

**Workshop “Health Aspects of Wildfire Smoke”**  
**organized by the National Institute for Health and Welfare (THL, Finland) and**  
**the WHO European Centre for Environment and Health (WHO-ECEH)**  
Bonn, Germany, 21 May 2012

Workshop Summary and Recommendations to the 15th Meeting of the Task Force for Health  
UNECE Convention on Long-range Transboundary Air Pollution  
Bonn, Germany, 22-23 May 2012

### **Workshop Summary**

The workshop addressed the global dimension of vegetation fires, including the different fire regimes in natural forests, open land ecosystems, agricultural and pasture lands, both at historic and contemporary scales. Wildfires (i.e., uncontrolled natural and human-made fires) and management fires set in land-use systems and for land-use change are producing smoke emissions that in some cases have severe impacts on human health. Recent research on the quality of vegetation fire emissions reveals a progress in analytical methods. Field and modeling studies of the impacts of vegetation fire smoke emissions on human health and mortality at global level, in North America and in Europe were presented at the workshop and reveal the significance of vegetation fire emissions at regular (recurrent) intervals and as sporadic events, often combined with heat stress, on total and specifically on cardiovascular and respiratory mortality. Wildfires burning at the urban or residential perimeters, affecting structures, industrial infrastructure, agricultural lands treated with pesticides, fungicides, and fertilizers and fires affecting landfills (residual waste) and other waste, generate hazardous pollutants. Fires burning on terrain contaminated by radioactivity lead to uncontrolled airborne redistribution of radioactive substances. Globally proactive and preventive measures to protect the public against the adverse effects of vegetation fire smoke pollution are insufficient.

Considering the nature and variety of environmental and ecological factors influencing fire occurrence and fire regimes, including weather and climate variability, and the complexity of causes of wildfires and the manifold reasons for fire application respectively, appropriate measures to reduce fire emissions and the associated risks for human health and security require a coordinated approach.

Responsibilities of civil protection and public health protection include advisory and protective measures such as public awareness raising, early warning, evacuations, provisions of clean-air shelters, hospital capacity, rescue services and other measures. Their responsibilities do not include the reduction of the sources of dangerous or avoidable vegetation fire smoke pollution.

Fire management, on the other side, is addressing the source of vegetation fires and thus vegetation fire smoke. Integrated fire management embraces all means of wildfire prevention and suppression, and also the use of prescribed fire in natural ecosystem management and in land-use systems in order to obtain sustainable and ecologically balanced land management objectives.

The increasing scientific insight into the environmental and health consequences of vegetation fire smoke and the recognized increase of exposure and vulnerability of global populations to vegetation fire smoke pollution requires a coordinated effort of sectoral responsibilities. National responsibilities often lie with various agencies which can be successful only through inter-agency cooperation.

A number of international conventions, legally binding protocols and voluntary bilateral or multilateral agreements or other mechanisms are indirectly addressing some adverse effects of human activities on the global environment and humanity, to which vegetation fires and fire emissions are contributing, e.g. the

- UN Framework Convention on Climate Change
- UNECE Convention on Long-range Transboundary Air Pollution (LRTAP)
- European Landscape Convention (Council of Europe)
- Convention on Biological Diversity (UN CBD) and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
- UNEP mandate to strengthen the international governance framework for environmental emergency response and preparedness
- Hyogo Framework for Action 2005-2015 “Building the Resilience of Nations and Communities to Disasters” through the UN International Strategy for Disaster Reduction (UNISDR)

- Ministerial Conference for the Protection of Forests in Europe in its endeavor to develop a *Legally Binding Agreement on Forests in Europe*

None of the conventions and international mechanisms are explicitly addressing vegetation fires and vegetation fire smoke.

At regional level the only existing legally binding agreement is the ASEAN Agreement on Transboundary Haze Pollution signed in 2002. However, this agreement has not yet been ratified by all signatory parties.

With regards to fire management and general disaster response a large number of bilateral agreements as well as several regional or multilateral programmes are providing cooperative frameworks for exchanging knowledge, expertise and resources in fire management. None of these agreements address transboundary vegetation fire smoke pollution.

The Global Wildland Fire Network<sup>1</sup>, which is operating as a Thematic Platform under the auspices of the UN International Strategy for Disaster Reduction (UNISDR)<sup>2</sup>, and its leading body, the UNISDR Wildland Fire Advisory Group<sup>3</sup>, both facilitated by the Global Fire Monitoring Center (GFMC)<sup>4</sup>, in 2001 took the role of forming an international voluntary platform in the UN family and with non-UN international organizations. The global network is addressing vegetation fire issues globally, across sectoral responsibilities and mandates of international agencies, programmes and other organizations. While in the late 1990s the WHO took the initiative to produce the "Health Guidelines on Vegetation Fire Events"<sup>5</sup>, there was limited follow up during the last years, despite of the renewed interest generated by several wildfire and smoke episodes globally.

The workshop "Health Aspects of Wildfire Smoke" held back to back with the Joint LRTAP Convention / WHO Task Force on Health Aspects of Long-range Transboundary Air Pollution, is now offering an opportunity to bring back the interest of the community concerned with vegetation fire smoke effects on public health.

This happens at a time of preparation of the "UNECE / FAO Regional Forum on Cross-boundary Fire Management", which is currently prepared by the UNECE / FAO Team of Specialists on Forest Fire and the UNECE Trade and Timber Division, through its Coordinator – the Global Fire Monitoring Center (GFMC) – and the Council of Europe, Euro-Mediterranean Major Hazards Agreement (EUR-OPA), to be held in 2013 at the United Nations, Geneva.<sup>6</sup> This Forum will be a first step towards elaborating a proposal for the development of an agreement on international cooperation to enhance fire management capability in the region. The Forum will have a global scope nonetheless and invite other regional entities to contribute.

The opportunity of this planned activity should be taken to bring the interests of the different groups together and encourage both sides, the UNISDR Wildland Fire Advisory Group / UNECE / FAO Teams of Specialists on Forest Fire and the Joint LRTAP Convention / WHO Task Force, to cooperate in the endeavor of preparing guidance and proposals for the development of public policies for the international community with the ultimate goal to reduce the adverse impacts of vegetation fires on the environment, human health and security (by observing the needed utility of natural and management fires in many ecosystems and land-use systems and the avoidance of unnecessary fire or excessive fire application).

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<sup>1</sup> <http://gfmc.online/GlobalNetworks/globalNet.html>

<sup>2</sup> <https://www.unisdr.org/2005/task-force/tf-working-groups4-eng.htm>

<sup>3</sup> <http://gfmc.online/GlobalNetworks/Rationale-and-Introduction-1.html>

<sup>4</sup> <http://gfmc.online/>

<sup>5</sup> <http://gfmc.online/programmes/un/who/who.html>

<sup>6</sup> <http://gfmc.online/iwpm/background.html>

## **Workshop Recommendations**

The workshop "Health Aspects of Wildfire Smoke" was held back to back with the Joint LRTAP Convention / WHO Task Force on Health Aspects of Long-range Transboundary Air Pollution, 21 May 2012. The workshop addressed

- the global dimension of vegetation fires, including the different fire regimes in natural forests, open land ecosystems, agricultural and pasture lands, both at historic and contemporary scales. Wildfires (i.e., uncontrolled natural and human-made fires) and management fires set in land-use systems and for land-use change
- the state-of-the-art science of the impacts of vegetation fire smoke und human health and security
- the increase of exposure and vulnerability of global populations to vegetation fire smoke pollution
- the need of coordinated efforts by agencies, programmes and organization mandated with sectoral responsibilities, including international conventions and legal and voluntary agreements

and recommends the Task Force to

- establish close ties with the UNISDR Wildland Fire Advisory Group / UNECE / FAO Team of Specialists on Forest Fire
- accept the invitation of the Global Fire Monitoring Center (GFMC) to attend the 2012 (biennial) meeting of the Global Wildland Fire Network and the UNISDR Wildland Fire Advisory Group (30 June – 1 July 2012), and to
- cooperate in developing joint initiatives in dedicated research and development, as well as in the formulation of public policies and implementation strategies addressing the reduction of adverse consequences of vegetation fire smoke pollution on human health and security