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COMMITTEE ON FORESTRY

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GLOBAL FOREST RESOURCES ASSESSMENT 2020: KEY FINDINGS AND WAYS FORWARD INCLUDING DIGITALIZATION

Executive Summary

FAO Global Forest Resources Assessment (FRA) regularly collects, analyses and disseminates information on the status of and trends in the world's forest resources. This document describes the latest of these assessments, FRA 2020. It introduces its Key Findings and discusses the way forward towards a reporting process that builds on synergies with other regional and global reporting processes, supports production of analyses and outlooks and allows informing relevant policy processes including the implementation of the Sustainable Development Goals (SDGs) in a transparent and timely manner. It also describes the use of the new FRA platform to collect data and disseminate them and the results of the assessment in an innovative and easy-to-use way that can facilitate evidence-based decision making both at the national and international levels.

Suggested action by the Committee on Forestry

The Committee may wish to invite countries to:

- Provide frequent updates on key forest-related indicators, and use the FRA on-line reporting platform to promote and share publicly available tabular and geospatial information on national forest resources at their desired level of detail, and use FRA data for evidence-based policy decisions and forestry outlooks.

- Use of Global Core Set of forest related indicators to monitor progress towards the Global Forest Goals and the SDGs and further develop and improve the indicators as per the recommendations of the EWS hosted by FAO in 2019.

- Ensure that their FRA focal points are in continuous communication with the focal points of other processes for adequate reporting on forest resources and forest products in the context of SDGs, Global Forest Goals, and Rio conventions, including the Paris Agreement.

The Committee may wish to request FAO to:

- Develop in consultation with CFRQ partners, international experts and other stakeholders, a more flexible FRA reporting process that allows voluntary annual updates of key indicators, such as those of the SDG 15, and produces a full FRA report (see separate Information Note FO:COFO/2020/Inf.6 on the options) with a frequency which maximizes synergies with *State of the World's Forest* (SOFO) reports and/or World Forestry Congress.

- Develop guidance and operational tools for more consistent reporting on primary forests and other forest characteristics, including using remote sensing, and include the forest restoration potential, restoration plans and their implementation status in the future FRA reporting content in support of SDGs, post-2020 biodiversity framework, the Bonn Challenge and monitoring of progress on restoration within the UN Decade on Ecosystem Restoration.

- Implement the recommendations of the Expert Workshop (EWS) hosted by FAO on the "Global Core Set of Forest Related Indicators" with regard to further work on Tier 2 and Tier 3 indicators and steps needed to utilize the full potential of the Global Core Set of Forest-related Indicators at all levels, in collaboration with CPF members and other relevant international organizations and processes.

- Identify and promote new technologies and digital innovation for data collection and dissemination on forest resources, their management and uses - including livelihoods and socio-economic data - as well as on forest products, in synergy with other data-related initiatives of FAO, including the Hand- in Hand and the 50x2030 initiatives.

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I.   BACKGROUND

1.   The scope, methodology and periodicity of FRAs have evolved over time in response to changing information needs. The latest assessments have a holistic perspective covering all aspects of sustainable forest management and are country-driven, relying on data provided by a well-established network of officially nominated national correspondents.

2.   FRA is the most comprehensive and authoritative assessment of global forest resources, their management and uses. Over the last decades, FRA has contributed to compilation, analysis and reporting of official, consistent and reliable information on world's forest resources to inform the society of their status and trends at national, regional and global levels. FRA was the vehicle for collection of data for and reporting on the progress towards the Millennium Development Goals (MDG) and now FRA collects data for and reports on two of the indicators of the Sustainable Development Goals (SDG). FRA data are also frequently used to support the work of the Intergovernmental Panel on Climate Change (IPCC) and the Rio Conventions (Convention on Biodiversity (CBD), United Nations Convention on Climate Change (UNFCCC) and United Nations Convention to Combat Desertification (UNCCD). In addition, FRA data contribute to the monitoring

of the progress towards the Global Forest Goals (GFG) of the United Nations Strategic Plan for Forests (UNSPF)[1] 2017-2030.

3.   In addition to FRA, FAO is collecting statistical information on a multitude of variables, including on forest products published in FAOSTAT and the Forest Products Yearbook as well as on socio-economic data including in the context of household surveys, agricultural surveys or censuses or other SDG related data collection efforts. Further integration and use of all these data will be enable countries to take informed and evidence-based decisions, including in the context of the SDGs.

II.   GLOBAL FOREST RESOURCES ASSESSMENT 2020

A.   Preparations

4.   Preparations for FRA 2020 began with an internal evaluation of FRA 2015 and an online user survey, which helped determine the scope and reporting the content of the assessment. Scope and content were also addressed in consultations with various teams in the FAO Forestry Division, the FRA Advisory Group[2], partners of the Collaborative Forest Resources Questionnaire (CFRQ)[3] and the United Nations Economic Commission for Europe/FAO Team of Specialists on Sustainable Forest Management.

5.   The Seventh Expert Consultation on FRA, held in Joensuu, Finland, in June 2017, concluded the consultation cycle. The objective of the consultation was to provide guidance on the scope and reporting framework for FRA 2020. It also discussed the role of FRA in the SDG process as the vehicle to collect data foe two forest-related indicators of SDG 15 – Life on Land. The recommendations of the Expert Consultation focused on developing the capacity of FRA to provide timely responses to international information requirements while also further reducing the reporting burden on countries.

6.   Following the received feedback and recommendations a new online data collection and review platform was put in place to facilitate reporting, increase its transparency, improve consistency of reported data and results, and the enhance accessibility and usability of data for end-users. For the first time since FRA 2000, the number of collected variables was reduced (to about 60 broad categories).

B.   Data collection

7.   FRA 2020 was a participatory and inclusive process that included a strong capacity development component and strengthened linkages to international processes, including SDGs. In March 2018, a global technical meeting in Toluca, Mexico, brought together more than 160 participants from more than 90 countries, including national correspondents, representatives of the Collaborative Forest Resources Questionnaire (CFRQ), and members of the FRA Advisory Group. At the meeting, national correspondents received information on the reporting process and familiarized

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[1] The United Nations Strategic Plan for Forests 2017–2030 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. The plan was agreed at a special session of the United Nations Forum on Forests in January 2017 and subsequently adopted by the United Nations General Assembly in April 2017.

[2] The FRA Advisory Group was established in 2002. It is informal in nature, but it is recognized by FAO's Committee on Forestry, which generally endorses its recommendations. Its role is to make recommendations aimed at strengthening existing institutional networks and making future FRAs more user-oriented and demand-driven and more closely linked with other international processes.

[3] In 2011, FAO, the International Tropical Timber Organization, FOREST EUROPE, the United Nations Economic Commission for Europe, the Observatory of Central African Forests and the countries of the Montréal Process combined to create the CFRQ. This joint questionnaire was established with the aim of reducing the reporting burden on countries and increasing data consistency across organizations through standardized definitions and the common timing of data collection.

themselves with the new online reporting and review platform. Moreover, nine regional and subregional workshops were organized during the period April–December 2018 in order to further support countries in compiling and finalizing the FRA 2020 country reports.

8.   National correspondents entered their data and metadata as well as submitted their country reports through the platform for technical review. In this review, the draft country reports underwent detailed checks to ensure their completeness and the correct interpretation of definitions and application of standardized reporting methodologies.

9.   Finally, forty-seven desk studies, representing 0.5 percent of the total forest area, were prepared for countries and territories not submitting reports.

C.   Key findings

10.   **Forest area:** The world has a total forest area of 4.06 billion hectares, which is 31 about percent of the total land area. This area is equivalent to a roughly half a hectare per person – although forests are not distributed equally among the world's peoples or geographically. The tropical domain has the largest proportion of the world's forests (45 percent).

11.   **Forest area changes:** The global forest area continues to decrease, and the world has lost 178 million hectares of forest since 1990, an area about the size of Libya. However, the rate of net forest loss decreased substantially over the period 1990–2020 due to a reduction in deforestation in some countries, plus increases in forest area in others through afforestation and the natural expansion of forests. Africa has the largest annual rate of net forest loss in 2010–2020, at 3.9 million hectares, followed by South America, at 2.6 million hectares. The highest net gain of forest area in 2010–2020 was found in Asia.

12.   **Deforestation:** FRA 2020 also reveals that since 1990 an estimated 420 million ha of forest has been lost worldwide through deforestation, conversion of forest to other land use such as agriculture. However, the rate of deforestation has declined substantially. In the most recent five-year period (2015–2020), the annual rate of deforestation was estimated at 10 million hectares, down from 12 million hectares in 2010–2015 and 16 million hectares in 1990-2000.

13.   **Primary forests:** The world still has at least 1.11 billion ha of primary forest – that is, forests composed of native species in which there are no clearly visible indications of human activities and the ecological processes have not been significantly disturbed. Combined, three countries – Brazil, Canada and the Russian Federation – host more than half (61 percent) of the world's primary forest. Ninety-three percent (3.75 billion hectares) of the forest area worldwide is composed of primary forests and other naturally regenerating forests and 7 percent (290 million hectares) is planted.

14.   **Forest area under management plans and protected areas:** In addition to the reduced rate of net forest loss and deforestation, FRA 2020 reported also other positive findings. The area of forest in protected areas has increased by 191 million ha since 1990, and has now reached an estimated 726 million ha (18 percent of the total forest area of reporting countries). In addition, the area of forest under management plans is increasing in all regions – globally, it has increased by 233 million ha since 2000, reaching 2.05 billion hectares (54 percent of the total forest area of the reporting countries) in 2020.

15.   The full Key Findings as well as the FRA Main Report and database are available at http://www.fao.org/forest-resources-assessment/en/

III.   SEEKING SYNERGIES IN DATA COLLECTION

A.   Background

16.   As FRAs have evolved to become more comprehensive, the amount of information requested from Members has increased substantially. In the past, the reporting burden on countries was exacerbated by requests for the same or similar data from other forest-related reporting processes. Starting from FRA 2005, however, FAO's FRA secretariat has collaborated with other international reporting processes and organizations involved in the collection of forest-related data, and it has worked with members of the Collaborative Partnership on Forests (CPF) to improve definitions, streamline reporting and enhance data accessibility. This approach led first to the establishment of the CFRQ and, more recently, has guided the development of the CPF Global Core Set of forest-related indicators (GCS). FRA 2020 builds also on other reporting processes. It uses total land area from FAOSTAT and the analysis of the wood removals, for example, is based on the data collected through the Joint Forest Sector Questionnaire (JFSQ) in the context of the Yearbook of Forest Products [4].

B.   FRA and SDGs

17.   FAO is the custodian agency for three forest related indicators of the SDG 15: 15.1.1 (forest area as a proportion of total land area), 15.2.1 (progress towards sustainable forest management) and 15.4.2 (mountain green cover index). FRA is responsible for collecting the data, preparing the reporting tables and drafting the narrative for 15.1.1 and 15.2.1. Reporting on both indicators is annual.

C.   Global Core Set of forest-related indicators, addressing Global Forest Goals and SDGs

18.   The UNSPF 2017-2030 provides a global framework for sustainable management of all types of trees and forests to halt deforestation and forest degradation. The Plan established six GFGs with 26 associated targets. To measure progress towards these targets, and to reduce the reporting burden of countries on reporting on other indicators, including those related to SDGs and the Rio Conventions, the CPF proposed development of a GCS of forest related indicators.

19.   The GCS consists of 21 indicators [5], which address the topics identified in high level political commitments on forests and helps focus data collection efforts on the questions of the highest policy importance. Most of these indicators are well established and ready for use, but five of them have data challenges (Tier 2) and four of them were classified as "Tier 3" which means that they require further work on concepts and/or definitions before becoming operational.

20.   Upon the recommendation of COFO24 FAO has continued to work with CPF members and other experts to further develop the "Tier 2", "Tier 3" and "candidate" indicators of the Global Core Set and continue to report on progress on the Global Core Set, including at UNFF. In October 2019, the Expert Workshop (EWS) held at FAO in Rome, discussed ways to further improving methodologies and data availability of selected indicators, especially those to measure socioeconomic and financial aspects [6]. The expert workshop concluded that while progress has been made overall on

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[4] FAO has been publishing the Yearbook of Forest Products since 1947. Starting from 1998, the data are collected in a coordinated manner by the Intersecretariat Working Group (IWG) on Forest Sector Statistics, including FAO, EUROSTAT, UNECE, and ITTO, through a network of national correspondents (NCs). The NCs provide relevant data via the Joint Forest Sector Questionnaire (JFSQ).

[5] FO:COFO/2018/5.1, Annex 1 available at http://www.fao.org/3/MW547EN/mw547en.pdf

[6] The recommendations of the EWS are available at http://www.cpfweb.org/49035-025d09a3673eb81df286cc335fe902c5f.pdf

the GCS indicators, there are challenges to operationalizing the Tier 2 and Tier 3 GCS indicators and that further research is required for socio-economic indicators.

21.   It is clear that more collaboration across international agencies, support to countries and closer exchanges with relevant non-forestry agencies are needed to further enhance methodologies for the "Tier 3" indicators, refine definitions and increase consistency of data collection. Such efforts are critical for more meaningful inclusion of forests in national development strategies, action plans and investments, as well as for improved forest-related decision-making on forestry including halting deforestation and the role of forest in food system transformation.

22.   For instance, FAO's Hand-in-Hand Initiative, which focuses on accelerating agricultural transformation and sustainable rural development to eradicate poverty and end hunger and all forms of malnutrition, is supporting countries to use data to tailor and target policy interventions for raising incomes, reducing inequities and vulnerabilities of the poor, and promoting the sustainable use of biodiversity, natural resources and ecosystem services. For objective consideration of the forest sector and forest dependent-communities in cross-sectoral policy-making processes, it is fundamental to improve availability and quality of forest biophysical and socioeconomic data and ensure that forest-related data is communicated to the main statistical and planning agencies.

23.   Furthermore, the 50x2030 Initiative to Close the Agricultural Data Gap, which aims to empower and support fifty low and lower middle income countries to build strong national data systems, provides opportunities to enhance the collection and analyses of a wide range of forest-related data.

IV.   Digital innovations

24.   For FRA 2020, FAO has transformed the FRA process into a digitally aided activity, which provides basis for future opportunities for more frequent updates and integrated support for the use of remote sensing.

A.   FRA platform

25.   FRA 2020 data were collected using a new on-line platform. The FRA national correspondents used the platform to enter their data and metadata, submit the reports for review and communicate with the reviewers. The platform contained automatic validation and consistency checks, tools for estimation of certain attributes for FRA reporting years and a repository for storing and sharing documents. In addition, the platform provided access to the latest geospatial data and products including for tree cover and its changes, burned area, tree cover within protected areas and the area of mangrove forests. Finally, it includes a separate summary sheet for SDG indicator values calculated using the reported data.

26.   The reviewers used the platform to check that the definitions and standardized were applied in a correct manner, confirm internal consistency of the data, and compare them with the information provided for FRA 2015 as well as with other published information data. Around 30 experts from among FAO staff, CFRQ partners and other international bodies contributed to the review process. After the review process, the platform was used to generate a digital document containing the reporting tables. The document was sent for official validation to the Heads of Forestry.

27.   By the end of the FRA 2020 data reporting process, the platform had about 600 users.

B.   Global Remote Sensing Survey

28.   In addition to facilitating access to the remote sensing data and products through the FRA platform, FAO has initiated a global Remote Sensing Survey. The Survey has two main objectives, which are to:

- improve the capacity of countries to use the latest remote sensing data and products to improve estimates of forest area and forest area change, including for reporting on forest-related indicators for the Sustainable Development Goals; and
- derive regional and global estimates of forest area and forest area change.

29.   The survey was designed in collaboration with the Joint Research Center of the European Commission and a number of international experts, and is based on visual interpretation of roughly 430,000 global samples worldwide. The samples are assessed with a new digital tool, Collect Earth Online, which FAO developed in collaboration with Google and Collaboration with Google and SERVIR, a joint venture between the National Aeronautics and Space Administration of the United States and the U.S. Agency for International Development.

30.   Between late 2018 and mid-2020, FAO has organized altogether 24 FRA remote sensing survey workshops and trained almost 700 national experts from 119 countries on remote sensing and the use of FRA remote sensing survey methodology. Participants have analysed more than 230,000 sample sites for land use and land use changes. Roughly one third of the participants have been trained in virtual workshops using e-learning material and other digital tools since the since the beginning of the COVID-19 pandemic.

V.   THE WAY FORWARD

A.   Building on synergies

31.   The main aim of the FAO global forest resources assessments is to provide authoritative, reliable and timely information on forest resources, their condition, management and uses in a transparent manner for policy formulation and decision making in support of national and international processes.

32.   With the new user-friendly digital data dissemination platform, FRA 2020 provides a strong basis for further analysis, such as the regional forest sector outlook studies carried out by FAO, as well as other foresights and further analysis and decision support tools for halting deforestation and forest degradation, improving livelihoods and increasing investments.

33.   To meet that objective, FRA 2020 reviewed and revised the reporting process and content as well as strengthened the collaboration with other regional processes. The data for pan-European reporting was collected simultaneously with FRA using the new online platform to share the questionnaires and submit reported data. The same experts reviewed both, FRA and the pan-European reports. In addition, also other partners of the Collaborative Forest Resources Questionnaire participated in the FRA reporting and review process.

34.   Further streamlining and harmonization of FRA with other forest resource related data collection and reporting processes should be sought through strengthened collaboration with the CFRQ, CPF, Rio Conventions and parties involved in the Agenda 2030 related data collection and reporting processes. FAO will also enhance synergies with the future work on the GCS.

35.   Finally, the scope of the next FRA will be carefully reviewed to further reduce potential duplication and enhance synergies with other data collection processes.

B.   Digital innovations

36.   Development of continuous forest reporting capacity of the countries, further increase in the transparency, consistency, quality and accessibility of the reported data, enhanced support for information needs of other international processes as well as reduced reporting burden will continue to be priority areas for future development of the FRA and other forest-related processes. Many of these objectives can be reached through further digitalization of the reporting process.

37.   More specifically, additional work is needed to improve the digital FRA reporting platform to better support institutional memory and processes. That will require a possibility to store and share private and public documents as well as tabular and geospatial data that support the reporting. This functionality can also increase the transparency of the reports as it allows sharing information that complement metadata provided in narrative format. In addition, to fully benefit from the enhanced availability of freely available geospatial data and products, an enhanced module providing an easy access to them is needed.

38.   Furthermore, more work is needed in data dissemination tools to make sure that all types on end users will have an easy access to the reported data and metadata, can download them in a user-friendly non-proprietary format and produce simple visualization of selected variables for their own use. That includes completion of the already initiated work by the Joint UNECE/FAO Forestry and Timber Section, the FAO FRA Secretariat and the Forest Europe Liaison Unit Bratislava to develop a joint on-line interface to share the 2020 data on forests and sustainable forest management in the pan-European region. In the new arrangement, the global and the pan-European data will made available through one website, hosted by FAO. Furthermore, the new functionalities should also facilitate access to other data sources, such as FAOSTAT, UNFCCC and ILO databases.

39.   New technologies and digital innovation provide opportunities, both in data collection and dissemination not only for forest resources but also for forest products. Data collection on forest resources, employment, production and trade of forest products, including on food, feed, fuel and fibre, require data collection and compilation from national sources, which may be available beyond the forest sector. Potential innovative technologies that could be used for improved data collection include automated data scraping, tapping social media streams, "citizen science" approaches and remote sensing. Strengthening linkages with FAO corporate statistical data systems and the FAO Data Lab, which was established in 2020 to use big data techniques to help gather, organize and analyse daily information, could provide insights into the interlinkages of the impact of population growth, economy and other relevant factors on forests, the forestry sector and forest-related sectors.

40.   The current COVID-19 outbreak has shown the urgent need for timely and reliable data, including on forest resources and forest products, to provide evidence for short, medium and long-term action to be taken in order to address the impact caused by the pandemic. Digital technologies and innovative data visualizations can support all stakeholders to facilitate open access to key data as basis for informed decision-making at all levels. This may lead to a need for increased capacity building in digital data management, data analysis, and data communication.

C.   Improved guidance and focused reporting content

41.   Additional work on reporting guidance is needed for a number of important indicators, such as primary forest area and its trends as well as the Global Core Set of forest related indicators that also support other international reporting processes. Furthermore, to better monitor progress towards international commitments on halting deforestation and increasing forest area, the reporting content of FRA should be revised to cover national forest restoration potential as well as restoration pledges and the status of their implementation.

42.   Employment in the forest sector is an important indicator of the impact of forests on people, and it helps quantify the contribution of the sector to broader economic objectives. Further work is needed to better reflect the importance of the forestry sector to people and their livelihoods, including for food security and nutrition. The employment data should also be collected using a methodology that is in compliance with existing international guidelines such as the international statistical standards adopted by the International Conference of Labour Statisticians (ICLS).

D.   Towards more frequent reporting?

43.   Since FRA 1990, FRA have been published every five years. While such a reporting periodicity remains sufficient for the vast majority of FRA attributes, more frequent updates on key indicators would benefit monitoring progress towards the GFGs and SDGs, supporting the Rio conventions as well as future reporting on restoration potential, pledges and their implementation status. Furthermore, it would make it possible for the countries to update their reports when new data becomes available without unnecessary delays.

44.   The new on-line FRA platform, its existing functionalities and the data reported to FRA 2020 provide an excellent basis for a more continuous reporting process. One option could be to allow annual/bi-annual updates on SDG indicators and related variables, and to produce a full report in the context of every other *State of the World's Forests* report (i.e. every four years). However, before implementing such a change, also other options and their technical and financial implications as well as impact on the countries' reporting burden will need to be carefully considered. A separate information note will be available at COFO25.