



KEY SOURCES FOR DOVETAIL PARTNERS FOREST SECTOR INFORMATION

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Executive summary

There are hundreds of free and commercial sources of forest sector information available on the Internet. However, Dovetail Partners relies only on those that provide accurate and current information. The credibility of our work requires accessing information from as reliable sources as possible and understanding any limits of such data. Statistics and information providers include international organizations, national governments, non-governmental organizations, scientific professional societies and private companies. Most of the sources listed are available for free, however others require a paid subscription. The hosts of forest sector information websites are responsible for maintaining them by providing up-to-date and validated information. This report provides a brief overview of primary international and United States sources of information for forestry, certification, climate and land-cover change, markets, trade, illegal logging and trade, prices and portals for further information.

Introduction

Credible, accurate, up-to-date information on the forest sector is the basis for Dovetail Partners' work, and that of others including researchers, engineers, architects, investors, banks, businesses, trade associations, retirement funds, etc. While there are hundreds of sources of forest sector information available, Dovetail relies on a number of key sources for factual information from the forest to the market.¹ Reports and statistical databases are available for free, or with a cost, from international organizations, trade associations, national and state government agencies, private data providers, scientific professional societies and consultancy firms. The sources covered here are available via the Internet, but there are also many important printed magazines, textbooks and newsletters. All of the sources described here have valuable attributes, but also some limitations. Some of the sources are available in languages in addition to English.

This report begins by exploring important sources of forestry information and then highlights forest products, trade and market sources. A description of each source examines the content, its origins, strengths and weaknesses. The report concludes with the traditional "Bottom Line" and includes a comparative annex that provides details on each information source, including hyperlinks and email address. This report is not meant as a promotion of any particular source nor is Dovetail making any claims to the accuracy of the data provided by these sources. The goal of this report is simply to introduce readers directly to sources of forest and forest market data believed, in the opinion of the authors, to be valuable to the understanding of forest conditions, markets, and trends.

For simplicity we have divided source information into six categories as follows:

- Forestry
- Certified Forestry
- Climate Change & Land Use Change
- Market & Trade
- Illegal Logging & Trade
- Pricing

Sources in each of these categories are discussed in brief below.

¹ One of Dovetail's most valuable sources of information is our own library of reports (www.dovetailinc.org/reports).

Forestry

These resources provide information about forest resources and forestry practices, including forestland area, timber productivity, biodiversity, plantation management, tropical forests, growth and removals, and other considerations.

Global Forestry

The *Food and Agriculture Organization* (FAO) is a key source of forestry information with long-term series (longitudinal data), of which some date back to 1948 (as well as trade information described below) (www.fao.org/forestry/en/). The FAO Forestry Department lists these core activities: forest management; forest products and services; forest and environment; people and forests; policy and governance; assessment and monitoring; and interdisciplinary issues.

Of the forestry-related reoccurring and singular projects, Dovetail often utilizes FAO's *Forest Resources Assessment* (FRA) (www.fao.org/forest-resources-assessment/en/). The periodic (5-year cycle) FRA is the FAO Forestry Department's most important product. The FRA is based on national reports produced in a standard format conforming to internationally negotiated and agreed monitoring criteria. For example, one of the most challenging definitions is what constitutes a "forest" -- when is a group of trees a forest, and when is it defined as "trees outside the forest"? The FRA project is based on wide ranging country-supplied information collected as both text reports and statistics. The analysis focuses on key issues and has continually reported on deforestation and afforestation. Changes in definitions make comparisons from one FRA to the next difficult. For example, when the FAO changed the definition of a forest to include smaller, more-dispersed trees, suddenly the world's forest area increased. Simultaneously, deforestation decreased, as they are inversely proportional. The FRA has a wealth of country-level information, added to form global estimates, in its *Desk Reference* (www.fao.org/3/a-i4808e.pdf). Approximately 10 years ago, in 2005, the FRA started to report on some policy-related questions as well. In July 2016, the 2015 FRA was modified and uploaded to the FAO website (www.fao.org/forest-resources-assessment/current-assessment/en/). The *State of the World's Forests* (SoWF), produced every two years, was issued for 2016 when this report went to press (www.fao.org/3/a-i5588e.pdf). Its focus changes with each edition and this time was on forestland use changes due to agriculture.

Plantations or Planted-Forests

The FRA includes periodic information about plantations or planted-forests. In addition, a *Global Planted Forests Assessment 2005* project was published (www.fao.org/forestry/plantedforests/67507/en/). While it gives good information about the state of the world's plantation resources at that time, it is now out-of-date. The FRA distinguishes between plantations and naturally generated forests, and is a more current source. This is an example of the need to consider continual updating when launching new projects because the most current statistics and forecasts are often wanted.

European Forests

The *State of Europe's Forests 2015* (SoEF) was produced by Forest Europe, which is a rotating conference of European ministers responsible for their country's forests (www.foresteurope.org/fullsoef2015). Conferences have been held approximately every four years starting in 1990 and are led by a revolving liaison unit. The 2015 *SoEF* was produced by the Spanish Liaison Unit as a key background document for their conference. Previously the UN Economic Commission for Europe and FAO (UNECE/FAO) Forestry and Timber Section

published the SoEF and prior editions are available (via www.unece.org/forests/publications.html). For the 2015 SoEF the Section did produce statistical and descriptive information which is available via a database covering forest resources, biological diversity, forest health and vitality, productive functions, protective functions, socio-economic functions and overview tables (http://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT_26-TMSTAT1/).

Tropical Forests

The *International Tropical Timber Organization* (ITTO), while having a market-orientation that is covered below, has tropical forestry information as well. Under the heading of Sustainable Forest Management (SFM) Topics 2011 these subjects are included: overview of SFM in 2011; status of tropical forest management in 2005 and 2011; and country profiles by region plus four individual country profiles for Brazil, Gabon, Guyana and Peru. The appendix tables include estimations of deforestation by tropical country and industrial roundwood production. Most, but not all, tropical timber countries are members of ITTO, but those that are not are excluded from the “global tropical forest” totals. In mid-2016 ITTO had a financial crisis and all work stopped while it was being audited.

International Forestry and Human Dimensions

Another international forestry information source is the *Center for International Forestry Research* (CIFOR). CIFOR has six major work areas: forests and human well-being; sustainable landscapes and food; equal opportunities, gender, justice and tenure; climate change, energy and low-carbon development; value chains, finance and investment; and forest management and restoration. In addition, CIFOR has the following research themes: climate change; gender; livelihoods; forest management; food and biodiversity; forest policy; products and trade; and landscapes. CIFOR produces reports that can be topically searched (www.cifor.org/library/). Some databases such as the “Forest carbon database” and “Non-timber Forest Products Database” are text publications with metadata about other databases published in 1996 (www.cifor.org/?s=database&submit=%EF%80%82&lang=en). It is necessary to check publication dates to ensure publications and data are current.

US Forests

While focused on the US, the *US Department of Agriculture Forest Service* (USFS) does have some international information (www.fs.fed.us/). The site is divided according to the different sections of the Service: National Forest System, State and Private Forestry, and Research. Each section has many informative webpages, e.g. the Forest Inventory and Analysis (FIA) site (www.fia.fs.fed.us/). The FIA site is organized by state with a choice of download methods to provide reports and data. The FIA program collects, analyzes and reports on US forest area size and location, tree growth and mortality, timber production, forestland ownership, etc. The following links provide background information about how the FIA programs work, who is involved in running them, what data they provide, discussion of data reliability, and so on:

fia.fs.fed.us/library/fact-sheets/overview/What_is_FIA_FS.pdf
fia.fs.fed.us/library/fact-sheets/overview/Pgm_Components_FS.pdf

The USFS *Cut and Sold Reports* show total volumes and values of all convertible forest products sold and harvested from the National Forest System lands and National Grasslands (www.fs.fed.us/forestmanagement/products/sold-harvest/). In addition, these reports show the amounts and values of species and products sold and harvested, including all other forest products,

such as Christmas trees, mushrooms, and boughs. The data for these Cut and Sold reports come from the Forest Service's Automated Timber Sale Accounting system.

The World Bank also has reports and data on forest-related topics (www.worldbank.org/en/topic/forests). The Bank funds programs and projects in developing forested (or deforested) countries. In mid-2016 the Bank published its “Forest Action Plan” for 2016-2020 (<http://documents.worldbank.org/curated/en/2016/06/26499487/forest-action-plan-fy16-20>). The Plan is to integrate sustainable forest management (SFM) into development decisions. It defines the World Bank Group's: 1.) Investments contributing to SFM and value chains, and 2.) Interventions in other sectors that coordinate with forest capital. The Bank's forest site gives access to its projects, data, research and news. The databases have extensive social and economic statistics, but no specific forest sector data. However, there is a link to the UN Conference on Trade and Development (UNCTAD) Trade Analysis Information System which is organized by HS codes and enables choosing trading partners and any wood or paper product down to the 6-digit HS level.²

In addition to the international and the US sites above, there are a multitude of national sites providing specific information for a country. There are also sub-national sites which provide more localized information, e.g. by US state.

Certified Forestry

Global and national systems exist for certification of sustainable forest management. The statistics are often limited to area of forests certified and the number of certificates held by companies trading certified forest products. Unfortunately two important statistics are missing: the value and volume of certified forest products. The main international systems presented below are in alphabetical order.

The *Forest Stewardship Council* (FSC) (www.ic.fsc.org/en). FSC has these program areas: forest management; chain-of-custody; social policy; monitoring and evaluation; supply chain integrity; ecosystem services; and controlled wood. Information is presented in reports, factsheets and statistics. Regarding the latter, monthly “Facts and Figures” are reported for certified forest area by region, number and trends of chain-of-custody certificates by region and by country, ten largest certificates, and trends in area certified (www.ic.fsc.org/en/facts-figures). The FSC database (www.info.fsc.org) is the “one stop for inquires about [FSC] certificates and their status.”

Programme for Endorsement of Forest Certification Schemes (PEFC) provides a variety of informative sources about its system (www.pefc.org). Under the website's “resources” menu tab are its publications, case stories, videos, presentations and technical documentation (www.pefc.org/resources/brochures). PEFC has statistics on area of certified forests by country and region, forest owners, chain-of-custody, trends in certified area, and top ten countries certified area (www.pefc.org/resources/webinar/747-pefc-global-certification-forest-management-chain-of-custody). PEFC has links to all the national systems that it endorses at www.pefc.org/about-pefc/membership.

² **Harmonized Commodity Description and Coding Systems (HS)** - The Harmonized System (HS) is an international nomenclature to classify traded goods for customs. At the international level, the HS for classifying goods is a six-digit code system.

The *Sustainable Forestry Initiative* (SFI) is a North American (US and Canada) certification system endorsed by PEFC. The site contains webpages about its standards and topical issues. Within the annual reports are the “SFI Stats and Facts” (<http://www.sfiprogram.org/media-resources/progress-reports/>). Data is provided for certified forests and products and can be aggregated. The SFI’s Certificate Database (<http://64.34.105.23/PublicSearch/MainSearch.aspx>) is “Your gateway to [SFI] forest products and suppliers.”

For information that includes multiple programs and a broader discussion of the context and influence of certification, the *Forest Products Annual Market Review* (www.unecce.org/forests/fpamr.html, and discussed further in the Markets and Trade section) provides an annual summary of developments within forest certification. In the most recent editions, the certification data and discussion is included in Chapter 2. From 2005 to 2011, certification was addressed within Chapter 10.

Climate Change and Land Use Change

In 2016 one of the most topical issues is climate change. Land use change is critical to the forest sector because the balance between deforestation and afforestation is essential. Objective, science-based information on these issues is fundamental to many studies.

Many of the sources described above have webpages on the topical issue of climate change. However, two of the most dedicated sources are the *Intergovernmental Panel on Climate Change* (IPCC) (www.ipcc.ch) and the *UN Framework Convention on Climate Change* (UNFCCC) (www.unfccc.int/2860.php). The IPCC publishes general and technical reports, of which the most famous are the periodic “Assessment Reports” that describe the state of knowledge on climate change. The most recent assessment report is “Climate Change 2014” for which the “Synthesis Report” is organized by four topics: observed changes and their causes; future climate changes, risk and impacts; future pathways for adaption, mitigation and sustainable development; and adaptation and mitigation (www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf). The IPCC’s Data Distribution Centre has climate datasets, modeling data, socio-economic data, data for other environmental changes, as well as scenarios and forecasts (www.ipcc-data.org/ddc/ddc_provides.html).

The UNFCCC organizes the Convention of the Parties (COP) meetings, e.g. the 2015 COP in Paris, which resulted in the Paris Agreement. As background for COPs the secretariat produces reports and documentation. According to the website, “National Communications’ from Annex I Parties provide information on emissions and removals of greenhouse gases (GHGs); national circumstances; policies and measures; vulnerability assessment; financial resources and transfer of technology; education, training, and public awareness; and any other details of the activities a Party has undertaken to implement the Convention” (www.unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/7742.php). The UNFCCC has data for greenhouse gases (www.unfccc.int/ghg_data/items/3800.php). Additional documentation is available at www.unfccc.int/documentation/items/2643.php.

Market & Trade Information

For trade (imports and exports) of forest products, Dovetail Partners uses a number of international and national information sources. All sources have advantages, and some have disadvantages, that users must take into account.

International Markets

The new European Forest Institute's (EFI) *Forest Products Trade Flow Database* does not contain any original statistics, but uses the UN Comtrade database (see next source) as its basis (www.efi.int/portal/virtual_library/databases/forest_products_trade_flow_database/). Through an algorithm that is publicly available, EFI cleans or validates the Comtrade data. In simple terms they compare importer and exporter records and check if they are comparable and within acceptable limits. According to the EFI website:

Each time when a country A exports a certain commodity to country B, a number of data variables are recorded, typically by each of the respective national customs organizations as export and import. The recorded data include value of the shipment and quantity in one or more unit types, typically in metric tons and cubic meters but depending on the commodity, a wealth of different quantity metrics can be applied in different countries.

Normally the quantity of a shipment should remain the same between origin and destination country and the value should also remain more or less the same. However, as in many cases these data are not comparable, it is difficult.

Some of the reasons for trade flow data discrepancies are reported here (not in order of importance):

- *Triangular trade³*
- *Product conversion in customs zones or free-trade areas*
- *Misreporting by one of the partner countries*
- *Non-reporting by one of the partner countries*
- *Differences between countries in methods of assessing trade value and quantity (particularly an issue with intra-EU trade)*
- *Partners report in different classification systems*
- *Time-shift effects due to trade leaving a country in one period and arriving in partner country in the next period*
- *Erroneous indication or misinterpretation of units or currencies*
- *Erroneous conversion between quantity units or between currencies*
- *Confidentiality e.g. when there are very few economic operators related to a particular commodity in a country.⁴*

The EFI trade flow database was revitalized in 2015 and is still undergoing improvements in 2016. One improvement desired is the addition of Eurostat Comext monthly statistics (see below). In fact, EFI expresses the intention to continue to improve its database by showing its algorithm and by calling for comments from users.

The *UN Comtrade* database covers all UN-member countries and all of their internationally traded products that have a Harmonized System (HS) code (<http://comtrade.un.org/>). Dovetail accesses the seven codes for wood and paper products, including wooden furniture. The Comtrade website is fairly simple to use. However, without a paid subscription, users are limited to five choices for reporting countries, partner countries, and years traded. When running large analyses, this limitation can mean repeated downloading until all data is received. There is no limitation on the number of HS codes for products that are chosen. Comtrade has a major advantage of flexibility in

³ A term indicating trade among three or more ports or regions

⁴ www.efi.int/portal/virtual_library/databases/forest_products_trade_flow_database

choosing the level of HS codes, for example high-level, 2-digit codes grouping all sub-products, or down to 6-digit more-detailed statistics. Comtrade does some validation, but it is incomplete necessitating checking statistics by performing reverse trade analyses (checking whether what country A reports exporting to country B is the same as country B reports importing from country A; where discrepancies are discovered additional insight is needed to determine which is more correct).

FAO, ITTO, UNECE and Eurostat work together to collect trade and production statistics from their respective member countries via the Joint Forest Sector Questionnaire (which does not cover the forest sector, but only production and trade). The output is not equally available on the four organizations' websites. Eurostat does not show any of the questionnaires output because its statistics are based on Comext (see below). ITTO shows only the tropical timber statistics for its member countries on its online *Annual Review Statistics Database* (www.itto.int/annual_review_output/). The ITTO database is extremely easy to use and has the advantage of the distinction between tropical, non-tropical hardwood and softwood products. Output can be in metric quantities or in value. A disadvantage is that like all the data collected by the joint questionnaire, it is published late in the following year. Another disadvantage is that only four products are available: industrial roundwood, sawnwood/lumber, veneer, and plywood. ITTO uses this data to produce the "Annual review and assessment of the world timber situation" (which focuses on tropical timber in a global context, but not the entire world timber situation). ITTO has a wealth of market information related to tropical timber, as well as non-tropical timber to a lesser extent. For example, ITTO has a *Market Information Service* (MIS), which according to the website, has "the aim of improving transparency in the international tropical timber market". Twice a month the *Tropical Timber Market* (TTM) provides market trends and trade news from around the world, as well as indicative prices for over 400 tropical timber and added-value products" (www.itto.int/market_information_service). The free subscription allows receiving a link to the MIS and access to previous issues back to 1998.

ITTO conducts *Independent Market Monitoring* (IMM) for the Forest Law Enforcement, Governance and Trade (FLEGT) program of the European Commission (www.itto.int/imm/). The objective is to monitor the international market for FLEGT-licensed timber. As of July 2016 this timber is not yet available from the countries that have signed Voluntary Partnership Agreements (VPA) with the EU, but it is expected later in 2016. The site contains reports and data for the 15 (as of mid-2016) VPA countries and the EU, as well as some additional key trading partners, such as China. The IMM has an online database of all EU forest products imports originating from Comext monthly statistics, thus valuable for the most recent trends (via www.itto.int/imm/). Guidelines to use the Zip-file of the MS Access database are also available (www.itto.int/files/user/imm/IMM_EU_Imports_Database_Guidelines.pdf). Thus, the IMM site has statistics beyond those of the VPA partner countries.

FAO uses the statistics that it collects, plus those collected from its three partners via the joint questionnaire, in its FaoStat database "*Forestry Production and Trade*" (<http://faostat3.fao.org/download/F/FO/E>). The Production and Trade online database is global from 1961 to the previous year, which for example, currently in mid-2016 has 2014 data. The website database is easy to use and is organized by countries, regions and grouping, e.g. European Union, by years, by trade flow and by primary wood and paper products (excluding value-added products). It is possible to download statistics in various ways or to visualize some of the data. One advantage is that FAO attempts through estimations to provide complete statistics, i.e. data for every country, every year and every product.

FAO's *Forestry Trade Flows* are not based on the joint questionnaire, but rather on UN Comtrade statistics (<http://faostat3.fao.org/download/F/FT/E>). The website is easy to use and is organized similarly to the production and trade webpage. Unfortunately, the choice of wood and paper products is limited to only eleven products. Another disadvantage is that the information is available earlier via the original source, Comtrade.

The *UN Economic Commission for Europe and FAO* (UNECE/FAO) Forestry and Timber Section publishes *Forest Products Statistics* electronically for the previous five years, i.e. currently in mid-2016 for 2010-2014 (www.unece.org/forests/fpm/onlinedata/forest-products-statistics/production-and-trade-tables-2010-2014.html). While there is a wealth of statistics collected via the aforementioned joint questionnaire, a publication in PDF is not practical for many analyses. Prior years' information is available as PDFs in archives, however at the time of writing the link was not functional. UNECE/FAO's trade and production statistics are not easily used and the secretariat has allowed FAO to publish some, but not all, of their statistics in the previously described FAO production and trade database. The statistics are part of the basis of the *Forest Products Annual Market Review*. The *Review* analyzes market developments in the UNECE/FAO's 56-member countries, as well as their trading partners outside the region, and other market actors. The *Review* has moved from a purely market-related report to one that includes policy influences. The *Review* is prepared as a background document, together with the results of a forecasting questionnaire, for the annual Timber Committee Market Discussions. Unfortunately, the results of the forecasting questionnaire are not available in a user-friendly format, but rather as a PDF publication (www.unece.org/forests/fpm/timbercommittee.html).

Eurostat, the statistical branch of the European Commission that is the secretariat for the European Union, publishes the statistics it collects from its 28-member countries in a *Comext database* (<http://epp.eurostat.ec.europa.eu/newxtweb/setupdimselection.do>). The database is updated frequently and has the advantage of monthly data updates. The use of the database is free, but users must create a user profile. The database starts with the EU-28 countries (as of mid-2016) as reporters, then there is the choice of trading partners, products, import or export, months or years and output in value in euros or volume (cubic meters or metric tons). Output is limited. Use of the webpage is cumbersome requiring multiple clicks to select the desired parameters.

US Market Information

USDA Foreign Agricultural Service offers both statistics and reports about US trade (imports and exports) with trading partners. Through the Global Agricultural Trade System Online (GATS), statistical information is available in either value or volume and by different coding types, including HS codes to the detailed 10-digit level (<http://apps.fas.usda.gov/gats/default.aspx>). There are trade reports and analysis as well as news for forestry-related topics grouped together with horticulture (www.fas.usda.gov/commodities/horticulture-and-forestry). There does not seem to be consistent reporting of forest products-related analysis, however, the search function enables finding more relevant information.

Through the US Forest Service, *US Timber Production, Trade, and Price Statistics* are collected and reports are published every two years (www.treearch.fs.fed.us/pubs/43952). The reports present annual data on the production, trade, consumption and prices of timber products in the US. While the focus is national, it includes some data for states, regions and Canada. The data are collected from industry trade associations and government agencies. A major use of the data is tracking industry production and consumption trends over time.

The FIA (covered earlier) reports on *US Timber Products Output* for industrial and non-industrial uses of roundwood by state (www.fia.fs.fed.us/program-features/tpo/). To estimate industrial uses

of roundwood, all primary wood-using mills in a state are canvassed. These studies' results can enable logging utilization studies when output is compared to forest inventory.⁵

Illegal Logging & Trade

While impossible to have accurate statistics on the full extent of illegal logging and the trade of illegal wood and paper products, it is essential to base analyses on the best estimates and information available.

Chatham House, the Royal Institute of International Affairs, an independent policy institute based in London maintains the *Illegal Logging Portal* (www.illegal-logging.info). The portal has links to current reports about illegal logging and trade, forest governance, regulating trade, and promoting legality. The portal is organized by these themes, and also by country.

The *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES), lists forest species (trees and other plants and animals) that are classified into three appendices according to the extent they are threatened by international trade (www.cites.org/). Appendix I species are the most endangered and are threatened with extinction, meaning their commercial trade is prohibited. Appendix II species are threatened, meaning their trade is controlled through CITES permits or certificates. Appendix III species are under surveillance to prevent unsustainable or illegal exploitation – again, proper permits or certificates are required for international trade. For international trade of forest products it is important to be aware of possible CITES listings that are continually subject to revision through the meetings of the 182 government parties.

Pricing

The European Forest Institute (EFI) hosts the *Forest Products Price Information Portal* (www.fppi.efi.int/). The portal facilitates finding price information from over 200 different information sources. These include price series data, non-series price data and other price-related information from more than 30, predominantly European, countries. Meta-data is provided for each source. Users can search by product category, geographic location, market area, and organization type. Creation of the portal was by an EFI research station, the Observatory for European Forests, which no longer exists, and the UNECE/FAO. It is apparent that the site has not been adequately maintained as some of the links no longer work. Nevertheless, the portal still has valid information.

Random Lengths Weekly Report provides prices for US wood products, especially lumber/sawnwood and panel products (www.randomlengths.com/). Its composite lumber and panel prices provide a benchmark for trading. In addition to listings of prices, there is market analysis of products, species and the industry. Prices are a composite of individual mill prices gathered weekly. Random Lengths is only available by subscription, however, some information is available free via their Woodwire, e.g. the composite prices. *Random Lengths International* gives some of the same US information and then expands into North American trade (export and import) statistics and export prices to the most popular destination (www.randomlengths.com/In-Depth/International-In-Depth/). Random Lengths' *Yardstick* is a monthly newsletter of market analysis and economic indicators such as housing starts, price information, trade statistics, financial indicators, etc. (www.randomlengths.com/Product/Detail/International/). The *Yardstick* is only available by paid subscription.

⁵ For an example of utilizing these data sources to illustrate forest sector regional trends, see: *A Guide to the Forest Products Industry of the Southern United States*, available at:

www.usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=7f8429df087e4c86951a7e69d93207a7

RISI offers price indices, industry trends, price forecasts, mill analyses, mill costs, and mill capabilities through a variety of publications (www.risiinfo.com/). *RISI* is global and covers pulp and paper markets extensively, and other primary wood products less intensively. *RISI* provides more comprehensive information for the North American market through its Crow's Market & Price Service, including the Crow's Weekly Market Report. Almost all products are available by paid subscription. *RISI* collects its information via a network of contributors.

Forest2Market has reports in a series of newsletters and a price database, which started with stumpage in 2001 (www.forest2market.com). Originally US-based, *Forest2Market* has expanded to many important trade regions of the world. Prices and other information are collected from contributors in the wood and paper products industry. Two newsletters are the "Global forest products markets" and "Global bioenergy, biofuels and biochemical industries". The Global Forest Products Markets covers news of industry trends, forecasts, policies, and technological developments. *Forest2Market* forecasts prices and industry developments. The newsletters are available free online and by subscription.

US Timber Price Data by state is a US Forest Service website identifying data sources for timber prices in a given region, information regarding mill prices for delivered logs, and stumpage prices. It provides links and explanations as to what free information is available for each state. Also included is contact information for select state authorities on timber prices. www.srs.fs.usda.gov/econ/timberprices/data.html

The UNECE/FAO also has a *Price Database* for a limited number of wood products (www.unece.org/forests/output/prices.html). While mainly European prices, there are also some US series. Unit prices for traded products, i.e. the value of trade divided by the volume of trade, are available for some products from 1964-2014. The prices are limited to publicly available price series and are updated annually, both of which are important limitations to consider.

Portals (links to links)

The *Global Forest Information Service* is an initiative of the Collaborative Partnership on Forests, a 14-interagency partnership. The Service is led by the International Union of Forest Research Organizations (IUFRO) to provide up-to-date links to further information (www.gfis.net). The site has no information of its own, but directs readers to sources of further information. There are many different topics of interest, and the search mechanism is essential for finding relevant information links.

The Bottom Line

A wealth of information is publically available to understand and analyze the forest sector, from forests to markets. Dovetail Partners consults these sources to obtain objective, high quality, current reports and statistics. While statistics should be objective, when it comes to reports, potential bias should be considered. It is critical to have a good understanding of a source's content, origin of information and any limitations. Databases with long-term and up-to-date statistics are valuable when their content is validated – otherwise users can unknowingly quote wrong data. Historical data is subject to updating and correction, meaning use of statistics is time sensitive. Long-term series have value in observing trends, as well as giving indications for the future. Forecasts are also time-sensitive.

The onus is on the hosts of the websites above, and those who contribute information to the websites, to ensure information is consistent and correct. Links change too often, and websites must be maintained, or they lose their appeal. Users of forest sector information, e.g. Dovetail Partners, policymakers, businesses, and other stakeholders, rely on valid sources. The designers of web-based information must consider continual updating when launching new sites. After establishment,

regular maintenance is required to make the source applicable for users' needs, e.g. analyses and decision-making. A common strength of the sources above is their reputation for valid national and international information.

Overall, there is a need to incorporate emerging issues and considerations. Recommendations include:

- Looking across the landscape beyond current forest areas to include “trees outside of forests” and non-forested areas that could benefit from stewardship or afforestation/reforestation (e.g., areas at risk for desertification or degraded agricultural lands)
- Looking for opportunities to update systems with emerging considerations, including incorporating measures of social impact and benefits (human dimensions) in addition to economic and environmental resource data
- Certification systems could gather and share information on the value and volume of certified forest products produced and traded.

Annex for Forest Sector Information Sources Report: as of July 2016

Forests and Forestry

General	FAO	FAO	UNECE/FAO & Forest Europe	ITTO	CIFOR	USDA FS	World Bank
Title	Forest Resources Assessment	Plantation forest assessment	State of Europe's Forests (SoEF)	Status of tropical forest management	Forest management	Forest inventory and analysis	World DataBank
Contents	Main report, country reports, key findings, tables, database	reports, database, definitions	report, database	overview of SFM in 2011; status of tropical forest management in 2005 and 2011; country profiles by region plus four individual country profiles	reports	reports and data	socio-economic
URL/web address	http://www.fao.org/forest-resources-assessment/en/	http://www.fao.org/forestry/plantedforests/67507/en/	http://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT_26-TMSTAT1/andwww.foresteurope.org/reporting_SF M	www.itto.int/sf/	www.cifor.org/library	www.fia.fs.fed.us	http://databank.worldbank.org/data/databases.aspx
Geographic coverage	global	global	56-country UNECE region of Europe, N. America and CIS	tropical forests	global	USA	global
Periodicity	5 years	once	5-years, with some annual updates	once	none	annual inventories	annual
Starting	1948	2005	1988	2011	n/a	1930	1960
Ending	2010	2005	2015	2011	n/a	2015	2015
Organized by	multiple	multiple	country, indicators, years	country	research theme	State	country
Product units	multiple	hectares, m3	varies	hectares, m3	varies	acres, cubic feet	varies
Output	text, tables, spreadsheets, graphics	text,	text, data	text, data	text	text, data	data
Download format choice	no	no	no	no	no	yes	yes: table, map, graph
Organization type	International organization	International organization	international organization	International organization	International organization	National government agency	International organization
Owner	FAO	FAO	UNECE/FAO & Forest Europe	ITTO	CIFOR	USDA-FS	World Bank
Cost	free	free	free	free	free	free	free
Other info	2015 FRA withdrawn from website	out-of-date	2015 SoEF produced by Forest Europe at www.foresteurope.org/reporting_SF M	needs updating	Some publications quite out of date	Many additional info sources available	No specific forest sector info
Contact info	fra@fao.org	forestry@fao.org	roman.michalak@unece.org	itto@itto.int	www.cifor.org	ams@fs.fed.us	www.worldbank.org/en/about/contacts

Annex for forest sector info sources report: as of July 2016

Certified forestry info

General	FSC	PEFC	SFI
Title	Facts and figures	Global statistics	Annual progress report
Contents	Certified forest area, number of certificates	Certified forest area, number of certificates	Stats and facts
URL/web address	https://ic.fsc.org/en	http://www.pefc.org/images/documents/PEFC_Global_Certificates_-_March_2016.pdf	www.sfiprogram.org/
Geographic coverage	global	global	North America
Periodicity	frequent updates	quarterly	annual
Starting	2014	1999	n/a
Ending	2016	2016	2016
Organized by	country	country, region	N. America
Product units	hectares, number of CoC	hectares, number of CoC	acres
Output	tables	tables	reports
Download format choice	no	no	no
Organization type	international organization	international organization	international organization
Owner	FSC	PEFC	SFI
Cost	free	free	free
Other info	No value info	No value info	No value info
Contact info	info@fsc.org	info@pefc.org	info@sfi.org

Annex for forest sector info sources report: as of July 2016

Climate change

General	IPCC	UNFCCC
Title	Reports, statistics and forecasts	Reports, data
Contents	Data distribution centre	Reports, data
URL/web address	www.ipcc-data.org	http://unfccc.int/2860.php
Geographic coverage	global	global
Periodicity	periodic	periodic
Starting	1900	1990
Ending	2010	2013
Organized by	topic	conferences' outcomes
Product units	varies	vary
Output	text, tables, databases	text, tables, data
Download format choice	no	no
Organization type	international organization	international organization
Owner	IPCC	UNFCCC
Cost	free	free
Other info	Can be technical	database exists
Contact info	IPCC-Sec@wmo.int	secretariat@unfccc.int

Annex for forest sector info sources report: as of July 2016

Market and Trade

General	EFI	UN	ITTO	ITTO	FAO	FAO
Title	Forest Products Trade Flow Database	Comtrade	Annual Review Statistics Database	Independent Market Monitoring system	FaoStat	FaoStat
Contents	Country-level trade data for all wood and paper products	Database of all traded products	Trade and production data for tropical and non-tropical wood products.	Trade data for EU, especially tropical	Production and trade data	Trade flows
URL/web address	http://www.efi.int/portal/virtual_library/databases/forest_products_trade_flow_database/	http://comtrade.un.org/data/	http://www.itto.int/annual_review_output/	www.itto.int/imm/	http://faostat3.fao.org/download/F/FO/E	http://faostat3.fao.org/download/F/FT/E
Geographic coverage	global	global	global with focus on tropical timber	EU & VPA partners	global	global
Periodicity	annual	annual	annual	annual, monthly	annual	annual
Starting	2004	1962	1990	2004	1961	1997
Ending	2014	2015	2014	ongoing	2014	2014
Organized by	Harmonized System codes	HS codes	countries, products, trade flows	HS codes	countries, trade flows & production, commodities	reporter and partner countries, trade flows, products
Product units	m3, m.t., US\$	m3, m.t., US\$	m3, m.t and US\$	m3, m.t and euros	m3, m.t., US\$	m3, m.t., US\$
Output	data, graphics, text	data, graphics	data	text, data	data	data
Download format choice	yes	yes	no	no	yes	yes
Organization type	international organization	international organization	international organization	international organization	international organization	international organization
Owner	EFI	UN	ITTO	ITTO	FAO	FAO
Cost	free	free or subscription	free	free	free	free
Other info	Under development in 2016	Not fully validated	Validated	Validated	Validated	limited products
Contact info	efisec@efi.int	comtrade@un.org	itto@itto.int	itto@itto.int	FAO-statistics@fao.org	FAO-statistics@fao.org

UNECE/FAO	Eurostat	FAS	USFS	USFS
Forest products markets	Comext	GATS	Timber Output Studies	Timber Production, Trade
Forest Products Annual Market Review, statistics and forecasts Market reviews: http://www.unece.org/forests/fpamr.html . Data: http://www.unece.org/forests/fpm/onlinedata/forest-products-statistics/production-and-trade-tables-2010-2014.html	Trade data for EU http://epp.eurostat.ec.europa.eu/newxtweb/	US trade statistics http://apps.fas.usda.gov/gats/ExportQuery1.aspx	Primary wood-processing industries, their outputs www.fia.fs.fed.us/program-features/tpo/	Market developments, policy initiatives www.fs.fed.us/sites/default/files/media/types/news_release/field_article_document/2013/44/fpl_rn330_0.pdf
56-country UNECE region	EU-28 and its trading partners	US and partners	US states	U.S.
annual	monthly	monthly, annual	5 years	2 years
1961	1988	1967	1997	1965
2014	2016	2016	2012	2011
commodity and country	HS codes to the 8-digit level	HS codes to 10-digit level	States	Products
m3, m.t., US\$	m3, m.t., euros	m3, US\$	BF, cubic feet, tons, cords	BF, cubic feet, tons, cords
text, data	data	data	text	text
no	no	no	no	no
international organization	EU organization	US government agency	US government agency	US government agency
UNECE/FAO	Eurostat	USDA FAS	USFS	USFS
free	free	free	free	free
data difficult to use	website difficult to use	US-based	US-based	US-based
info.ece-faoforests@unece.org	Eurostat.helpdesk_EN@sogeti.lu	GATSHelp@fas.usda.gov	hberesford@fs.fed.us	jlhoward@fs.fed.us

Annex for forest sector info sources report: as of July 2016

Illegal Logging and Trade

General	Chatham House	CITES
Title	Illegal Logging Portal	Convention on International Trade in Endangered Species of Wild Fauna and Flora
Contents	Illegal logging, forest governance, regulating trade, promoting legality	Appendices of endangered species
URL/web address	www.illegal-logging.info	https://cites.org/
Geographic coverage	Global	Global
Periodicity	Current	Ongoing
Starting	n.a.	1973
Ending	n.a.	2016
Organized by	Subject, country	Appendices of species
Product units	n.a.	n.a.
Output	Links to reports, news	Lists of endangered species
Download format choice	no	no
Organization type	International Organization	International Organization
Owner	Chatham House	CITES
Cost	free	free
Other info	Also includes climate change	International convention managed by member governments
Contact info	contact@chathamhouse.org	info@cites.org

Annex for forest sector info sources report: as of July 2016

Price information

General	EFI	Random Lengths	Random Lengths	RISI	Forest2Market	USFS	UNECE/FAO
Title	Forest Products Price Information Portal	Random Lengths	Random Lengths International	RISI price indices	Global Forest Products Markets	U.S. Timber Price Data	Price database
Contents	Links to forest products price info sources	Lumber, panel prices	Trade analysis, prices	Price indices	Trade, product analysis, prices	Stumpage and log prices	Wood and paper
URL/web address	http://fppi.efi.int	www.randomlengths.com	www.randomlengths.com/Product/Detail/International/	www.risiinfo.com	www.forest2market.com	www.srs.fs.usda.gov/econ/timberprices/data.html	www.unece.org/forests/output/prices.html
Geographic coverage	Europe, some other countries	U.S., Canada	International	Global	N. America, S. America, N. Europe	U.S.	Europe and U.S.
Periodicity	Ongoing	Weekly	Biweekly	Weekly to monthly	Monthly	Annual	Annual
Starting	n.a.	1944	1944	n.a.	2007	1980	1993
Ending	n.a.	ongoing	ongoing	ongoing	ongoing	2015	2015
Organized by	Product category, country	Product	Product	Product, region	Topic	U.S. state	Product
Product units	Local currencies	US\$, BF, square feet, m3	US\$, BF, square feet, m3	US\$, volume	US\$, volume	US\$, cord, BF	Euro, US\$
Output	Links to forest products price info sources	Text, prices	Text, prices	Reports, prices	Reports	Links to state sources	Spread sheet
Download format choice	no	no	no	no	no	no	no
Organization type	International Organization	Private company	Private company	Private company	Private company	US government agency	International organization
Owner	EFI	Jon Anderson	Jon Anderson	RISI	Forest2Market	USFS	Providers of prices
Cost	free	Paid subscription	Paid subscription	Paid subscription	Paid subscription	Free	Free
Other info	Not fully maintained	Some info available free via weekly Woodwire	Some info available free via weekly Woodwire	Many publications available	Also available: Global Bioenergy, Biofuels and Biochemicals Markets.	Content varies by availability	Limited products, unit prices for traded products 1964-2014
Contact info	efisec@efi.int	rlmail@rlpi.com	rlmail@rlpi.com	http://www.advertise.risi.com/?_ga=1.167838377.986226602.1467665532#!contact/c1d94	john.greene@forest2market.com	jprestemon@fs.fed.us	stats.timber@unece.org

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