



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations

Organisation  
des  
Nations  
Unies  
pour  
l'alimentation  
et  
l'agriculture

Продовольственная и  
сельскохозяйственная  
организация  
Объединенных  
Наций

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

## COMMITTEE ON FORESTRY

### TWENTIETH SESSION

Rome, Italy, 4-8 October 2010

## FOREST BIODIVERSITY, FIRE AND WATER IN THE CONTEXT OF CLIMATE CHANGE

### Forest health and forest fire in the context of climate change

#### INTRODUCTION

1. Climate change presents new challenges to sustainable forest management. Changes in temperature and moisture regimes make forest ecosystems vulnerable to insects, pathogens and invasive species. Accumulations of incendiary dead and dying forest biomass increase the frequency and intensity of fire. Beyond the ecological devastation and economic losses produced by fires of extreme intensity, greenhouse gas (GHG) emissions levels are exacerbated, contributing an important share of the emissions attributable to forests. Thus, adapting forest management to climate change includes an explicit strategy to confront forest insects, pathogens, invasive species and threats from unwanted fire. Furthermore, national strategies to reduce GHG emissions from deforestation and forest degradation need to incorporate dimensions to address forest insects, pathogens, invasive species, fire and other threats to forest resilience.

#### FOREST HEALTH – A FIRST LINE OF DEFENCE IN COMBATING EMISSIONS FROM FOREST LOSS

2. New threats to forests from insects, pathogens and other invasive species are emerging due to expanded global trade and the exploitation of new market opportunities. Habitat modification and increased international pest movements associated with trade of plants, plant products and other articles such as containers, soil, industrial equipment, and personal baggage have all contributed to the spread of pests. Management of pests and prevention of their spread helps ensure that forests remain healthy, meeting sustainable forest management objectives.

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3. Local climatic change may increase the potential for these pests to establish themselves in new areas. Extreme weather events that threaten forests and forest health are increasing the urgency with which forest health issues need to be addressed.

4. The governing body of the International Plant Protection Convention (IPPC), the Commission on Phytosanitary Measures (CPM), adopts International Standards for Phytosanitary Measures (ISPMs) to help prevent pest introduction and spread while facilitating trade. The IPPC currently has 173 contracting parties (member countries). In meeting the obligations of the IPPC, most governments have established their own National Plant Protection Organizations (NPPOs) to protect natural resources including forests from pest introduction, entry and establishment.

5. NPPOs have historically dealt mostly with agricultural crops. In recent years, however, forest pests have become a more prominent concern, and increased communication between the forest sector and NPPOs is needed. The forest sector has a vital role in developing and implementing phytosanitary standards. Those involved in growing, harvesting, processing, storing, remanufacturing and finishing forest products can all benefit from understanding what the IPPC is and how NPPOs work.

#### ***DRAFT GUIDE TO IMPLEMENTATION OF PHYTOSANITARY STANDARDS IN FORESTRY***

6. Since the regulatory language of ISPMs targets phytosanitary experts, foresters can benefit from plain-language descriptions of the ISPMs. FAO has been coordinating a multistakeholder activity to prepare a *Guide to implementation of phytosanitary standards in forestry*, which offers clear and concise guidance on forest health practices and suggestions for improved national implementation.<sup>1</sup> The finalization, adoption and implementation of this guide will be an important first line of defence against forest pests and disease, thereby reducing some of the threats from fire and increased GHG emissions. All frontline defence measures in forest management must be seen positively as important contributions by forest managers to adapt to and mitigate climate change.

#### **MANAGING UNWANTED FOREST FIRE TO REDUCE EMISSIONS**

7. Forest fires are a threat exacerbated by climate change. Even though there are no clear figures on the emissions generated by vegetation fires, they are one of the main sources of GHG, accounting for almost 20% of total emissions from human activities. Forest management to reduce GHG emissions from vegetation fires should be a fundamental part of REDD-plus programmes and included in its Monitoring, Reporting and Verification components.

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<sup>1</sup> The draft guide has been prepared through a consultative process involving an international group of scientists, phytosanitary authorities and forest sector representatives and is also supported by the IPPC Secretariat at FAO. The guide has gone through two cycles of review involving more than 100 persons from 44 countries. Its key messages will be transferred to training materials and field tested in developing countries under the auspices of the regional forest invasive species networks and the Regional Forestry Commissions. The Commission on Phytosanitary Standards (CPM) at its 5<sup>th</sup> Session, held in Rome in March 2010, welcomed the initiative.

8. The FAO Ministerial Meeting on Forests and the 17<sup>th</sup> Session of COFO, March 2005, called upon FAO, in collaboration with countries and international partners, including the UNISDR<sup>2</sup>, to develop a strategy to enhance international cooperation in fire management, advance knowledge, increase access to information and resources and explore new approaches for cooperation at all levels. They also requested the preparation of voluntary guidelines on the prevention and suppression of, and recovery from, forest fire.

9. Subsequent COFO sessions requested FAO to:

- enhance its role in fire management<sup>3,4</sup>
- support improved fire management through the implementation of the guidelines<sup>5</sup> and community-based approaches<sup>6</sup>
- develop actions at (sub)regional levels through regional<sup>7</sup> and national networks as well as the Regional Forestry Commissions and their fire management working groups<sup>8</sup>
- assist in capacity building to develop and implement climate change mitigation and adaptation measures, including to reduce emissions from deforestation<sup>9</sup>

10. The global concern regarding climate change led to an agreement at the United Nations Copenhagen Conference, December 2009, on programmes dealing with Reducing GHG Emissions from Deforestation and Forest Degradation (REDD-plus). These programmes do not yet specifically consider vegetation fires and although vegetation fires are not the main GHG emission producer, their importance cannot be neglected. Wildfire prevention, suppression and burned area restoration should be emphasized in REDD-plus national programmes.

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<sup>2</sup> United Nations focal point for the International Strategy for Disaster Reduction.

<sup>3</sup> Following COFO's request, FAO developed a programme on vegetation fire management based upon a global fire assessment and the fire management review of international cooperation (2006).

<sup>4</sup> As a member of the International Liaison Committee (ILC) FAO supported the organization of the 4<sup>th</sup> International Wildland Fire Conference in Seville, Spain (2007), and is active in planning for the 5<sup>th</sup> International Wildland Fire Conference in South Africa (2011).

<sup>5</sup> A strategy to enhance international cooperation on wildland fire was developed with four components including the *Fire management voluntary guidelines*, now available in all six FAO languages and undergoing translation into several others. Another component, the Fire Management Actions Alliance, was established to promote the use of the Guidelines.

<sup>6</sup> Regional community-based fire management regional training workshops were organized in Indonesia and China (2007-2008) and one national workshop in Ethiopia (2009).

<sup>7</sup> FAO has supported the following networks: the Wildland Fire Advisory Group; the UNISDR Regional Fire Management networks; the *Silva Mediterranea* working group on forest fires; and with support of the *Corpo Forestale dello Stato* (Italy) FAO has started to build a network on fire management in the Near East (2009).

<sup>8</sup> Based on the guidelines a methodology has been developed for the elaboration of national action plans in fire management at national or regional workshops as well as a resource book for reviewers of national fire management legal frameworks. The methodology has been applied in regional workshops in Cuba, Indonesia, Thailand and Trinidad and Tobago (2007-2009).

<sup>9</sup> Since 2005 FAO has also implemented the following projects to support capacity building in fire management:

- Technical Cooperation Projects in Botswana, Bulgaria, Cape Verde, Croatia, Guatemala, Nicaragua, The former Yugoslav Republic of Macedonia and Zimbabwe
- Government Cooperative Programme projects in Syria (phase I and II)
- Emergency projects in Lebanon and Nicaragua (4)
- Unilateral Trust Fund project component in Morocco (phase I and II)

## MANAGING UNWANTED FOREST FIRE TO PROTECT RESOURCE VALUES

11. With global warming, the increased vulnerability of deteriorated fire-dependent landscapes and the expansion of the wildland-urban interface have increased fire occurrence and impact. Research on mega-fires concludes that appropriate landscape level policy, planning and management practices are critical to reduce their negative impacts, particularly in hot dry climates. Hotter and dryer climates will increase these risks for many other forests and vegetation types. Recent mega-fires in countries such as the USA, Greece, Australia and the Russian Federation, have had enormous social, economic and environmental costs, in spite of the fact that increasing resources and technology have been dedicated to this issue.

12. Very often, land management laws, policies and plans are at odds with actions needed to prevent unwanted vegetation fires. Forest management activities like thinning, prescribed burning and selective cutting are essential to mitigate mega-fire threats. It is therefore vital to integrate fire management into broader landscape management policies and planning. This is consistent with general disaster reduction recommendations, even those not related to fire, which emphasize the need for including disaster reduction management within broader landscape approaches.

### POINTS FOR CONSIDERATION

**13. The Committee may wish to:**

- endorse the *Guide to implementation of phytosanitary standards in forestry* <http://www.fao.org/forestry/56879/en/> to be published as an FAO Forestry Paper to provide guidance on practices that minimize pest prevalence and spread without impacting on trade; and
- encourage FAO and partners to strengthen country capacity to use these measures through pilot activities.

**14. The Committee may wish to encourage countries to:**

- recognize the contribution of vegetation fires to the emission of GHGs and the importance of including vegetation fire management in their REDD-plus programmes;
- incorporate vegetation fire management in broader sustainable land-use and landscape policies, planning and practices.
- contribute to the existing voluntary trust fund focused on helping developing countries implement the principles and strategic actions of the *Fire management voluntary guidelines*.

**15. The Committee may wish to request FAO to revise the fire management voluntary guidelines in the light of climate change and REDD-plus, and consistent with broader landscape management approaches.**