a DDS following the given framework and reporting requirements. They would not be legally obliged to set in place a DDS, but would be encouraged to and provided with guidance by the economic operators group and/or the European Commission. **Competent Authorities** (CAs) could, depending on the chosen framework, involved as well, i.e. be assigned audit responsibilities, to conduct spot checks confirming that voluntary DDS participation status is being correctly allocated and that the DDS principles are upheld.
What/ type of instrument	A voluntary DDS would be defined under an agreed voluntary DDS framework. Reporting requirements would be standardised. This would not be legally binding.
Legal and technical feasibility	There is no experience to date of WTO dispute cases dealing with similar issues, so WTO risk would be low. Although not legally binding, the voluntary system would still need clarity to ensure universal understanding of the requirements. This would include clarity and narrowness of the definitions of key concepts: e.g. definition of sufficient/good DD, definition of 'negligible risk'. Voluntary DD has already been carried out by leading companies, i.e. to fit the UN Guiding Principles for Business and Human Rights or the OECD's DD Guidance for Responsible Business Conduct - two global frameworks that set out broad rules for corporate DD.
Coherence with EU and international policy commitments and objectives	Operating a voluntary DDS scheme would raise coherence issues with other EU commitments and might neither reflect the strong ambitions set out in the European Green Deal, the new EU Forest Strategy or the new EU Biodiversity Strategy. These strategies all include EU leadership on international action for global public goods and sustainable development goals. The voluntary measures may fall short of the combined objectives in these strategies as it does not guarantee a significant uptake of the DDS.
Effectiveness	Voluntary approaches have shown abundant shortcomings in the past decades of implementation. The most relevant problem might be the level of industry uptake and the incentives it might create for free-riding. A recent report[40] focusing on 500 relevant corporations and financial institutions concluded that 43% of them did not have in place any deforestation commitments. This means companies aiming to clean their supply chains and prevent deforestation and forest degradation are forced to compete on the EU market with companies that do not implement sustainability considerations in their supply chains and face at the same time the increased costs of sourcing sustainably. A study reviewing the effectiveness of more than 150 voluntary schemes suggests the impact of most voluntary schemes is limited, with over 80% performing poorly on at least one performance indicators[41]. Research also demonstrates that commonly used voluntary DD tools are not very effective at improving respect for rights[42]. For voluntary measures where expulsion is the ultimate sanction but the actual impacts are negligible (e.g. the economic operator can effectively trade regardless), most collective voluntary initiatives are vulnerable to failure. This is also because of the lack of common standards and an inability to effectively monitor the application of the requirements of the scheme. Another problem may be that the added value that the operator gains (the competitive edge or differentiation) decrease as the proportion of operators partaking in the DDS increases. Hence, this may discourage companies from joining the scheme or drive participants to cut corners in order to out-compete one another once again.
Efficiency	In theory, the enforcement and monitoring cost of voluntary schemes should be lower than or similar to that of a mandatory scheme. Due to the measure being voluntary, there would be no enforcement costs for public authorities. The compliance costs of the private sector would be broadly similar to those incurred by a mandatory

[40] https://forest500.org/sites/default/files/forest500_2021report.pdf

41 http://ww2.rspb.org.uk/Images/usingregulation_tcm9-408677.pdf

42 https://euideas.eui.eu/2020/07/03/human-rights-due-diligence-making-it-mandatory-and-effective/

Measure	Voluntary due diligence
	regime, with the difference that they would apply only to the operators that voluntarily take up the obligation to perform DD. In the DD scheme, operators have to prove that timber placed on the EU market does not come from illegal sources. This can be a challenging exercise and operators may have varying abilities to meet this obligation. In particular, the burden on operators who have not set up a DDS before might be proportionally higher than for larger operators.
Risks around Implementation	The potential inability of operators to collect and reasonably check all relevant information, particularly SMEs who may be expected to have less understanding of the DD requirements and its needs, and therefore uneven and ineffective implementation, are the main risks of this measure. There may also be a risk of different interpretations of the voluntary DDS, if it is not sufficiently clear enough. Additionally, there is a risk that increasing participation may reduce the competitive differential aspect of having voluntary DDS participation status, and drive companies to cut corners. Given the approach would be voluntary there is a risk of lack of monitoring and enforcement. This could occur if whoever is responsible for monitoring misses resources and/or political will to monitor regular implementation, or if audit checks are not carried out frequently enough. If the voluntary DDS entails high additional costs, operators might be incentivised to under-report the risks associated with their current supply chain.
Compatibility to be combined with another measure	The uptake might increase as a consequence of other measures around consumer awareness and information availability. Consumer awareness may in turn influence demand and likelihood of operators participating in a voluntary DDS. Measures include benchmarking or country assessments (e.g. index) showing which countries are exposed to and effectively combat deforestation, promotion through trade and investment agreements of trade in legal and sustainable products, mandatory disclosure of information (including corporate non-financial reporting) and consumer information campaigns in the EU.
Feedback [43]	Voluntary DD was the object of abundant feedback from stakeholders. It was widely rejected in the open public consultation, with 56,9% of the stakeholders considering it "not at all suitable" or "somewhat not suitable". Overall, the EP assessment finds that "*voluntary anti-deforestation commitments have not yet been sufficient*". EP view is that third-party certification can only be complementary to a mandatory DD[44].
Overall assessment	Negative. The effectiveness is likely to be low.

1.6 6. Mandatory due diligence

Measure	Mandatory Due Diligence
Who does what	**The European Commission** will establish a legislative framework covering the main provisions of a DDS, including relevant provisions for monitoring and enforcement. Key insights and lessons learnt from the DDS under the EUTR should feed the development of a new DDS for commodities linked to deforestation and forest degradation. **Economic operators** will be obliged to set in place a DDS able to capture a wide variety of commodities that may be associated with deforestation or forest degradation. **Competent Authorities** (CAs) will be responsible for monitoring and enforcing the DDS and will ensure that businesses/suppliers in third party countries provide necessary information to prove the DD requirements. Competent authorities could be responsible to carry out audit checks where economic operators will need to demonstrate their DDS compliance with the official requirements.
What/ type of instrument	A mandatory DDS will be defined under an EU-wide legislation (most likely a Regulation, rather than a Directive), that will further need to be calibrated to the commodities they import and their relevant supply chain.
Legal and technical feasibility	Regulations like the EUTR and the Conflict Minerals already have in place a mandatory due diligence system, suggesting high feasibility.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected. There is however a wide variety of existing EU standards for DD checks across different scopes, be it either for products (e.g. timber, mineral) or for broader corporate behaviour or provision of financial services. It is necessary to

43 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

44 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Mandatory Due Diligence
	avoid duplication of checks and thus incorporate as many as possible of these schemes within the overarching DDS. The ongoing proposal[45] from DG JUST will have to be considered in this analysis.
Effectiveness	Overall, the effectiveness will depend on many factors. Challenges of implementability undermining the effectiveness of the EUTR have been detected in the Fitness Check. New due diligence designs would need to build on those lessons learnt. Some of those challenges detected relate to uneven implementation, insufficient penalties or difficulties of tracing products to the area. Effectiveness might also rely on definitions of key terms – e.g. negligible risk and the way MSs and operators will interpret the provisions as DD is understood differently based on the legislative tradition of the country. The successful implementation of the measure relies on effective communication between and data availability to CAs, which is not always given (e.g. communication with customs). In addition, it relies on effective national legal systems to ensure enforcement is taking place, along with prosecution of those breaching the mandatory provisions (which appears to be a challenge under the EUTR DDS).
Efficiency	DDS requirements impose a substantial cost to CAs and enforcement authorities for performing the necessary checks as well as carry out prosecution, as assessed in the EUTR. However, when assessed in terms of share of the trade value that this costs represent, they don't seem disproportionate. Due diligence obligations also creates costs for companies being required to create and use these due diligence systems. Depending on the complexity and risks of their supply chains, this costs can be higher or lower. Some mitigating measures, such as simplified requirements for low risk areas, could be conceived. The advantage of mandatory DD vis a vis voluntary DD is that it doesn't allow for free-riding.
Risks around Implementation	Some MSs have voiced concerns that increased DDS complexity might reduce implementation. There are also concerns that SMEs will find implementation more difficult. As is the case with many policy measures, reliance on effective and even implementation and enforcement across MSs might prove difficult. An advanced DDS should entail high additional costs, operators might be incentivised to under-report the risks associated with their current supply chain
Compatibility to be combined with another measure	DD mandates are reported to promote the use of certification schemes, and possibly voluntary/mandatory labelling systems. Operating a DDS would also benefit from developed country benchmarks and mandatory disclosures of information.
Feedback from stakeholders, MSs, third countries and the EP [46]	Mandatory DD was the object of abundant feedback from stakeholders. It was widely supported in the open public consultation, with 69% of the stakeholders considering this measure to be "completely suitable" or "somewhat suitable". The overwhelming majority of qualified stakeholders — businesses associations and NGOs — supported a mandatory due diligence regime, although the details of this system vary from one organization to another. The EP report calls for the European Commission to present an EU-legal framework based on a mandatory DD approach to ensure sustainability and deforestation-free supply chains for products placed in the EU market.
Overall assessment	Positive.

1.7 7. Mandatory public certification

Measure	Mandatory public certification
Who does what	The **Commission** would be responsible for introducing this scheme, and MS would be involved in the enforcement of the measures. Industry would have to comply with certification in order to trade its products in the EU (ban for products without certification). The roles in the establishment and functioning of the scheme would be as follows: The **EU** establishes deforestation-free criteria and a product scope and requires that all products within the scope sold in the EU should comply with the criteria. Products that do not comply with the criteria are not authorised to be placed on the EU market. **Member States or third countries** could apply for the EU to review and approve mandatory public certification systems on a country level. The approval would be contingent on the reliability of such a system in ensuring compliance with the requirements of the EU policy intervention, in particular the deforestation-free definition. This

45 https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance

46 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Mandatory public certification
	would include specific requirements in terms of transparency and reliability. Another possibility would be for the EU to outsource the verification that the products meet these criteria to a public body or one of its agencies, for example the European Environment Agency. The EU controls the quality and reliability of the certification. **Individual companies** seek public certification for their products prior to placing on the market. Financial support can be granted for SMEs. A degree of self-certification accompanied by submission of information could be considered.
What/ type of instrument	Mandatory legislation.
Legal and technical feasibility	As such a mandatory certification requirement should meet the subsidiarity criteria. Regarding the proportionality principle, it will be necessary to demonstrate that a mandatory certification scheme would be relevant and would have a positive impact on decreasing deforestation and forest degradation, and that there are no less restrictive means available to achieving the same results. One key issue with certification is the challenge of monitoring, disclosure and enforcement. A recent study by Bager et al on political feasibility for EU policy options gives this policy option a Medium score on advocacy (actors supporting a given policy option), medium score on institutional complexity, and low score for cost.[47]
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected, although the measure falls under the scope of the WTO TBT Agreement. The latter potentially restricts the scope of natural resources sustainability certification systems. Developing countries increasingly see certification as a de facto barrier to trade and have been quick to voice their concerns in the WTO deliberations, particularly those by the Committee on Trade and Environment. In order to respect the WTO requirements mentioned above (cf. p. 137) voluntary certification should inform consumers about risks to deforestation/forest degradation in regions (as opposed to countries) that are prone to such risks, and domestic (EU) deforestation/forest degradation should be covered as well.
Effectiveness	It will very much depend on the type of enforcement system selected. In the case of national systems that are approved by the EU, it will also rely on the willingness of third countries and member states to set up their own public certification systems. If a central authority was to be given the role of certifying, appropriate resources would be needed. Some previous examples could be used to assess the potential effectiveness. The effectiveness of the car safety related legislation has been found to be credited for the large reduction in fatal and serious injury risk amongst car occupants, followed by measures targeting drink-driving and road safety engineering measures. [48]
Efficiency	Certification can be a complicated and costly process and resources expended to certify operations and to support the various schemes' managerial structures could be used for other ends. Monitoring would be assumed by public administrations rather than private companies, such as in the due diligence system. An EP analysis notes that while policy options including mandatory certification are the most costly, the costs remain overall proportional when considering overall GDP share.
Risks around Implementation	Countries may not be willing to set up national certification systems. If, on the other hand, it relies on an EU public body and its monitoring ability, this will substantially increase the workload potentially resulting in a weak monitoring system, loopholes and fraud if no adequate resources are given. There are also challenges in the implementation due to the fact that the mandatory certification standards are a 'de facto ban' for those products that are not certified.[49] Suppliers incur both direct and indirect costs in pursuing certification. Direct costs include those associated with the certification process – such as the fees paid to certifiers to conduct initial assessments and subsequent audits, hold stakeholder consultations and prepare reports. Achieving certification may also require investments in machinery, staff training, infrastructure and logistics to comply with the certification standards; these indirect costs could be much higher than direct costs, depending on the gap between the existing quality of management and that required to meet the certification standards.
Compatibility to be combined with another measure	This measure is compatible with other measures.
Feedback from stakeholders,	Mandatory public certification system was the object of abundant feedback from stakeholders, who approved it by the majority. 67% of them think the measure to be "completely suitable" or "somewhat suitable".

47 Bager et al (2020), Reducing Commodity-Driven Tropical Deforestation: Political Feasibility and 'Theories of Change' for EU Policy Options, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3624073

48 https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/specialist/knowledge/pdf/vehicles.pdf

49 EPRS

Measure	Mandatory public certification
MSs, third countries and the EP [50]	Corresponds to the EP report policy option 2 'mandatory certification standards' and policy option 3 'mandatory certification standards with DD'. The EP analysis assessed the effectiveness of measures containing mandatory certification standards and noted that these measures were the most effective in eliminating deforestation and associated carbon emissions. It estimated that avoided deforestation due to reducing EU imports of commodities associated with deforestation would result in 197 500 hectares of avoided deforested land and 56 million tonnes of avoided CO2 emissions.[51]
Overall assessment	Positive (option 3)

1.8 8. Private voluntary certification systems either new or those already in place

Measure	Private voluntary certification systems, new and the ones already in place
Who does what	**European Commission** would guide the development of private schemes by 'encouraging' such development in a political declaration (e.g. COM DOC). **MSs** could also be required to communicate on the existence of certification schemes to further disseminate their use to the general public. **Economic operators** would voluntarily decide whether or not to amend their packaging to include the information on certification and go through the whole certification process, which would require a verification of their supply chain. **Consumers** would be entrusted to boost demand for deforestation-free products based on knowledge about their potential impacts on deforestation and forest degradation.
What/ type of instrument	A non-binding instrument would be sufficient for this measure as the Commission would only 'encourage' such private / voluntary schemes.
Legal and technical feasibility	No legal instrument would be required for this measure. There are many existing voluntary private schemes and more could be created without technical limitation.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected, although non-EU countries increasingly see certification as a de facto barrier to trade. In order to respect the WTO requirements (cf. p. 137), .
Effectiveness	There are numerous concerns about the effectiveness of this policy measure. The first, as with any other voluntary system, is the risk of minimal uptake by companies and the potential incentive for free-riding. Second, there is abundant literature on certification schemes' shortcomings in terms of governance, transparency, clarity of standards, reliability of monitoring systems, etc. The consensus is that these schemes on their own have not been able to provide the changes needed to prevent deforestation. The EP study notes that the effectiveness of many voluntary commitments remains to be established, and results are non-conclusive on whether deforestation is actually reduced. Over the past years, concerns have been raised over the efficiency and integrity of chain of custody (CoC) systems. Some see these systems as open to fraud given that certified companies may easily mislead their auditors although the audit is conducted with the greatest care and according to all procedures. A company may be selling products containing a volume of "certified" timber material that exceeds the volume of certified raw material that they are buying. The current CoC systems seem to only work for companies not committing deliberate fraud. Concerns about the integrity of CoC systems are mounting, and therefore discussions over this gap in the CoC systems have grown in strength in recent years.
Efficiency	Certification will only represent a cost for companies using the systems. The cost-benefit balance could in any case be problematic because the costs of monitoring and auditing for certification may outweigh the benefits if consumers are not aware of the certification scheme and do not value its message. For producing companies or smallholders willing to get certified, these systems can be complicated and costly. These costs can be prohibitive in particular for SMEs that could resist going through the certification process on this basis. Many private certification schemes already exist however, so the encouragement of and awareness rising about pre-existing certification schemes would not be as costly

50 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

51 EPRS 2020 EU Legal Framework to halt deforestation

Measure	Private voluntary certification systems, new and the ones already in place
	as implementing new ones.
Risks around Implementation	Since economic operators have the choice of being certified or not, businesses who do not employ these certifications might be affected in a disadvantageous way. Some companies might also have a harder time tracing their supply chain (e.g. products using palm oil) in comparison to others (e.g. coffee), depending on their supply chain's length and complexity. For instance, a manufacturing company producing lotions which include a small portion of palm oil might be less familiar with suppliers compared to a coffee company which sells the commodity directly in a less processed state. There is an important risk that producers around the world might respond by creating their own national certification schemes, as happened in reaction to the FSC.[52] Another challenge of private certification is the competition it creates with other schemes including public certification schemes. This can undermine the effectiveness of some schemes, or at least challenge its implementation as shown in the context of the FLEGT. Particularly important are also definitional issues and internal variations in definitions among the schemes (e.g. on 'what is a forest?' and 'what is deforestation?'). Weak thresholds or unclear definitions can allow for compliance-creep and make verification difficult. The challenge is difficult to work with, and stricter definitions may just lead to some companies opting out or not seeking certification in the first place. Regarding issues for SMEs, first movers who shape the rules of certification schemes can tailor the provisions to match their technical and operational requirements, leaving late movers with higher switching costs. This can seriously disadvantage SMEs in developing countries where low labour costs and low capital investments may serve as the basis of an operation's cost advantage in the market.[53] One main concern with certification of individual producers or supply chains is that they fail to see the full context and surroundings. Even if most agricultural farms in an area are certified, land tenure can still be weak, poverty increasing, and legal and illegal deforestation taking place. To accommodate this, a few certification schemes provide add-ons, such as 'RSPO NEXT' that includes a voluntary addendum focusing on avoiding deforestation and protecting indigenous people. Conceptually, recent thinking talks of a Jurisdictional Approach to Zero Deforestation Commodities (JA-ZDC) in which the supply chain certification is expanded to cover the entire administrative region or unit that it is situated in.
Compatibility to be combined with another measure	Yes.
Feedback	The measure got rather negative reactions in the open public consultation. Almost 40% of the widely responding stakeholders considered "Private certification systems, new and the ones already in place in the EU market" as "not at all suitable" or "somewhat not suitable". The EP report calls to not consider voluntary (private) certification measure as these are seen as insufficient.[54]
Overall assessment	Negative.

1.9 9. Benchmarking

Measure	**Build benchmarking or country assessments (e.g. index) rating countries according to deforestation and forest degradation**
Who does what	**The European Commission**: would need to establish the criteria for benchmarking a country's performance; collect and process data; and publish results. Countries would receive a score, which could then be compared against other countries.

Measure	**Build benchmarking or country assessments (e.g. index) rating countries according to deforestation and forest degradation**
	A review of the criteria at a set period of time (e.g. 2 years) and updated data would need to be collected to ensure benchmarking and/or country assessments represent the existing scenario. The quality and accuracy of information may need to be evaluated, as well as the enforcing the provision of information from third countries and/or producers. **Others**: Depending on how the assessments are conducted and then used, other stakeholders may be involved (e.g. MSs providing evidence or assessments).
What/ type of instrument	Depending on the effects of the benchmarking considered, the measure could be a non-binding/non-regulatory instrument or a binding regulatory instrument.
Legal and technical feasibility	The feasibility and proportionality would vary based on the effects of the benchmarking (i.e. information purpose vs access to EU market). For this measure to be a workable option, the data on which the benchmarking is based would need to be transparent, objective and scientifically-based.
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected. To meet the requirements of the World Trade Organisation (WTO), the measure would need to be non-discriminatory (to avoid an unfair advantage to commodities or products produced domestically, the criteria should apply both abroad and domestically) and be based on concrete, science-based considerations. National forest monitoring may already exist in some countries. The OECD also undertakes Environmental Performance Reviews of individual OECD countries,[55] where assessments of a country's progress in achieving environmental and sustainable development objectives are reviewed, with elements such as peer reviews included.
Effectiveness	Whilst there is limited evidence concerning the use of benchmarking for policies relating to deforestation, the application of the IUU fishing regulation country carding system is thought to be the most relevant tool in providing incentives to country exporting to the EU but also for those not exporting to the EU that do not want to lose the possibility of future trade partnerships. In addition, dialogues opened as part of the red carding system are found to further the knowledge and understanding of the IUU fishing regulation. [56] The measure's implementation could identify and propagate best practice. Benchmarking or country assessments would also enable the ranking of countries and would be available to all stakeholders, which would facilitate consumer choice and have the potential to impact decisions made at global, regional and national level surrounding deforestation and forest degradation.
Efficiency	Regarding costs, if information is readily available through existing monitoring and data collection processes, costs may be relatively low, compared to if new monitoring and data collection approaches had to be undertaken. Costs will be associated with the identification and review of criteria, benchmarking methodology and publishing of the compiled information. Information will also need to be updated on a regular basis to ensure accuracy of a country's assessment/benchmarking which will lead to additional costs.
Risks around Implementation	The burden placed on the European Commission (and MSs) for compiling the assessments could be manageable, with the country assessments needing to be updated regularly. The risks are more around the criteria and thresholds selected to benchmark countries and the potential diplomatic issues that those decisions may entail. Objective, transparent and science-based data to underpin the benchmarking system could be appropriate risk mitigating tools. If country assessments are used to impact decisions concerning trade, such an application may require an assessment of WTO compliance. Further investigation into the criteria which could be used for benchmarking and the intended use of the information is required for greater consideration of the benefits.
Compatibility to be combined with another measure	This measure is likely compatible to be combined with other measures and in theory, this could complement any measure by providing some additional information / incentives to the overall measure.
Feedback	"Benchmarking or country assessments" were the object of abundant feedback from stakeholders, who by their majority approved these measures. 55% considered it to be "completely suitable" or "somewhat suitable". The EP report does not consider benchmarking measure. [57]
Overall assessment	Positive. Likely useful as a combination measure.

55 OECD. (no date). Environmental Performance Review. [online]. Available from: https://www.oecd.org/site/peerreview/environmentalperformancereviews.htm [Accessed 16 October 2020].

56 Information from targeted interview

57 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

1.10 10. Promotion through trade and investment agreements of trade in legal and sustainable products

Measure	Promotion through trade and investment agreements of trade in legal and sustainable products
Who does what	The **European Commission** will be responsible to set up the trade and investment agreements with third party-countries. Furthermore, the European Commission could improve effectiveness of Sustainable Development chapters to included deforestation-free commitments, the include Trade and Sustainable Development (TSD) provisions and promote 'Sustainable Forest Management' in EU Free Trade Agreements (FTAs) **Economic operators** and **third-party countries** would be responsible for providing the documentation to obtain benefits from FTA.
What/ type of instrument	International Trade Agreements including FTAs.
Legal and technical feasibility	The largest constraints to trade policies might be political rather than legal. There is an existing body of international law addressing deforestation and forest degradation and while it is not binding, it does provide a legal basis for the European Commission to act. Most FTAs hold sustainable development provisions on sustainability and environmental governance, hence set a good frame for addressing deforestation. TSD chapters envisage trade and investment as a means to support and pursue sustainable development objectives and include provisions on the conservation and sustainable management of biodiversity. A recent report from the EP considered a range of possible trade related options for instruments to halt deforestation and forest degradation, these are declined at unilateral, bilateral and multi-lateral levels[58].
Coherence with EU and international policy commitments and objectives	No issues of compatibility with EU and international legislation were detected. However, the WTO requirements would need to be respected (cf. p. 137). Recent EU trade deals, including the EU-Mercosur provisions on trade in goods, set out that 'environmental measures, such as measures taken to implement multilateral environmental agreements' fall within the general exception, as such we consider this is coherent with other trade legislation.
Effectiveness	**TSD** has been under scrutiny recently with criticisms highlighting it lacks an enforcement mechanism and therefore had little impact on sustainability. More ambitious implementation has been supported by many stakeholders. An increasing number of experts are also of the opinion that, in order to be effective, the sustainability related provisions of EU trade agreements should not be dealt through a separate process but that they should be part of the formal dispute settlement mechanism between the trade parties.[59] The existing evidence indicates that the assessment of environmental impacts linked to **EU FTAs** is not (yet) able to treat the environment with the comprehensiveness and robustness it requires. Consequently, dedicated efforts are needed to ensure that the information underpinning EU FTA negotiations and implementation can correspond to the challenges linked to trade liberalisation. [60]
Efficiency	Trade agreements' negotiation costs vary but remain limited to administrative costs for negotiating (including travels) and developing supporting studies. Application costs depend on the provision's impacts on business. There could be no costs for business for clauses dealing (exclusively) with general commitments, information exchange and dialogue. [61] These would include adding provisions regarding sustainability in FTAs, and possibly re-negotiating trade agreements with third-party countries. No comprehensive overview of trade agreement negotiation costs has been identified; however, the CETA trade agreement between the EU and Canada was reported to have cost a total of EUR 1,031,452.26. This estimate covers the 2009-2016 period.[62]
Risks around Implementation	The inclusion of commitments to improve trade in deforestation-free produced commodities and products and of provisions for dialogue and cooperation is clearly feasible; several new FTAs already include them. Negotiating

58 European Parliament, In depth analysis, How can international trade contribute to sustainable forestry and the preservation of the world's forests through the Green Deal?

59 Institute for European Environmental Policy (2020), https://ieep.eu/uploads/articles/attachments/9c951784-8c12-4ff5-a5c5-ee17c5f9f80b/Trade%20and%20environment_FINAL%20(Jan%202020).pdf?v=63748123099

60 Institute for European Environmental Policy (2020), https://ieep.eu/uploads/articles/attachments/9c951784-8c12-4ff5-a5c5-ee17c5f9f80b/Trade%20and%20environment_FINAL%20(Jan%202020).pdf?v=63748123099

61 COWI (2018), Feasibility study on options to step up EU action against deforestation, https://iopscience.iop.org/article/10.1088/1748-9326/aa625e/pdf

62 https://www.europarl.europa.eu/doceo/document/P-8-2016-002914-ASW_EN.html

Measure	Promotion through trade and investment agreements of trade in legal and sustainable products
	reductions in tariffs for sustainably produced commodities would be distinctly more complex but less so at a bilateral than a multilateral level.[63] Some of these agreements are very lengthy to negotiate and adopt, leading to even longer time before results are visible (e.g. MERCOSUR trade agreement took c. 20 years to agree).
Compatibility to be combined with another measure	Bilateral Trade Agreements related measures are compatible with all other measures.
Feedback	This measure was the object of abundant feedback from stakeholders, who mostly approved it. 75% of the stakeholders consider it to be "completely suitable" or "somewhat suitable". The EP report does not consider trade agreements as a separate measure / option.[64]
Overall assessment	Negative for the aims of this initiative.

1.11 11. A VPA-like approach in combination with possible legislative measure(s)

Measure	Development and cooperation assistance to producing countries
Who does what	The **European Commission and third countries** engage in negotiations regarding the design of a licensing system certifying that products exported to the EU comply with certain requirements agreed between the EU and partner countries, inspired by the Voluntary Partnership Agreements of the FLEGT Regulation. **Stakeholder consultations** are organised to define the exact scope of products to fall under the scheme as well as a set of EU level defined sustainability criteria with which products need to comply in order to be certified by the product assurance scheme. **VPA countries** are called to set up a robust and credible assurance scheme including effective supply chain controls and mechanisms for verifying products compliance with the criteria set earlier An **independent party** is appointed to conduct audits to assure the proper functioning of the assurance scheme. **Exporters** of relevant products need to certify them before exporting to the EU.
What/ type of instrument	Voluntary Partnership Agreements (VPAs)
Legal and technical feasibility	No issues related to legal feasibility identified at an EU level. Similar to the functioning of the existing scheme set up by the FLEGT for timber-product, conducting VPAs for a wider scope of products should be possible. However, in contrast with the FLEGT approach, the different viewpoint taken focusing on the sustainability of products rather than on their legality in each of the partner countries might cause internal coherence issues as legally produced products would not necessarily meet the sustainability criteria set. Furthermore, the question is, how these criteria would interplay with the criteria defined at the EU level, since it is not clear what would be negotiated. Experience from the timber-product VPAs highlights the difficulties entailed not only in concluding VPA agreements but also in developing and implementing a product assurance system afterwards. In the 15 years of implementation of the regulation, only 15 countries have engaged in the VPA process at all (implementing and negotiating), only 7 have signed VPAs and only one (Indonesia) has and operating system and reached the phase of issuing FLEGT licences. For the countries which have not reached licencing (14 out of 15), but are still covered by the EUTR, the MSs' CAs stated that often it is more difficult to gather the necessary information for the EUTR implementation than in non-VPA countries. Most importantly though, the current VPA scheme of FLEGT has resulted in a very poor coverage of EU timber-based imports having no effect on the grand majority of EU imports. As such a large fraction of relevant imports to the EU is not captured by the VPAs while the investments and efforts at EU level are important. Not all potential partner countries were willing to engage in this kind of negotiations.
Coherence with EU and international policy commitments	By focusing on legality only this measure would fall short of addressing the central challenges at the EU level such as protecting biodiversity and long-term decarbonisation.

63 COWI (2018), Feasibility study on options to step up EU action against deforestation, https://iopscience.iop.org/article/10.1088/1748-9326/aa625e/pdf

64 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Development and cooperation assistance to producing countries
and objectives	While the current experience with FLEGT focusing on timber *legality* has brought no conflict with WTO, an approach based on a set of EU-defined sustainability criteria may be more challenging to uphold against WTO rules. In specific, in the absence of a globally accepted definition of sustainability production criteria, a set of sustainability criteria defined unilaterally by the EU can be challenged as unevenly discriminating against imports from specific countries.
Effectiveness	The overall global effectiveness of the FLEGT approach to VPA agreements is assessed as very low. With VPA negotiations initially taking too long to conclude, the import volumes from all VPA-engaged countries represents about 7.5% of the total EU imports of relevant products.[65] Hardly culminating in a functioning TLAS (functioning only for Indonesia currently) and eventually covering only a fraction (3%) of EU timber-based product imports, the overall footprint of the approach in tackling EU-induced deforestation is assessed as being marginal. Moreover, in the absence of a functioning TLAS, there is no indication that the VPA process leads to either a reduction of illegal timber harvesting activities or a reduced deforestation rate in these countries: the engagement in VPA agreements has not necessarily led to a reduced risk-profile for illegally harvested timber for most of the partner countries. The most successful example of implementation of the VPA agreements when it comes to the FLEGT Regulation precedent is the agreement concluded with Indonesia, the only country that is currently fully implementing the FLEGT VPA agreement by means of issuing legality certificates for timber products has improved access of its products to the EU market. Nevertheless, even in the case of Indonesia, the proper functioning of the agreement has been jeopardised in the past by political developments in the partner country as overall there is no means of guaranteeing that implementation of the VPA by partner countries is in line with the agreement. Given the broader scope of products addressed under this new measure, and the continuing decline of the EU as a key importer globally, it is expected that the conclusion of negotiations might be an even more challenging and long-term process. Similarly to FLEGT, it might be challenging to conclude VPAs that cover a significant part of the EU imports of relevant products and problematic to assure a continuous correct implementation by the partner countries.
Efficiency	The implementation of the, usually lengthy, FLEGT VPA negotiation processes with partner countries is reported to require a significant amount of resources from the European Commission while, as seen earlier, the process hardly culminates in the development of a functioning TLAS. Commission data from 2015 shows EU and MS expenditures close to €620m spend on the VPA processes (covering a period from 2003-14). Given only 3 % of EU import is so far covered by a FLEGT license, it appears much cheaper (per unit volume of imports) to place a requirement on EU market operators to ensure legality of imports (i.e. through EUTR) relative to seeking to put in place licencing agreements with multiple exporting countries (noting the implicit assumption that this equates coverage of imports to effectiveness of tackling illegal logging.) The cost of reaching agreements on broader product scopes will possibly be significantly larger.
Risks around Implementation	Even when considering partner countries willing to enter in VPA negotiations, these are not guaranteed to reach a conclusion (in a reasonable timeframe) or even when they do so, to be implemented as per the agreement. Getting partner countries to agree to an EU-definition of sustainably sourced products will be an additional negotiation challenge as this might be conflicting with their definition of legal timber. Eventually this approach does not guarantee that a good part of the EU imports of products causing a deforestation risk are eventually covered by the VPAs. Additionally, local regulation might evolve to undermine the implementation of the Regulation (e.g. allowing the legalisation of confiscated illegally harvested timber). This policy measure, if applied in the deforestation context, would need to involve an approach in which an EU-level definition of sustainability of production conditions for products related to deforestation. This is different from the VPA approach implemented in the FLEGT where the emphasis is placed on the legality of timber products, a definition that can differ from country to country. It is not guaranteed that the main EU trading partners of the selected products will have any interest in entering a VPA agreement with the EU. The EU's relatively reduced importance as a trade partner globally is likely reducing the incentives of trade partners to enter into a VPA, reducing thus the overall potential of the VPA approach. On the benefits side, for the countries where an assurance scheme is eventually installed, there is the opportunity to certify the origin of products exported to the EU.

65 Trade data derived from the Eurostat ComExt database.

Measure	Development and cooperation assistance to producing countries
Compatibility to be combined with another measure	For this measure to produce an impact, it would have to be combined with demand-targeting measures. Once the standards are defined at the EU level, however, the question arises on what would actually be negotiated in this kind of agreements.
Feedback	This measure was not amongst those evaluated by the open public consultation. The EP report mentions VPA agreements as a possibility; however, it does not develop on this. The EP report does not take into account previous experience nor is it based on a cost-benefit analysis. [66]
Overall assessment	Negative. Even in combination with demand-side measures, this measure seems to be a low-ranked option for reducing EU-induced deforestation.

1.12 12. Mandatory disclosure of information (including corporate non-financial reporting)

Measure	Mandatory disclosure of information (including corporate non-financial reporting)
Who does what	**Companies**: would need to report information linked to deforestation and forest degradation which will require an input of resources. A process will need to be set up to collect and store the information. It could benefit those companies who have already engaged in disclosing and being transparent with such information.[67] **CA**s: would need to ensure companies provide the required information and enforce this measure at national level. Therefore, they would need to set up a system/the tools to disclose information and information would need to be checked/audited/monitored by a CA to ensure that the correct information is being reported. These actions require vast input of resources. The Feasibility Study suggests that "a template for the disclosure should be developed to ensure that specific and comparable information is provided." The **European Commission** would need to manage the regulation and set out the format and elements of reporting.
What/ type of instrument	A mandatory requirement to disclose information would require regulatory, binding legislation.
Legal and technical feasibility	Existing EU legislative acts require companies to disclose certain information on environmental protection (and other areas). For example, Directive 2014/95/EU of the EP and of the Council[68] (the Non-financial Reporting Directive). It has been suggested that a revision of Directive 2014/95/EU could introduce standards for deforestation risk or impact (Bager et al. 2020), with the EP resolution. It also recommends that the Commission 'promotes the integration of forest-related considerations into corporate social responsibility'. Currently, EU rules on non-financial reporting only apply to large public-interest companies with more than 500 employees. This covers approximately 6,000 large companies and groups across the EU. An existing initiative for a legislative proposal on substantiating green claims[69] suggests that companies could substantiate their environmental claims using the EU Product and Organisation Environmental Footprint (PEF/OEF)[70]. This has the potential to be applied to this measure as a method for companies to report and disclose information. Regarding timescales, these are likely to be an annual disclosure and included as part of companies' annual reports. The Feasibility study also advocates for the mandatory disclosure template to integrate content and elements from the Soft Commodities Forest Risk Assessment Tool commissioned by UN-REDD for investors[71]. Key commodities could also be targeted. The Feasibility Study highlights that some banks and financial institutions already have guidelines and voluntary commitments, however these are of limited effect. It is also reported that recent assessments show a low commitment in the financial sector to current initiatives, and therefore suggested that this measure will

66 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

67 COWI A/S. (2018). Feasibility study on options to step up EU action against deforestation. Luxembourg: Publications Office of the European Union.

68 Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2014:330:FULL&from=EN

69 European Commission (2020). Environmental performance of products & businesses – substantiating claims. [online]. Available from: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-claims-based-on-environmental-footprint-methods [Accessed 16 October 2020].

70 More information available here: https://ec.europa.eu/environment/eussd/smgp/

71 IISD. (2015). UNEP, UN-REDD Programme Address Bank and Investor Risk Policies on Soft Commodities. [online]. Available from: http://sdg.iisd.org/news/unep-un-redd-programme-address-bank-and-investor-risk-policies-on-soft-commodities/

Measure	Mandatory disclosure of information (including corporate non-financial reporting)
	contribute to creating public and peer pressure on investors to proof investments, with the expected behaviour change linked to reducing deforestation.[72] A balance between business confidentiality and practical feasibility will also be needed. Finally, feasibility depends on the level of detail required and the number of inputs based on the scope of the measure. Existing methods to report under the Non-financial Reporting Directive are flexible, and European and national guidelines have been provided to help companies produce their statements. For example, the UN Global Compact,[73] the OECD guidelines for multinational enterprises[74] and the ISO 26000.[75] The European Commission has also published guidelines on reporting climate-related information in 2019,[76] and guidelines to help companies disclose environmental and social information in 2017.[77]
Coherence with EU and international policy commitments and objectives	The reporting itself should not be considered as a barrier to trade by the WTO, however any restriction placed on investments could be, particularly if these are investments from specific countries/areas.
Effectiveness	It is questionable whether information requirements imposed on investors will actually result in reduced or halted deforestation and forest degradation. The scoping of the size of investments/ operators /companies included would need to be determined and may have an impact on effectiveness. Whilst compliance checks and verification that information has been disclosed may increase effectiveness, this will also increase the administrative burden. The measure will create public and peer pressure on investors to proof investments, rather than avoiding deforestation itself. It therefore requires behaviour change to actually reduce/halt deforestation and forest degradation.. The regulating of the investments themselves or banning certain investments may result in a greater impact/meeting of objectives, but such a measure would have its own downsides and implications (outlined in the Feasibility Study).
Efficiency	This would not be a very efficient measure because it would trigger administrative costs for very uncertain benefits.
Risks around Implementation	If SMEs are included in the measure and required to report, there is the risk that the administrative burden may outweigh the achievement of reducing or halting deforestation or forest degradation. The Feasibility Study also highlights the risk associated with business confidentiality, should a high level of detail be required to be reported on. The commodity linked to the investment could not be produced on land or facilities located within risk geographies and it is suggested that both illegal and legal deforestation are included in the reporting of risk and mitigations taken. Whilst such investments taking place in risk geographies would not be prohibited under this measure, the information on this investment must be reported to the European Commission, and likely published. The Soft Commodities Forest Risk Assessment Tool is comprised of three categories (policy scope, policy strength and implementation, monitoring & reporting) and has 18 individually-weighted indicators, presented in the footnote.[78] Benchmarking can also take place using such a system, so that financial institutions (and other actors) can be ranked against one another. Companies already engaged in reporting and transparency activities would benefit, as reporting would likely already being accounted for in their business model.
Compatibility to be combined with another measure	This measure can be combined with other measures, such as voluntary DD, voluntary and mandatory labelling, as well as provide some support/be supported by promotion through trade and investment agreements of trade in legal and sustainable products.
Feedback	This measure was the object of abundant feedback from stakeholders. Their opinion on it was mostly positive with 70.7% of them considering the measure as "completely suitable" or "somewhat suitable". The EP report does not consider mandatory disclosure in its policy options.[79]

72 COWI A/S. (2018). Feasibility study on options to step up EU action against deforestation. Luxembourg: Publications Office of the European Union.

73 United Nations Global Compact. (no date). United Nations Global Compact. [online]. Available from: https://www.unglobalcompact.org/ [Accessed 15 October 2020].

74 OECD. (no date). Guidelines for multinational companies. [online]. Available from: http://www.oecd.org/corporate/mne/ [Accessed 15 October 2020].

75 ISO. (no date). ISO 26000 Social Responsibility. [online]. Available from: https://www.iso.org/iso-26000-social-responsibility.html [Accessed 16 October 2020].

76 European Commission. (2019). Commission guidelines on non-financial reporting. [online]. Available from: https://ec.europa.eu/info/publications/non-financial-reporting-guidelines_en#climate [Accessed 15 October 2020].

77European Commission. (2019). Commission guidelines on non-financial reporting. [online]. Available from: https://ec.europa.eu/info/publications/non-financial-reporting-guidelines_en#climate [Accessed 15 October 2020].

78 https://naturalcapital.finance/wp-content/uploads/2018/11/NCD-SOFT-COMMODITIES-RISK-FULL.pdf

79 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

Measure	Mandatory disclosure of information (including corporate non-financial reporting)
Overall assessment	Negative. Likely not effective as a standalone measure, as whether its implementation will result in achieving the objectives is uncertain. Some elements of this measure may be included in the revision of the Non-Financial Reporting Directive.

1.13 13. Consumer information campaigns in the EU

Measure	Consumer information campaigns in the EU
Who does what	The **European Commission** would be in charge of defining an EU wide model. An EU wide campaign declined in all EU languages could also be implemented. **MSs** would be in charge of running campaigns. **Consumer** awareness would be raised through education and awareness campaigns.
What/ type of instrument	A non-legislative instrument would involve awareness raising campaigns and education on sustainable diet, health/nutrition and consumption, e.g. about meat and dairy alternatives, reducing unsustainable consumption of commodities and products.
Legal and technical feasibility	It is legally feasible to introduce education campaigns, these are used often at EU level to guide consumer behaviour. Every year, the European Commission's Civil Protection and Humanitarian Aid Operations runs high impact communication campaigns to raise awareness and enhance understanding and support of humanitarian aid values among the EU citizens. The campaigns also inform citizens about the EU's role in civil protection. These can be done for sustainable consumption of food fighting deforestation. On average, a recent study on sustainable food found that most consumers find that their government is not doing enough to encourage/ promote food sustainability. (BEUC, 2020) Implementation of this option would be straightforward - campaigns can be run through regular advertisement (i.e. posters), social media, education in schools, TV, Media and so on.
Coherence with EU and international policy commitments and objectives	Introducing information-based campaigns can complement other policies to spur sustainable consumption. Consumer information and education tend to be non-invasive policy instruments which do not conflict with other policies.
Effectiveness	In terms of the success of campaigns to promote greater consumption of fruit and vegetable, an evaluation of the five-a-day campaign in the UK has shown that, on the one hand the message remains one of the most memorable and simplest diet related advertising in the country, but on the other hand, a decade after its introduction only about a third of UK adults consume five portions of fruit and vegetables per day. Evidence also shows that consumer choices are not only made based on best available information, but consumer behaviour is constrained and formed by many actors and aspects which are together referred to as 'food environment', and include e.g. the choice architecture (i.e. the way in which food choice is presented to nudge consumers towards preferred choices), norms and conventions, cost, convenience, and habit. For this reason, information provision, fact-based education, and awareness campaigns are on their own insufficient to achieve the required behavioural change towards sustainable consumer choices.[80]
Efficiency	Costs of a campaign, depending on its scope, type of media utilised, length and reach, vary greatly. An example is "Stoptober" for smokers, a campaign launched in 2012 by the UK government. The campaign costs were £5.8 million in total and the breakdown as follows: Media advertising (television, radio, press, digital, outdoor, media partnerships) £3380,000; Public relations activity £70,000; Local and regional activation of the campaign among participating organisations including the national Stop Smoking Services £500,000; Fees for development and fulfilment of all creatives and products including advertising, website, and digital tools £1820,000; Follow on communications £30,000. This campaign led to more than 300,000 smokers to try to quite in October 2012, with the overall estimate of additional past-month quitting attributed to the campaign being 4.15%, and the incremental cost-effectiveness ratio being £557.90 for the population, suggesting that the campaign was efficient. [81] To implement an effective awareness campaign at the European level, several aspects must be considered: the content, the messenger, the choice of media and tone; targeting a specific audience with a specific message, as it is cheaper and more effective than extensive advertising campaigns. It is important to be able to identify key consumer segments and markets for tailor made information campaigns and adapt campaigns

80 European Commission (2020), Towards a Sustainable Food System, https://ec.europa.eu/info/sites/info/files/research_and_innovation/groups/sam/scientific_opinion_-_sustainable_food_system_march_2020.pdf

81 Brown et al (2014), How effective and cost-effective was the national mass media smoking cessation campaign 'Stoptober'?, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3929003/

Measure	Consumer information campaigns in the EU
	by using relevant communication channels (i.e. social marketing websites for younger consumers). Furthermore, information campaigns are in general more costly to implement than tools such as an environmental tax or product standard. Awareness campaigns are usually short-term, media-oriented actions that focus on a specific issue. Despite their high initial implementation costs, awareness campaigns can be quite effective under certain conditions. Research shows that rather than governments alone launching an information campaign, joint initiatives can be particularly effective. This is because the partners can often more effectively communicate with target audiences, drawing on specific experiences, resources, and knowledge. Collaboration with NGOs could render information campaigns more effective as NGOs usually have in-depth knowledge of local and/or specific communities.[82]
Risks around Implementation	The behavioural approach may lead policy makers into competition with commercial marketing. Most actions targeting consumers therefore require careful adaptation, which can vary according to the country or even by region. This is an obstacle to centralized European action on consumer behaviour. Moreover, the social incentives for sustainable consumption often develop at the local level or by the action of communities of citizens.[83] Otherwise, there are not many risks associated with information campaigns. Benefits of information campaigns can include the generation of widespread interest in the issue of deforestation and sustainable consumption. Most importantly, studies have shown that increased awareness also leads to increased acceptance to other policy options on behalf of consumers. Awareness-raising and information campaigns targeted at a wide range of stakeholders including farmers, food providers, restaurants and retail (for example lifelong learning schemes for farmers and making citizens aware of the real prices of food) are key. Behavioural change campaigns can be used to reinforce and propose morals associated with food.[84]
Compatibility to be combined with another measure	Education and information do not have to be used as stand-alone policies, in fact evidence has shown that these alone are not enough to change consumption patterns. They should be complemented with other proposed policy options
Feedback	The measure as not been addressed in the EP legislative report.
Overall assessment	Negative.

1.14 14. Green Diplomacy

Measure	Green Diplomacy
Who does what	The **European Commission** will be responsible to promote sustainable forest management through green diplomacy internationally. **NGOs** and **International Organisations** will be involved in collaborating with nations and the EU in order to achieve consensus on issues related to deforestation.
What/ type of instrument	International sustainability initiative.
Legal and technical feasibility	No issues related to legal feasibility were identified in regard to green diplomacy. The Green Diplomacy Network, established in 2003, could be used as a platform to use green diplomacy as a measure to reduce deforestation worldwide. However there is no specific relation to deforestation identified to date. Furthermore, there is no global legal instrument in which forests are the main subject; nor there is any international treaty in which all environmental, social and economic aspects of forest ecosystems are included. However, some international agreements on other topics such as Climate Change have been established, e.g. the Stockholm convention on Persistent Organic Pollutants (2001), the Paris Agreement (2015) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITIES Convention, 2015). Recurring meetings which could take place on an annual or bi-annual basis could be set-up to establish goals and track progress with regards to deforestation. International cooperation could either cover all commodities or it could cover single commodities.
Coherence with EU and	No issues of compatibility with EU and international legislation were detected. Policy-wise, the fact that there

82 European Commission (2012), Policies to encourage sustainable consumption, https://ec.europa.eu/environment/eussd/pdf/report_22082012.pdf

83 OECD, 2018, Promoting Sustainable Consumption, https://www.oecd.org/greengrowth/40317373.pdf

84 OECD, 2018, Promoting Sustainable Consumption, https://www.oecd.org/greengrowth/40317373.pdf

Measure	Green Diplomacy
international policy commitments and objectives	are existing multilateral agreements related to deforestation and forest degradation is beneficial as it shows likely acceptance of regulatory measures and the reduced likelihood of a challenge in front of the WTO.
Effectiveness	While EU policies can promote environmentally and socially sustainable practice and avoid precipitating damage beyond its borders, the EU can also learn from other countries' and regions' experiences and approaches to address environmental challenges. Furthermore, since the EU only accounts for 9% of global emissions, achieving real impact worldwide will require strong collective action. In EU circles, the Green Diplomacy Network is seen as a successful example of how to combine the strength of EU diplomatic structures overseas in favour of more effective outreach and intelligence activities. The Green Development Network could thus serve as a model to tackle problems related to deforestation. Engaging jointly in outreach activities and intelligence gathering in this domain would allow the EU to raise the profile of deforestation globally.[85] Evidence from other green diplomacy initiatives such as the Paris Agreement shows that this agreement set in motion a set of irreversible mechanisms pertaining to the creation of new climate policies, such as the five-year cycle of Nationally Determined Contributions (NDCs) which embody efforts by each country to reduce national emissions and adapt to the impacts of climate change.[86] Other successful international agreements aimed at tackling environmental challenges include the CITIES and the Stockholm Convention on Persistent Organic Pollutants. These show that international agreements and cooperation represent a potentially effective tool in addressing environmental challenges, suggesting that an international treaty aimed at tackling deforestation could also represent an effective policy measure to tackle this complex international problem.
Efficiency	This measure can be considered efficient. Whilst there will likely be high administrative costs and resources required to set up international agreements or to set up an international treaty on deforestation, it is likely that there will be a reduction in deforestation and forest degradation due to international commitment in resolving the product. Clearly, this may take some time; but by themselves, they require fewer resources than many of the other policy measures.[87]
Risks around Implementation	The EU encourages dialogue and international cooperation with other major producer and consumer countries of commodities which might be linked to deforestation to increase awareness, profile, understanding and convergence on zero-deforestation and sustainability definitions and standards and to encourage similar actions to those described in relevant interventions elsewhere. This would include in particular partnership agreements on commodities, public procurement policies, encouragement for business initiatives, and transparency platforms. This helps to reduce leakage and increases the global impact of interventions. Overall, supply-side interventions would clearly benefit from additional involvement and support from other development cooperation partners. Considering demand-side interventions these will be more effective if other consumer countries adopt them or similar measures. In the absence of action by other major consumer countries, the risk of 'leakage' or trade diversion to less scrupulous markets could undermine the effectiveness of EU action.[88]
Compatibility to be combined with another measure	Green diplomacy can be easily combined with other measures
Feedback	The measure was the object of abundant feedback from stakeholders. Their feedback was notably positive since 65,5% considered the measure as "completely suitable" or "somewhat suitable". Green diplomacy has not been addressed in the EP legislative report as a possible measure.
Overall assessment	Negative.

1.15 15. Other – EUTR Plus – US approach – Schatz Bill

Measure	Other – US approach – Schatz Bill
Who does what	This would consist of a similar system as the EUTR based on legality rather than on a deforestation-free definition. (The draft Schatz bill in the U.S. proposes exactly this, addressing illegal deforestation.) The **EU** would need to provide the legislative framework for MSs to operate in and provide clear guidance for national governments and competent authorities to enforce the measure. A review of the list of commodities and countries would need to be undertaken over a given period of time.

85 https://www.egmontinstitute.be/green-diplomacy-network-what-is-in-a-name/

86 https://iopscience.iop.org/article/10.1088/1748-9326/ab865c/pdf

87 COWI (2018), Feasibility study on options to step up EU action against deforestation, https://iopscience.iop.org/article/10.1088/1748-9326/aa625e/pdf

88 COWI (2018), Feasibility study on options to step up EU action against deforestation, https://iopscience.iop.org/article/10.1088/1748-9326/aa625e/pdf

Measure	Other – US approach – Schatz Bill
	Economic operators would be required to provide proof that the products they import do not come from areas subjected to deforestation. **CAs**: the legislation would need to be enforced at national level by customs and border forces. The checking of certifications and approvals would also need to be undertaken. Communication between national governments and customs and/or border forces would need to be sufficient.
What/ type of instrument	This would be a legislative, binding measure.
Legal and technical feasibility	This measure would draw on the burden of proof, with importers required to prove that their products do not come from areas subject to illegal deforestation. Customs controls throughout the EU would need to enforce and follow the same standards, with the Commission perhaps needing to set up a customs partnership within the Union.[89] It is uncertain whether the existing EU-level framework has the foundations to support such a measure, in the same way the US legislative framework does. This measure is proportional and conforms with the subsidiarity principle, by reason of scale. Regarding technical feasibility, the EU has to provide a list of commodities which can only be imported where a person can certificate that reasonable care has been taken to identify the commodity's point of origin and it not being an area of illegal deforestation. Furthermore, a list of high-risk countries is maintained where commodities can only be imported provided information shows supply chain information relating to the point of origin, and that the point of origin has not seen illegal deforestation. The list of commodities can be determined, but the draft Schatz Bill includes palm oil, soy products, beef and cattle products, pulp and paper, although another source suggests that cocoa and rubber may also be included.[90] In order to dress these lists and to keep them updated, supply chains will have to be analysed to ensure compliance with the law. It may be a challenge to collect such information, as well as enforcing the measure.
Coherence with EU and international policy commitments and objectives	The precedent of the EUTR suggests high feasibility. This measure will need to be assessed for WTO compliance, for potentially being a protectionist measure. For the US, the draft Schatz Bill draws upon the US Lacey Act that bans trafficking in illegal wildlife, plant and plant products.[91] The WTO allows for exemptions where the protection of human/plant/animal and lift (Article XX(b)), as well as Article XX (g) allowing for the conservation of exhaustible natural common resources. This measure would need to be based on concrete, science-based considerations and restrictions would need to apply both abroad and domestically.
Effectiveness	The measure would likely be come short of being effective at achieving a reduction in deforestation and forest degradation. The reasons are manifold: First, available reports confirm that a sizable part of ongoing deforestation is legal according to the laws of the country of production. Forest Trends estimated in 2014 that almost half of all tropical deforestation between 2000 and 2012 was driven by the illegal conversion of forest lands for commercial agriculture. The same organization estimates that between 2013 and 2019, around 69% of deforestation destined to commercial agriculture in tropical countries was illegal. These reports tend to focus on countries with weak governance — the global share of deforestation that is illegal might be lower —, but already provide clear data signalling that leaving out deforestation that is legal in the country of production would undermine the effectiveness of the policy measures. Second, focusing only on legality would make the intervention rely on the stringency of non-EU countries' requirements and their enforcement. This would make it dependent on the decisions taken in third countries and their potential political turns. This could also potentially encourage a race to the bottom in countries highly dependent on agricultural exports that may be tempted to lower their environmental protection with a view to facilitating the access of their products to the EU market. Exports from a country with stricter environmental controls could therefore be adversely affected when compared to those of countries with less demanding controls, regardless of whether the latter presents a higher risk in terms of deforestation. This type of requirement could therefore discourage the adoption of more effective environmental controls. Third, establishing a deforestation definition could facilitate the implementation of the measures. Results from the Fitness Check that looked at the due diligence implemented under the EUTR suggests that due diligence obligations only relying on the laws of the country of origin are sometimes difficult to implement, as companies and public authorities in charge of enforcement need to find their way among foreign documents, certificates and laws, written in foreign languages, and sometimes produced in countries with high levels of corruption where ascertaining the reliability of documents may also be very difficult. A deforestation-free definition opens a new, more straightforward way of checking compliance, whereby an operator or a public authority could check whether a product is deforestation-free by

89 European Parliament.

90 https://www.forest-trends.org/blog/meaningful-supply-chain-legislation-lessons-from-the-us-tariffs-act-for-demand-for-regulating-the-trade-in-forest-risk-commodities/

91 Union of Concerned Scientists. (2015). The Lacey Act's Effectiveness in Reducing Illegal Wood Imports. [online]. Available from: https://www.ucsusa.org/sites/default/files/attach/2015/10/ucs-lacey-report-2015.pdf [Accessed 15 October 2020].

Measure	Other – US approach – Schatz Bill
	resorting to widely-available satellite monitoring tools (provided that the exact area of production can also be ascertained).
Efficiency	This measure is expected not be efficient as it is expected to bring lower results than mandatory due diligence based on a deforestation-free definition, while the costs would be similar.
Risks around Implementation	With this measure, access to the market is restricted through the prohibiting of products. There is a risk that MS customs and border controls would not enforce the same rules and protectionism occurs, where domestic and international imports and not treated the same. Where products cannot be substituted and with a decline in supply, a potential increase in product price for consumers in the EU may occur. Wider benefits could be the enforcement of human rights and a decline in forced labour (dependent on these aspects being included in the definition of 'deforestation' and/or 'illegality').
Feedback [92]	Stakeholder feedback and the EP were consistent on the requirement for the intervention to be based on a deforestation-free definition.
Overall assessment	Negative.

1.16 16. Other – FATF

Measure	Measure similar to the Financial Action Task Force (FATF)
Who does what	The **European Commission** would need to set up an organisation similar to the FATF, which would provide guidance and recommendations for governments to combat deforestation and forest degradation. The European Commission would need to assess compliance with its recommendations at a country (and/or regional) level and list those countries not following recommendations, those that are trying to follow recommendations and those that are following recommendations. There are 51 staff members at the FATF Secretariat[93] and for the financial year 2020, the FATF budget was around 11.8 million EUR, of which around 8.2 million EUR dedicated for staff and 1.6 million EUR for travel costs. The budget is funded by annual membership fees, by the European Commission and Gulf Co-operation Council, as well as by voluntary contributions for specific projects. The OECD calculates the membership fees which are related to the size of a country's economy.[94] **Producer countries** would need to commit to the recommendations and facilitate the assessments carried out by the FATF-equivalent organisation.
What/ type of instrument	The measure itself is non-binding and non-regulatory, but draws on EU regulation, legislation, and available techniques (e.g. voluntary labelling) to provide guidance, monitor country progress and list countries in terms of compliance.
Legal and technical feasibility	The environment is a shared competence of the EU and MSs; therefore, the measure is legally feasible and proportionate. The measure would assess countries' implementations of measures to prevent deforestation and forest degradation. This includes the assessments of whether producer countries have developed sound laws and regulations and whether these are being implemented and enforced. The latter two may be challenging to monitor where sufficient information is not available. Also, the question remains which laws, objectives etc. (i.e. both international and EU legislation and objectives) to include in the guidance by which countries are assessed.
Coherence with EU and international policy commitment and objectives	This measure is voluntary for countries to become members of and therefore should not, in principle, cause conflict with WTO legislation. However, it will need to be ensured that the reporting required does not duplicate efforts from the outcome of the revision of the non-Financial reporting directive. Similarly, if other measures were to be implemented, this measure's coherence would need to be evaluated, in particular, with a benchmarking measure. If standards are introduced as part of the measure, these would need to be assessed against the WTO trade rules, in particular the exemptions relating to the protection of human/plant/animal health and life.[95]
Effectiveness	It could not be determined whether an assessment of the effectiveness of FATF has been undertaken. It was set up in 1989

92 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

93 https://www.fatf-gafi.org/media/fatf/documents/brochuresannualreports/FATF-annual-report-2019-2020.pdf

94 https://www.fatf-gafi.org/media/fatf/documents/brochuresannualreports/FATF-annual-report-2019-2020.pdf

95 WTO (n.d.), WTO rules and environmental policies: GATT exceptions, https://www.wto.org/english/tratop_e/envir_e/envt_rules_exceptions_e.htm.

Measure	Measure similar to the Financial Action Task Force (FATF)
	by the G7 and in April 2019 an open-ended mandate was adopted with which they recognised that there was a need for FATF to continue its action. It could therefore be accepted that FATF, overall, has been effective.[96] Although it should be noted that FATF operates in the financial sector and concerns money laundering and terrorist financing, and different challenges will be faced relating to deforestation and forest degradation. Additionally, the measure would create an international policy-making body that does not undertake activities relating to law enforcement, investigations or prosecutions. Local CAs would still be required to operate in these areas.
Efficiency	Administrative costs of FATF could not be identified. However, a Secretariat would need to be established for this measure and there would be administrative costs.
Risks around Implementation	There is a risk that a lack of membership may undermine the effectiveness of the measure. However, jurisdictions may commit to meeting the Recommendations without becoming a member. This would still allow for an assessment to take place. Standards, laws, regulations and measures intending to combat deforestation and forest degradation would need to be identified and listed. These would include elements relating to international co-operation as well as EU initiatives (listed below in the 'Coherence' rows). As for FATF, there would be members of the organisation developed by the measure, which may include both member jurisdictions and regional organisations, observer organisations may also join, such as the UN, World Bank and IMF. When the organisation undertakes an assessment, evidence will be looked for to demonstrate that key components (determined when recommendations are established) are being met, with example factors for assessment including the level of risk, policy and co-ordination in the country; the level of international co-operation; preventative measures in place; legal persons and arrangements; intelligence; and deforestation investigation and prosecution [obtained and adapted from FATF immediate outcomes].[97] This assessment is done via peer reviews/mutual evaluations of each member. The detailed process used for this in FATF can be found in the footnoted source.[98]
Compatibility to be combined with another measure	The FATF Recommendations are also recognised as global standards, therefore it is unlikely that it would be combined with a deforestation free requirement or standard as there would be some overlap. Similarly, there may be some overlap if combined with benchmarking or the Schatz Bill, as elements of this measure are similar to these (e.g. lists). However, this measure may go beyond the list of countries provided by the Schatz Bill as the present measure also takes into account wider compliance with international laws and standards, rather than illegal deforestation alone. This measure could be combined with other measures and monitor the progress of countries in adopting, implementing and auditing the EU legislation introduced.
Feedback	The EP report does not consider this measure.[99]
Overall assessment	Negative.

1.17 17. Other – Kimberley process

Measure	Measure similar to the Kimberley process
Who does what	The **European Commission** would need to set up the organisation responsible for implementing the process/certification. If built directly upon the workings of the Kimberley Process, currently undertaken to regulate trade in rough diamonds, this would neither require a permanent office nor permanent staff. **MSs and producer countries**: would have the option to agree to the terms of the measure to achieve certification. CAs and in particular importing authorities, would be encouraged to inspect the contents of shipments and to verify that a shipment arrives with a valid certificate.[100] **Industry and civil society groups**: may participate as 'Observers' which contribute to monitoring and establishing the effectiveness of the measure, playing and active role. As with the Kimberley Process Certification Scheme, this measure would allow for 'candidates' a country having expressed an interest in adhering to the measure but not yet meeting the minimum criteria.[101]

96 https://www.fatf-gafi.org/publications/fatfgeneral/documents/fatf-mandate.html

97 https://www.fatf-gafi.org/publications/mutualevaluations/documents/effectiveness.html

98 https://www.fatf-gafi.org/publications/fatfrecommendations/documents/fatfissuesnewmechanismtostrengthenmoneylaunderingandterroristfinancingcompliance.html

99 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

100 https://www.kimberleyprocess.com/en/system/files/documents/20131122_kpcs_core_document_eng_amended_clean.pdf

101 https://www.kimberleyprocess.com/en/what-kp

Measure	Measure similar to the Kimberley process
What/ type of instrument	Non-binding and non-regulatory. This would be a voluntary measure that countries could choose to participate in.
Legal and technical feasibility	This measure would be implemented through the national legislations of its participants (producer countries).[102] Similar to other certification systems, definitions and criteria must be established to allow for verification and monitoring to take place. The scope of the commodities to be included (for example, one certification per commodity type) also needs to be determined.
Coherence with EU and international policy commitment and objectives	As this certification would only allow participants to trade with other members who satisfy the requirements of the agreement/certification, WTO compliance may not be met. Although, as the Kimberley Process was established in 2003 and is still in operation, it is possible that WTO compliance may be met for deforestation and forest degradation as it has been for "conflict free" rough diamonds.
Effectiveness	There has been some criticism over the effectiveness of the Kimberley Process by several NGOs, including Global Witness,[103] although these are not recent. It has also been argued that the achievements of the Kimberley Process are undermined by poor reporting and a lack of transparency when non-compliance is present, which in turn undermines assurances that 99% of diamonds are conflict-free. It is reported that the Kimberley Process is responsible for stemming 99.8% of the tide in conflict diamonds, however its effectiveness is not discussed.[104]
Efficiency	The Kimberley Process has no permanent offices or permanent staff. It is an organisation that relies on contributions from participants and 'burden-sharing'.[105] This measure would be a consensus-based body and rely on the engagement from all participants, costs would therefore be distributed amongst the voluntary participants. Customs and boarder control authorities would need to be engaged to undertake certificate checks on imports.
Risks around Implementation	There is a risk that fake certificates could be produced, as occurs with the Kimberley Process.[106] This would undermine the effectiveness of the measure in combatting deforestation and forest degradation. As countries can only trade with other members (under the measure's commitments), there is a risk of supply being impacted on countries which cannot yet meet the commitments or are not party to the organisation. Other certification systems relating to deforestation and forest degradation are also already known amongst consumers.
Compatibility to be combined with another measure	This certification focuses on shipment, import and export of commodities. It could be made compatible with labelling systems and the information generated through achieving the certification used to demonstrate compliance, as well as assist with informing consumers about the supply chain of the commodity. This measure would have some overlap with other certification schemes.
Feedback	This measure has not been assessed in the open public consultation. The EP report does not consider this measure either.[107]
Overall assessment	Negative.

102 https://www.kimberleyprocess.com/en/faq

103 https://cdn.globalwitness.org/archive/files/import/loopholes_in_the_kimberley_process.pdf; see also: https://www.bbc.co.uk/news/10307046; https://www.theguardian.com/sustainable-business/diamonds-blood-kimberley-process-mines-ethical

104 https://www.kimberleyprocess.com/en/what-kp

105 https://www.kimberleyprocess.com/en/what-kp

106 https://www.kimberleyprocess.com/en/enforcement

107 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0285_EN.html

ANNEX 5: SATELLITE MONITORING TOOLS

Figure 1: Free-access (Earth Observation) satellite imagery most commonly used for monitoring deforestation and degradation at global or pan-tropical levels

Name of the data source	Geographic Coverage	Data since?	Type of information
Sentinel's imagery from Copernicus programme[108]	Global – resolution up to 10 m x 10 m	2014 (Sentinel-1) ; 2015 (Sentinel-2) 5-days revisiting time	Radar imagery (sentinel-1) or Optical imagery (sentinel-2)
Landsat imagery from NASA[109]	Global – resolution 30 m × 30 m	1972 (several Landsat missions – presently Landsat 7 and 8) 8-days revisiting time	Optical imagery
Planet imagery from Norway's International Climate and Forest Initiative[110]	Tropics, 5 m × 5 m resolution	2015 (biannual) – 2020 (monthly)	Optical imagery (mosaics of Planet imagery)

Figure 2 Overview of most well-known datasets regarding the monitoring forest cover at global, pan-tropical or national (Brazil) levels

Name of the tool	Geographic Coverage	Data since?	Type of information
Copernicus Land Monitoring service[111]	Global maps at 100 m resolution Pan-European maps at 10 m resolution	2015 - Annual for global level Every 3 years for pan-Europe (2015, 2018, 2021)	Land cover (global) Land Cover, Tree cover density & forest type products (pan-Europe) operational products, e.g. land use.
Copernicus Emergency Management service112	Global maps at 250 m resolution Pan-European maps at 180 m resolution	2018- Global (GWIS) 2015 for pan-Europe (EFFIS)	Active Fires, Burned areas (Global) Forest Fires, Burned forest areas (Pan European)

[108] https://scihub.copernicus.eu/
[109] https://landsat.gsfc.nasa.gov/
[110] https://www.planet.com/nicfi
[111] https://land.copernicus.eu/
[112] https://emergency.copernicus.eu/

FAO Global Forest Resource Assessments (FRA)[113]	Global data reported at national level	1990 (varies depending on type on information required) – reported every 5 years	Land use change Forest coverage Growing stock Biomass stock Carbon stock
Global Forest Watch (GFW) from World Resources Institute (WRI) [114]	Global maps at 30 m resolution	2001 (2001-2010 and 2011-2019 methodologies differ)	Annual maps of Tree cover Canopy density
FAO – State of World's Forests [115]	Global map at 100 m resolution	2015	Forest Fragmentation
Tropical Moist Forest system from JRC[116]	Pan-Tropical humid domain maps at 30 m resolution	1990	Annual maps of tree cover disturbances in tropical moist forests
PRODES[117] and DETER[118] Systems from INPE (Brazilian Research Space Agency)	Brazilian Amazon maps at 30 m res. (PRODES) or 250 m resolution (DETER)	1988 – annual (PRODES) 2004 - daily (DETER)	Deforestation (PRODES) Forest cover disturbance alerts (DETER)

Figure 3 Overview of most well-known systems or tools for monitoring commodity flows or environmental values

Name of the tool	Geographic Coverage	Data since?	Type of information
TRASE[119]	Some countries in Tropics – national and sub-national scale	Varies by commodity and country selection	Key commodities flows Supply chain mapping National exports
Agroideal[120]	Brazil, Argentina, and Paraguay	2008	'Risk exposure maps' for Soy and beef Deforestation
Global Risk Assessment Services (GRAS)[121]	48 countries	2000	Geo-Spatial tool for sustainability assessments

[113] http://www.fao.org/forest-resources-assessment/en/
[114] https://www.globalforestwatch.org/
[115] https://data.jrc.ec.europa.eu/dataset/cff5de0e-d8c3-49ee-97a8-d68e5ae2beb4
[116] https://forobs.jrc.ec.europa.eu/TMF/
[117] http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prode
[118] http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/deter
[119] https://trase.earth/
[120] https://agroideal.org/en/
[121] https://www.gras-system.org/

High Carbon Stock Approach (HCSA)[122]	Tropics	Varies by area	Methodology to assess high Carbon & Biodiversity value
High Conservation Value (HCV)[123]	Various levels - HCV can range in size from single trees to entire landscapes	Varies by area	Tool to achieve certification by voluntary sustainability schemes
THE ATLAS OF ECONOMIC COMPLEXITY[124]	Global (country level), 6000 goods and services	1995 (varies by country)	Global trade flows; country profile

[122] http://highcarbonstock.org/the-high-carbon-stock-approach/
[123] https://hcvnetwork.org/
[124] https://atlas.cid.harvard.edu/

ANNEX 6: ADDITIONAL INFORMATION AND CASE STUDIES ON POTENTIAL IMPACTS ON THIRD COUNTRIES

Contents of the annex:

A) Overview of countries potentially impacted by the initiative.
B) Case study 1: cocoa from West Africa
C) Case study 2: beef from Brazil
D) Case study 3: palm oil from Asia
E) Case study 4: soy from South America

A) Overview of countries potentially impacted by the initiative.

The following tables include average annual imports of beef, coffee, soya, palm oil, cocoa and timber/timber products into the EU-27 over the period 2015-2019, by a) quantity, b) value, c) focal commodities as % of overall trade to the EU (all commodities), and d) importance of EU imports for partner exporting country GDP. All data are based on mean annual EU-27 reported import data from the Eurostat ComExt database[125]. GDP values from World Bank Open Data.

a. Top 20 countries by quantity		
Country	**Quantity (million kg)**	**Top commodities quantity (%)**
Brazil	18415.86	Soy (67.3%); Timber (26.8%); Coffee (4.7%); Beef (1%); Palm oil (0.1%); Cocoa (<0.1%)
Russia	12494.62	Timber (97.6%); Soy (2.2%); Beef (0.1%); Cocoa (0.1%); Coffee (<0.1%); Palm oil (<0.1%)
United States of America	10675.25	Soy (58.8%); Timber (40.4%); Beef (0.7%); Cocoa (0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Argentina	7404.12	Soy (99.2%); Beef (0.7%); Timber (0.1%); Cocoa (<0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Norway	6487.77	Timber (96.2%); Soy (3.6%); Beef (0.1%); Cocoa (0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Belarus	6390.24	Timber (99.8%); Soy (0.1%); Beef (0.1%); Cocoa (<0.1%); Coffee (<0.1%)
Indonesia	5152.98	Palm oil (89.2%); Timber (8.6%); Coffee (1.8%); Cocoa (0.5%); Beef (<0.1%); Soy (<0.1%)
United Kingdom	4757.53	Timber (87.1%); Soy (4.1%); Cocoa (3.8%); Beef (3.7%); Palm oil (0.8%); Coffee (0.7%)
Ukraine	4622.02	Timber (84.1%); Soy (15.3%); Cocoa (0.3%); Beef (0.3%); Palm oil (<0.1%); Coffee (<0.1%)
Switzerland	3089.17	Timber (94.7%); Cocoa (2.7%); Coffee (1.9%); Beef (0.6%); Soy (0.1%); Palm oil (<0.1%)
Uruguay	2432.06	Timber (82%); Soy (16.3%); Beef (1.7%); Cocoa (<0.1%); Palm oil (<0.1%); Coffee (<0.1%)
Malaysia	2225.73	Palm oil (90.2%); Timber (9.7%); Cocoa (0.2%); Soy (<0.1%); Beef (<0.1%); Coffee (<0.1%)
China	2095.15	Timber (88.2%); Soy (9.9%); Coffee (1.7%); Cocoa (0.2%); Beef (<0.1%); Palm oil (<0.1%)
Canada	1915.81	Soy (58.2%); Timber (41.4%); Beef (0.4%); Cocoa (<0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Paraguay	1774.37	Soy (98.1%); Beef (1.8%); Timber (0.1%); Coffee (<0.1%); Cocoa (<0.1%)

[125] Eurostat, 2021. https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/focus-on-comext. Downloaded on 12/02/2021.

Country	Quantity (million kg)	Top commodities quantity (%)
Bosnia and Herzegovina	1216.17	Timber (98.3%); Beef (1.4%); Soy (0.2%); Cocoa (0.1%); Coffee (0.1%)
Côte d'Ivoire	1196.22	Cocoa (87.9%); Timber (5.8%); Palm oil (4.9%); Coffee (1.4%); Soy (<0.1%); Beef (<0.1%)
Chile	907.54	Timber (99.5%); Beef (0.5%); Cocoa (<0.1%); Coffee (<0.1%); Soy (<0.1%); Palm oil (<0.1%)
Viet Nam	789.27	Coffee (84.7%); Timber (15.2%); Beef (0.1%); Cocoa (<0.1%); Palm oil (<0.1%); Soy (<0.1%)
Serbia	745.12	Timber (74.5%); Soy (23.5%); Beef (1.5%); Cocoa (0.4%); Coffee (0.1%); Palm oil (<0.1%)

b. Top 20 countries by value		
Country	**Value (million EUR)**	**Top commodities value (%)**
Brazil	9983.81	Soy (44.3%); Timber (26.5%); Coffee (21.1%); Beef (7.7%); Palm oil (0.2%); Cocoa (0.1%)
United States of America	5621.27	Timber (52.2%); Soy (39.8%); Beef (6.9%); Cocoa (0.8%); Coffee (0.2%); Palm oil (<0.1%)
United Kingdom	4479.21	Timber (60.9%); Cocoa (16.6%); Beef (15.5%); Coffee (4.7%); Soy (1.7%); Palm oil (0.6%)
China	3740.72	Timber (93.8%); Soy (3.4%); Coffee (2.3%); Cocoa (0.2%); Beef (0.2%); Palm oil (<0.1%)
Switzerland	3419.76	Coffee (41.7%); Timber (40.5%); Cocoa (15.9%); Beef (1.8%); Soy (0.1%); Palm oil (<0.1%)
Indonesia	3182.91	Palm oil (70.7%); Timber (20.7%); Coffee (6.1%); Cocoa (2.3%); Beef (0.1%); Soy (<0.1%)
Argentina	3045.82	Soy (82.8%); Beef (17%); Timber (0.1%); Cocoa (0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Côte d'Ivoire	2877.64	Cocoa (95.7%); Timber (2.4%); Coffee (1%); Palm oil (0.9%); Soy (<0.1%); Beef (<0.1%)
Russia	2618.88	Timber (91.9%); Soy (4.8%); Beef (2.5%); Cocoa (0.7%); Coffee (<0.1%); Palm oil (<0.1%)
Viet Nam	1492.64	Coffee (79.5%); Timber (20.2%); Beef (0.3%); Cocoa (<0.1%); Palm oil (<0.1%); Soy (<0.1%)
Malaysia	1486.65	Palm oil (79.4%); Timber (19.7%); Cocoa (0.9%); Beef (<0.1%); Coffee (<0.1%); Soy (<0.1%)
Ukraine	1391.07	Timber (72.1%); Soy (20.6%); Beef (4.7%); Cocoa (2.6%); Palm oil (<0.1%); Coffee (<0.1%)
Uruguay	1280.68	Timber (61.2%); Beef (27.4%); Soy (11.4%); Cocoa (<0.1%); Coffee (<0.1%); Palm oil (<0.1%)
Norway	1259.43	Timber (86.3%); Soy (9.6%); Cocoa (1.9%); Beef (1.8%); Coffee (0.3%); Palm oil (<0.1%)
Ghana	1173.15	Cocoa (97.2%); Timber (2.3%); Palm oil (0.5%); Coffee (<0.1%); Soy (<0.1%); Beef (<0.1%)
Canada	885.51	Timber (50.5%); Soy (45.7%); Beef (3%); Cocoa (0.7%); Coffee (0.1%); Palm oil (<0.1%)
Colombia	849.00	Coffee (61.6%); Palm oil (32.9%); Beef (2.9%); Cocoa (2.4%); Timber (0.2%); Soy (<0.1%)
Belarus	803.46	Timber (97.4%); Beef (2%); Soy (0.4%); Cocoa (0.1%); Coffee (<0.1%)
Honduras	793.10	Coffee (71.1%); Palm oil (28.6%); Timber (0.2%); Cocoa (0.1%); Beef (<0.1%); Soy (<0.1%)
India	775.26	Coffee (38.2%); Timber (29.2%); Soy (17.7%); Beef (13.6%); Cocoa (1.1%); Palm oil (0.2%)

c. Top 20 countries with the highest % value of focal commodities as a % of total imports to the EU from that country		
Country	**Value of focal commodities as a % of total trade (all commodities) from the country into the EU**	**Top commodities value (million EUR)**
Burundi	46.55	Coffee (28); Beef (<1); Timber (<1); Palm oil (<1)
Sao Tome and Principe	41.54	Cocoa (7); Coffee (<1); Timber (<1)
Paraguay	41.45	Soy (652); Beef (82); Timber (1); Coffee (<1); Cocoa (<1)
Central African Republic	40.80	Timber (11); Coffee (<1); Beef (<1)
Uruguay	40.22	Timber (784); Beef (351); Soy (146); Cocoa (<1); Coffee (<1); Palm oil (<1)
Honduras	38.94	Coffee (564); Palm oil (227); Timber (2); Cocoa (1); Beef (<1); Soy (<1)
Côte d'Ivoire	33.65	Cocoa (2753); Timber (68); Coffee (30); Palm oil (26); Soy (<1); Beef (<1)
Uganda	32.28	Coffee (272); Cocoa (25); Beef (3); Soy (1); Timber (<1); Palm oil (<1)
Papua New Guinea	28.44	Palm oil (332); Coffee (60); Cocoa (12); Timber (1)
Ghana	25.49	Cocoa (1140); Timber (27); Palm oil (6); Coffee (<1); Soy (<1); Beef (<1)
Nauru	25.01	Beef (<1); Coffee (<1); Timber (<1)
Rwanda	24.16	Coffee (25); Beef (<1); Timber (<1); Cocoa (<1); Soy (<1)
Heard island and McDonald islands (AU)	22.07	Coffee (<1)
Ethiopia	21.80	Coffee (241); Soy (1); Beef (<1); Timber (<1); Cocoa (<1)
Argentina	20.16	Soy (2522); Beef (518); Timber (4); Cocoa (2); Coffee (<1); Palm oil (<1)
Cameroon	18.53	Cocoa (404); Timber (250); Coffee (34); Palm oil (<1); Beef (<1); Soy (<1)
Guatemala	18.48	Palm oil (212); Coffee (113); Timber (2); Cocoa (<1); Beef (<1); Soy (<1)
Timor-Leste	17.93	Coffee (4); Timber (<1)
Brazil	17.66	Soy (4421); Timber (2650); Coffee (2108); Beef (773); Palm oil (17); Cocoa (14)
Nicaragua	16.56	Coffee (93); Beef (6); Cocoa (4); Palm oil (1); Timber (<1); Soy (<1)

d. Top countries by importance of EU imports for the exporting country's GDP (GDP >0.5%)			
Country	**Value as % of GDP**	**Top commodities value (million EUR)**	**% deforestation of natural forest 2015-2020** [126] **[% net change in extent of natural forest (2015-2020)]***
Côte d'Ivoire	6.03	Cocoa (2753); Timber (68); Coffee (30); Palm oil (26); Soy (<1); Beef (<1)	[-16.66%]
Honduras	3.78	Coffee (564); Palm oil (227); Timber (2); Cocoa (1); Beef (<1); Soy (<1)	1.79%
Bosnia and Herzegovina	3.04	Timber (456); Beef (45); Coffee (3); Cocoa (2); Soy (2)	**
Uruguay	2.50	Timber (784); Beef (351); Soy (146); Cocoa (<1); Coffee (<1); Palm oil (<1)	[0%]

Top commodities value	Value as %	Top commodities value (million EUR)	% deforestation of

[126] FAO. 2020. Global Forest Resources Assessment 2020: Main report. Rome. https://doi.org/10.4060/ca9825en. Data accessible via https://fra-data.fao.org/WO/fra2020/forestAreaChange

(million EUR)	of GDP		natural forest 2015-2020 [127] [% net change in extent of natural forest (2015-2020)]*
Ghana	2.18	Cocoa (1140); Timber (27); Palm oil (6); Coffee (<1); Soy (<1); Beef (<1)	[+0.90%]
Cameroon	2.14	Cocoa (404); Timber (250); Coffee (34); Palm oil (<1); Beef (<1); Soy (<1)	1.41%
Paraguay	2.12	Soy (652); Beef (82); Timber (1); Coffee (<1); Cocoa (<1)	8.03%
Sao Tome and Principe	2.12	Cocoa (7); Coffee (<1); Timber (<1)	5.64%
Papua New Guinea	1.95	Palm oil (332); Coffee (60); Cocoa (12); Timber (1)	0.47%
Belarus	1.56	Timber (783); Beef (16); Soy (4); Cocoa (1); Coffee (<1)	0.27%
Serbia	1.51	Timber (467); Soy (91); Beef (54); Cocoa (9); Coffee (2); Palm oil (<1)	0.01%
Liberia	1.33	Cocoa (35); Timber (3); Palm oil (1); Coffee (1)	1.95%
Ukraine	1.32	Timber (1003); Soy (287); Beef (65); Cocoa (36); Palm oil (<1); Coffee (<1)	0.01%
Gabon	1.26	Timber (175); Palm oil (1); Cocoa (<1); Coffee (<1)	0.41%
Uganda	1.03	Coffee (272); Cocoa (25); Beef (3); Soy (1); Timber (<1); Palm oil (<1)	12.00%
Burundi	1.02	Coffee (28); Beef (<1); Timber (<1); Palm oil (<1)	0%
Sierra Leone	0.98	Cocoa (32); Coffee (3); Palm oil (1); Timber (<1)	[-3.90%]
Nicaragua	0.87	Coffee (93); Beef (6); Cocoa (4); Palm oil (1); Timber (<1); Soy (<1)	13.58%
Solomon Islands	0.83	Palm oil (11); Timber (<1); Cocoa (<1)	[-0.10%]
Togo	0.80	Cocoa (17); Soy (13); Coffee (5); Palm oil (1); Timber (<1)	2.12%
Congo	0.79	Timber (69); Coffee (10); Cocoa (7); Palm oil (<1)	0.31%
Viet Nam	0.73	Coffee (1186); Timber (302); Beef (4); Cocoa (1); Palm oil (<1); Soy (<1)	0.08%
Central African Republic	0.61	Timber (11); Coffee (<1); Beef (<1)	0.67%
Argentina	0.60	Soy (2522); Beef (518); Timber (4); Cocoa (2); Coffee (<1); Palm oil (<1)	2.42%
Brazil	0.58	Soy (4421); Timber (2650); Coffee (2108); Beef (773); Palm oil (17); Cocoa (14)	1.72%
Switzerland	0.54	Coffee (1427); Timber (1383); Cocoa (545); Beef (62); Soy (2); Palm oil (<1)	0.61%
Guatemala	0.51	Palm oil (212); Coffee (113); Timber (2); Cocoa (<1); Beef (<1); Soy (<1)	1.68%
Malaysia	0.50	Palm oil (1181); Timber (292); Cocoa (13); Beef (<1); Coffee (<1); Soy (<1)	[-1.91%]

** Where deforestation data were not available, % net change in extent of natural forest was provided in square parentheses. Whilst net change differs from deforestation because it also includes gains in forest cover through natural regeneration, these data were included for countries without deforestation data to maximise data coverage.*

*** 2015 but not 2020 data were available for Bosnia and Herzegovina*

[127] FAO. 2020. Global Forest Resources Assessment 2020: Main report. Rome. https://doi.org/10.4060/ca9825en. Data accessible via https://fra-data.fao.org/WO/fra2020/forestAreaChange

Table 2 Least Development Countries' importance of exports of commodities in terms of percentage of GDP.

Top 10 least developed countries by importance of EU imports for the exporting country's GDP			
Country	**Value as % of GDP**	**Top commodities values (million EUR)**	**% deforestation of natural forest 2015-2020** [128] **[% net change in extent of natural forest (2015-2020)]***
Sao Tome and Principe	2.12	Cocoa (7); Coffee (<1); Timber (<1)	5.64%
Liberia	1.33	Cocoa (38); Timber (3); Palm oil (1); Coffee (1)	1.95%
Uganda	1.03	Coffee (272); Cocoa (25); Beef (3); Soy (1); Timber (<1); Palm oil (<1)	12.00%
Burundi	1.02	Coffee (28); Beef (<1); Timber (<1); Palm oil (<1)	0%
Sierra Leone	0.98	Cocoa (32); Coffee (3); Palm oil (1); Timber (<1)	[-3.90%]
Solomon Islands	0.83	Palm oil (11); Timber (<1); Cocoa (<1)	[-0.10%]
Togo	0.80	Cocoa (17); Soy (13); Coffee (5); Palm oil (1); Timber (<1)	2.12%
Central African Republic	0.61	Timber (11); Coffee (<1); Beef (<1)	0.67%
Ethiopia	0.33	Coffee (241); Soy (1); Beef (<1); Timber (<1); Cocoa (<1)	2.79%
Guinea	0.31	Cocoa (27); Coffee (2); Timber (1); Palm oil (<1); Beef (<1)	[-3.22%]

** Where deforestation data were not available, % net change in extent of natural forest was provided in square parentheses. Whilst net change differs from deforestation because it also includes gains in forest cover through natural regeneration, these data were included for countries without deforestation data to maximise data coverage.*

[128] FAO. 2020. Global Forest Resources Assessment 2020: Main report. Rome. https://doi.org/10.4060/ca9825en. Data accessible via https://fra-data.fao.org/WO/fra2020/forestAreaChange

B) Case study 1: cocoa from West Africa

1) Production and import pattern context

Global cocoa production is concentrated in a small number of tropical countries (Fig. 1), which primarily export raw beans (~70% for both Ghana and Côte d'Ivoire) (Trase, 2021). The EU-27 is the biggest importer of cocoa (importing 22.38% of international exports by value in 2019, source: UN Comtrade). The EU-27 imported the majority of its cocoa 2015-2019 from West Africa, including from Côte d'Ivoire (44%), Ghana (17%), Nigeria (8%) and Cameroon (7%) (Source: Eurostat ComExt, importer-reported data on quantity, downloaded 12.02.2021). Hence the EU relies on a small number of countries to meet its demand for cocoa, all of which are associated with commodity-driven deforestation (World Resources Institute, 2021, Fig. 3). Three quarters of cocoa imported into the EU 2015-2019 entered via the Netherlands, Germany and Belgium (Fig. 2).

Cocoa supplies from West Africa are essential to produce the standard-quality chocolates made by most large companies worldwide, whereas speciality and fine flavour cocoa is mainly sourced from Latin America (CBI, 2020a). Industry specialists have voiced concern over possible shortages of cocoa, particularly high quality beans (Teye and Nikoi, 2021).
The world market price for cocoa is determined as an average price for cocoa futures in the New York and London commodity exchanges. Historically cocoa prices have been volatile and subject to shocks ranging from oversupply, pests and disease, weather patterns and civil war (Bakhtary *et al.*, 2020).

Cocoa supply chain: The international cocoa market is hourglass shaped – on one side almost 90% of production relies on 5-6 million smallholders in developing countries, at the other side are billions of final consumers, mostly in high income countries. In between, the supply chain is highly concentrated with a few giant traders and processors producing semi-finished and finished goods, accompanied by thousands of small traders, processors and grocery producers (Santucci and Tiagni Wouakoue, 2019). A handful of large multinational companies control a sizable share of processing and manufacturing; Barry Callebaut, Cargill and Olam process 60% of the world's cocoa, and Mars, Nestlé, Mondelēz, Hershey's, Ferrero, and Lindt account for 40% of the global consumer chocolate market (Fountain and Huetz-Adams, 2018). This market concentration for cocoa export, processing and chocolate production has facilitate the penetration of more coordinated value chains, with stronger linkages between retailers, chocolate manufacturers and cocoa processors (Teye and Nikoi, 2021).

According to the World Cocoa Foundation, around 22% of globally traded cocoa is certified (Nieburg, 2018). More than half of the cocoa traded and chocolate manufactured is covered by global deforestation-free commitments (Higonnet *et al.*, 2018).

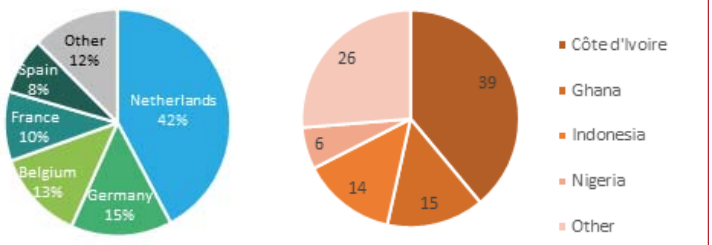
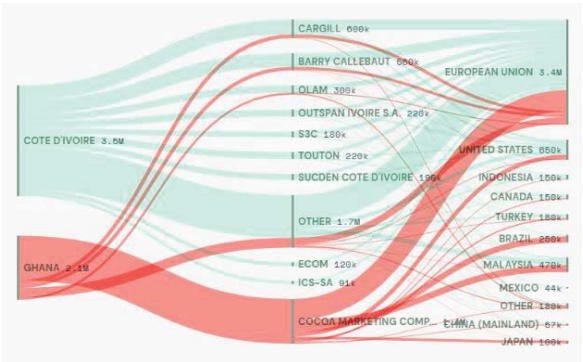


Figure 1. Main producers of cocoa in 2019 (% of global production; Source: FAOSTAT, accessed 28.4.2021)

Figure 2. Main EU Member State importers of cocoa (based on average annual exported quantity over the period 2015-2019. Source: *Eurostat ComExt, importer-reported data.*

Figure 3. Percent of land with forests replaced by cocoa (2001-2015). (Source: World Resources Institute, 2021)

Figure 4. Trade flows of cocoa from Côte d'Ivoire and Ghana 2018-2019 (tons) per exporting company and importing country (Source: Trase, 2021).



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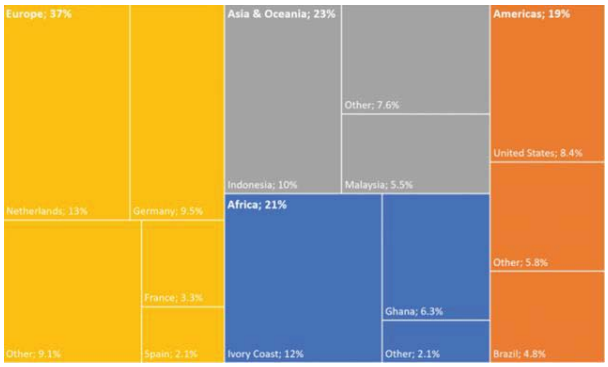

Figure 5: Estimated cocoa bean grinding by region and country in % of the world's total, 2018/2019. (Source: International Cocoa Organisation (ICCO), 2020 in: CBI, 2020a).

2) Information about the sector in the EU

Europe is the world's largest producer and exporter of chocolate, housing chocolate manufacturers of all sizes (CBI, 2020a). It has the world's highest industrial demand for cocoa beans, with the Netherlands responsible for 13% of global cocoa grindings 2018/19 (CBI, 2020a, Fig. 5). Globally, seven multinational companies represent the bulk of the market for final chocolate products: Mars, Ferrero, Mondelez, Meiji, Hershey, Nestlé and Lindt & Sprüngli, all except Meiji and Hershey have chocolate confectionary production plants in Europe (CBI, 2020a). Trase[129] trade flow/supply chain information for Côte d'Ivoire and Ghana in 2019 indicate that 64% of cocoa imported into the EU from Côte d'Ivoire and 79% for Ghana appears to have been imported by larger operators.

The Netherlands hosts the world's largest cocoa–chocolate conglomerate where processors, traders and chocolate manufacturers come together (Camargo and Nhantumbo, 2016). It is the world's largest importer of cocoa beans, it has the world's largest cocoa grinding industry and is Europe's largest exporter of cocoa beans (CBI, 2020a). The port of Amsterdam houses multinationals such as Olam and Cargill, as well as Dutch companies such as Dutch Cocoa, Daarnhouwer and Theobroma (CBI, 2020a). **Germany** houses Europe's second largest cocoa processing industry, dominated by multinationals such as Cargill and Barry Callebaut. It is Europe's largest chocolate manufacturing industry and the world's largest exporter of chocolate (CBI, 2020a). **Belgium** is the third-largest overall cocoa bean importer in Europe and the second-largest direct importer. It is a large manufacturer of chocolate products and in 2019 was the world's second largest chocolate exporter (CBI, 2020a). France, Spain and Italy are also large importers of cocoa beans, with a significant chocolate industry that pays growing attention to speciality chocolates (CBI, 2020a). Eastern European countries have high annual growth rates in direct cocoa bean imports from producing countries, whereas most cocoa beans imported by the Nordic countries come from elsewhere in the EU (CBI, 2020a).

[129] https://trase.earth/explore

The **bulk market** for commodity cocoa beans, which makes up more than 90% of the total chocolate market, is highly price-oriented (CBI, 2020a). Multinationals are expanding their influence along the cocoa supply chain – many have their own buyers and processing facilities in cocoa producing countries (e.g. Mondelez and Barry Callebaut) and ingredient companies such as Cargill and OLAM work as both cocoa processors and exporters in producer countries and as importers and manufacturers in Europe (CBI, 2020b).

The EU's smaller but growing **speciality market** creates value through higher quality products, with direct sourcing of speciality cocoa beans and is generally associated with more ethical and sustainable sourcing (CBI, 2020a; Cadby *et al.*, 2021). There was reported to be a growing number of direct trade relationships in the speciality cocoa market, between producers and small and medium sized SME chocolate makers (CBI, 2020b). In addition, there is a growing trend of European importers trying to create better connections between chocolate makers and producers (CBI, 2020b).

Cocoa sustainability is high on the international agenda with growing corporate and consumer awareness of social and environmental issues around cocoa production (Brack, 2019). Most importers, cocoa processors, chocolate makers and retailers have **sustainability commitments** (CBI, 2020b), including through the use of certification schemes (Rainforest Alliance-UTZ, Fairtrade, organic) and company-specific programmes, with retailers covering sustainability concerns in their codes of conduct (CBI, 2020b). The majority of multinationals have corporate sustainability programmes (e.g. Nestlé, Mars, Mondelez, Lindt & Sprüngli, Barry Callebaut, Cargill) (CBI, 2020b) and already report significant amounts of information on their cocoa supply (Brack, 2019). Ferrero and Hershey have committed to sourcing 100% certified cocoa by 2020, and several companies have set targets for sourcing 100% responsibly or sustainably (e.g. Barry Callebaut and Mars by 2025 and Cargill by 2030) (Brack, 2019). EU countries including Germany, the Netherlands and Belgium were reported to have set sustainability goals targeting their chocolate and confectionary industry (CBI, 2020b), with the Netherlands and Germany committing to 100% and 70% sustainable cocoa consumption by 2025 and 2020, respectively (Grassnick and Brümmer, 2021). In 2017, the efforts of cocoa supply chain companies were brought together through establishment of the Cocoa and Forests Initiative (CFI). The CFI is a partnership among the governments of Ghana and Côte d'Ivoire and 35 leading cocoa, chocolate, and retail companies with the shared goal to end deforestation and restore forests across (World Cocoa Foundation, 2021).
Traceability of cocoa back to the farm/forest of origin may prove difficult for EU operators, as no traceability system was reported to exist in Côte d'Ivoire and whilst a national system exists in Ghana it was reported not to provide fill traceability back to the forest of origin (Brack, 2019).

3) Information about the sector in producer countries

Cocoa production in West Africa is primarily produced by 1.8 to 2 million **smallholder farmers** (Camargo and Nhantumbo, 2016; Schulte *et al.*, 2020; Kyere-Boateng and Marek, 2021), who depend on the crop for their income and livelihood (Kroeger *et al.*, 2017) and mostly operate at or below the poverty line (Bakhtary *et al.*, 2020). The cocoa sector in Côte d'Ivoire provides more than one third of export revenues and ~14% of GDP (World Bank, 2019). In Ghana, cocoa serves as the main cash crop, contributing 25% of earnings in foreign exchange as well as contributing on average 2 per cent to GDP (Kyere-Boateng and Marek, 2021; Teye and Nikoi, 2021). Very little of the cocoa value is captured by smallholders (Bakhtary *et al.*, 2020), with farmers receiving 3-7% of the retail price of a chocolate bar (Brack, 2019).

Cocoa is a major **driver of deforestation** in West Africa, particularly in Côte d'Ivoire and Ghana where only small remnants of primary forest remain (Brack, 2019; Schulte *et al.*, 2020; Kyere-Boateng and Marek, 2021). The prosperity of cocoa farming has relied on a system of converting forested lands at an accelerated pace, drawing on the fertility of newly-deforested land (Ongolo *et al.*, 2018). Most cocoa farms are just 2-4 ha, with cocoa farming characterised by low productivity, pests and disease, aging tree stock and lack of available land suitable for cultivation (Schulte *et al.*, 2020). Smallholders face many barriers to maintaining productivity and investing in sustainable agricultural practices, including lack of technical knowledge, resources, access to finance and land/tree tenure issues (Kroeger *et al.*, 2017; Bakhtary *et al.*, 2020), hence farmers may move on to establish new cocoa farms rather than investing in replanting ageing plantations (Schulte *et al.*, 2020).

In Côte d'Ivoire, cocoa sector governance has shifted from a largely state-controlled approach to include a more active role for cocoa companies. In Ghana, the cocoa sector remains controlled by public institutions (such as the state-owned COCOBOD), although global cocoa companies have gained more power since the sector was liberalised in the 2000s (Schulte *et al.*, 2020).

Whereas in most producing countries the farm gate price reflects the fluctuating world market, cocoa pricing in Côte d'Ivoire and Ghana is determined at a fixed price. National cocoa marketing boards pre-sell part of their harvest in the year before the harvest season starts, giving farmers a certain percentage of this fixed price (Bakhtary *et al.*, 2020). National cocoa prices, annual production levels, land and forest governance and cocoa sector planning are the responsibilities of governments, hence are difficult for external stakeholders to influence (Brack, 2019).

There has been an increase in **public-private partnerships** aimed at tackling social and environmental issues in the cocoa sector (Teye and Nikoi, 2021). Many companies invest in traceability and larger corporate players implement smallholder engagement programs that offer inputs, training and access to finance (Bakhtary *et al.*, 2020). However, these were reported to be often limited in scale, lacking coordination and failing to address the systemic problems facing smallholders (Bakhtary *et al.*, 2020).

There have been government and industry attempts to address structural poverty (Schulte *et al.*, 2020). The governments of Côte d'Ivoire and Ghana agreed in 2019 to sell cocoa with a price premium (a living income differential - LID) of USD 400 per ton, to improve the price insecurity of farmers. The European Commission launched a new initiative to enhance dialogue with Côte d'Ivoire, Ghana and Cameroon, to support sustainable cocoa production in the framework of the LID initiative (European Commission, 2021).

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C) Case study 2: beef from Brazil

1) Production and import pattern context

The US and Brazil are the two largest producers of beef worldwide, together accounting for one-third of global production (Fig. 1). The main global importers of beef are China and the United States (importing 20.5% and 12.8% respectively of international exports by value in 2019), with 6.03% of international beef exports going to the EU-27 (source: UN Comtrade).

The EU-27 imported approximately a third of its beef from South America 2015-2019 (Brazil 21.38%, Argentina 6.24% and Uruguay 4.68%), and another third from the United Kingdom (22.27%) and the United States of America (8.89%) (Source: Eurostat ComExt, importer-reported data on quantity, downloaded 12.02.2021). The majority of imported beef entered the EU-27 via Italy, Netherlands and Germany (Fig. 2).

Over the period 2001–2015, cattle was the agricultural commodity found to replace most forest globally, with deforestation linked to beef production across South America, including Brazil, Argentina and Uruguay (Goldman *et al.*, 2020, Fig. 3 & 4).

Between 2015 and 2017, the largest export markets for Brazilian beef, offal, and live cattle were China (mainland and Hong Kong), which purchased 30.2% of Brazil's exports by volume (30.1% by value), followed by Egypt, Russia and Iran. The European Union imported 7.1% of Brazil's exports by volume (11.9% by value) (zu Ermgassen *et al.*, 2020).

In 2019, fresh beef constituted 82% of Brazils beef exports, processed beef 10%, and offals and other cuts 8%. Main importers of fresh beef in 2019 were China, Hong Kong, Egypt, and Chile. The key importers of prepared or preserved meat, like corned beef, were the US and the EU, together importing 72% of processed beef exports from Brazil (Kuepper *et al.*, 2020). Around two-thirds of Brazilian beef exports are handled by three companies – JBS, Minerva and Marfrig. Whilst all three have signed the G4 agreement (a commitment to eliminate deforestation from their supply chains in the Amazon biome), Trase's data suggest these companies' exports were linked to 140,000 ha of deforestation between 2015 and 2017 (Trase, 2019).

Overall, export markets purchase 19% of Brazil's beef, whilst the domestic market buys 81%. A study mapping the deforestation-risk associated with Brazilian supply chains found that exporters shouldered 13-14% of the deforestation risk, with 85-86% of cattle-related deforestation in Brazil linked to the domestic market (which sources a disproportionately large share of beef raised in the Amazon) (Trase, 2019; zu Ermgassen *et al.*, 2020). Relative deforestation risk was found to be highest for China (21.7 to 31.1% of all export-associated deforestation risk), Egypt and Russia - the EUs deforestation risk was found to be much lower and mainly concentrated in the Cerrado (zu Ermgassen *et al.*, 2020).

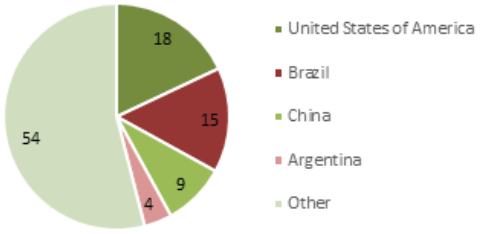

Figure 1: Main producers of **beef** in 2019 (% of global production; Source: FAOSTAT, accessed 28.4.2021)

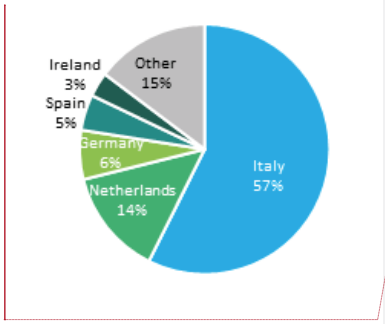

Figure 2: Main EU Member State importers of beef (based on average annual exported quantity over the period 2015-2019. Source: *Eurostat ComExt, importer-reported data.*

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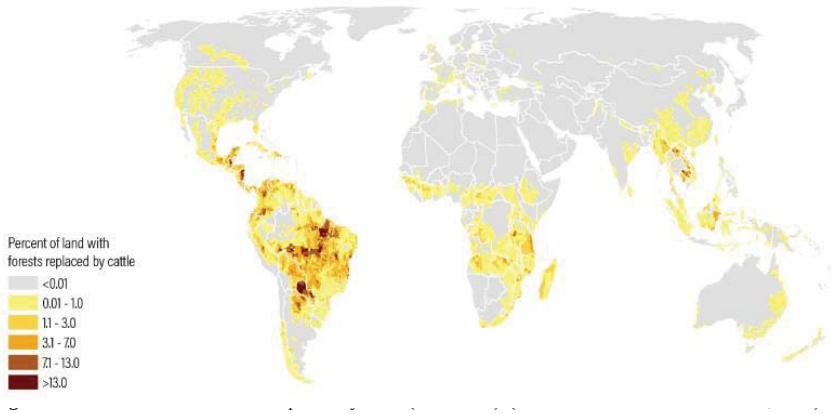

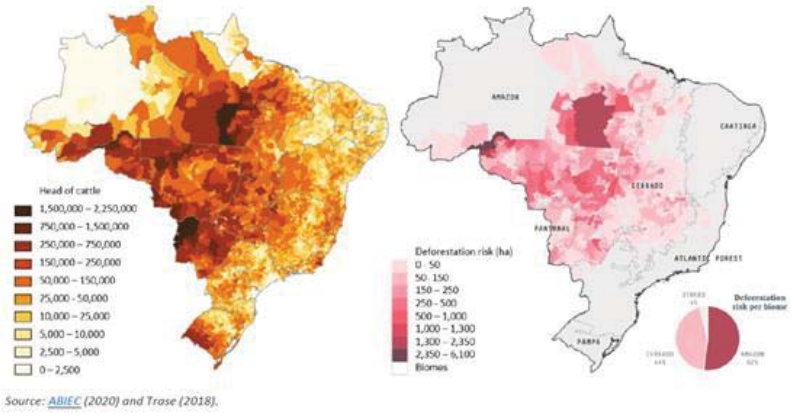

Figure 4. Brazilian cattle herd, 2019 (heads of cattle) and cattle-driven deforestation risk per municipality (Source: ABIEC, 2020 and Trase, 2018 in: Kuepper *et al.*, 2020)

2) Information about the sector in the EU

Within the EU, the greatest importers of fresh and frozen beef are the Netherlands, Italy and Germany (Fig. 5).

The EU is also one of the world's leading producers, consumers, and traders of bovine meat and dairy products (Ihle *et al.*, 2017). Over the period 2016-2020 there was more beef being exported from the EU than imported (European Commission, 2021, Fig. 6).

The biggest beef and veal processing companies in the European Union are Bigard from France, VION from the Netherlands, ABP Food Group from Ireland and Inalca from Italy (6.1%, 5.4%, 4.2% and 2.4% of EU market share) (Ihle *et al.*, 2017). Together the top 15 processing companies held 36% of the total beef and veal market share in the EU 2010/11 (Ihle *et al.*, 2017).

The concentration of the beef and veal sector is low for the European Union, but much more important in some European countries such as Germany and France, where it exceeds 50% of market share (Hocquette *et al.*, 2018).

The EU currently sources cattle from many regions in Brazil, with the greatest quantities coming from the Pampas in the far south, the southern Cerrado savannah and around the Amazon–Cerrado transition zone in the west. Between 2015 and 2017, EU beef imports were linked to 2,900-3,600 hectares of deforestation risk each year (Trase, 2019).

"European Union countries … accepted only fresh and frozen beef from facilities in 10 states in Brazil's south, southeast, and central-west, some of the first to be designated as free of foot-and-mouth disease […] EU sourcing is, however, expanding northwards—in 2016 , [..] the European Union approved 14 additional states for exports of processed meat, including five states in Brazil's Legal Amazon: Acre, Rondônia, Pará, Tocantins, and Maranhão" (zu Ermgassen *et al.*, 2020).

Trase trade flow data (Fig. 7) indicates that the majority of Brazilian beef exported to the EU (in tons) comes from the three main meatpackers – Marfrig (39%), JBS (34%) and Minerva (14%). "Around two-thirds of Brazilian beef exports are handled by these three companies […] all of which have signed the G4 agreement, a commitment to eliminate deforestation from their supply chains in the Amazon biome. Despite this, Trase's data suggest these companies' exports were linked to 140,000 ha of deforestation between 2015 and 2017" (Trase, 2019).

"Although these companies have taken steps to monitor their direct suppliers, and so in theory can avoid farms associated with deforestation, none so far monitors its indirect suppliers, who make up the bulk of their supply chain" (Trase, 2019). For example, JBS states that it has 50,000 direct suppliers, but has not disclosed the number of indirect suppliers (Slob *et al.*, 2020).

A recent study of 1,545 direct suppliers and 3,164 indirect suppliers to Brazil's top three meatpackers, JBS, Marfrig and Minerva (representing only a small sample of their total suppliers) found that deforestation was higher in their indirect supply chains than their direct supply chains (Slob *et al.*, 2020).

"JBS and Marfrig announced new commitments to monitor indirect suppliers by 2025 in September and July 2020, respectively […] Apart from committing to monitoring 100 percent of direct and indirect suppliers in the Amazon by 2025, Marfrig's new target (Verde+ Plan) extends the zero-deforestation commitment to the Cerrado biome by 2030" (Slob *et al.*, 2020).

Fewer top companies have existing voluntary deforestation commitments for beef (28%) compared to palm oil, paper and timber (71%, 66% and 48% respectively), despite increased awareness of the influence of cattle on tropical deforestation in recent years (Global Canopy, 2021).

The ability of EU operators to trace supply chains back to the farm of origin may prove difficult due to the complexity of Brazilian beef supply chains, lack of a national traceability system and restricted public access to information (see section 3 below).

Studies such as the supply chain mapping by Ermgassen *et al*. (2020) can be used by companies to differentiate sourcing risks for different actors and regions across Brazil and identify hotspots of risks in their supply chains.

Figure 5: Import of beef (fresh & frozen meat) to EU 2015-2021[1]

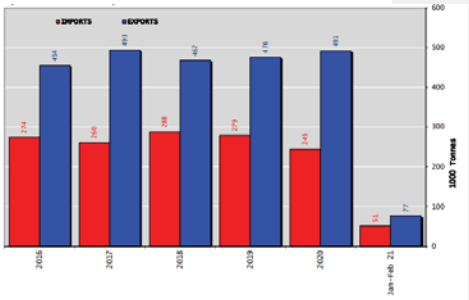

Figure 6: EU-27 import/export trade balance of beef products (excl. live) 2016-2021 (European Commission, 2021)

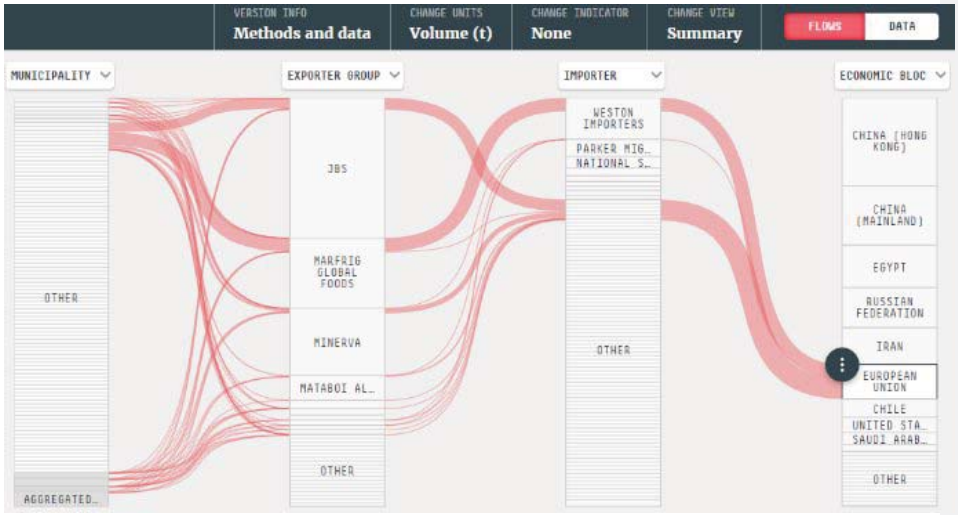

Figure 7: Trade flows for beef from Brazil (2800 municipalities) into the EU in 2017 (ton) (Source: Trase)

3) Information about the sector in the producer country

In 2019, Brazil exported 2.3 million tons, accounting for over 21 percent of total global beef exports (Kuepper *et al.*, 2020). Brazilian beef production has grown steadily in the past two decades, and in 2019, the livestock sector represented 8.5 percent of Brazil's GDP. While most Brazilian beef is consumed domestically, the proportion of beef destined for export markets has increased from 18 percent in 2015 to 23 percent in 2019 (Slob *et al.*, 2020).

2.5 million farmers operate mostly pasture-based production systems where 87 to 90% of cattle are finished on pasture and approximately 10 to 13% finished in feedlots (zu Ermgassen *et al.*, 2020). In 2019, Brazil recorded the largest beef cattle herd in the world of 238 million head. Cattle farms range in size, from large-scale company-run farms to small-scale ranchers (Kuepper *et al.*, 2020) . Cattle ranching is most prevalent in the states of the North and Central-West regions, though it takes place throughout Brazil (Kuepper *et al.*, 2020).

Around 80% of Brazil's beef exports are raw meat and live animals. This market emphasis on low-value-added exports, rather than higher-value and processed products, exerts pressure on margins, leaving little room for investments in productivity and sustainability (The Nature Conservancy and Bain & Company, 2020).

"Two-thirds of cleared land in the Amazon and Cerrado biomes have been converted to cattle pasture (Mapbiomas, 2018), making the Brazilian cattle sector responsible for one-fifth of all emissions from commodity-driven deforestation across the entire tropics (Pendrill *et al.*, 2019)" (zu Ermgassen *et al.*, 2020). Often, the key driver of conversion is the underlying land, which can be used for different commodities, and rearing cattle is a cheap way to prevent the forest from growing back (Kuepper *et al.*, 2020).

Cattle production in Brazil is associated with low-productivity, extensive ranching with little investment into land and pasture care or animal husbandry. More than half the pasture is estimated to be in some stage of degradation. Without efforts to prevent degradation pastures can lose their capacity to feed animals in 3-4 years (The Nature Conservancy and Bain & Company, 2020). Since traditional cattle ranching practices in Brazil exhaust the soil, ranchers continuously expand by deforesting new areas in order to maintain or increase production (Partnerships for Forests, 2020).

"The cattle supply chain is complex as it often involves various locations from birth to slaughter, leading to different levels of transparency and visibility. For each *direct*, tier-1 supplier of a meat processor, one or more *indirect* suppliers may also be involved. The process may include several transactions of animals between birth (the calving ranches) and the fattening stage before slaughter (Fig. 8 and 9). Research indicates that 80 percent of direct suppliers in the Amazon bought cattle from other properties before selling to a slaughterhouse. On average, a transaction with a direct supplier included purchases from 15 indirect suppliers" (Kuepper *et al.*, 2020).

Cattle laundering was reported, whereby animals bred, raised, or fattened on ranches in areas with recent deforestations, embargoes, or without registration are sold to a "clean" farm, which can then be channelled into regular supply chains. (Kuepper *et al.*, 2020).

"Brazil has a total of 265 beef slaughterhouses registered under Federal Inspection (SIF) […] The Legal Amazon states, which overlap with significant parts of the Cerrado Biome, are home to 98 SIF slaughterhouses with an estimated daily capacity of up to 50,000 heads of cattle. […] A handful of meat processing companies continue to dominate the Brazilian cattle industry, with JBS, Marfrig, and Minerva accounting for the largest capacity. […] Together, the top three operate 60 SIF-registered facilities throughout the country, of which 32 are located in the Legal Amazon states" (Kuepper *et al.*, 2020).

JBS is the largest animal protein company and the second-largest food company in the world; Marfrig is the world's second-largest beef company by production capacity; and Minerva is an export-oriented beef company (Slob *et al.*, 2020).

"There are two commitments made by slaughter businesses in the Brazilian cattle sector, both initiated in 2009: 1) the Terms of Adjustment of Conduct (TAC) are legally binding commitments signed by individual slaughterhouses to not purchase cattle from properties with illegal deforestation within the Legal Amazon (the nine states making up the Amazon basin); 2) the G4 is an agreement from the three largest meat packing companies, JBS, Minerva, and Marfrig, to not purchase cattle from properties in the Amazon biome who cleared land post-2009." (zu Ermgassen *et al.*, 2020).

Though 75% of export-approved slaughterhouses in the Amazon have signed these commitments, we do not know what proportion of exports originate from signatory slaughterhouses or to what degree these locally focused commitments (which apply only to the Amazon) reduce international markets' exposure to deforestation (zu Ermgassen *et al.*, 2020).
TAC audits commissioned by the large meatpackers report high levels of compliance for direct suppliers, but their connections to indirect supply remain largely out of sight (Kuepper *et al.*, 2020). Marfrig reported 53% of its cattle in the Amazon is sourced from indirect suppliers, for which it has no systematic verification, due to "*the lack of a nationally implemented public traceability policy [which] makes it difficult to implement such a verification*" (Kuepper *et al.*, 2020). JBS and Minerva have not disclosed the proportion of its beef sourced from indirect suppliers. Minerva reports high compliance for its direct supply chains but fails to monitor indirect supplies "*given that the monitoring of these indirect suppliers depends on support and investments from the government in technologies that promote the traceability of cattle from birth to slaughter*" (Kuepper *et al.*, 2020).

"The beef cattle production chain in Brazil is complex and unstructured. Existing public databases of information related to sanitary control, and social and environmental practices are independent and not in communication with one another. Monitoring only starts once an animal reaches the slaughterhouses, usually after it has passed through a number of cattle production properties, creating a chain full of indirect suppliers consisting of ranchers specialized in calf and rearing. These indirect suppliers become blind spots for the current slaughterhouse monitoring systems hindering full traceability and allowing producers that have deforested to actively participate in the beef market" (Partnerships for Forests, 2020).

"Ultimately, to set the cattle sector onto a more sustainable footing, improvements in the transparency and governance of both domestic and export supply chains are required" (zu Ermgassen *et al.*, 2020).

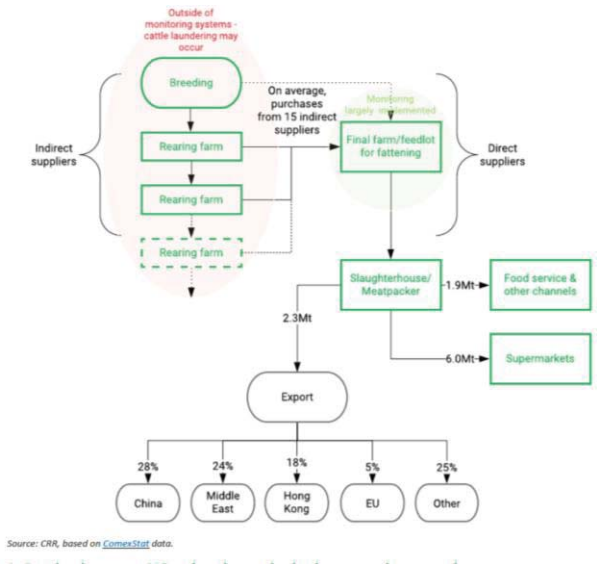

Figure 8: Brazilian beef supply chain stages (2019 volumes). (Source: Kuepper *et al*., 2020).

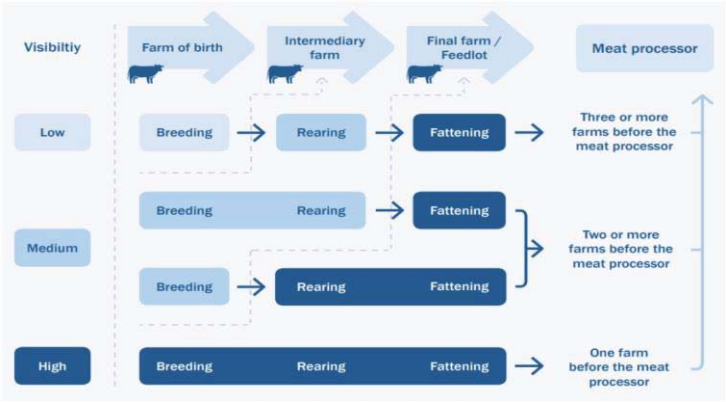

Figure 9: Complexity of beef supply chains up to the meat processor stage and implications to supply chain visibility. (Source: Proforest, 2017)

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D) Case study 3: palm oil from Asia

1) Production and import pattern context

Ninety percent of global palm oil in 2019 was produced by four countries, with the majority produced by **Indonesia** (60%) and **Malaysia** (24%)[130] (Fig. 1). The majority of the world's palm oil is also processed and refined in Indonesia and Malaysia[131]. A significant amount of Indonesian-grown crude palm oil is processed in Malaysia[132]. After India and China, the EU is the world's third largest importer of palm oil[133] and, in 2020, palm oil consumption in the EU-27 amounted to approximately 7.1 million metric tons[134]. Imports into the EU-27 over the period 2015-2019 entered primarily via the **Netherlands**, followed by **Spain** and **Italy**[135] (Fig. 2).

Palm fruit produces two chemically distinct oils:

- **Crude palm oil (CPO)** is extracted from pressed fruit and then refined. CPO is transformed into a variety of different products, including biodiesel and refined palm oil for frying and specialist usage e.g. spreads, confectionary.
- **Palm kernel oil (PKO)** is extracted from palm kernels at crushing plants, after separation of palm fruits and kernels at mills[136]. PKO is used to produce natural fatty alcohol that is processed into products such as shampoos and liquid detergents.

Blended palm oil and palm kernel oil forms an important share of the global vegetable oil market, competing with other oils such as soybean[137]. Palm oil production has been highlighted as a major driver of deforestation in the tropics, and a cause of forest fires and peatland destruction in some countries[138]. Production is sensitive to weather patterns such as dry spells or heavy rainfall resulting in flooding, and fluctuations in yield subsequently affect world market price[139].

[130] FAOSTAT, accessed 28.4.2021
[131] https://chainreactionresearch.com/wp-content/uploads/2017/11/unsustainable-palm-oil-faces-increasing-market-access-risks-final-1_updated-july-2018.pdf
[132] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[133] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[134] https://www.indexmundi.com/agriculture/?country=eu&commodity=palm-oil&graph=domestic-consumption (Index Mundi used USDA data)
[135] Eurostat ComExt, importer-reported data
[136] http://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[137] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[138] https://www.proforest.net/fileadmin/uploads/proforest/Documents/Publications/bn06_rspb_web.pdf
[139] https://www.ig.com/uk/trading-strategies/factors-affecting-crude-palm-oil--cpo--prices-190905

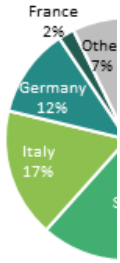

Figure 1: Main producers of palm oil fruit in 2019 (% of global production; Source: FAOSTAT, accessed 28.4.2021)

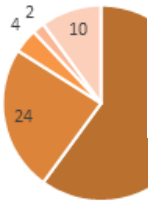

Figure 2: Main EU Member State importers of palm oil (based on average annual exported quantity over the period 2015-2019. Source: Eurostat ComExt, importer-reported data

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Palm oil supply chain: The international palm oil supply chain is hourglass shaped (see Figure 3), with the relatively small group of processors and traders forming a bottle neck at the international trading stage[140]. The refinement (processing) and trade stages are concentrated in the hands of just a few corporate groups (namely Wilmar, Musim Mas, GAR, Cargill and Asian Agri in Indonesia and Sime Darby and FELDA in Malaysia)[141]. However, production involves a wide range of suppliers from companies to smallholders, and manufacturing involves a wide range of consumer goods manufacturers in a market that is diversifying[142]. At the production stage, palm oil is typically sourced from a mill's own plantations as well as a large number of third-party suppliers (e.g. smallholders), possibly selling fruits to a network of middlemen[143]. Over the last few years, major corporations involved in production and trade have been investing in their refining

[140] Figure taken from https://www.sciencedirect.com/science/article/pii/S0959378017310117
[141] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[142] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[143] https://www.tropicalforestalliance.org/assets/Uploads/2018-POTC-Scorecard-Report_public-v2.pdf

capacity rather than in expanding their own plantations, so as to absorb the growing supply of unprocessed oils from medium-scale producers and smallholders[144].

Supply chain complexity has been the major barrier to the implementation of zero-deforestation commitments for palm oil (see Figure 4). Supply chains frequently involve tens, hundreds, or even thousands of producers, as well as mills in multiple countries[145]. Mixing of palm oil sources may occur at multiple stages in the supply chain, making traceability harder to achieve[146]. In Indonesia, smallholder palm oil plantations are reported to be difficult to accurately map due to heterogeneous characteristics of land use (a mosaic pattern) and the lack of legal registration of smallholder lands[147]. While much processing and refining of CPO and PKO take place in Indonesia, Malaysia and Singapore, most manufacturing takes place in countries of consumption and notably in China which then exports the manufactured products worldwide[148]. Because the downstream palm oil supply chain is highly fragmented and includes numerous retailers and manufacturers, individual consumer goods manufacturers and retailers have limited influence and leverage on the supply chain and the sustainability standards of production[149].

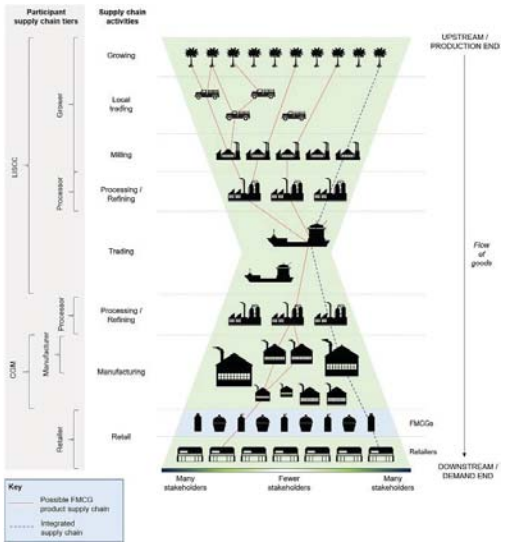


Figure 3: Palm oil supply chain illustration

[144] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[145] https://www.proforest.net/fileadmin/uploads/proforest/Documents/Publications/bn06_rspb_web.pdf
[146] https://www.sciencedirect.com/science/article/pii/S0959378017310117
[147] Descals, A., Wich, S., Meijaard, E., Gaveau, D. L. A., Peedell, S., and Szantoi, Z. 2021. High-resolution global map of smallholder and industrial closed-canopy oil palm plantations, Earth Syst. Sci. Data, 13, 1211–1231, https://doi.org/10.5194/essd-13-1211-2021.
[148] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[149] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf

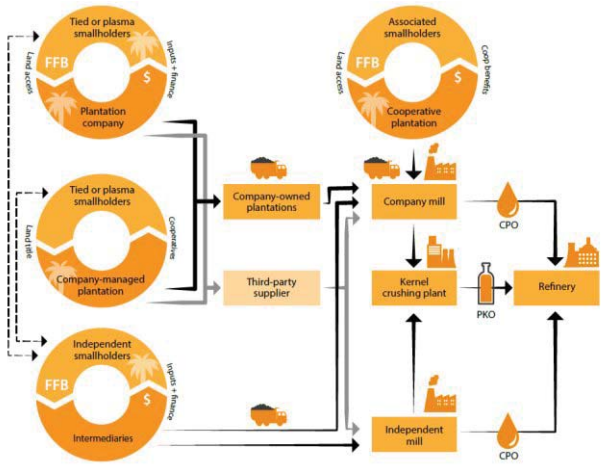


Figure 4: simplified palm oil value chain from plantation to refinery in Indonesia[150]

2) Information about the sector in the EU

An independent survey suggested traceability to the mill for European palm oil imports exceeding 99% of supply was achievable, with lower traceability beyond mill-level (i.e. plantation level, where deforestation occurs)[151]. In general, the importers surveyed had little information on third-party traded palm oil, highlighting the need for traceability and visibility along the entire supply chain[152]. Palm oil sourced from intermediaries and third-party owned mills or warehouses is often very difficult to map and monitor, and in practice a 'deforestation-free' supply is very difficult to guarantee[153].

Largest EU palm oil buyers: In 2019, Unilever, P&G and Nestlé were the top three palm oil consuming companies globally (see Figure 5)[154]. The majority of palm oil imports enter the EU via the Port of Rotterdam in the **Netherlands**[155]. WWF's Palm Oil Buyers Scorecard, which assesses the sustainability commitments and actions of 173 palm oil-consuming companies worldwide, assessed 118 European companies in 2020[156], indicating that the EU palm oil market is not restricted to a handful of operators

[150] http://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[151] Palm Oil Transparency Coalition and 3keel. 2020. *First Importer Suvey: 2019 Palm Oil Industry Standard*. Available at: https://www.palmoiltransparency.org/wp-content/uploads/2020/01/2019-POTC-Scorecard-Report_public.pdf
[152] https://www.palmoiltransparency.org/wp-content/uploads/2020/01/2019-POTC-Scorecard-Report_public.pdf
[153] Bakhtary, H., Matson, E., Mikulcak, F., Streck, C. and Thomson, A. 2020. *Company progress in engaging smallholders to implement zero- deforestation commitments in cocoa and palm oil*.

[154] Global Market Report: Palm Oil (iisd.org)
[155] Europe Economics 2014. The economic impact of palm oil imports in the EU. London, UK. Available from: http://seap.ipni.net/ipniweb/region/seap.nsf/e0f085ed5f091b1b852579000057902e/a08b2cb6a7910fa648257da900587c6f/$FILE/Europe%20Economics%20-%20Economic%20Impact%20of%20Palm%20Oil%20Imports.pdf
[156] https://palmoilscorecard.panda.org/methodology

(however, note that not all European companies were in EU Member States, and the scorecard utilises data from the Roundtable on Sustainable Palm Oil to select companies to assess so does not represent an exhaustive list of EU operators). Within the scorecard, EU companies such as AAK AB (Sweden), Unilever (Netherlands), Nestlé (Switzerland), and BASF (Germany) are among the largest palm oil buyers.[157]

State of commitments by countries and the private sector: The governments of eight EU countries (Belgium, Denmark, France, Germany, Italy, the Netherlands, Sweden and the United Kingdom), as well as several major companies, have already committed to only buying from producers certified as sustainable[158]. Companies involved in the palm oil industry show relatively high engagement with certification schemes and zero-deforestation commitments[159]. The leading non-state global initiative is the Roundtable on Sustainable Palm Oil (RSPO), established in 2004 by European food industry and environmental NGOs, which together developed a certification system and global standard for sustainable palm oil[160]. There are also companies engaging in Rainforest Alliance and organic certifications for palm oil, which can represent an opportunity for small and medium-sized exporters to target niche markets[161]. The European Palm Oil Alliance (EPOA) is a business initiative of palm oil refiners and producers supporting initiatives committed to sustainable palm oil across Europe; members include MVO - the Netherlands Oils and Fats Industry[162]. In 2017, the European Parliament issued a non-binding resolution with the aim of imposing more stringent conditions on palm oil imported by European markets, including the phasing out of palm oil as a component of biofuels[163].

[157] WWF. 2019. *Palm Oil Buyers Scorecard.* Available at: https://palmoilscorecard.panda.org/check-the-scores/all
[158] https://www.europarl.europa.eu/RegData/etudes/ATAG/2018/614706/EPRS_ATA(2018)614706_EN.pdf
[159] Bakhtary, H., Matson, E., Mikulcak, F., Streck, C. and Thomson, A. 2020. *Company progress in engaging smallholders to implement zero- deforestation commitments in cocoa and palm oil*.

[160] Dermawan, A. and Hospes, O., 2018. When the state brings itself back into GVC: The case of the Indonesian palm oil pledge. Global Policy, 9, pp.21-28.
[161] https://www.cbi.eu/market-information/vegetable-oils/palm-oil
[162] https://palmoilalliance.eu/
[163] European Parliament (2017) Palm Oil and Deforestation of Rainforests. European Parliament Resolution of 4 April 2017 on Palm Oil and Deforestation of Rainforests (2016/2222(INI)). 2016 edn. European Parliament, Brussels, Belgium.

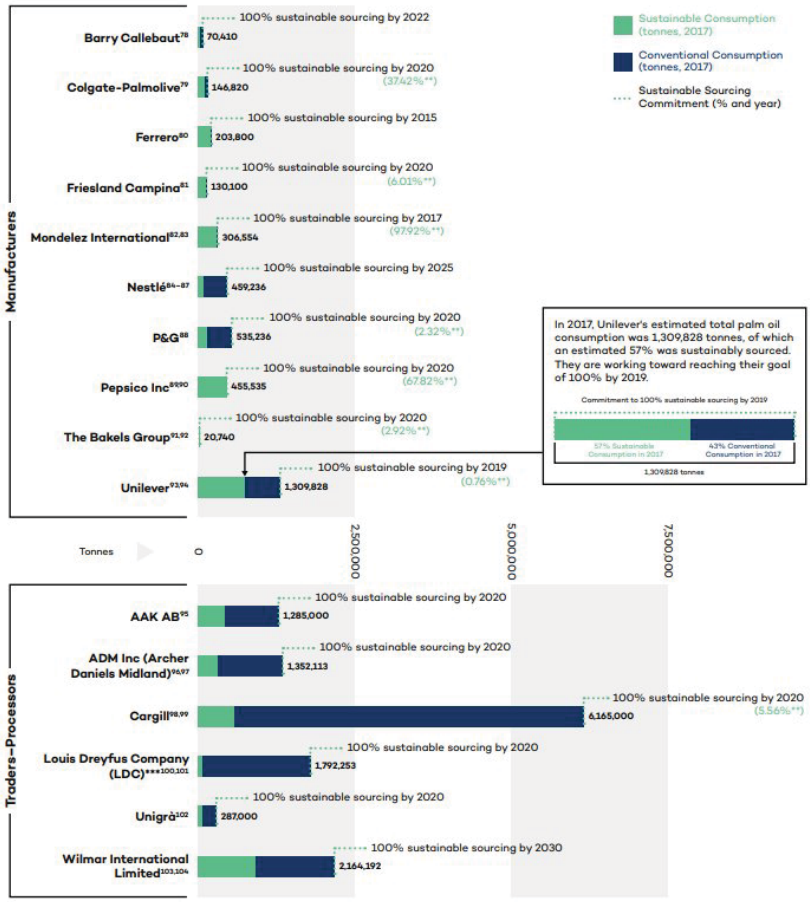


Figure 5: Main palm oil consuming companies, including their sustainable sourcing commitments. Source: Global Market Report: Palm Oil (iisd.org)

Available tools that may support due diligence:

- **Certification:** though not an indicative measure to determine product origin, a high proportion of trade is covered by certification schemes (e,g. in 2019, 86% of European palm imports are certified sustainable[164], and approximately 19% of global palm oil is RSPO-certified sustainable[165]). Certification systems have the caveat that it does not always guarantee traceability to farm or forest of origin, but understanding which provides traceability up to this level could assist (e.g.

[164] Data covers EU28 countries and Switzerland. See EPOA and IDH. 2020. *Sustainable Palm Oil for Europe in 2019*.
[165] https://rspo.org/impact

'identity preserved' or 'segregated' traceability types provide guarantee that the product is from a certified plantation and is separated from uncertified sources)

- **Traceability in risk assessments:** Palm fruit is highly perishable and should be processed within 24 hours of harvest, limiting the distance of plantation sourcing to a radius of ~50 km from a processing mill (depending on available infrastructure for transport [166]); mill locations therefore can indicate where palm fruit is processed as well as where palm plantations are located [167]. The standard ~50km distance between source plantations and processing mills allows geospatial deforestation risk assessment for palm oil. Widely used methods currently take recent trends in deforestation, peat clearance or fire in an area, and use this information to calculate the probable future risk[168]. Proforest's 2016 Responsible Sourcing and Production Briefing states that accuracies of 70–80% are possible in Southeast Asia[169]. However, it has been noted that the 50km standard should be used with caution as improvements in road networks allow sourcing from plantations beyond this radius[170].
- **Data on mills:** In the case of palm oil, due to the perishable nature of the fruit, mill locations can indicate where oil palm plantations are located. Global Forest Watch maintains a Universal Mill List (UML) – an open-access collection of palm oil mill locations across the world with associated group, company, and mill names, RSPO certification status and unique "universal IDs". The UML is based on data contributed to the authors from palm oil buyer companies, the RSPO, and FoodReg, as well as data gathered from government records and extensive supply chain research, and is updated every six months[171]. WRI released the PALM Risk Assessment Tool in 2016, enabling users to prioritize mills within a company's supply chain to guide improvements toward zero-deforestation commitments. The tool looks at two indices: past deforestation-related impacts (2009-2012) and potential for future deforestation-related impacts (average rate of loss over the previous two years of available tree cover loss data). Deforestation-related activities include fires and tree cover loss over time. Comparing across a set of mills, the PALM Tool generates a relative deforestation risk ranking (high, medium, low) for each mill. An overall score allows users to easily assess, at an aggregated level, which particular mills in a supply chain are the highest priority for action. Limitations of the tool include the assumption that mills source from plantations within a 50 km radius, the fact that the WRI mills database is incomplete and continues to be compiled, and the tool's reliance on satellite imagery with accuracy limits [172]. Demand for transparency in to forest-risk commodity supply chains has led to large European multinationals to pursue

[166] https://www.wri.org/insights/palm-oil-mill-data-step-towards-transparency; https://iopscience.iop.org/article/10.1088/1748-9326/ab7f0c/pdf; https://www.tropicalforestalliance.org/assets/Uploads/2018-POTC-Scorecard-Report_public-v2.pdf
[167] Lake, S., A. Rosenbarger, C. Winchester, 2016. "PALM Risk Assessment Methodology" Technical Note. Washington, D.C.: World Resources Institute. Available online at: www.wri.org/publication/palm-risk-assessment-methodology
[168] https://www.proforest.net/fileadmin/uploads/proforest/Documents/Publications/bn06_rspb_web.pdf
[169] https://www.proforest.net/fileadmin/uploads/proforest/Documents/Publications/bn06_rspb_web.pdf
[170] https://www.palmoiltransparency.org/wp-content/uploads/2020/01/2019-POTC-Scorecard-Report_public.pdf
[171] https://data.globalforestwatch.org/datasets/gfw::universal-mill-list-1/about
[172] Lake, S., A. Rosenbarger, C. Winchester, 2016. "PALM Risk Assessment Methodology" Technical Note. Washington, D.C.: World Resources Institute. Available online at: www.wri.org/publication/palm-risk-assessment-methodology

supply chain mapping, as in the case of Unilever, which makes public the list of all palm oil mill declared by their direct suppliers[173].

- **Maps and satellite monitoring:** Tools such as Global Forest Watch,[174] Global Forest Watch Pro,[175] and Starling[176] uses satellite data and various underlying datasets to provide a near-real time monitoring of deforestation across the globe which can be linked to concession data in order to monitor individual sites. Descals *et al*. (2021) recently created a machine-learning model using radar satellite imagery to produce a 10m resolution global map of closed-canopy oil palm (*Elaeis guineensis*) plantations by typology, that is, industrial versus smallholder plantations. The map is for the year 2019 and currently excludes young and sparse oil palm stands, oil palm in nonhomogeneous settings, and semi-wild oil palm plantations; however, the authors note that their model can be regularly rerun as new images become available in order to monitor the expansion of the crop in monocultural settings[177].
- **Trade flow:** Trase[178] provides trade flows of deforestation-related commodities from producing regions through to destination ports. It allows stakeholders to trace exports back to the region of origin (specific subnational production region, and sustainability risk associated with those regions).
- **Disclosure and benchmarking:** Forest500,[179] ZSL SPOTT,[180] and WWF Palm Oil Buyers Scorecard[181] evaluates publicly available data on palm oil companies and their deforestation-related commitments and policies. CDP Forests [182] provides publicly available company disclosure results based on questionnaires they send through annually to companies involved in forest-risk commodities; companies are asked about their policies, use of commodities, traceability and certification.

3) Information about the sector in the producer countries

Recent studies on the impact of EU import reduction suggest that there would only be small impacts on major economic variables in Indonesia.[183] However, the shift towards sourcing deforestation-free commodities will likely place a burden of cost on operators and stakeholders in producing countries such as Indonesia and Malaysia (palm oil represents the countries' second and fifth highest value export respectively).[184] In its

[173] https://www.unilever.com/planet-and-society/protect-and-regenerate-nature/sustainable-palm-oil/
[174] https://www.globalforestwatch.org/
[175] https://pro.globalforestwatch.org/
[176] https://www.starling-verification.com/
[177] Descals, A., Wich, S., Meijaard, E., Gaveau, D. L. A., Peedell, S., and Szantoi, Z. 2021. High-resolution global map of smallholder and industrial closed-canopy oil palm plantations, Earth Syst. Sci. Data, 13, 1211–1231, https://doi.org/10.5194/essd-13-1211-2021.
[178] https://www.trase.earth/
[179] https://forest500.org/rankings/companies
[180] https://www.spott.org/palm-oil/
[181] https://palmoilscorecard.panda.org/check-the-scores/all
[182] https://www.cdp.net/en/responses?utf8=%E2%9C%93&queries%5Bname%5D=&filters%5Bprogrammes%5D%5B%5D=Forest
[183] Jafari, Y., Othman, J., Witzke, P., and Jusoh, S. 2017. *Risks and opportunities from key importers pushing for sustainability: the case of Indonesian Palm Oil.* Available at: https://agrifoodecon.springeropen.com/articles/10.1186/s40100-017-0083-z. See also Rifin, A., Feryanto, Herawati and Harianto. 2020. *Assessing the impact of limiting Indonesian palm oil exports to the European Union.* Available at: https://journalofeconomicstructures.springeropen.com/articles/10.1186/s40008-020-00202-8
[184] Data from Comtrade (2019).

current state, traceability beyond mill-level has been difficult to implement. Mixing of palm oil sources may occur at multiple stages in the supply chain, making traceability harder to achieve due to its complex social system.[185] Establishing a palm oil traceability/transparency system to ensure that it is sourced from deforestation-free or certified plantations will likely be a transition that takes time, investment, support and engagement.[186]

For palm oil exports, individual traders appear to be embedded within the legal ownership structures of large exporter companies[187]. Only five exporter groups (encapsulating 352 individual traders in 2015) were found to be responsible for ~70% of Indonesia's palm oil exports in 2015 and 2018, namely Sinar Mas, Wilmar International, Musim Mas, Royal Golden Eagle and Permata Hijau[188]. Although all five operate under 'No Deforestation, No Peat or No Exploitation' commitments, these exports were associated with 78% of all deforestation risk, underscoring the fact that further work is needed to ensure commitments are fully implemented[189]. National and sub-national governments in palm oil producer countries have reportedly used incentives, land use permits, and agricultural and trade policies to encourage the development of palm oil plantations, in order to harness the crop's potential for rural and fiscal development[190]. Privatisation of previously state-run plantations has resulted in Malaysian and Singaporean corporate groups controlling more than two-thirds of the total production of Indonesia's palm oil through single investments and joint ventures with local companies[191]. Government palm oil revenues and national earnings from export taxes are often channelled through central government for redistribution among the provinces[192].

In reaction to growing consumer concerns over palm oil-driven deforestation and greenhouse gas emissions, Malaysia and Indonesia have both established national certification systems, namely the Indonesian Sustainable Palm Oil standard (ISPO) and the Malaysian Sustainable Palm Oil (MSPO) certification schemes in 2011 and 2015, respectively[193]. Both countries are also founding members of the Council of Palm Oil Producing Countries (CPOPC) intergovernmental organisation, established in 2015 to strengthen cooperation between producer countries as well as develop a global framework of principles for sustainable palm oil[194].

In Indonesia, private companies, smallholders and state-owned companies are reported to control 51%, 42% and 7% of national palm oil planted land respectively[195]. The majority

[185] Lyons-White, J., and Knight, A. 2018. *Palm oil supply chain complexity impedes implementation of corporate no-deforestation commitments.* Available at https://www.sciencedirect.com/science/article/pii/S0959378017310117
[186] Lyons-White, J., and Knight, A. 2018. *Palm oil supply chain complexity impedes implementation of corporate no-deforestation commitments.* Available at https://www.sciencedirect.com/science/article/pii/S0959378017310117
[187] https://trase.finance/explore
[188] https://trase.finance/explore
[189] https://trase.finance/explore
[190] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[191] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[192] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[193] https://www.iisd.org/system/files/publications/ssi-global-market-report-palm-oil.pdf
[194] https://www.cpopc.org/about-us/
[195] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf

of smallholders in the country are located in Sumatra, whereas industrial plantations dominate in Kalimantan[196]. Although smallholders reportedly obtain lower yields[197], they are expected to double their production and manage 60% of Indonesia's oil palm plantation area by 2030[198]. In Malaysia, smallholders are reported to manage 28% of palm oil plantations and large companies own the remainder. Smallholders operate either independently or under contract with a company ('scheme' smallholders). Independent smallholders in the global palm oil supply chain are noted to suffer from a lack of resources, farmer organization and market access, and require more comprehensive support to shift to sustainable agricultural practices than do large suppliers and producers[199].

Palm oil smallholders face risks of being excluded from the value chain due to the complexity in implementing traceability systems.[200] In this sector, it has been difficult to achieve traceability beyond mill-level due its complex social system and has been the major barrier in implementing no-deforestation commitments.[201] Reduction in mills or supply base has been implemented as a strategy by companies to make it easier to monitor suppliers,[202] however strategies such as this could affect palm oil producers (including smallholders) on a larger scale with the EU's proposed requirement. When too many barriers exist to include smallholders in the transition towards deforestation-free value chains, they are likely to be excluded and with it the opportunity to promote sustainable production, strengthen social inclusion and alleviate poverty.[203]

Independent smallholders in both Indonesia and Malaysia are rarely organized in cooperatives, which acts as a further barrier to certification and government and corporate support. By comparison, 'scheme' smallholders are typically better supported and organised, and in Malaysia are represented by the Federal Land Development Authority[204]. Independent smallholders are likely to find sustainable palm oil certification prohibitively expensive[205], and their slow inclusion in the certification process risks them being excluded from company supply chains[206]. Only a small proportion of Indonesia's

[196] https://www.cifor.org/publications/pdf_files/WPapers/WP220Pacheco.pdf
[197] Roundtable for Sustainable Palm Oil. (2019). RSPO smallholders. https://rspo.org/smallholders
[198] Suhada, T.A., Bagja, B., & Saleh, S. (2018, March 30). Smallholder farmers are key to making the palm oil industry sustainable. World Resources Institute. https://www.wri.org/blog/2018/03/smallholder-farmers-are-key-makingpalm-oil-industry-sustainable
[199] Bakhtary, H., Matson, E., Mikulcak, F., Streck, C. and Thomson, A. 2020. *Company progress in engaging smallholders to implement zero- deforestation commitments in cocoa and palm oil*.

[200] Jezeer, R. and Pasiecznik, N. 2019. *Exploring Inclusive Palm Oil Production.* Available at: http://www.etfrn.org/publications/exploring+inclusive+palm+oil+production
[201] Lyons-White, J., and Knight, A. 2018. *Palm oil supply chain complexity impedes implementation of corporate no-deforestation commitments.* Available at https://www.sciencedirect.com/science/article/pii/S0959378017310117
[202] Mars. 2020. *Mars Palm Positive Plan Delivers Deforestation-Free Palm Oil Supply Chain*. Available at: https://www.mars.com/news-and-stories/press-releases/mars-palm-positive-plan
[203] Jezeer, R. and Pasiecznik, N. 2019. *Exploring Inclusive Palm Oil Production.* Available at: http://www.etfrn.org/publications/exploring+inclusive+palm+oil+production and FAO. 2018. *The State of the World's Forests 2018 – Forest pathways to sustainable development*.
[204] Bakhtary, H., Matson, E., Mikulcak, F., Streck, C. and Thomson, A. 2020. *Company progress in engaging smallholders to implement zero- deforestation commitments in cocoa and palm oil*.

[205] https://www.wri.org/insights/smallholder-farmers-are-key-making-palm-oil-industry-sustainable

[206] Bakhtary, H., Matson, E., Mikulcak, F., Streck, C. and Thomson, A. 2020. *Company progress in engaging smallholders to implement*

independent smallholders have obtained RSPO certification[207]. Similarly, farmers are likely to struggle to meet mandatory smallholder requirements of Indonesia's ISPO certification standard, which require them to prove land ownership and good agricultural practices[208].

zero- deforestation commitments in cocoa and palm oil.

[207] Brandi, C. et al. Sustainability Standards for Palm Oil: Challenges for Smallholder Certification Under the RSPO. J. Environ. Dev. 24, 292–314 (2015).
[208] Nicholas Jong, H. Indonesia aims for sustainability certification for oil palm smallholders. Indonesian Forests, Indonesian Palm Oil (2020).

E) Case study 4: soy from South America

1) Production and import pattern context

Global production of soy has doubled – in some countries tripled – since 2000 (Brack, Glovery & Wellesley, 2016). The majority of global soy is produced in North and South America with the United States (US), Brazil and Argentina as the largest producers (Fig. 1). About three quarters of all soy production goes into animal feed, with the remainder being used for biofuel and food production (USDA FAS, 2019).

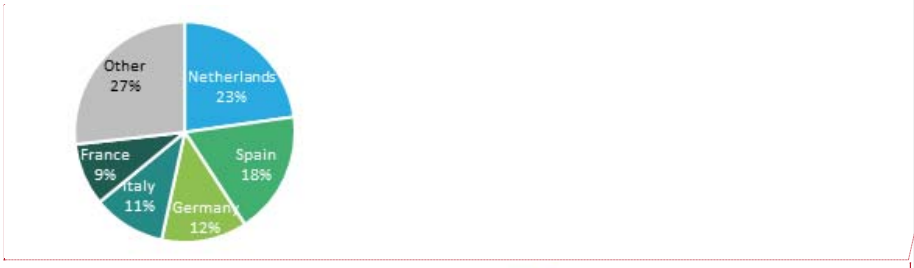
Soy is one of the most prominent drivers of global forest loss. From 2000 to 2010, South America converted 24 million hectares of land from natural ecosystems - tropical rainforests and savannahs- to cultivated area (Cabezas *et al.*, 2019). Over 80 percent of this land use change can be attributed directly or indirectly to soy production. The expansion of soy drives deforestation either directly through the clearing of forest to crops, or indirectly through the displacement of existing pasture land leading to further clearing for new pasture land (Nepstad *et al.*, 2008).

The global soy supply chain is characterized by a high level of vertical integration. In particular the stage of milling, processing and trading and to lesser extent production are dominated by a few global agribusiness companies. In the case of Brazil and Argentina, six companies, ADM, Amaggi, Bunge, Cargill, China National Cereals, Oils and Foodstuffs Corporation (COFCO), and Louis Dreyfus dominate 54.3 percent of the soy exports. In the EU almost half and in China almost all of the soy milling is undertaken domestically (Cabezas *et al.*, 2019).

While the majority of global soy is consumed domestically, about 40 percent of it is traded internationally (USDA FAS, 2019). China is the main consumer of soy, importing around 40 percent of internationally traded soy products in 2017 and 2018, mainly as a source of animal feed. Growth in populations and changes in consumption - including shifts to meat-based diets in emerging economies - are expected to further drive expansion of soy production and its embedded deforestation.

With about 13 percent of global trade, the EU-27 was the second largest importer of soy products by value in 2019 (source: UN Comtrade). The EU-27 imported the majority of its soy 2015-2019 from Brazil (39.29%), Argentina (23.27%), the United States (19.89%), Paraguay (5.51%) and Canada (3.53%) (Source: Eurostat ComExt , importer-reported data on quantity, downloaded 12.02.2021). The main importers of soy into the EU-27 2015-2019 were the Netherlands, Spain and Germany (Fig. 2).

Even though the EU has a domestic soy production of around 2-3 million tonnes, it imported around 15 million tonnes of soybean and 18 million tonnes of soybean meal in 2017 and 2018, which accounted for around 90% of its soy products domestic consumption in 2017 and 2018 (USDA FAS, 2019).



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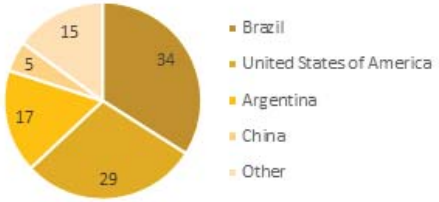

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Figure 1: Main producers of soybean in 2019 (% of global production; Source: FAOSTAT, accessed 28.4.2021)

Figure 2: Main EU Member State importers of soy (based on average annual exported quantity over the period 2015-2019. Source: *Eurostat ComExt*[4]*, importer-*

2) Information about the sector in the EU

In the EU, the processing, manufacturing and retailing stages of the supply chain are generally country-specific as are relevant industry associations (Cabezas *et al.*, 2019). The EU's soybean imports are dominated by a few transnational companies. The main soybean importing companies into the EU differ for Brazil and Argentina. For **Brazil**, the main importing companies are: ADM, Amaggi, Bunge, Cargill, Coamo. They account for 57.15 percent of all Brazilian imports into the EU. For **Argentina**, the main importing companies are: COFCO, Glencore, Louis Dreyfus, Aceitera General Deheza and Vicentin. They account for 65.82 percent of all Argentinian imports into the EU. Together, the five main importing companies for Brazil and Argentina accounted for 38.24 percent of the EU's 2017 imports (UNDESA, 2019).

Soy production in the EU varies across countries, but focusses on non-GM soybeans. Processors are organized in several sectoral associations and bodies, such as FEDIOL, the EU level association that groups protein meal and vegetable oil national associations, or FEFAC, the European feed manufacturers federation.

The European Union was the biggest importer of Argentinian soy in 2016-2018, importing 6.2 Mt (or 23% of exports) in 2018 – down from 11 Mt (21%) in 2016. Due to sourcing a significant share of soy from the Chaco, the EU was exposed to 550 ha of deforestation risk (Trase, 2021).

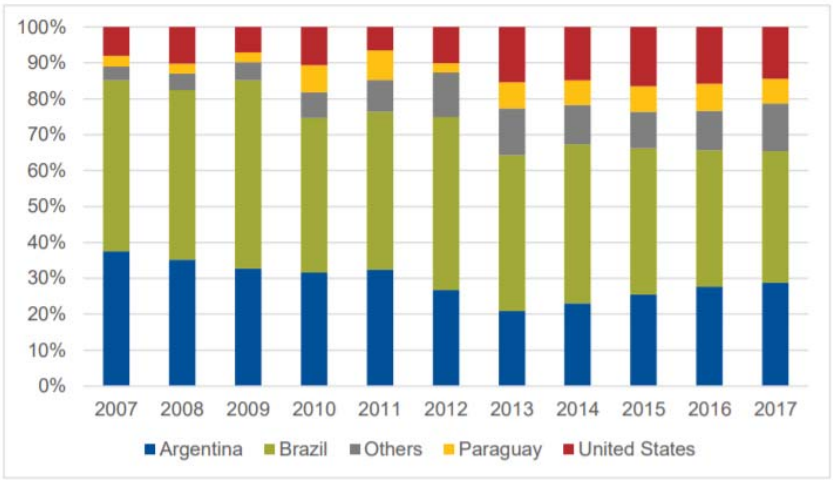

Figure 3. Share of EU soy imports per major exporter. Source: United Nations Department of Economic and Social Affairs (2019)

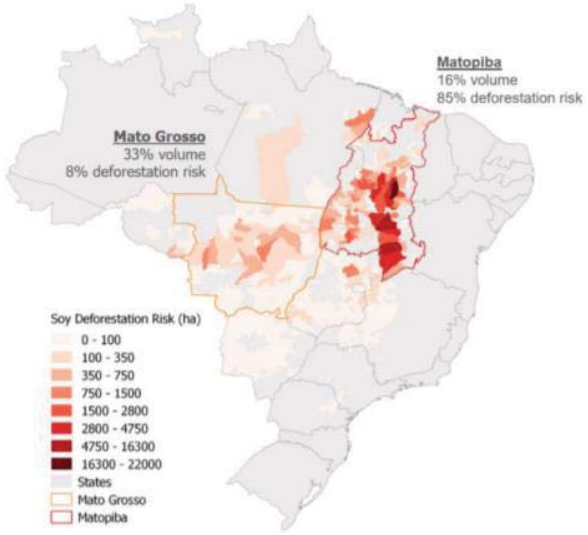

Figure 4. Map of the EU's imports soy embedded deforestation risk in Brazil (2013-2017). Source: Trase.

3) Information about the sector in producer countries

Brazil

Brazil is the world's largest soy producer and exporter. Its exports have more than doubled in the last decade, in response to relentlessly growing international demand (Trase, 2021). This valuable cash crop is produced throughout the country, but the most

significant region for production is the Cerrado, which accounted for about half of Brazil's soy crop and 15 percent of global production in 2018/2019 (The Nature Conservancy, 2020). In addition to being one of the most important centers of food production in the world, the Cerrado is a critical region for storing carbon in its soils and native vegetation, providing water for Brazil's farms and people, and serving as home to about a third of Brazil's plant and animal life. The expansion of soy and cattle ranching has been the primary driver of habitat conversion in the Cerrado in recent decades, resulting in the loss of approximately half of the region's native vegetation. To, it is estimated that soy cropland in the Cerrado will need to expand by 7.2 million hectares by 2030. The Nature Conservancy (2020) estimates that further expansion to meet the world's growing demand for soy will reach 7.2 million hectares by 2030. This will include the clearing of 2.2 million hectares of native vegetation unless the expansion focuses on the 18.5 million hectares of already cleared pastureland that is suitable for soy production. There is also untapped potential to further increase productivity on soy farms by up to 25 percent by improving farming practices.

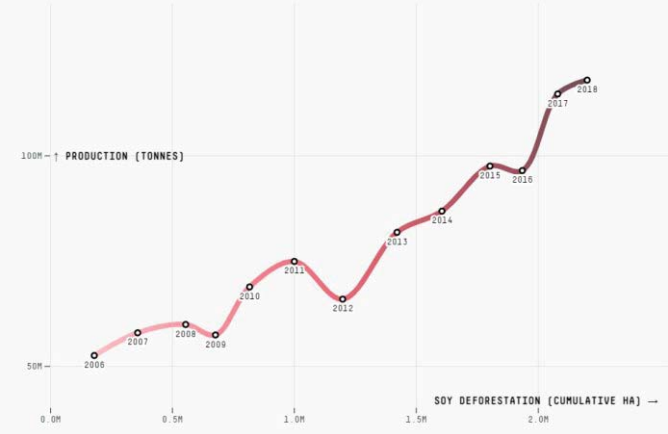

Figure 6. Soy deforestation in Brazil, 2006-2018. Source: Trase.

In 2018 Brazil exported 99.5 million tonnes of soy in the form of beans (83%), cake (16%) or oil (1%), accounting for ~42% of all soy exports globally. The bulk of the Brazilian soy crop is used as feed in the poultry and pork industries, both domestic and overseas (Trase, 2021). While direct soy deforestation is dwarfed by deforestation for cattle pasture (120,854 compared to 987,353 ha in 2018), soy expansion remains an important direct and indirect driver of deforestation in Brazil. Thanks to the Amazon Soy Moratorium, there has been very little deforestation directly linked to soy in the Amazon since 2008 (although deforestation continues within soy growing farms in areas that are not planted by soy – with most of this deforestation being illegal). Direct conversion of the Cerrado for soy has declined by over 70% since the early 2000s, but Trase estimates that soy will occupy at least 15% of the land that was deforested in 2018 by 2023 (amounting to nearly 100,000 ha).

In Brazil, soybean production involves almost a quarter of a million farms producing soybeans (Cabezas *et al.*, 2019). Typically, a soybean plantation is 130 hectares in size (2017 average). While more than two-thirds of soy farmers are family farmers, they only account for 10 percent of the soybean planted area (SIDRA, 2016). Almost all (90 percent) Brazilian soy is produced by large agro-businesses. For instance, while the Association of Producers of Soybeans of the State of Mato Grosso (APROSOJA) has only 5,000 corporate and individual members, they are responsible for around 27.7 percent of the national soybean production.

The soybean crushing and primary vegetable crude oil and meal extraction is dominated by 13 companies. These companies constitute ABIOVE, the Brazilian vegetable oil industry association founded in 1981. Those same companies also play an important role in other stages of the soy supply chain. In particular, six of those companies, namely ADM, Amaggi, Bunge, Cargill, COFCO and Louis Dreyfus jointly account for over 59.6 percent of Brazil's soy and soy products exports in 2017.

Argentina

Argentina's soy supply chain is dominated by large international companies, which dominate the production capacity of each stage of the supply chain. The leading soybean exporting companies in Argentina are Aceitera General Deheza, Bunge, Cargill, COFCO, Louis Dreyfus and Vicentin, which jointly account for 61.9 percent of the soybean 2017 exports (Cabezas *et al.*, 2019). Many of these companies are also the leading companies in terms of crush capacity. In addition, there are a number of major domestic actors which also play an important role at the different stages of the supply chain, such as major farmer groups. The Asociación de Cooperativas de Argentina (ACA) and Agricultores Federados Argentinos (AFA) are involved in all stages of the supply chain and represent almost 7 percent of total exports in 2017.

Soy exports fell almost 50% in 2016–2018, linked to a protracted drought. However, exports from the Chaco – the frontier of soy deforestation, where much of the soy going to the European Union is sourced – remained unchanged (Trase, 2021). Argentina stands out from other Latin American soy producers in that it primarily exports processed soy products – cake and oil – rather than beans. Argentina was the no. 3 exporter of soy and the no. 1 exporter of soy cake in 2018.

Paraguay

Paraguay's soy plantations are concentrated in the east of the country, in the already heavily deforested Atlantic Forest. There are signs that a new deforestation frontier may be opening up in the sparsely populated Dry Chaco west of the Paraguay River, which is home to the majority of Paraguay's remaining forest and indigenous communities (Trase, 2021). Soy is a mainstay of Paraguay's economy. In 2018, soy exports generated US$3.8 billion – 51% of the country's total export revenue.

Rates of deforestation in the Atlantic Forest have declined dramatically since the introduction of a zero-deforestation law (Ley de Deforestacion Cero) in 2004. This drop

in deforestation in the Atlantic Forest continued in 2014–2016, when soy deforestation fell more than 50%, from 11,046 to 5,083 hectares (around 39% of all deforestation in the Atlantic Forest in the period). It is likely that most, if not all of the deforestation that did happen in the biome was illegal.

Between 2010 and 2018 the Paraguayan Chaco lost more than 2 million ha of native vegetation. The Dry Chaco in particular has seen some of the highest rates of deforestation in the world in the past decade, largely due to the expansion of cattle pasture. Nearly all of Paraguay's 9.5 Mt of soy exports in 2018 came from the Atlantic Forest. Deforestation in the Chaco has also been declining in recent years, with only 54,000 ha of Chaco forest lost in 2018, down from 400,000 ha in 2010. Whether this trend will continue, however, is uncertain.

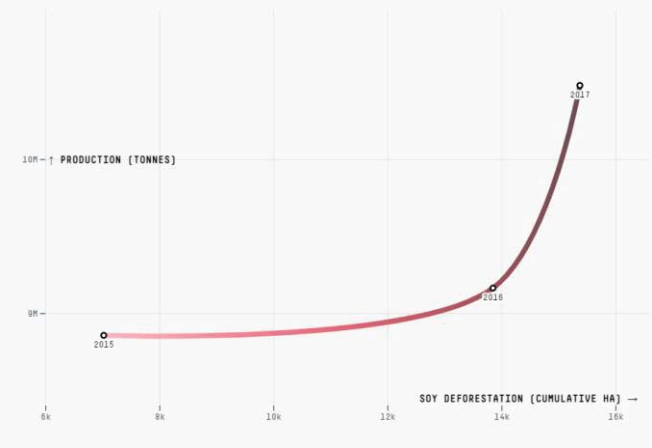

Figure 8. Soy deforestation in Paraguay, 2015-2017. Source: Trase.

4) Information about the sector in producer countries

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ANNEX 7: THE INTERNATIONAL, EU AND NATIONAL CONTEXT

EU context

The following EU initiatives and instruments form the policy context for this impact assessment:

1. The European Green Deal, which sets out a new overall growth strategy for the EU to achieve a sustainable green transition, committing the EU to becoming climate-neutral by 2050. The EU Green Deal Communication presented a roadmap of key policies and measures, several of which are relevant when considering deforestation and forest degradation and are referred to hereunder and makes specific references to the Communication of July 2019 and the legislative proposal underpinned by this impact assessment.
2. The 2030 EU Biodiversity Strategy, which proposes measures to expand protected areas and to restore degraded ecosystems across Europe. The Strategy also calls for ambitious global targets for 2030 to address the drivers of biodiversity loss, and a stronger implementation, monitoring and review process. Of particular relevance for the initiative covered by this Impact Assessment is the link to the proposal for legally binding EU nature restoration targets that the Commission is currently developing. Restoring EU's ecosystems will help to increase biodiversity, mitigate and adapt to climate change, and prevent and reduce the impacts of natural disasters. The main objective of this will be to restore degraded ecosystems, in particular those with the most potential to capture and store carbon, prevent and reduce the impact of natural disasters, deliver further benefits, such as soil health and pollination and improve knowledge and monitoring of ecosystems and their services. This will in particular be important to show to third countries that we are taking our own responsibilities to address challenges also within the EU.
3. The Farm to Fork Initiative, which aims to make food systems fair, environmentally friendly, and healthy, including through reducing the environmental impact of the food processing and retail sectors.

Both the 2030 EU Biodiversity Strategy and the Farm to Fork Initiative identify the legislative proposal and other measures to avoid or minimise the placing of products coming from supply chains associated with deforestation or forest degradation on the EU market, as important for the achievement of their objectives.

4. The 2019 Communication sets out the overall objective of protecting and improving the health of existing forests, in particular primary forests and to increase sustainable, biodiverse forest coverage worldwide. The Communication articulates five priorities:
    a. Reduce the footprint of EU consumption on land and encourage the consumption of products from deforestation-free supply chains in the EU. The legislative initiative supported by this impact assessment is the key deliverable under this priority.
    b. Work in partnership with producer countries to reduce pressures on forests and to "deforest-proof" EU development cooperation, to be developed as part of the dialogue under the new Multiannual Financial Framework, crucial to covers aspects related to root causes of deforestation, such as governance, the fight against corruption and law enforcement, and to be accompanied by adequate packages of support.

c. Strengthen international cooperation to halt deforestation and forest degradation and encourage forest restoration, both bilaterally and in multilateral fora, necessary in a global biodiversity endeavour, including by adopting measures to avoid products coming from supply chains associated with deforestation and/or forest degradation being placed on the market.
d. Redirect finance to support more sustainable land-use practices.
e. Support the availability and quality of information on forests and commodity supply chains, the access to that information, and support research and innovation including through the establishment of an EU observatory on deforestation, forest degradation, changes in the world's forest cover and associated drivers to facilitate access to information on supply chains for public entities, consumers and businesses.

5. The EU Timber Regulation (EUTR)[209], a legislative instrument that prohibits the placing of illegally harvested timber and timber products on the EU market. It lays down obligations for operators placing timber on the market for the first time to exercise Due Diligence (DD) and for traders to keep a traceable record of their suppliers and customers. The Regulation applies to both imported and domestically produced timber and timber products.
6. The FLEGT Regulation, which lays down EU procedures for the implementation of a FLEGT licensing scheme through bilateral Partnership Agreements (VPAs) with timber-producing countries. To date, Indonesia is the only country to issue FLEGT licences, which certify the legality of timber exported to the EU.

Both the FLEGT Regulation and the EU Timber Regulation are part of the FLEGT Action Plan,[210] adopted in 2003, which constitutes the key EU policy against illegal logging and associated trade. Both instruments are currently undergoing a Fitness Check, the findings of which also provides input into this impact assessment, to the extent that these are relevant, given their scope is narrower than the scope of the initiative on deforestation that this Impact Assessment underpins.

7. The EU Taxonomy Regulation[211] for sustainable activities, which provides definitions to help companies, investors and policy makers identify environmentally sustainable activities. The Taxonomy Regulation empowers the Commission to adopt delegated and implementing acts to specify how competent authorities and market participants shall comply with the obligations laid down in the directive. The Taxonomy Regulation tasks the Commission with establishing the actual list of environmentally sustainable activities by defining technical screening criteria for each environmental objective through delegated acts. The Commission services are currently preparing the first delegated act, which is scheduled for adoption in 2021.

In line with the commitments in the 2019 Communication, the implementation of the EU Taxonomy Regulation will address the deforestation impacts of the financial sector and

[209] Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.
[210] Communication from the Commission to the Council and the European Parliament - Forest Law Enforcement, Governance and Trade (FLEGT) - Proposal for an EU Action Plan. COM(2003)0251. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52003DC0251
[211] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088

investments, thereby complementing and supporting the legislative initiative on deforestation that this Impact Assessment informs.

8. The 2018 Renewable Energy Directive (RED),[212] which sets rules and specifies targets for the EU to achieve a renewable energy target of at least 32% by 2030. The Directive strengthens the EU sustainability rules for bioenergy by covering also solid biomass and biogas in heat and power, in addition to biofuels for transport. The Directive includes dedicated risk-based sustainability criteria for forest biomass. It also promotes the shift from conventional to advanced biofuels, including a gradual phase out for biofuels produced from food and feed crops with high risk of indirect land use change (ILUC). While these criteria cover only bioenergy uses, they are relevant to considerations on forestry and deforestation[213] and therefore also influence the EU consumption of products covered by this Impacts Assessment.
9. The EU Land Use, Land Use Change and Forestry (LULUCF) Regulation,[214] which sets a binding commitment to all EU MSs to compensate accounted greenhouse gas (GHG) emissions from land use by an equivalent accounted removal of CO2 and sets out the accounting rules for LULUCF sector in EU MSs.

Other relevant EU initiatives are being prepared at the time of publication of this report:

1. A new EU Forest Strategy will cover the whole forest cycle and promote the many services that forests provide. The EU Forest Strategy will enable the contribution of the forest sector to the new Commission priorities of building a new growth model through the European Green Deal, including advancing rural areas. The strategy will propose a consistent and holistic approach to EU forests, contribute to meeting the EU's international commitments and be an important element of stronger EU leadership internationally (2030 Agenda for Sustainable Development, Paris Agreement, Convention on Biological Diversity, Convention to Combat Desertification). The strategy will ensure the sustainable management of all EU forests, enhancing forest protection and restoration to meet the EU biodiversity and climate objectives, and decreasing the loss of forest coverage, while strictly protecting all remaining EU primary and old-growth forests.

The new EU Forest Strategy will confirm that the international aspects will be based on the measures already identified in the 2019 Communication, which sets the basic framework for the EU's global action, including the legislative initiative supported by this impact assessment, and will be properly and consistently taken into consideration when shaping domestic policies.

[212] Relevant information on this initiative, including the Inception Impact Assessment can be found in https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12553-Revision-of-the-Renewable-Energy-Directive-EU-2018-2001

[213] In particular, the Directive states that biofuels, bioliquids and biomass fuels produced from agricultural biomass should not be considered as fulfilling the sustainability criteria if they have been made from raw material obtained from land with a 'high biodiversity value'. This concept of 'high biodiversity value' is further defined as covering 'primary forest and other wooded land (i.e. forest), where there is no clearly visible indication of human activity, highly biodiverse forest and other wooded land which is species-rich and no degraded or has been identified as being highly biodiverse or areas designated for nature protection purpose'. Moreover article 29(4) points b and c exclude the use of agricultural biomass from continuously forested land and woodland that has been deforested since 2008, providing a specific definition for forests (land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ) and woodland (land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ)

[214] Relevant information on the review of the LULUCF Regulation, including the inception Impact Assessment can be found in https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12657-Land-use-land-use-change-and-forestry-review-of-EU-rules

2. A legislative initiative on sustainable corporate governance, which aims to improve the EU regulatory framework on company law and corporate governance. It would enable companies to focus on long-term sustainable value creation rather than short-term benefits. It aims to better align the interests of companies, their shareholders, managers, stakeholders and society. This initiative is based on a horizontal approach addressing human rights, and environmental duty of care acting upon the behaviour of companies. It is complementary with the initiative on deforestation covered by this Impact Assessment. They operate at different levels, the former on a horizontal level, and the latter addressing more specific issues. While sustainable corporate governance approach addresses business operations, the deforestation approach is focusing on specific products and supply chains. Therefore, while general objectives may be shared and are mutually supportive, specific objectives are naturally different.
3. A revision of the Non-financial reporting Directive (NFRD), which is expected to describe requirements for disclosure of non-financial and diversity information by companies. The provisions cover companies located in the EU and require the disclosure of information related to environmental protection, social responsibility and treatment of employees, respect for human rights, anti-corruption and bribery and diversity of the boards.
4. A legislative initiative on substantiating green claims regarding the environmental performance of products & businesses, which aims to make claims reliable, comparable and verifiable in order to help consumers and buyers to make more sustainable decisions, as well as to increase consumer confidence surrounding green labels and information.
5. A Sustainable Product Initiative (SPI), which aims to make products fit for a climate neutral, resource efficient and circular economy, reduce waste and ensure that the performance of frontrunners in sustainability progressively becomes the norm. The SPI intends to widen the scope of the Ecodesign Directive beyond energy-related products so as to make it applicable to the broadest possible range of products (including services where appropriate) and make it deliver on circularity and may also establish product sustainability principles and other mechanisms to regulate sustainability-related aspects in a wide range of products.

Forests-related specific aspects are covered in these initiatives, similar to other sector-specific areas, in line with the 2019 Communication. Both NFRD and green claims initiative provide for additional information to the public and raising awareness, which makes them complementary to the legislative initiative that this Impact Assessment supports. The SPI will have major impacts on the way products are designed, produced, used and disposed of. It can therefore add to the impact of the initiative covered by this Impact Assessment.

International context

At the global level, the instruments, processes and commitments such as the following are relevant for this impact assessment:

1. The UN Framework Convention on Climate Change (UNFCCC) of 1992 and its Paris Agreement, adopted at COP 21 in 2015. The aim of the agreement is to keep global temperature rise below 2 degrees above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees. In order to achieve this goal, Parties aims to

achieve a balance between anthropogenic emissions by sources and removals by sinks in the second half of this century.[215]

2. The Convention on Biologic Diversity (CBD), whose aim, as stated in its preamble is "to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source." The parties to the CBD have adopted further political commitments, the so-called Aichi Biodiversity Targets. These targets were set for 2020. Draft goals and targets for 2030 are being considered for adoption at COP15 of the CBD216[217]
3. The UN Sustainable Development Goals (SDGs), adopted as part of the '2030 Agenda for Sustainable Development' that sets out a 15-year plan to reach the various goals. The SDGs address global challenges including poverty, inequality, climate change and environmental degradation.[218]
4. The UN Forum on Forests (UNFF), which is an intergovernmental policy forum, which promotes "management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end." The UNFF was established in 2000 by the UN Economic and Social Council. The Forum has universal membership and is composed of all MSs of the United Nations[219].
5. The New York Declaration on Forests (NYDF) is a non-legally binding political declaration that grew out of dialogue among governments, companies and civil society, spurred by the Secretary-General's Climate Summit. It endorses a global timeline to cut natural forest loss in half by 2020, and strive to end it by 2030. The Declaration is endorsed by dozens of governments, many of the world's biggest companies, and many influential civil society and indigenous organizations. It also calls on the private sector to meet the goal of eliminating deforestation from the production of agricultural commodities such as palm oil, soy, paper and beef products by no later than 2020.
6. REDD+ (Reducing Emissions from Deforestation and Forest Degradation), which is a climate change mitigation solution being developed by the parties to the UNFCCC. It aims at incentivising developing countries to keep their forests standing by offering them results-based payments for actions to reduce or remove forest carbon emissions. REDD+ includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.
7. The Durban Declaration 2050 vision for forests and forestry in 2015, aiming at the achievement of the 2030 Agenda for Sustainable Development adopted by the World Forestry Congress, which is held every 6 six years under the auspices of the FAO since 1954.
8. The Committee on Forestry (COFO) of the FAO, which brings together relevant authorities involved in forest management at national level to identify emerging policy and technical issues, seek solutions and advise on appropriate actions.

[215] In particular, Article 5.1 of the Paris Agreement recalls the commitment made by the Parties in the 1992 Convention to "*take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases […] including forests*." Article 5.2 further calls on Parties to implement and support the existing framework relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+), and alternative policy approaches.

[216] CBD. 2020. Update of the Zero Draft Of the Post-2020 Global Biodiversity Framework. CBD/POST2020/PREP/2/1

[217] Of particular relevance to deforestation and forest degradation are Target 3, 4, 9, 14, 15 and 20

[218] Of particular relevance for deforestation and forest degradation are SDGs 12.2, 13, and 15.2.

[219] The main outcome of the work of the UNFF so far are: 1) The International Arrangements on Forests and the UN Forest Instrument, and 2) The UN Strategic Plan for Forest 2017-2030 , which provides a global framework for action at all levels to sustainably manage all types of forests and trees outside forests, and to halt deforestation and forest degradation

9. UN Decade of Ecosystem Restoration (2020-2030)[220], which aims to build a strong, broad-based global movement to ramp up restoration and put the world on track for a sustainable future. It emphasises the need the need "to reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation and contribute to the global effort to address climate change."

National and regional context

At the national and regional level, the following initiatives are relevant for this impact assessment:

1. The Ministerial Conference on the Protection of Forests in Europe (Forest Europe), which is a pan-European voluntary high-level political process for intergovernmental dialogue and cooperation on forest policies in Europe. It develops common strategies for its 47 signatories (46 European countries and the European Union) on how to protect and sustainably manage their forests. Forest Europe signatories make political commitments, which serve as a framework for implementing sustainable forest management in the European countries, in coherence with the rest of the region, and strengthen international cooperation.
2. The Amsterdam Declaration Partnership, which is an initiative supported by some EU MSs (Belgium, Denmark, France, Germany, Italy, the Netherlands and Spain) as well as Norway and the United Kingdom. The members are committed to deforestation-free, sustainable commodities and support learning across national initiatives for trade in sustainable commodities. It also promotes policy coordination and synergy between initiatives in producer countries.
3. France's 2017 due diligence law, which requires companies to map human rights and environmental risk within their supply chains and take appropriate action to mitigate risks and prevent serious violations. The country also passed in 2018 a national strategy against imported deforestation,[221] which sets out measures to fight against imported deforestation. The scope focuses on those commodities that are associated with the largest volume of deforestation, which for France is: soya, palm oil, beef, cocoa rubber and timber.
4. The draft Schatz bill,[222] which was introduced in the US Senate and aims to restrict access to the US market for certain commodities that originate from illegally deforested land. The focus of the draft law is on palm oil, soy products, beef, cocoa, rubber and pulp and paper.
5. The UK's proposed law to prevent forests and other natural areas of importance from being illegally converted to agricultural land. The proposed legislation would focus only on legality and would set due diligence obligations for large companies.

[220] United Nations General Assembly Resolution 73/284: United Nations Decade on Ecosystem Restoration (2021–2030) A/RES/73/284:
[221] République Française - Ministère de la Transition Écologique et Solidaire. 2018. Stratégie nationale de lutte contre la déforestation importée 2018-2030: dossier de presse. Available at https://www.ecologie.gouv.fr/sites/default/files/2018.11.14_dp_sndi_mtes.pdf
[222] Environmental Investigation Agency. 2020, March 3. EIA Applauds Newly Announced U.S. Bill to Tackle Global Deforestation; Urges Biden-Harris Administration to Support. Press release. Available at https://eia-global.org/press-releases/20210303-tackling-global-deforestation-schatz-pr

ANNEX 8: OVERALL COMPARISON OF OPTIONS

Table 9 Overall comparison of options

Policy option	Impacts		
	Economic impact	Social impact	Environmental impact
Option 1	**Administrative burden/costs**: One-off costs of between 5 000 and 90 000 EUR per operator for DDS establishment Recurrent: EUR 175 to 2,616 million of administrative burden for operators per year Indirect costs: Additional costs as a consequence of the due diligence conclusions for specific supply chains Member States authorities: EUR 18 million per year for enforcement **Benefits**: Producers implementing more sustainable production practices expected to gain share in the EU market Minimal impact (increase) expected on commodity and product prices	Promoting improved forest governance in countries producing commodities Employment increase expected to fulfil the DDS requirements.	The effectiveness in curbing EU-driven deforestation and forest degradation is estimated to be above at 29% The environmental benefits are expected also above the following minimums: a) At least 71,920 hectares of forest saved from EU-driven deforestation and forest degradation annually starting in 2030. b) At least 31.9 million metric tons of carbon fewer emitted to the atmosphere due to EU-driven deforestation every year, which could be translated into economic savings of at least 3.2 billion EUR annually. It is also expected to contribute to preserving biodiversity and achieving the specific objectives of the EU intervention.
Option 2	**Administrative burden/costs**: One-off: costs of between 5 000 and 90 000 EUR per operator for DDS establishment Recurrent: EUR 158 to 2,354 million for operators per year Member States authorities: less than EUR 18 million per year European Commission: setting up and operation of benchmarking will result in one-off EUR 337,000 and thereafter EUR 168,000 per year. **Benefits**: Operators sourcing commodities and products	Promoting improved forest governance in countries producing commodities. Public access to benchmarking might provide valuable information to NGOs, academia and policy makers and would facilitate decision-making, innovation and research relating to deforestation, forest degradation and trade. The benchmarking information on third countries could act as an incentive for producer countries to improve their environmental protection and	The effectiveness in curbing EU-driven deforestation and forest degradation is estimated to be well above 29% The environmental benefits are expected at the high end above the following minimums: a) At least 71,920 hectares of forest saved from EU-driven deforestation and forest degradation annually starting in 2030. b) At least 31.9 million metric tons of carbon fewer emitted to the atmosphere due to EU-driven deforestation every year, which could be translated into economic savings of at

	from 'low-risk' countries would benefit from higher demand for commodities and products from countries assessed to be 'low-risk' Producers implementing more sustainable production practices expected to gain share in the EU market and see increased competitiveness compared to operators sourcing from 'high-risk' countries **Trade implication**: Potential shift in EU trade towards 'low risk' producer countries from 'high risk' producer countries. **Impacts on consumers**: Expected that costs increase for consumers purchasing 'low risk' products will be lower than for those purchasing 'high risk' products. **Impacts on SMEs / Smallholders**: SMEs and smallholders may be disproportionately affected by the additional requirements but the two-tiered approach would be particularly beneficial for SME operators and traders as they would benefit from lower costs of the simplified DDS by placing products derived from low-risk supply chains	make their supply chains more sustainable	least 3.2 billion EUR annually. It is also expected to contribute to preserving biodiversity more decisively and achieving the specific objectives of the EU intervention.
Option 3	**Administrative burden**: One-off: costs of between 5 000 and 90 000 EUR per operator for DDS establishment EUR 166 to 2,485 million of administrative burden for operators per year **Benefits**: Producers implementing more sustainable production practices expected to gain share in the EU market **Trade implication**: Potential shift in EU trade towards	Mandatory public certification could act as an incentive for those producer countries who opt to use it, to improve their environmental protection and make their supply chains more sustainable In these countries, legislative framework and public engagement is expected to be strengthened in particular surrounding land tenure and land exploitation, increase transparency and knowledge of farming communities, in particular of sustainable practices. Public mandatory certification	The effectiveness in curbing EU-driven deforestation and forest degradation is estimated to be above 29% The environmental benefits are expected at the middle end above the following minimums: a) At least 71,920 hectares of forest saved from EU-driven deforestation and forest degradation annually starting in 2030. b) At least 31.9 million metric tons of carbon fewer emitted to the atmosphere due to EU-driven deforestation every

	countries with less stringent laws **Public administration costs** Setting up a mandatory public certification scheme: 1.2 million EUR per country. Moreover, costs of enforcement and costs of reporting to EU institutions, which amount to 100,000 - 1,000,000 EUR per country, would apply.	would address **some of the common challenges** associated with private certification schemes (e.g. fragmented ownership of the land, implementation made at national level, clear criteria that are applicable globally and identical for all supply chain, and independent audits through implementation by national authorities.	year, which could be translated into economic savings of at least 3.2 billion EUR annually. It is also expected to contribute to preserving biodiversity and achieving the specific objectives of the EU intervention.
Option 4	DDS costs as for Option 1 apply. In addition: **Business operating costs** DDS costs same as under Option 1. In addition, it is estimated that that operators and traders will face a minimum of 10.6 EUR and a maximum of EUR 831.5 in labelling costs on average. SMEs will face lower labelling costs in comparison to large companies due to the lower number of products that will need to be labelled. Member States authorities: Enforcement of labelling scheme between EUR 148,148 and 296,296 EUR per year per Member State. European Commission annual management costs of the label over EUR 1.1 million.	**Consumer engagement** - The labelling requirements of this policy option will enable consumers to become more informed about the impact of their purchasing decisions. **Consumer confusion** - However, there is a risk of consumers being confused or overwhelmed by the new label (due to many already existing product labels).	The effectiveness in curbing EU-driven deforestation and forest degradation is estimated to be above 29% The environmental benefits are expected also at the middle-low end above the following minimums: a) At least 71,920 hectares of forest saved from EU-driven deforestation and forest degradation annually starting in 2030. b) At least 31.9 million metric tons of carbon fewer emitted to the atmosphere due to EU-driven deforestation every year, which could be translated into economic savings of at least 3.2 billion EUR annually. It is also expected to contribute to preserving biodiversity and achieving the specific objectives of the EU intervention.
Option 5	**Administrative burden/costs: Business operating costs** Costs associated with the certification process and its implementation. Costs vary based on country and commodity/product. Costs are expected to be very high for operator who will not be able to meet the requirement and not be able to place their product on the EU market. European Commission: the costs of benchmarking is estimated to be 1,025,712 EUR in year 1 and afterwards, 598,264 EUR annually. The	Legislative framework and public engagement is expected to be strengthened in particular surrounding land tenure and land exploitation, increase transparency and knowledge of farming communities, in particular of sustainable practices. Benchmarking would provide a clear source of information to guide and facilitate the implementation of the policy option	The potential environmental benefits of this policy option were impossible to quantify. It is expected, however, that it will contribute to curb EU-driven deforestation, and in turn greenhouse gas emissions. It would also contribute to preserving biodiversity and achieving the specific objectives of the EU intervention.

	costs of the carding system is estimated at EUR 75,600 per year. For Member States authorities: costs of implementation of EUR 22 million per year. **Benefit**: Producers implementing more sustainable production practices expected to gain share in the EU market **Impacts on trade** are potentially important due to the prohibition of products and commodities that do not meet the deforestation-free requirements Potential shift in EU trade towards countries with less stringent laws	Country carding systems were successful in engaging countries and increase their commitment to improve their management and control systems	