TFA EU DEEP DIVES
GEOLOCATION & TRACEABILITY SESSION: TIMBER

CONTENTS
1 Overview of timber production and supply chain 1
2 EU’s FLEGT and EUTR 3
3 Status of traceability 5
4 Tools available for geolocation and traceability 10
5 Challenges / gaps 11
6 References / additional resources 11

1. OVERVIEW OF TIMBER PRODUCTION AND SUPPLY CHAIN

FAO identifies 9 main types of forest products1:

» Industrial roundwood - All roundwood (rough wood) used for any purpose other than energy. It comprises: pulpwood; sawlogs and veneer logs; and other industrial roundwood (e.g. roundwood used for fence posts and telephone or electricity poles).

» Wood fuel - Roundwood that will be used as fuel

» Wood charcoal - Wood carbonised by partial combustion or the application of heat from external sources.

» Wood pellets and other agglomerates - Agglomerates produced either directly by compression or by the addition of a binder

» Sawnwood - Encompasses planks, sleepers (cross-ties), beams, joists, boards, rafters, scantlings, laths, boxboards and "lumber",

» Wood-based panels - Plywood, particle board, oriented strand board (OSB), fibreboard, densified wood, combination board and other panels based on wood or other ligno-cellulosic materials.

» Pulp for paper - Fibrous material prepared from pulpwood, wood chips, particles or residues by mechanical and/or chemical process for further manufacture into paper, paperboard, fibreboard or other cellulose products

» Recovered paper - Waste and scraps of paper or paperboard that have been collected for re-use or trade. It includes paper and paperboard that has been used for its original purpose and residues from paper and paperboard production.

» Paper and paperboard - Represents the sum of graphic papers; sanitary and household papers; packaging materials and other paper and paperboard. It excludes manufactured paper products such as boxes, cartons, books and magazines, etc.
Global production
A total of 3.9 billion m³ underbark of wood was removed from global forests in 2020, of which around one half (49%) was for use as woodfuel and the remainder was industrial roundwood (for use by wood processors) (Table 9.4). North & Central America and Europe together accounted for around three fifths (58%) of all industrial roundwood removals in 2020. Globally, removals of industrial roundwood increased by 7% between 2015 and 2020, resulting from increases in all regions except North & Central America. Nearly three quarters (74%) of woodfuel removals in 2020 took place in Asia and Africa.

Europe produced just over one third (36%) of all sawnwood in 2020 (mainly in EU countries), with over one quarter (28%) in Asia and a further quarter (26%) produced in North & Central America. Overall, sawnwood production increased by 5% between 2015 and 2020, driven by increases in most regions.

---

1 Classification of forest products 2022 (FAO)
2 Forestry Statistics 2022: Chapter 9 International Forestry
Wood-based panels were more commonly produced in Asia, accounting for over one half (58%) of global production in 2020. Nearly one quarter (23%) were produced in Europe (mainly in EU countries) and 13% in North & Central America. At a global level, wood-based panel production increased by 6% between 2015 and 2020, mainly driven by increases in Europe and in Asia.

Asia also accounted for almost one half (49%) of paper and paperboard production in 2020, with one quarter (25%) in Europe and a further 20% in North & Central America. At a global level, paper and paperboard production fell only slightly between 2015 and 2020 \(^3\).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sawnwood</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>419</td>
<td>385</td>
<td>376</td>
<td>448</td>
<td>473</td>
</tr>
<tr>
<td>UK</td>
<td>149</td>
<td>130</td>
<td>139</td>
<td>150</td>
<td>170</td>
</tr>
<tr>
<td>EU¹</td>
<td>80</td>
<td>98</td>
<td>98</td>
<td>101</td>
<td>109</td>
</tr>
<tr>
<td>Africa</td>
<td>8</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Asia</td>
<td>105</td>
<td>61</td>
<td>86</td>
<td>125</td>
<td>133</td>
</tr>
<tr>
<td>North and Central America</td>
<td>129</td>
<td>146</td>
<td>102</td>
<td>127</td>
<td>123</td>
</tr>
<tr>
<td>Oceania</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>South America</td>
<td>22</td>
<td>30</td>
<td>26</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td><strong>Wood-based panels</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>126</td>
<td>178</td>
<td>284</td>
<td>345</td>
<td>368</td>
</tr>
<tr>
<td>UK</td>
<td>48</td>
<td>59</td>
<td>71</td>
<td>79</td>
<td>85</td>
</tr>
<tr>
<td>EU¹</td>
<td>34</td>
<td>48</td>
<td>53</td>
<td>56</td>
<td>57</td>
</tr>
<tr>
<td>Africa</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Asia</td>
<td>27</td>
<td>46</td>
<td>153</td>
<td>196</td>
<td>213</td>
</tr>
<tr>
<td>North and Central America</td>
<td>44</td>
<td>61</td>
<td>42</td>
<td>48</td>
<td>47</td>
</tr>
<tr>
<td>Oceania</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>South America</td>
<td>4</td>
<td>8</td>
<td>15</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td><strong>Paper and paperboard</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>235</td>
<td>325</td>
<td>392</td>
<td>407</td>
<td>401</td>
</tr>
<tr>
<td>UK</td>
<td>74</td>
<td>100</td>
<td>106</td>
<td>104</td>
<td>99</td>
</tr>
<tr>
<td>EU¹</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Africa</td>
<td>59</td>
<td>83</td>
<td>91</td>
<td>88</td>
<td>81</td>
</tr>
<tr>
<td>Asia</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>North and Central America</td>
<td>57</td>
<td>95</td>
<td>170</td>
<td>192</td>
<td>198</td>
</tr>
<tr>
<td>Oceania</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>South America</td>
<td>8</td>
<td>11</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: FAO.

Figure 2. Production of wood products by region (1990-2020).
Source: Table 9.5 - Forestry Statistics 2022: Chapter 9 International Forestry

Global trade

The UK was the second largest net importer (imports less exports) of all forest products in 2020, with China being the largest net importer in 2020 and Japan the third largest.

---

3 Forestry Statistics 2022: Chapter 9 International Forestry
The largest net exporters (exports less imports) of all forest products in 2020 were Canada, Sweden and Finland.
Exports of roundwood are led by New Zealand (16%), followed by Czech Republic (14%), Russia (12%), Germany (9%), United States of America (5%), Canada (4%), Australia (4%), Poland (3%) and Norway (3%).

Figure 5. Major exporters of roundwood (Percentage of global exports (2020)).
Source: Adapted from FAO Forest product statistics

Roundwood imports was dominated by Asia (56%), followed by Europe (39%). However, it is important to note that China’s import of roundwood accounted for 44% of the total imports. Europe had the highest share of roundwood exports (53%) followed by Oceania (26%) and North America (11%).

Figure 6. Major importers of roundwood (Percentage of global imports (2020)).
Source: Adapted from FAO Forest product statistics
European Union production and trade

The total annual roundwood production in the EU decreased slightly for the first time since 2012. In 2020, it reached an estimated 488 million m³. This is 21% more than at the beginning of the millennium. With the exception of five Member States where roundwood production decreased or remained stable and further two Member States where lack of latest data does not allow the trend to be evaluated all EU countries recorded an increase in roundwood production in the period of 2000–2020. The largest relative increase in the amount of harvested wood took place in the Netherlands (185%) and Czechia (126%). In 2020, Germany was the largest producer of roundwood in EU (84 million m³), followed by Sweden, Finland and France (each producing between ca 50 and 75 million m³). Almost a quarter (23%) of the EU’s roundwood production in 2020 was used as fuelwood, while the remainder was industrial roundwood used for sawnwood and veneers, or for pulp and paper production.

The total output of sawnwood across the EU increased by approximately 11% from 2000 to 2020, reaching 108 million m³ in 2020. Germany and Sweden were the EU’s leading sawnwood producers in 2020, accounting for approximately 24% and 17% of the EU total sawnwood output, respectively.

The most important wood products imported to the EU from China are wooden furniture and other wood products. For FLEGT VPA countries (more on FLEGT in section 2), sawnwood and wooden furniture are the two most important wood products exported to the EU. Finally, the EU’s main imports from the rest of the world are other wood products followed by sawnwood and wooden furniture.

4 Wood products - production and trade - Eurostat
Figure 9. Wood products imported to the EU from FLEGT countries, 2000–2020 (million €, current prices). Source: Figure 9. Eurostat.

Figure 10. Wood products imported to the EU from countries other than China or tropical countries, 2000-2020 (million €, current prices). Source: Figure 9. Eurostat.

Figure 11. Wood products imported to the EU from China, 2000–2020 (million €, current prices). Source: Figure 8. Eurostat.
Certified supply

There are two main forest voluntary sustainability standards operating globally: The Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), which acts as a mutual recognition system for national timber certification schemes. The certified areas of both schemes are as follows:

- **FSC**: 215,795,101 ha\(^5\) (19% of world production forests\(^6\) as of Sept 2022)
- **PEFC**: 312,616,899 ha\(^7\) (27% of world production forests as of June 2022)

In both FSC and PEFC certification, North America had the biggest share of certified areas: 29% and 52% respectively for FSC and PEFC.

Many forestry companies and landowners in different parts of the world have chosen to use both FSC and PEFC certification for their forest management units to provide evidence for their sustainable forest management practices. However, this means that from a statistical point of view, their respective certified forest area appears in both the PEFC as well as in the FSC statistics. This poses a challenge for the calculation for the total national certified area in several countries as well as for the calculation of the total global certified area, as adding up FSC and PEFC certified forest area leads to inflated figures. Based on joint research, PEFC and FSC concluded that in mid-2021, approximately 95 million hectares of global forest area were double certified\(^8\).

In terms of Chain of Custody (CoC) certificates, as of September 2022, there are FSC 52,760 CoC certificates issued, in which 47% are in Asia Pacific, followed by Europe 42%. For PEFC, there are 13,045 CoC certificates, and over 80% are issued in Europe (as of June 2022).

---

6  Globally, about 1.15 billion ha of forest is managed primarily for the production of wood and non-wood forest products (FAO Global Forest Resources Assessment 2020).
7  PEFC Facts and Figures June 2022: [https://cdn.pefc.org/pefc.org/media/2022-08/e3e9a6b7-8b9e-41c6-a262-a640db681390/1e1fa1d5-7fed-5721-a1b1-df35146f1f32.pdf](https://cdn.pefc.org/pefc.org/media/2022-08/e3e9a6b7-8b9e-41c6-a262-a640db681390/1e1fa1d5-7fed-5721-a1b1-df35146f1f32.pdf)
8  This is an estimation, based on the PEFC and FSC figures. No data for 2022 is available for double certification.
Timber supply chain and trade

Timber and timber products supply chains are extremely complex. As wood is not perishable goods, it can be traded globally without the need to be processed immediately at site where it is harvested. Industrial roundwood, sawn timber and wood-based panels are all commonly traded around the world.

China is the world’s manufacturer of timber products. It is the largest importer of raw material, and one of the biggest exporters of timber products such as wood based panels and furniture. A large proportion of globally traded industrial roundwood is destined for one market, China, which imported a record 60.2 million m³ of industrial roundwood in 2020. China continued to dominate imports of temperate and tropical sawnwood in 2020, with a total volume of 33.9 million m³.
China is the world’s largest wood-based panels exporter (by volume and value), followed by Canada (in volume) and Germany (in value). More than 50% of global furniture manufacturing takes place in Asia—mainly China and Viet Nam, which lack abundant high-quality domestic hardwood production and thus import large volumes of raw materials.\(^9\)

2. EU’S FLEGT AND EUTR

The Forest Law Enforcement, Governance and Trade (FLEGT) Regulation aims to ensure only legally produced timber is exported to the EU and through the negotiation and conclusion of Voluntary Partnership Agreements (VPAs) between the EU and timber producing partner countries outside the EU. Imports of timber and timber products from non-EU countries with which the EU has concluded VPAs require a license issued by the partner country (FLEGT license), that certifies that all timber and timber products covered by the VPA and exported to the EU have been legally produced.

The EU Timber Regulation (EUTR) was adopted as a demand side measure, also with an overarching objective to reduce illegal logging and associated trade in illegally harvested timber, but in this case by ensuring only legally harvested timber and timber products are placed on EU market. The EUTR prohibits the placing of illegally harvested timber and timber products on the EU market, either by importers or domestic producers. It requires EU ‘operators’ who place timber on the EU market for the first time to conduct due diligence (DD) to minimise the risk to a negligible level of placing illegally harvested timber, or timber products derived from such timber, on the EU market.\(^10\)

Forest Law Enforcement, Governance and Trade (FLEGT)

Implementation of the FLEGT Regulation by EU Member States involves the designation of a or several competent authorities to:

- implement and enforce the Regulation;
- validate FLEGT licenses;
- keep a record of licenses and customs declarations;
- determine the need for further checks on shipments;
- and determine and apply penalties in case the Regulation is infringed.

In terms of imports into the European Union, The EU has introduced the Forest Law Enforcement, Governance and Trade (FLEGT) action plan to fight illegal logging and associated trade. One key element of the plan is to ensure that only legally harvested timber is imported to the EU. So far, agreements have been concluded or are being negotiated with fifteen tropical countries that have signed or are in the process of signing voluntary partnership agreements (VPAs) with the EU: Cameroon, the Central African Republic, Ghana, Indonesia, Liberia, Congo (Republic of the Congo), Côte d’Ivoire, the Democratic Republic of the Congo, Gabon, Guyana, Honduras, Laos, Malaysia, Thailand and Vietnam.\(^11\) In 2020, the EU imported a total €5,663.3 million worth of wood products, 13% of which coming from FLEGT-VPA countries.

---


10. Fitness Check of the EU Timber Regulation and the FLEGT Regulation

The EU Timber Regulation (EUTR) requires Operators who first place timber and timber products onto the EU market to exercise Due Diligence to minimize the risk of placing illegally.

‘Illegally harvested’ timber refers to timber harvested in contravention of the applicable legislation in the country of harvest. Here, applicable legislation must cover the following matters:

- rights to harvest timber within legally gazetted boundaries,
- payments for harvest rights and timber including duties related to timber harvesting,
- timber harvesting, including environmental and forest legislation including forest management and biodiversity conservation, where directly related to timber harvesting,
- third parties’ legal rights concerning use and tenure that are affected by timber harvesting,
- trade and customs, in so far as the forest sector is concerned

The three key elements of the Due Diligence system are:

1. Access to Information: The Operator must have access to, and gather, information describing the timber and timber products, country of harvest, species, quantity, details of the supplier, and information on compliance with national legislation.

2. Risk assessment: The Operator should assess the risk of illegal timber in its supply chain, based on the information identified above and taking into account criteria set out in the regulation.

3. Risk mitigation: When the assessment shows that there is a risk of illegal timber in the supply chain, that risk can be mitigated by requiring additional information and verification from the supplier

---

Table 1. Total wood imports to the EU and the share of FLEGT countries, EU, 2000–2020 (million €, current prices).
Source: Table 3. Eurostat.

EU Timber Regulation (EUTR)
Although there is not a single accepted system for risk assessment, as a general rule however, the Operator will have to address the following questions:

» Where was the timber harvested?
» Is the level of governance a concern?
» Are all documents indicating compliance with applicable legislation made available by the supplier, and are verifiable?
» Are there indications of involvement of any company in the supply chain in practices related to illegal logging?
» Is the supply chain complex?

3. STATUS OF TRACEABILITY

The latest CDP report released in May 2022\(^\text{13}\) revealed that three quarters of companies (512/675) report having a traceability system for at least one commodity. However, levels of reported traceability remain low. More than a third of companies reporting on palm oil (35%), around half of companies reporting on timber, cattle, soy and coffee (45%; 45%; 47%; 52%). Moreover, full traceability remains uncommon in the timber sector as only 17% of companies disclosing their sourcing data are able to trace 50% or more of their volumes to the plantation/forest management unit level.

The recent ZSL SPOTT timber and pulp company assessment in 2022\(^\text{14}\) also showed similar trends on traceability. Out of 94 companies assessed, only 12 companies (12.8%) have achieved 100% traceability to country level. Additionally, only 6 companies out the 94 (6.4%) have achieved 100% traceability to the Forest Management Unit level.

4. TOOLS AVAILABLE FOR GEOLOCATION AND TRACEABILITY

Certification

FSC and PEFC operate similar systems for their forest management and chain of custody certification, despite the differences in the details. For FSC and PEFC certification, forest enterprises who hold Forest Management (FM) certificates are required to certify against the CoC standard if they would like to sell their timber as FSC or PEFC certified. For example a family run forest with a sawmill need to be independently certified against the forest management standard and the CoC standard.

\(^{13}\) From Commitments to Action at Scale Critical steps to achieve deforestation-free supply chains, May 2022 https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/368/original/CDP_AFI_Forest_Report_2022_%2814%29.pdf?1654614758

\(^{14}\) https://www.spott.org/timber-pulp-assessment-summary/
FSC CoC standard operates the following control systems:

» Transfer system - Through segregation from ineligible materials, the link between input and output material is assured through all stages of an organization’s processes. This applies to products with the claim ‘FSC 100%’, meaning that FSC certified materials can be mixed together, but non-certified materials are segregated and cannot be used.

» Percentage system - allows all outputs to be sold with a percentage claim that corresponds to the proportion of claim-contributing inputs over a specified claim period. This system can be applied to FSC Mix product groups, meaning that non-certified materials can be mixed with FSC certified materials as long as they meet controlled wood requirements.

» Credit system - allows a proportion of outputs to be sold with a credit claim corresponding to the quantity of claim-contributing inputs and the applicable product group conversion factor(s). This system can be applied to FSC Mix product groups, meaning that non-certified materials can be mixed with FSC certified materials as long as they meet controlled wood requirements.

For any non-certified materials to be included in FSC products, organisations have to conduct risk assessments to ensure that they do not originate from the following unacceptable sources (referred to as controlled wood categories) are:

1. Illegally harvested wood;
2. Wood harvested in violation of traditional and human rights;
3. Wood from forests in which high conservation values are threatened by management activities;
4. Wood from forests being converted to plantations or non-forest use; and
5. Wood from forests in which genetically modified trees are planted
PEFC
PEFC certification use very similar approach as FSC in their CoC models and non-certified materials. There are three methods to implement the PEFC chain of custody, namely the physical separation method, the percentage method and the credit method.

PEFC certified material and PEFC controlled sources can be used as input in PEFC product group under the three CoC methods. For non-certified materials to be included as PEFC controlled sources, organisations have to conduct Due Diligence System to determine that that there is “negligible risk” of material from controversial sources, which are defined as:

Forest and tree based material sourced from:

a. Activities not complying with applicable local, national or international legislation on forest management;
b. Activities where the capability of forests to produce a range of wood and non-wood forest products and services on a sustainable basis is not maintained or harvesting levels exceed a rate that can be sustained in the long term.
c. Activities where forest management does not contribute to the maintenance, conservation or enhancement of biodiversity on landscape, ecosystem, species or genetic levels.
d. Activities where ecologically important forest areas are not identified, protected, conserved or set aside.
e. Activities where forest conversions occur.
f. Activities where the spirit of the ILO Declaration on Fundamental Principles and Rights at Work (1998) is not met.
g. Activities where the spirit of the United Nations Declaration on the Rights of Indigenous Peoples (2007) is not met.
h. Conflict timber.
i. Genetically modified trees.
Innovations at FSC

FSC have launched the FSC Blockchain Beta digital verification platform pilot program for high-risk supply chains to improve traceability and integrity of supply chain. Forest-related supply chains rely on paper documentation, including a paper trail of invoices, bills of lading, and other “wet” signature/stamp trade paperwork. A certified organisation clearly knows their direct suppliers, but generally they do not have knowledge of their trading partners’ suppliers. Blockchain allows trading partners to be connected to all parties handling materials down to the source and to verify the compliance of the materials as they move through the supply chain, without the need to reveal or even identify business relationships beyond those direct relationships an organisation already has today.

FSC has developed its GIS portal, which enables FSC forest management auditors around the globe to access relevant geospatial information, which they can easily combine with up-to-date satellite derived data. The web app provides access to geo spatial datasets such as

» tree cover loss
» intact forest landscapes
» protected areas
» Indigenous and community lands
» water courses
» boundary data of certified forest areas, voluntarily provided by our certificate holders

Spatial analytics will allow FSC and the FSC certification bodies worldwide to monitor operations on the ground in a much more objective and transparent way, and pinpoint areas for improvement. Satellite analysis of certified forest areas will help to identify areas where forests are preserved. It will also indicate where certified forests are under pressure and require a more watchful eye.
National efforts

Some good examples of national efforts in timber traceability are the wood tracking system of timber legality assurance system (TLAS) of countries who are negotiating Voluntary Partnership Agreement (VPA) with the EU, which is part of the Forest Law Enforcement, Governance and Trade (FLEGT) initiative. Here we provided an example in Ghana. Note that the WTS is not yet in full operation so no FLEGT-licensed timber from Ghana has arrived at the European market yet.

An important part of such agreements is the establishment of a licensing scheme to ensure that only timber products that have been produced in accordance with the national legislation of the exporting country may be imported into the EU. Under the licensing scheme, import into the EU of timber exported from a Partner Country will be prohibited unless the timber is covered by a valid license. The issuing of licenses will require implementation of a legality assurance system (LAS). Under such a system, in order to issue a license, the Licensing Authority will need to have evidence to confirm that the timber was legally produced and that it can be traced to known legal origins.

Ghana’s Wood Tracking System (WTS) follows logs and wood through the entire value chain, from tree to domestic use and from tree to export. Crucial for the WTS are the so-called Critical Control Points (CCPs) in the value chain, that all logs/wood have to pass. At each of these CCPs, forest officials check whether logs and wood can still be considered legal, in that all procedures and practices of harvesting, transport, trading and processing are executed according to Ghanaian forest law and VPA’s legal principles.

The WTS was initially designed as a fully digitalized track and trace model that would be able to relate each lumber and log to its source through GPS and barcodes. In response to challenges to identify individual logs in mixed bundles of timber, the WTS started to include elements of a mass-balance model as volumes of input and output are now also monitored at mills. Moreover, the system is less digitalized as once planned: a GPS-based system was not feasible so stems and logs do still have physical tags instead of digital barcodes. In addition, the WTS still has a paper-based fallback option, in case of internet and power failures.  

The Indonesian Timber Legality Assurance System (Sistem Verifikasi Legalitas Kayu – SVLK) which was established in 2013, is also worth noting. The aim of the SVLK initiative is to combat illegal logging and the trade in illegal timber, while at the same time improving governance and the management of Indonesia’s forests, both those under state and private ownership, to meet growing demands from international markets (particularly the European Union, Australia, and the United States) for guarantees of timber legality through the certification of sustainable, legally-sourced timber exports.

The scheme consists of a tracking system that aims to ensure that all entities in the timber supply chain obtain their wood and timber products from sustainably-managed forests and conduct their trading operations in accordance with prevailing laws and regulations.
Developed with the active participation of a range of different stakeholders, from both government and civil society and public and private sectors, the SVLK system works to:

1. assess and, where satisfied, verify relevant parties (including concession holders, timber businesses and traders) dealing in the production, processing, transportation, distribution, transfer and domestic trade of timber and wood products;
2. trace the origin of all timber and wood products, and
3. issue documentation and/or licenses that certify the legality of timber and wood exports.

The SVLK assurance scheme is a mandatory system that requires all timber from state-owned and private forests to obtain verification of legality as a guarantee that the timber originates from legal, sustainably-managed sources.

**Private sector efforts**

**Blockchain**

Blockchain is a decentralized, distributed electronic database shared across a public or private network. Every transaction in a blockchain database is shared among a number of users, each one verifying that the database is accurate and preventing unauthorized transactions from being completed. When applied to timber, blockchain would provide an open record of transactions, where anyone can query the blockchain to validate the legitimacy of the sustainability of the timber.

Preferred by Nature and iov42 have teamed up together to provide blockchain service for the timber industry, called the Timber Chain. The Timber Chain is a service that enhances the digital data recording processes for companies, optimises the auditing and certification processes for certifiers, and ensures data integrity by protecting everything on a cryptographically-secure platform. All relevant supply chain stakeholders can access and use the Timber Chain, increasing cross-chain transparency and improving the overall efficiency of auditing.

With the Timber Chain, companies can:

- Create permanent digital records of commodity stocks, bundling / sorting processes, and shipments
- Upload all relevant information to be easily accessed and verified by Preferred by Nature
-Digitally receive and store LegalSource certificates from Preferred by Nature
- Share shipment information with buyers so they can trace the commodity’s origin
Scientific testing

DNA Testing

For example, companies such as DoubleHelix Tracking Technologies which provides scientific testing for the forest industry, including DNA, stable isotopes and wood anatomy. It has in-depth experience in DNA analysis. DNA extracted from wood can be tested to verify:

» Species (a method known as DNA Barcoding)
» Geographic origin (a method known as Phylogeography)
» Stump (to confirm if a piece of wood has been cut from a specific log or stump, known as DNA Fingerprinting)

DNA is extracted and compared to a reference database, if available for the species in question. In the case of Fingerprinting, DNA from a piece of wood is compared with DNA taken from a log or stump, much like a paternity test.

DoubleHelix has worked with various organisations and partners on DNA analysis. For example, it has worked with the University of Adelaide to develop genetic reference data for Burmese teak to support the Myanmar timber trade to meet increasingly strict import regulations in the European Union, USA and Australia, by using DNA tests to confirm the origin of harvest stated in government documentation. DNA and other scientific testing methods have a clear advantage over other audit and verification methods in that they are truly independent from documentation claims and cannot be manipulated.

Stable isotope analysis

Agroisolab is an international laboratory for verifying the origin of food, drink, timber and protected species using stable isotope analysis. Agroisolab uses isotope testing to verify whether a tested sample of timber matches its declared origin, and works with a network of laboratories that offer testing for the species of timber. It currently has stable isotope data for 10 species from various countries. Stable isotopes can be applied to a broad range of products but it cannot identify species.

In addition, Agroisolab is part of the consortium of World Forest ID, which has been formed by an international group of organisations, each bringing their expertise in forestry, traceability and biological sciences to create a new global standard in species and origin verification. To date they have collected 2163 samples, from 290 species in 28 countries.
Transparency platforms

SupplyShift is software designed to drive supplier performance and transparency. It provides the insights to mitigate risk. It has been used in various industries including food and beverage, cosmetic and apparel sectors. It has developed various assessment standards to suit the needs of different industries and issues. For example, agriculture, deforestation or conflict minerals. standard assessments that help companies quickly align with their best practices. It comes complete with ready-to-be-sent assessments, built-in scoring methodologies, and pre-built analytics dashboards, all designed to streamline progress toward company’s specific goals.

Similarly, Sourcemap is a software for supply chain risk assessment and optimization. Companies can upload multi-tier supply chain data for a network of any size or complexity via spreadsheet templates and see the results visualized instantly. Once the supply chain has been mapped, companies can use Sourcemap’s automated heat maps depending on the commodity and the risk companies want to focus on, and the scores are calculated automatically. Moreover, Sourcemap’s Transaction Traceability technology can track and trace every transaction from farm to factory using field-tested, secure mobile and cloud technology. Sourcemap supports item-level traceability through mobile app-enabled transaction and shipment tracking. The real-time results are available through an online dashboard with access available to all supply chain stakeholders. Mass-balanced and blended product is tracked through transformation processes. Conversion factors can be used to verify whether producers are likely to have adulterated products.

5. CHALLENGES / GAPS

Limitations on certification schemes
Forest certification schemes like FSC and PEFC offer the assurance that products with 100% certified materials could be traced back to FSC or PEFC certified forests. For FSC or PEFC products that contain other non-certified material, the certified portions can be traced back to certified forests while for the non-certified materials, they can be considered as ‘acceptable’. It provides ‘one up, one down traceability’ between the sellers and buyers of certified products.

However, FSC or PEFC does not provide full traceability from certified forests to end products as currently no tracking system is used for certified products when they move along the supply chains. For example, end product buyers can be assured that all the raw materials of certified products with the claim FSC 100% are originated from FSC certified forests, but they do not necessarily have the information of how many and where these certified forests are located.

Additional measures will be required to enable full traceability. For example, certified companies at the end of the supply chain need to request information from their suppliers (Tier 1 and beyond) on the origin of certified materials. They also need to conduct supply chain mapping to identify their supplier’s trading partners and material sources.
Blockchain and transparency platforms are just a tool

Blockchain is a secured database for storing data. However robust, it can never completely replace field inspections by independent auditors who can check volume and other information entered into the systems. The system will still require verification of the first mile data (forest to first processing) to ensure accurate information is being uploaded into the database.

Transparency platforms are widely used as a purchasing tool for gathering information on all sourcing (including certified and non-certified). Platforms are heavily reliant on the participation of suppliers and vulnerable to poor and/or unverified data due to its dependence on supplier declarations. In addition, these platforms are usually supplier focused rather than products specific, as they are designed for supplier engagement and drive improvement. Additional measures like Sourcemap’s Transaction Traceability is needed if companies want to have full traceability of their products.

Scientific testing is difficult to operate at scale

Scientific testing such as DNA and isotope analysis remains difficult to operate at scale, as you will need to build reference data for thousands of species. It is also expensive if you have to test every single product. Therefore, it is mostly used for high risk or high value products where additional level of assurance of their origin and/or species are required.

Impacts of EU Timber Regulation (EUTR)

As a result of EUTR, many operators have taken a more systems-based approach to supply chain traceability and management. A survey conducted jointly by Forest Trends and Preferred by Nature in March 2021 showed that Operators report an increased knowledge and understanding of illegal logging and supply chain risks as a result of the EUTR. Most noted that the EUTR had directly led to a dedicated systematization of their sourcing approach, including the development of internal policies, such as specific risk assessments and prohibited species lists. Companies report an exponential increase in the collection of information, noting that supply chains are now assessed back to the country of harvest, and where relevant, to the forest concession level. A Fitness Check on the EUTR and FLEGT Regulations also concluded that transparency has increased due to EUTR and that operators have tried to switch to more transparent supply chains or import certified products. While the EUTR has led to greater knowledge of the origin of the timber and timber products, identifying all necessary information and verifying documents from countries with corruption problems is challenging.

Nevertheless, the forthcoming EU Deforestation Free Due Diligence Regulation will have implications on how Operators currently conduct their due diligence. Most importantly, when it will come into effect, the EU DD Regulation will supersede the EUTR. As such, timber products entering the EU will have to be deforestation free as well as legal.

17 Fitness Check of the EU Timber Regulation and the FLEGT Regulation
It is worth noting that the definitions of ‘in accordance with the relevant legislation of the country of production’ currently varies slightly between the EU DDD Regulation and the EUTR:

- **EU DDD**\(^{18}\): The rules applicable in the country of production concerning the legal status of the area of production in terms of land use rights, environmental protection, third parties’ rights and relevant trade and customs regulations under legislation framework applicable in the country of production.

- **EUTR**\(^{19}\): The legislation in force in the country of harvest covering the following matters:
  - rights to harvest timber within legally gazetted boundaries,
  - payments for harvest rights and timber including duties related to timber harvesting,
  - timber harvesting, including environmental and forest legislation including forest management and biodiversity conservation, where directly related to timber harvesting,
  - third parties’ legal rights concerning use and tenure that are affected by timber harvesting, and
  - trade and customs, in so far as the forest sector is concerned.

Under the proposed law, operators and large traders will be expected to produce geolocation data making it possible to trace commodities back to their origin. EU authorities would have access to relevant information, such as geographic coordinates. Anonymised data would be available to the public. Based on a transparent assessment, the Commission would have to classify countries, or part thereof, into low, standard or high risk within six months of the regulation entering into force. Products from low-risk countries will be subject to the same information collection requirements, however will not have to conduct any risk analysis or risk mitigation.

### 6. REFERENCES / ADDITIONAL RESOURCES

- FSC (Forest Stewardship Council)
- PEFC (Programme for the Endorsement of Forest Certification)
- FLEGT Regulation
- Paper: [Opportunities for Improved Transparency in the Timber Trade through Scientific Verification](https://www.researchgate.net/publication/302304839_Opportunities_for_Improved_Transparency_in_the_Timber_Trade_through_Scientific_Verification) - Scientific Figure on ResearchGate.
- Blockchain – [Preferred by Nature](https://preferredbynature.org/)
- DNA testing – [DoubleHelix](https://www.doublehelix.com/)
- Stable isotope analysis - [AgrolisoLab](https://www.agrolisolab.com/)
- Transparancy platform – [Supplyshift](https://www.supplyshift.org/)
- Transparancy platform – [SourceMap](https://www nguồnmap.org/)

---

\(^{18}\) Proposal for a Regulation on deforestation-free products