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COMMITTEE ON FORESTRY

Twenty-seventh Session

Rome, 22–26 July 2024

FAO's work on integrated wildfire management

Executive Summary

The threat of wildfires is rapidly growing on a global scale. Fire intensity, scale and duration are all increasing due to climate and land-use changes. FAO is working with partners to lead the paradigm shift from a focus on suppression to the holistic approach of integrated fire management (IFM), with two critical aspects:

- a. supporting the use of fire for sustainable resource management; and
- b. reducing the negative impacts of wildfires.

Landscape fire is a transboundary issue with far-reaching impacts, affecting multiple stakeholders. FAO, the United Nations Environment Programme (UNEP) and other key partners are developing the Global Fire Management Hub (“Fire Hub”), which was launched in May 2023 to strengthen the capacities of countries to implement IFM, with the major goal of reducing the many negative impacts of wildfires on people, landscapes and the global climate. FAO supports Members in a variety of fire management activities and continues to collaborate with the Korea Forest Service and other partners on the global “Assuring the Future of Forests with Integrated Risk Management” (AFFIRM) mechanism being piloted in the Mekong region.

Suggested actions by the Committee

The Committee is invited to:

- a. encourage countries to consider implementation of the principles and strategic actions for IFM as outlined in the updated FAO Fire Management Voluntary Guidelines;
- b. recommend FAO to continue working with partners to lead the paradigm shift from a focus on fire suppression to IFM's holistic approach; and
- c. invite FAO to continue to support Members on IFM activities, including through the Fire Hub and in collaboration with its key partners, with the aim of strengthening the capacities of countries to implement IFM.

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I. Introduction

1. An estimated 340–370 million hectares (ha) of the Earth’s land surface is affected by fire annually,¹ including approximately 67 million ha of forested areas.² Landscape fires³ have grown rapidly in intensity, scale and duration due to climate and land-use changes. In 2023, the catastrophic wildfires⁴ that engulfed Canada burned more than 18 million ha⁵, an unprecedented seven times more than the national 20-year average. Wildfires in North Africa, including in Algeria, required mobilizing major suppression efforts and required thousands of evacuations⁶. In 2023, multiple wildfires in Greece resulted in a total burnt area of 175 759 ha, the highest recorded since the extreme year of 2007; and damaging fires in the Canary Islands occurred in August with the largest fire of the year burned nearly 12 000 ha in Tenerife⁷. Chile has been suffering from drought since 2010, and, as in previous years since 2017, a series of wildfires have burnt more than 700 000 ha, with loss of life and a state of emergency declared in multiple regions of the country⁸. Among the over 16 000 fires in the United States of America, the Hawaii wildfire disaster in early August 2023 alone caused 115 deaths⁹, with recovery and restoration set to take a long time.¹⁰

2. Major international reports¹¹ project that the frequency and area burnt by fires will continue to increase significantly, even under the most optimistic climate change scenarios. The increase in frequency and intensity of wildfires is one of the consequences of climate change, but they in turn also accelerate it by releasing large amounts of carbon that was stored in the vegetation and soils, reinforcing a damaging cycle. In this respect, it is urgent to manage and respond to fire threats, which will continue to intensify in the future.

3. Most fires have human causes. However, fires have also been used by humans for millennia and are a traditional, important land or farming management tool for smallholders and Indigenous Peoples, particularly in developing countries. Fire has been part of the Earth system for hundreds of millions of years,¹² and it occurs in every terrestrial vegetation biome and on every continent except Antarctica. Global vegetation patterns are driven to a large degree by long-term climate conditions, as well as by fire.¹³ Since fire is a traditional management tool and a part of many ecosystems, good use of it should

¹ Giglio, L., Randerson, J.T., van der Werf, G.R., Kasibhatla, P.S., Collatz, G.J., Morton, D.C. & DeFries, R.S. 2010. Assessing variability and long-term trends in burned area by merging multiple satellite fire products. *Biogeosciences*, 7(3): 1171–1186. <https://doi.org/10.5194/bg-7-1171-2010>

² van Lierop, P., Lindquist, E., Sathyapala, S. & Franceschini, G. 2015. Global forest area disturbance from fire, insect pests, diseases and severe weather events. *Forest Ecology and Management*, 352: 78–88. <https://doi.org/10.1016/j.foreco.2015.06.010>

³ Cultural land-use fires, prescribed management fires and wildfires burning in live and dead vegetation of natural, cultural and urban-industrial landscapes.

⁴ Wildfire is an unusual or extraordinary free-burning vegetation fire which may be started maliciously, accidentally, or through natural means, that negatively influences social, economic, or environmental values (UNEP 2022, Footnote 6)

⁵ <https://cwfis.cfs.nrcan.gc.ca/report>

⁶ <https://www.bbc.com/news/world-africa-66292753>

⁷ San-Miguel-Ayanz, J., Durrant, T., Boca, R., Maianti, P., Libertà, G., Jacome Felix Oom, D., Branco, A., de Rigo, D., Suarez-Moreno, M., Ferrari, D., Roglia, E., Scionti, N. and Broglia, M. Advance report on Forest Fires in Europe, Middle East and North Africa 2023, Publications Office of the European Union, Luxembourg, 2024, doi:10.2760/74873, JRC135375.

⁸ International Federation of Red Cross and Red Crescent Societies. Situation Report Chile: Wild Fires - Dec 2022

⁹ 2024 County of Maui Department of Fire and Public Safety. After – Action Report Maui Wildfires County of Maui Department of Fire and Public Safety August 7 - 11, 2023. Produced by the Western Fire Chiefs Association April 18, 2024.

¹⁰ <https://gwis.jrc.ec.europa.eu/>

¹¹ For example, see: UNEP. 2022. *Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment*. Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/38372/wildfire_RRA.pdf

¹² Bowman, D.M.J.S., Balch, J.K., Artaxo, P., Bond, W.J., Carlson, J.M., Cochrane, M.A., D’Antonio, C.M. *et al.* 2009. Fire in the Earth system. *Science (New York, N.Y.)*, 324(5926): 481–484. <https://doi.org/10.1126/science.1163886>

¹³ Bond, W.J., Woodward, F.I. & Midgley, G.F. 2005. The global distribution of ecosystems in a world without fire. *New Phytologist*, 165(2): 525–538. <https://doi.org/10.1111/j.1469-8137.2004.01252.x>

be promoted as a mechanism for sustainable land management and keeping emissions as low as possible while allowing for the highest carbon sequestration possible. FAO is working with partners to lead the paradigm shift from a focus on fire suppression to the holistic approach of integrated fire management (IFM), with two critical aspects:

- a. supporting the use of fire for sustainable natural resource management; and
- b. reducing the negative impacts of wildfire.

4. Integrated fire management addresses fire issues by considering biological, environmental, cultural, social, economic and political interactions to achieve resilient and sustainable landscapes and sustain livelihoods. Focusing on wildfire prevention is the right way to proceed, and often involves using fire as a management tool along with community engagement as a key and active feature of the entire process. FAO promotes an integrated approach to fire management centred on five elements (also known as the 5Rs): Review and analysis; Risk reduction; Readiness; Response; and Recovery.

II. FAO's work on integrated fire management

5. The FAO Strategy on Forest Fire Management¹⁴ sets out the approach to IFM in support of Members and continues to underpin FAO's support and interaction with Members, fellow United Nations agencies, and international and regional organizations. Fire management was discussed in each of the Regional Forestry Commissions' sessions in 2023.

A. The Global Fire Management Hub

6. Given FAO's long-term experience on IFM and the clear demand from the international community, FAO and the United Nations Environment Programme (UNEP) launched the Global Fire Management Hub ("Fire Hub") during the 8th International Wildland Fire Conference (IWFC) in May 2023. The aim of the Fire Hub is to strengthen the capacities of countries to implement IFM with the major goal of reducing the many negative effects of wildfires on people, landscapes and the global climate. The Fire Hub brings together key partners in the global fire community, including FAO, UNEP, the United Nations Office for Disaster Risk Reduction (UNDRR), the World Meteorological Organization (WMO), the Global Fire Monitoring Center (GFMC), the Joint Research Centre (JRC) of the European Commission, and many leading regional intergovernmental and national organizations, among others. The Governments of Canada, France, Germany, Portugal, the Republic of Korea and the United States of America are supporting the development of the Fire Hub. The Fire Hub's pillars include knowledge and data sharing, capacity building, wildfire-resilient communities, fire risk assessment and early warning, and policy support (see COFO/2024/INF/8).

B. Assuring the Future of Forests with Integrated Risk Management Mechanism

7. FAO continues to collaborate with the Korea Forest Service, the Asian Forest Cooperation Organization (AFoCO) and other partners on the global "Assuring the Future of Forests with Integrated Risk Management (AFFIRM) mechanism. AFFIRM is being piloted in Cambodia, the Lao People's Democratic Republic, Thailand and Viet Nam, with reviews and analytical reports of the fire situation in each country, and national and regional workshops, being developed in 2024. The results generated through AFFIRM will inform IFM in other countries and feed directly into the Fire Hub.

C. The FAO Voluntary Fire Management Guidelines

8. The FAO Voluntary Fire Management Guidelines¹⁵ have been revised by FAO, the GFMC and the International Liaison Committee of the IWFC, in consultation with numerous country experts and other key partners. This second edition of the voluntary guidelines better reflects the IFM concept with

¹⁴ See: <https://www.fao.org/3/cb6816en/cb6816en.pdf>

¹⁵ See the previous edition of the guidelines, *Fire management: Voluntary guidelines. Principles and strategic actions*, here: <https://www.fao.org/3/i9255e/i9255e00.htm>

updated recommendations on fire management actions that include Indigenous and traditional fire knowledge, and gender equity considerations.

D. FAO's support to Members

9. As part of FAO's effort to accelerate sharing of knowledge, data and expertise across the global fire community, FAO has led the development of the first Fire Hub training curriculum on "Fire Danger, Early Warning and Integrated Fire Management Decision-making". Under the capacity-building pillar of the Fire Hub, a training on this topic was delivered in Rome on 21–22 March 2024 to participants of the second Fire Hub workshop and FAO technical staff. The newly created training material and technical workshop provide information on and demonstrate the latest available satellite and ground-based fire, weather and landscape data; fuels and fire behaviour analysis tools; and fire danger and early warning assessment techniques for IFM decision-making. This includes both tactical decisions made in advance of, and during, active wildfires, and decisions for long-term strategic planning to reduce wildfire risk.

10. FAO continues to support Members on a variety of IFM activities. For example, FAO supports Jordan with the fire component of a project to enhance the capacity of the forest sector, Kosovo¹⁶ with IFM training, Argentina with the fire component of a REDD+ project funded by the Green Climate Fund (GCF), and Trinidad and Tobago on IFM approaches. In partnership with the European Union in Latin America and the Caribbean, FAO is collaborating through existing institutional arrangements to improve the analysis of wildfires and to reduce wildfire risk. There is an increasing demand for FAO technical support on IFM from regions and countries that far exceeds FAO's current resources to respond. The Fire Hub is expected to connect countries and regions and promote collaboration and technical support among them to ensure better fire management at the global level.

11. The G20 Environment and Climate Ministers' Meeting held in India in 2023 recognized the importance of preventing and managing wildfires and restoring wildfire-impacted land, as appropriate, to help achieve SDG 15 and global land degradation neutrality targets. A United Nations Forum on Forests Country-Led Initiative (CLI) was hosted by the Ministry of Environment, Forest and Climate Change of India on 26–28 October 2023, bringing together over 80 delegates from 40 countries and 20 international organizations.¹⁷ FAO contributed to the CLI through a presentation, as a panel member and by providing inputs to the outcome report. Recommendations made revolve around the concept of IFM and its implementation, including actions required to manage the transition towards the new paradigm of fire prevention and landscape restoration, and how to make best use of the Fire Hub.

12. Landscape fire is a transboundary issue with far-reaching impacts, affecting multiple stakeholders. At the 8th IWFC, Portugal presented a Landscape Fire Governance Framework, which establishes a set of guiding principles and goals for adjusting landscape fire management strategies and policies.¹⁸ In the context of global challenges that many countries are now facing, initiatives like the Fire Hub and the Landscape Fire Management Framework together provide a way forward to implement IFM on a global scale.

III. Way forward

13. To better promote IFM, coordinated actions at all levels are necessary. Unified and integrated planning must ensure and strengthen societal, environmental and economic resilience to landscape fires by addressing risk governance and ownership; dialogue on knowledge, including traditional and Indigenous knowledge; gender, diversity and inclusion; socioeconomic innovation in rural landscapes; strengthening local action; and fostering resilient ecosystems and communities.

14. The Fire Hub is a platform for achieving tangible results by strengthening data and knowledge and knowledge exchange, producing recommendations on fire risk assessment procedures and fire risk reduction activities; producing voluntary guidelines and promoting adequate landscape fire governance

¹⁶ References to Kosovo shall be understood to be in the context of Security Council resolution 1244 (1999)

¹⁷ <https://www.un.org/esa/forests/news/2023/10/india-cli-2023/index.html>

¹⁸ <https://www.wildfire2023.pt/conference/framework>

principles; developing e-learning courses and mentoring programmes; advancing gender equity, diversity, inclusion and Indigenous and traditional fire knowledge; and supporting the development of policies and actions that will help scale up action on IFM at all levels and on the ground.