



Prof. Dr. Dr.h.c. Johann G. Goldammer
Coordinator

@ Fire Ecology Research Group
Max Planck Institute for Chemistry
c/o Freiburg University
Georges-Koehler-Allee 75
79110 Freiburg, Germany
Tel: +49-761-808011
Fax: +49-761-808012
johann.goldammer@fire.uni-freiburg.de
<http://www.fire.uni-freiburg.de>

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Status of the Global Wildland Fire Network and the Regional Wildland Fire Networks

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1. Rationale for Setting up Regional Wildland Fire Networks²

In many vegetation types of the world, the application of fire in agriculture and pastoralism and the occurrence of natural wildfires (natural fire regimes) are established (sustainable) elements in traditional land-use systems, natural ecosystem processes and biogeochemical cycles. However, excessive application of fire associated with rapid demographic and land-use changes in some regions, leads to destruction of productivity, reduction of carrying capacity and biodiversity of the vegetation cover. In some ecosystems, e.g. in the tropical montane forests, lowland rain forests and in forest plantations, wildfires burning under extreme weather conditions have detrimental impacts on economies, human health and safety, with consequences which are comparable to the severity of other natural hazards. Climate variability, such as periodic extreme droughts and extremely wet periods caused by the El Niño-Southern Oscillation (ENSO) phenomenon and the associated La Niña episode, contribute to the severity of fire impacts. Fires are also leading to secondary natural disasters such as landslides and floods, downstream of fire-denuded landscapes.

Unlike the majority of the geological and hydro-meteorological hazards, wildfires represent a natural but predominantly human-influenced hazard, which can be predicted, controlled and, in many cases, prevented.

¹ The first version of this Status Paper has been published on the GFMC website on 27 July 2002. This Status Paper is the 38th update.

² For reasons of consistency and maintaining some historic touch of the development of the network this introductory part and some other parts of this document have not been revised over time. Only essential updates or necessary changes have been made. Ten years after the initial version of this overview much of the wording would be written rather different.

The GFMC is serving as Secretariat of the [Global Wildland Fire Network](#) and the [Wildland Fire Advisory Group](#) – an Advisory Body and [Thematic Platform](#) of the United Nations affiliated to the [United Nations International Strategy for Disaster Reduction \(UNISDR\)](#). GFMC is chairing the [UNECE/FAO Team of Specialists on Forest Fire](#). GFMC is an [Associated Institute of the United Nations University \(UNU\)](#).



The current state of wildland fire science and atmospheric sciences research of the last three decades potentially provide sufficient knowledge for fire management decision support and development of policies affecting the occurrence and consequences of human-caused fires. However, in many countries or localities, the requisite knowledge is either lacking or is not readily accessible for developing adequate measures in fire policies and management.

In response to the strategic goals of the UN Convention on Combat of Desertification (CCD), Convention on Biological Diversity (CBD), and the UN Framework Convention on Climate Change (UNFCCC), the Ramsar Convention on Wetlands the UN Forum on Forests (UNFF), the Millennium Declaration of the UN General Assembly, and the objectives of the work of the Global Fire Monitoring Center (GFMC) and the World Conservation Union (IUCN), the UN-ISDR Inter-Agency Task Force for Disaster Reduction in 2001 established a Working Group on Wildland Fire. This Working Group was coordinated by the GFMC.

One of the priority fields addressed by the Working Group on Wildland Fire was the establishment of, and operational procedures for, a global network of regional- to national-level focal points and network structures for early warning of wildland fire, fire monitoring and impact assessment, aimed at enhancing existing global fire monitoring capabilities and facilitation of international cooperation in fire management.

2. History, proposed *Modus Operandi*, Status and Visions for building the Regional Wildland Fire Networks

2.1 History

In keeping with the work of the Working Group on "Fire and Related Environmental Hazards" established under the IDNDR programme on Early Warning, the presentations and recommendations of the IDNDR Programme Forum 1999, and in accordance with the Framework for the Implementation of the UN International Strategy for Disaster Reduction (UNISDR), the World Conservation Union (IUCN) and its associated partner, the Global Fire Monitoring Center (GFMC) as well as the UN-FAO/ECE/ILO Team of Specialists on Forest Fire, suggested, in 2000, to create an interagency "Working Group on Wildland Fire".

This proposal was in line with several declarations made in international conferences during the last five years and is intended to bring together both the technical members of the fire community and the authorities concerned with policy and national practices in wildland fire management to realise their common interests of fire risk management and disaster reduction at global scale. The Inter-Agency Task Force for Disaster Reduction (IATF) at its second meeting on 11 October 2000 agreed to establish the Working Group on Wildland Fire (Working Group 4 [WG-4]).

Through the Working Group it was envisaged to establish an interagency and inter-sectoral forum of UN and other international agencies and programmes, and mechanisms of information and task sharing in the field of reducing the negative impacts of fire on the environment and humanity.

One of the priority fields of activity to be addressed by WG-4 was:

- Establishment of, and operational procedures for, a global network of regional- to national-level focal points for early warning of wildland fire, fire monitoring and impact assessment, aimed at enhancing existing global fire monitoring capabilities and facilitating the functioning of a global fire management working programme or network.

At the 2nd meeting of WG-4 (3-4 December 2001) it was decided to give priority to the establishment of the "Global Network of Regional Wildland Fire Networks".

It was aimed to build regional networks on existing formal or informal networks structures and initiatives. The "Global Wildland Fire Network" would consist of a set of Regional Networks that are in place or will be initiated during the process of formation. A regional network may consist of several

subnets or cooperative activities, e.g. in wildland fire science, fire monitoring, early warning, management or policy development.

2.2 Endorsement by the International Wildland Fire Summit

The envisaged timeframe for setting up the network was January 2002 - July 2003. The 3rd Global Wildland Fire Conference and the International Wildland Fire Summit (Sydney, 3-6 and 8 October 2003) was used as a platform to convene representatives from regional networks.

The strategy agreed by the Summit ("Strategy for Future Development of International Cooperation in Wildland Fire Management") includes the following agreement:

"The Regional Wildland Fire Networks will be consolidated, developed and promoted through active networking in information sharing, capacity building, preparation of bilateral and multilateral agreements, etc. This process will be facilitated through regional Wildland Fire Conferences and Summits in cooperation with the International Liaison Committee and the UN-ISDR Working Group on Wildland Fire".

For details of the preparation and outcomes of the International Wildland Fire Summit see:

- <http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

2.3 Formation of the UN-ISDR Wildland Fire Advisory Group

As a side event of the International Wildland Fire Summit a meeting was held with the regional fire management groups mandated under the auspices of the UN (ISDR Working Group on Wildland Fire, ECE/FAO/ILO Team of Specialists on Forest Fire, Fire Management Working Group, FAO North American Forestry Commission [NAFC] and the Forest Fire Group of FAO *Silva Mediterranea*). This was the first joint meeting of the four UN groups. A key output of the joint meeting was the recommendation to maintain a body under the auspices of the UN to enable the international community to maintain a unifying platform for the UN and jointly with non-UN groups and agreements.

The recommendation to maintain an advisory body for the UN must be understood i.a.w. the constitution of the IATF and the expected lifetime of a Working Group of ca. two to three years. Following these rules of the IATF the Working Group 4 on Wildland Fire finished its work by end of 2003 and transitioned to an active outreach programme, the Global Wildland Fire Network (GWFN). To support the work of the GWFN the IATF accepted the proposal to create a *Wildland Fire Advisory Group* (WFAG) under the auspices of the ISDR. The WFAG represents an advisory body to the UN system aimed at providing technical, scientific and policy-supporting advice to the UN family through the International Strategy for Disaster Reduction (UN-ISDR) and the IATF, and acting as a liaison between the United Nations system, the Global Wildland Fire Network and its supporting partners. The participation and support from following bodies is essential: UN agencies and programmes, other international organizations, non-government organizations, notably the IUCN-TNC-WWF Global Fire Partnership, government agencies, inter-governmental institutions and agreements, civil society, academia, the International Liaison Committee (ILC) of the series of International Conferences on Wildland Fire and the Global Fire Monitoring Center (GFMC) (to act as convener and secretariat).

The "Work Programme for the IATF for 2004" reflects the overall intent to work together in the Global Wildland Fire Network and the Wildland Fire Advisory Group. This programme includes a table in which the outcomes and follow-up arrangements for the four Working Groups are summarized (see Table 1).

In the transition stage from WG-4 to the WFAG the GFMC continued to facilitate the dialogue and direct interaction between the partners involved. The GFMC continues working through the IATF as a member and representative of civil society, ensuring appropriate information flow from the Global

Wildland Fire Network to the ISDR Secretariat and the IATF, and providing advisory support required for the mandate of the IATF.

Table 1. Extract of the final version of the “*Work Programme for the IATF for 2004*” released by the ISDR Secretariat on 23 November 2003.

WG focus 2001-2003	Outcome end of 2003	Follow-up arrangements- 2004
<p>WG4: Wildland Fire, chaired by: the Global Fire Monitoring Center (GFMC)</p>	<p>International dialogue on cross-cutting wildland fire issues fostered at UN inter-agency level and with international organizations and civil society</p> <p>Establishment of Regional Wildland Fire Networks, including inter-regional cooperation</p> <p>GFMC-ISDR global wildland fire information system, web portal and pragmatic outreach to user community consolidated (including dedicated journal and book publications) <www.gfmc.org></p> <p>Support of preparation, facilitation and implementation of the first International Wildland Fire Summit (October 2003), including preparation of the Summit paper <i>Strategy for Future Development of International Cooperation in Wildland Fire Management</i></p>	<p>Formation of a Wildland Fire Advisory Group under the auspices of the ISDR-IATF and GFMC</p> <p>ISDR / IATF endorsement and support of the Global Wildland Fire Network (<i>IATF information updates to be provided</i>)</p> <p>Cooperation with the ASEAN Center for Emergency Response and Strategic Planning for Environmental Disasters</p> <p>ISDR / IATF endorsement of the outcomes of the International Wildland Fire Summit. Preparation of a Global Wildland Fire Summit under the auspices of the UN, i.a.w. recommendations by the 2003 Summit (tentatively in 2005-2006)</p>

On 3-4 December 2004 the first meeting of the W FAG was convened at the GFMC (Freiburg, Germany). The objectives were the following:

- Constitutional: Reflect on the outcomes of the work of the former ISDR-IATF Working Group on Wildland Fire (WG-4) related to global wildland fire issues; define WG-4 transition to and *modus operandi* of W FAG, including membership with regional representation of the Global Wildland Fire Network
- Global situation assessment: Report on key issues on wildland fire in the regions of the Global Wildland Fire Network, notably the results of the consultations of the Regional Wildland Fire Networks in 2004; key scientific and other thematic issues.
- Technical: Thematic presentations and discussions on
 - Participation of Regional Wildland Fire Networks and GOF / GOLD in the Global Forest Fire Assessment
 - Review of a proposed international standard for statistical reporting of wildland fires, including the FAO Forest Resources Assessment 2005 (FRA 2005)
 - The role of the United Nations University in capacity building in advanced wildland fire management
 - Innovative technologies for remote sensing of wildland fires and fire impacts

- Roadmap for 2005-2007

- Evaluation of the regional consultations in 2004 and the GFMC/ISDR/FAO “Framework for the Development of the International Wildland Fire Accord” (May 2004)
- Formulation of a recommendation of the WFAG / Global Wildland Fire Network for the Development of the International Wildland Fire Accord, directed to the FAO and UNFF Ministerial Meetings (March 2005 / May 2005), and the UN World Conference on Disaster Reduction (WCDR), Japan, January 2005
- Initial discussion about the role of wildland fire and fire management in the implementation of the Kyoto Protocol
- Discussion on the participation of the Global Wildland Fire Network at the 4th International Wildland Fire Conference (Sevilla, Spain, 13-17 May 2007)

In 2008 a Joint Meeting of the Wildland Fire Advisory Group / Global Wildland Fire Network / International Liaison Committee (ILC) and the Fire Management Actions Alliance Advisory Group was convened at GFMC on 4-6 and 7 July 2008 (Freiburg, Germany). The main conclusions (<http://www.fire.uni-freiburg.de/GlobalNetworks/Rationale-and-Introduction-1.html>) included:

- Creation of a sub-regional network in the European Alpine region
- Options for a 2nd International Wildland Fire Summit at UN Geneva)
- Financing of the outreach activities of the Regional Wildland Fire Networks (FAO urged to provide support)
- Need for the realization of the Global Wildland Fire Early Warning System
- Dedicated support of the “Rosenberg Initiative” (RI) of the international Advisory Group on Environmental Emergencies (AGEE) led by UNEP and OCHA, to enhance governance of international cooperation in environmental disasters (wildfire emergencies)
- Support of the preparation of the 5th International Wildland Fire Conference „WildFire 2011“ (South Africa, 2011)
- Underscoring the need for the development of a satellite-derived Global Wildland Fire Assessment 2010, with the Global Observation of Forest and Land Cover Dynamics (GOF-C-GOLD) group
- Development of a Statement on Global Change and Wildland Fire in the form of a “White Paper” or position paper, to be submitted to the 2009 Global Platform for Disaster Risk Reduction (Geneva, June 2009). GFMC to coordinate.

In 2010 Joint Meetings of the UNISDR Wildland Fire Advisory Group (WFAG), the newly established International Fire Aviation Working Group (IFAWG)³, the International Liaison Committee (ILC) for the 5th International Wildland Fire Conference and Fire Management Actions Alliance (FMAA) were held in cooperation with and supported by the Euro-Mediterranean Major Hazards Agreement (EUR-OPA), Council of Europe, at the Global Fire Monitoring Center (GFMC, Freiburg, Germany, 26-29 June 2010). The meeting paved the way towards the 5th International Wildland Fire Conference (see item 2.6).

The forthcoming 2012 Joint Meetings of the UNISDR-WFAG, the International Fire Aviation Working Group (IFAWG) and the International Liaison Committee (ILC) for the 6th International Wildland Fire Conference will be held in cooperation with and supported by the United Nations Economic Commission for Europe (UNECE), the Council of Europe through its Euro-Mediterranean Major Hazards Agreement (EUR-OPA), the Organization for Security and Cooperation in Europe (OSCE) and the United Nations University (UNU) at the Global Fire Monitoring Center (GFMC), Freiburg, Germany, 29 June to 2 July 2012.

³ <http://www.ifawg.org/>

2.4 FAO Ministerial Meeting on Forests and the 17th and 18th Session of the FAO Committee on Forestry (COFO) 2005 / 2007

The Ministerial Meeting on Forests held at the FAO, Rome, 14 March 2005, attended by more than 120 countries, released a statement in which the need for international cooperation in wildland fire management was stressed. The ministers agreed to

call on FAO, in collaboration with countries and other international partners, including the International Strategy for Disaster Reduction, to develop a strategy to enhance international cooperation on wildland fires, that advances knowledge, increases access to information and resources and explores new approaches for cooperation at all levels.

Following the Ministerial Meeting on Forests, the 17th Session of the Committee on Forestry (COFO) was held in Rome, 15-19 March 2005. International cooperation in wildland fire management was discussed in several sessions. The main recommendations in the final report include:

28. The Committee further noted that fire management was a national responsibility. It called on FAO to facilitate enhanced international cooperation on forest fires and requested FAO, in collaboration with countries and other international partners, including the United Nations International Strategy for Disaster Reduction, to develop a strategy to enhance international cooperation on wildland fire. It noted that the template for international cooperation in wildland fire management, as presented at the International Wildland Fire Summit in Australia in 2003, could be used by countries wishing to cooperate in this area.

35. The Committee also recommended that FAO should inform the fifth session of the United Nations Forum on Forests of the importance attached by the Ministerial Meeting on Forests and by the 17th Session of the Committee to international cooperation on forest fire management.

SHAPING AN ACTION PROGRAMME FOR FAO IN FORESTRY (Item 9)

53. The Committee recommended that FAO continue its support for regional and national networks to combat fire as well as insects and disease, in collaboration with relevant organizations such as the United Nations International Strategy for Disaster Reduction and the Global Wildland Fire Network, and further requested that FAO work with partners to develop voluntary guidelines on the prevention, suppression and recovery from forest fire.

Both documents can be downloaded at:

<http://www.fire.uni-freiburg.de/GlobalNetworks/RationaleandIntroduction.html>

Between September 2005 and April 2006 FAO was supported by an international core group of experts to implement the recommendations of the Ministerial Meeting and COFO-17. The group prepared a draft "Fire Management Code" – a guiding framework of principles necessary to support the policy, legal, regulatory and technical enabling conditions for fire management – and the draft "Global Strategy to enhance International Cooperation to facilitate Implementation of the Fire Management Code". These two documents were discussed and consolidated by the FAO Expert Consultation on Fire Management (Madrid, Spain, 10-12 May 2006). On 14 July 2006 the Draft Fire Management Code was published and open for comments and suggestions by international stakeholders between July and end of October 2006:

<http://www.fao.org/forestry/firemanagementcode>

Following the strong objections of Brazil and the concerns of several other countries concerning the designation of the guiding framework as a "Code", the final draft of the document was entitled "Fire Management Voluntary Guidelines".

An assessment and strategic plan for international and inter-agency cooperation to develop capabilities, systems and procedures to facilitate international cooperation in fire management was developed by the GFMC ("Review of International Cooperation in Fire Management"). Together with the "Fire Management Global Assessment 2006", a thematic study prepared in the framework of the Global Forest Resources Assessment 2005, these three documents are the main pillars of the "Global Strategy to Enhance International Cooperation in Fire Management".

- <http://www.fao.org/forestry/site/35833/en/>

After the discussion and acceptance of the Global Strategy by COFO-18 (March 2007) the strategy was presented at the 4th International Wildland Fire Conference (cf. 2.5) where representatives of the Regional Wildland Fire Networks, countries and international organizations discussed and endorsed this voluntary international cooperative and collective process. At the conference FAO launched the "Fire Management Actions Alliance" aimed to stimulate improved fire management and reduce damage from fire worldwide:

- <http://www.fao.org/forestry/site/firealliance/en/>

The Alliance, as a non-geographically based group, will work with the Global Wildland Fire Network in order to promote mutual goals and objectives in enhancing international cooperation in wildland fire management. The Alliance is without any prejudice to the status of each of its members. FAO, through its Forest Management Division, in collaboration with the secretariat of the UNISDR Global Wildland Fire Network and with support of members, provides communications, coordination and related services to the Alliance through the Secretariat. The Secretariat operates with voluntary contributions from members.

2.5 The 4th International Wildland Fire Conference

The 4th International Wildland Fire Conference was held in Sevilla, 13 to 17 May 2007, and was attended by 1531 participants from 88 countries. Building on the objectives and outputs of the previous International Wildland Fire Conferences (Boston 1989, Vancouver 1997, Sydney 2003), the objectives of the 4th Conference, which was held under the auspices of UNISDR, FAO and the European Commission, was to:

- Provide a forum for forest fire management leaders, politicians, professionals, researchers and practitioners from throughout the globe to discuss and work on critical fire issues affecting people, communities, resources and ecosystems in all Regions and work on a cooperative way in the consolidation of a Global Wildland Fire Management Strategy.
- Strengthen the effectiveness of the Regional Wildland Fire Networks and support their links into the UNISDR Global Wildland Fire Network.
- Provide a forum for the fire management industry, research organizations and fire specialists to display innovations, new technologies, products and methods for wildland fire management and interact with the Conference participants.

One of the main aims of the conference was to provide a platform for a meeting of all Regional Wildland Fire Networks, which are collaborating under the UNISDR Global Wildland Fire Network. All 13 regional networks contributed to the preparation of the conference. Papers, posters and reports provided comprehensive information on wildland fire issues around the world. In six joint regional sessions the Regional Wildland Fire Networks and representatives of the European Commission as well as other participants, discussed a self-assessment of the fire situation in the regions and formulated recommendations for future action in the regions, as well as globally. The post-conference website includes all regional session reports as well as the global conference report (see Annex 4):

- <http://www.fire.uni-freiburg.de/sevilla-2007.html>

2.6 The 5th International Wildland Fire Conference (WildFire 2011)

The 5th International Wildland Fire Conference 'Wildfire 2011' was held in Sun City / Pilanesberg National Park, South Africa, 9-13 May 2011. The conference was held under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR) and the Food and Agriculture Organization of the United Nations (FAO) in conjunction with the Third Session of the Global Platform for Disaster Risk Reduction in Geneva. The Secretary General of the United Nations, Mr. Ban Ki-moon, conveyed an opening statement to the 500 delegates from 61 countries. He welcomed the efforts of fire specialists from around the world to develop a spirit of global cooperation in addressing the role of fire in the global environment and its impacts on society. The conference participants elaborated on both the need for the wise use of fire in sustainable management of natural and cultural ecosystems, and on the adverse effects of wildfires at local to global scales. They expressed strong concern at the escalation of wildfires across the globe, many unprecedented in the modern era for the severe impact on communities, the environment and the world economy. The conference participants acknowledged the benefits derived through collaboration in sharing information and researching new ways to tackle emerging issues. The conference participants, including the representatives of Regional Wildland Fire Networks and international thematic networks, concluded that efforts be strengthened in capacity building in wildland fire science and management, and that this can be fostered by international cooperation and sharing of expertise and resources. The post-conference website includes all regional session reports as well as the global conference report (see Annex 5):

- <http://www.fire.uni-freiburg.de/southafrica-2011.html>

2.7 The 6th International Wildland Fire Conference

The 6th International Wildland Fire Conference will be hosted by the Republic of Korea in 2015. Host organizations will be the Korea Forest Service (KFS) and the Korea Forest Research Institute (KFRI). After the official announcement at the 5th International Wildland Fire Conference first consultation were held with GFMC (representing the ILC) at the [2nd Pan-Asia & 7th North East Asia Wildland Fire Network Meeting](#) (June 2011, Republic of Korea), followed by the first and second meetings of the host (the South Korean Conference Organizing Committee - SKCOC) and the International Liaison Committee (ILC) for the 6th International Wildland Fire Conference at the GFMC in 2012 and in South Korea in 2013. The next planning meeting will be held at the Global Fire Monitoring Center (GFMC), Freiburg, Germany, 29 June 2014.

3. Modus Operandi of the Global Wildland Fire Network (GWFN)

On behalf of UNISDR the Global Fire Monitoring Center (GFMC) is facilitating the functioning of the Global Wildland Fire Network by supporting the establishment or consolidation of Regional Wildland Fire Networks and enhancing inter-regional communication and cooperation.

The GFMC liaises with international agencies, organizations and networks, notably through the following activities (not all-embracing list):

UN Specialized agencies and programmes

- WHO
 - WHO Health Guidelines on Vegetation Fire Events (1999) (GFMC co-author / editor)
 - WHO European Centre for Environment and Health (WHO-ECEH): Contribution to the Joint UNECE Convention on Long-range Transboundary Air Pollution (LRTAP) / WHO Task Force on Health Aspects of Long-range Transboundary Air Pollution (since 2012)
- FAO
 - Global Forest Fire Assessment 1990-2000 (2001) (GFMC co-author / editor)
 - Guidelines on Fire Management in Temperate and Boreal Forests (2002) (GFMC author)

- Global Forest Resources Assessment 2005 – Regional Fire Reports (2006) (GFMC and GWFN contributing authors and co-editor)
- Fire Management Global Assessment 2006 (GFMC support)
- Review of International Cooperation in Fire Management (2006) (GFMC author)
- Fire Management Voluntary Guidelines (2006) (GFMC and GWFN contributing authors)
- UNECE / FAO
 - Production of UNECE/FAO International Forest Fire News (IFFN) (since 1988) (GFMC editor)
 - UNECE/FAO Team of Specialists on Forest Fire (since 1993) (GFMC leader)
- WMO
 - Utilization of the global network of meteorological stations in the Global Wildland Fire Early Warning System (GFMC EWS portal)
- Secretariats of the three “Rio Conventions”
 - Promoting Synergy in the Implementation of the three Rio Conventions (UNCDB, UNCCD, UNFCCC): Wildland fire as a main theme (2004) (GFMC contributor)
- United Nations University (UNU)
 - GFMC is Associate Institute of the United Nations University, partnering with the Institute for Environment and Human Security (UNU-EHS) (since 2005)
- United Nations Environment Programme (UNEP) and UN Office for the Coordination of Humanitarian Affairs (OCHA) Joint Environment Unit (JEU) (GFMC and JEU have signed interface procedures for addressing international wildland fire emergencies in 2001)
 - Advisory Group on Environmental Emergencies (AGEE) (GFMC member of the Steering Committee)

Global Observation of Forest Cover - Global Observation of Landcover Dynamics (GOFC-GOLD), a subset of the Global Terrestrial Observing System - GTOS

- GOFC/GOLD Fire Implementation Team (GFMC Co-chair)

Group on Earth Observations (GEO)

- Global Wildland Fire Early Warning System is GEO Task DI-09-03B “Implementation of a Fire Warning System at Global Level” (GFMC co-chair)

Council of Europe (CoE)

- GFMC is member and an officially appointed center of the Network of Specialised Euro-Mediterranean Centres of the European and Mediterranean Major Hazards Agreement (EUR-OPA)

Organization for Security and Cooperation in Europe (OSCE)

- OSCE is implementing projects conducted under the frame of the Environment and Security Initiative (ENVSEC), an activity of UNDP, NATO, UNEP, OSCE and UNECE, through GFMC. Current project: „Enhancing national capacity on fire management and wildfire disaster risk reduction in the South Caucasus”. Projects in Central Asia (based in Mongolia), Western Balkans (based in FYR Macedonia) and Eastern Europe (based in Ukraine) are initiated in 2014.

4. Status of the Regional Wildland Fire Networks

Regional Networks are formed in two ways. First, independent regional initiatives that were in place before 2001-2002 and after have been invited to become connected to the Global Wildland Fire Network. Second, networks have been created in those regions where no such regional efforts are in place. The following information is derived from the website of the Global Wildland Fire Network:

- <http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html>

The Regional Wildland Fire Networks may consist of focused subnets or will be complemented by any other topical network. The harmonization with the objectives and efforts of other independent networks

is desired. The Regional Fire Implementation Teams of the Global Observation of Forest Cover - Global Observation of Landcover Dynamics (GOF-C-GOLD) are playing a key role in the formation and operational functioning of wildland fire monitoring in the regions (see: <http://www.gofc-fire.umd.edu/>).

Regional Sub-Sahara Africa Wildland Fire Network

The Regional Sub-Sahara Wildland Fire Network (AfriFireNet) was the first regional network that has been launched formally. On 3 July 2002 the network was kicked-off at its first official meeting held in the frame of the Wood for Africa Conference (Pietermaritzburg, South Africa). As of early 2004 more than 80 representatives from 13 African countries have registered as members of the network. An Advanced Wildland Fire Management Course (a Joint UN Inter-Agency Training Course with participation of UNEP, FAO and the United Nations University, Institute for Environment and Human Security [UNU-EHS]) for the SADC Region, sponsored by the German Foreign Office, Office for the Coordination of Humanitarian Assistance, has been held in Nelspruit, South Africa, 31 May - 5 June 2004. At the training course the Wildland Fire Management Training Handbook published by the GFMC was launched publicly. Between 30 October and 12 November 2004 a first joint FAO/GFMC/UNU-EHS Training Course for Instructors in Community-Based Fire Management (CBFiM) for Sub-Sahara Africa was held in Nelspruit, South Africa. Together with Working on Fire (WoF) – one of the official partner organisations within AfriFireNet aiming at implementing Integrated Fire Management in South Africa – annual training courses “Intermediate and Advanced Incident Command System” were held in South Africa between 2005 and 2010. Together with the WoF National Fire Training Academy the network is now offering training and capacity building in all sectors of integrated fire management, from grassroots level to regional policy and strategy. Activities of the recent years included Training Courses, Study Tours, Technical Exchanges, Workshops, Fire Management Plans, Policies and Strategies developed with Uganda, Kenya, Tanzania, Botswana, Zambia, Mozambique, Botswana, Namibia, Ghana, Mauritius and Madagascarin short, building relationships and creating a supportive environment for fire regional management. AfriFireNet is supporting fire research activities like the SavFire experiments in Kruger National Park 2006-2011. The implementation of the Wildfire 2007 recommendations, namely the use of ICS and International Cooperation governed activities since Sevilla. In 2011 AfriFireNet / WoF hosted the 5th International Wildland Fire Conference in South Africa (see section 2.5).

Since its start AfriFireNet was a forum for interested and motivated individuals. Over the recent years the network advanced to a more institutionalized setting and became more and more a partner of NGOs, governments and regional agreements (e.g., SADC). Regional consultations in 2010 resulted in a trilateral project activity between South Africa, Botswana and Tanzania. The Regional Network is a cooperative effort with the [Central African Regional GOF-C/GOLD Network](#), the [West Africa Regional Network \(WARN\)](#) and the [MIOMBO / SAFNeT Southern African Regional GOF-C/GOLD Network](#). The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For details see:

Regional network website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Africa/Afrifirenet.html>

SADC web page with a number of documents including the Regional Workshop on Cross-boundary fire management (January 2010) and the SADC Regional Fire Management Programme Document:

http://www.fire.uni-freiburg.de/GlobalNetworks/Africa/Afrifirenet_10.html

Regional South East Asia Wildland Fire Science and Management Network and the ASEAN Agreement on Transboundary Haze Pollution

At the World Conference on Land and Forest Fire Hazards (Kuala Lumpur, Malaysia, June 2002) two significant events paved the road for improving cooperation in fire management within the ASEAN (Association of South East Asian Nations) region and at international level. Building on almost a decade of cooperation in reducing the impacts of smoke-haze from land-use fires on the region the signing of the legally binding ASEAN Agreement on Transboundary Haze Pollution (10 June 2002; meanwhile ratified and entered into force on 25 November 2003) constitutes a multinational agreement for cooperation in fire management. At the ASEAN Senior Officials for Environment (ASOEN) Haze Technical Task Force meeting (10 June 2002) and the subsequent ASEAN Ministerial Meeting on Haze (11 June 2002) it was recommended that the ASEAN nations work together with the

GFMC to liaise the activities within ASEAN into the Global Wildland Fire Network. The ASEAN Secretariat will serve as a regional network focal point for the GWFN.

In May 2006 a "Conference on Promoting Partnerships for the Implementation of the ASEAN Agreement on Transboundary Haze Pollution" was held in Ha Noi Viet Nam. Partner countries and organizations were invited to establish partnerships for the implementation of the Agreement. The GFMC participated at the conference on behalf of the Global Wildland Fire Network. Starting in May 2003 the ASEAN Secretariat initiated the conceptual design of the South East Asia Fire and Haze Information Center (other working title: ASEAN Center for Emergency Response and Strategic Planning for Environmental Disasters). This facility will largely take over the role of the network information system.

Since December 2011 the Regional South East Asia Wildland Fire Science and Management Network has emerged from South East Asian Forest Fire Science Network (founded in 2000-2001), now entitled "South East Asian Wildland Fire Network", has taken over the role of liaising between the wildland fire science community, governmental institutions in SE Asian countries, and the ASEAN Agreement on Transboundary Haze Pollution.

ASEAN Secretariat and / or the South East Asian Wildland Fire Network attended the Pan-Asia Forest Fire Consultations in South Korea in 2009, 2011 and 2013 (cf. Northeast Asia Wildland Fire Network activities below) and the Global Wildland Fire Network / Wildland Fire Advisory Group meetings at GFMC in 2010 and 2012 and the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For details see:

ASEAN Haze Action Online Website:

<http://www.haze-online.or.id>

Regional South East Asia Wildland Fire Network Website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/SouthEastAsia/ASEAN-FireNet.html>

Regional North East Asia Wildland Fire Network

This network includes the participation of the Republic of Korea (South Korea), People's Republic of China, Japan and the Far East of the Russian Federation. During the International Wildland Fire Summit the representatives of the Republic of Korea have indicated a strong interest to support the formation of a regional node in South Korea. In November 2003 the Korea Forest Research Institute, Forest Fire Division, made its resources available to build the regional network. A kick-off meeting has been held in Seoul on 6 March 2004. As a follow-up activity a representative of the network stayed at the GFMC in August/September 2004. The 2nd Regional Northeast Asia Wildland Fire Network meeting was held 18 January 2005, Sendai, Japan (in conjunction with the UN World Conference on Disaster Reduction (Hyogo, Kobe, Japan, 18-22 January 2005). An International Symposium on Forest Fire Protection was held by the National Research Institute of Fire and Disaster, Mitaka, Tokyo, Japan, Tokyo, 30 November - 2 December 2005. During a side event of the network plans for the 3rd regional meeting were consolidated. The First International Northeast Asia Forest Fire Conference and the third meeting of the Regional Northeast Asia Wildland Fire Network was held 28-30 September 2006 in Khabarovsk, Russian Federation), followed by the 4th meeting in Harbin, China, 16-17 December 2007. In 2009 South Korea hosted the Pan-Asia Forest Fire Consultation for the UNISDR Regional Wildland Fire Networks of Northeast Asia, Central Asia, Southeast Asia (ASEAN), and South Asia in Busan. The proposal was endorsed to create a Pan-Asian Wildland Fire Network, which for the first time met in South Korea in June 2011. In 2013 the Pan-Asian Wildland Fire Network and its Secretariat were formally inaugurated at the Korea Forest Research Institute. The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For details see:

Regional website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Northeastasia.html>

Pan-Asian Wildland Fire Network:

http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Northeastasia_7g.html

<http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Panasia.html>

Regional Central Asia Wildland Fire Network

Central Asia and its neighbor countries have recently suffered major forest and other wildland fire problems. The causes of an increasing occurrence of wildfires in forests and other wildlands, including the underlying reasons for increasing human-caused fires, vary within the region and are due to (1) the transition from centrally planned to market economies, (2) national to regional conflicts, creation of new nations, involving political tensions and armed conflicts in some cases; (3) increasing, often illegal exploitation of forest resources, and (4) regional climate change involving an increasing occurrence of extreme droughts. The need has been recognized to initiate regional cooperation in wildland fire management, including wildland fire science. The "ECE/FAO International Conference on Management of Forest Fire Emergencies and International Cooperation in the Eastern Mediterranean, Balkans and adjoining Regions of the Near East and Central Asia" (Turkey, April 2004) provided an opportunity to clarify detailed objectives and modus operandi of the networking arrangement. The conference released the "*Antalya Declaration on Cooperation in Wildland Fire Management in the Balkans, Eastern Mediterranean, Near East and Central Asia*". Follow-up discussions were held in Almaty, Kazakhstan, 20-21 July 2004 (participants: Focal Points from Kazakhstan, Russian Federation and GFMC). The GFMC presented the status of the regional network and the Global Wildland Fire Network at the Regional Central Asian Forest Congress "Forest Policy: Problems and Solutions", Bishkek, Kyrgyz Republic, 25-27 November 2004. In the Resolution of the congress the forest services of Kyrgyzstan, Uzbekistan, Tajikistan and Kazakhstan endorsed the participation in the Global Wildland Fire Network and the support of an international wildland fire accord. A regional network meeting was held in Irkutsk, Russian Federation, 8 September 2005. The "First International Central Asian Wildland Fire Joint Conference and Consultation", jointly with the "First Central Asian Forest Fire Experiment, was hosted by Mongolia" (30 May – 9 June 2008). The network participated in the foundation of the Pan-Asia Wildland Fire Network (in the Republic of Korea, February 2009, see NE Asia Network overview), in the "International Conference on Cross-Border Forest Fires and Cooperation in their Suppression" (Irkutsk, Russian Federation, June 2010) and the International Conference "Forest Fires: Management and International Cooperation in Preventing Forest Fires in APEC Region" (Khabarovsk, Russian Federation, 4-6 October 2010). The network is chaired by Mongolia and the Russian Federation. The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). In 2014 the Regional Central Asia Fire Management Resource Center (RCAFMRC) will be established in Ulaanbaatar, Mongolia (with support by SDC Switzerland, OSCE and GFMC). For details see:

Regional website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/CentralAsia.html>

Results of the Antalya Conference with Antalya Declaration:

http://www.fire.uni-freiburg.de/course/meeting/meet2004_05.htm

Regional network meeting in Irkutsk (8 September 2005):

http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/CentralAsia_2.html

Regional conference, consultation and fire experiment in Mongolia (June 2008):

http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/CentralAsia_3.html

Pan-Asia Forest Fire Consultation (February 2009):

http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Northeastasia_7g.html

International Conference on Cross-Border Forest Fires (June 2010)

http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/CentralAsia_6.html

International Conference on Forest Fire Management and International Cooperation in the APEC Region (October 2010).

<http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/APEC-Fire-Conference-2010-Recommendations-ENG.pdf>

Regional Australasia Wildland Fire Network

In 1993 the Australian Fire Authorities Council (AFAC) was established to improve the collaboration and co-ordination of efforts between those Australian agencies with a responsibility for the protection of life and property from fire and other emergencies. The membership of agencies from the greater region saw AFAC's name change to the Australasian Fire Authorities Council in 1996. The current membership of AFAC stands at twenty-four full members and eleven associate members. All Australian fire and emergency agencies are full members of AFAC, as is the New Zealand Fire

Service. Among the associate members are the Hong Kong Fire Service, Singapore Civil Defence Force and the Papua New Guinea Fire Service, while East Timor, Fiji, Samoa and Tonga are in the process of lodging applications under this membership category. AFAC aims to promote and coordinate activities in fire prevention, management and research through five Strategy Groups.

This regional arrangement offers the most suitable conditions for taking the lead in building the Regional Australasia Wildland Fire Network. This suggested arrangement has been discussed in March 2003 in Melbourne at the occasion of the meeting of the International Liaison Committee (ILC) of the 3rd International Wildland Fire Conference and International Wildland Fire Summit. At the 2004 AFAC meeting (7-9 October 2004, Perth, Australia) AFAC decided to join the Global Wildland Fire Network. The Bushfire CRC has signed a MoU on cooperation with the GFMC. The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For more details see:

AFAC Website:

<http://www.afac.com.au/>

Bushfire CRC:

www.bushfirecrc.com

GFMC Australasia Wildland Fire Network Website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Australasia/Australasia.html>

Regional Mediterranean Wildland Fire Network

Following the discussions with FAO *Silva Mediterranea* in 2002 the formation of a Regional Mediterranean Wildland Fire Network is practically established under the auspices of this FAO group. A Workshop "Multilateral Assistance Against Forest Fires in the Mediterranean Basin" was held in Zaragoza, Spain, 10-11 June 2003. The objectives of the workshop included to study procedures to coordinate the existing mutual agreements and common legal and logistical tools to make effective, when needed, the multilateral assistance against forest fires within the Mediterranean Basin by sharing resources. A discussion was included about the possible role of the regional network and the GFMC to facilitate this process. The workshop was a preliminary activity to prepare a future Mediterranean conference on Multilateral Assistance against forest fires. Eastern Mediterranean countries participated at the "ECE/FAO International Conference on Management of Forest Fire Emergencies and International Cooperation in the Eastern Mediterranean, Balkans and adjoining Regions of the Near East and Central Asia" (Turkey, April 2004). The conference released the "Antalya Declaration on Cooperation in Wildland Fire Management in the Balkans, Eastern Mediterranean, Near East and Central Asia". Spain, acting as coordinator of the *Silva Mediterranea* Working Group on Forest Fires, hosted the 4th International Wildland Fire Conference (see Annex 4). A regional workshop "Forest Fires in the Mediterranean Region: Prevention and Regional Cooperation" was hosted by Italy (Saubaudia, 13-15 May 2008). The Working Group supported the „Workshop on the Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention“ (4-6 May 2010, Rhodes Island, Greece). The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For details see:

Regional website of the *Silva Mediterranea* Working Group on Forest Fires:

<http://www.fao.org/forestry/35587/en/>

Embedding website at GFMC:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Mediterrania/Mediterrania.html>

Results of the Antalya Conference with Antalya Declaration:

http://www.fire.uni-freiburg.de/course/meeting/meet2004_05.htm

Second seminar on "International Cooperation Programmes for Forest Fire Control in the Mediterranean Region" (Zaragoza, Spain, 27 September - 1 October 2004):

<http://www.iamz.ciheam.org/ingles/incenfor-04-pub-ing.htm>

Saubaudia workshop proceedings (2008):

<ftp://ftp.fao.org/docrep/fao/010/k2891e/k2891e00.pdf>

Workshop „Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention“

<http://www.fao.org/forestry/24115-06cc3e762cf617ab63ec548a6333c8466.pdf>

Regional Southeast Europe / Caucasus Wildland Fire Network

The first proposal for the formation of a regional network in SE Europe, particularly on the Balkan, was initially discussed by the Global Fire Monitoring Center (GFMC) in June 2002 to promote cooperation in wildland fire research and management under a "South East European Fire Management Network" (SEEFIRE). Envisaged participating countries included Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, the Former Yugoslav Republic of Macedonia, Romania, Serbia and Montenegro, and Slovenia. The SEEFIRE Network intended to address the problem of wildland fires (forest fires and fires in other vegetation types) that are increasingly observed in the SE European transition countries. SEEFIRE would establish an interactive network of institutions of all countries listed below that are involved in the prevention and control of wildland fire. At the occasion of the International Scientific Conference "Fire and Emergency Safety During the XXI Century - The Course of Europe" (31 October - 1 November 2002, Sofia, Bulgaria) the GFMC proposed the network formation with representatives of the Balkan Region.

A regional meeting of the International Commission for the Prevention and Extinction of Fires (CTIF) was convened in Bulgaria in February 2004 and discussed the establishment of a Regional Fire Monitoring Center. In March-April 2004 the "UNECE/FAO International Conference on Management of Forest Fire Emergencies and International Cooperation in the Eastern Mediterranean, Balkans and adjoining Regions of the Near East and Central Asia" has been held in Turkey (for details: See Regional Central Asia Wildland Fire Network). The conference provided an opportunity to clarify detailed objectives and modus operandi of the networking arrangement. The conference released the "*Antalya Declaration on Cooperation in Wildland Fire Management in the Balkans, Eastern Mediterranean, Near East and Central Asia*". In the Antalya Declaration Bulgaria offered to host the Regional Fire Monitoring Center. In implementation of the Antalya Declaration Turkey assisted Georgia and Syria in responding to large forest fires in September and October 2004.

On 4-5 April 2005 the Republic of Macedonia hosted the International Technical and Scientific Consultation "Forest Fire Management in the Balkan Region". The conference was sponsored by the UN-ISDR Wildland Fire Advisory Group / Global Wildland Fire Network through its Coordinator and Secretariat, the Global Fire Monitoring Center (GFMC). Funding of the consultation was provided by the German Foreign Office (represented by the GFMC) and contributions by the participating and contributing countries (Albania, Bulgaria, Croatia, Greece, Hungary, Macedonia, Serbia and Montenegro, Turkey). In the meeting it was decided to expand the current focus on the Balkan Region to a "Regional South East European Wildland Fire Network" and invite countries adjoining to the Balkan region to cooperate. The network is jointly co-coordinated by a representative of the wildland fire research community (University of Skopje, Macedonia), a national forest services (Bulgaria, Forest Service) and a national fire service (Croatia, Fire Service). The regional consultation was followed by the "Eastern European, Near East and Central Asian States Exercise on Wildland Fire Information and Resources Exchange - EASTEX FIRE 2005", hosted by Bulgaria, 20-22 April 2005. At the 33rd Session of the FAO European Forestry Commission (Zvolen, Slovakia, May 2006) the network coordinator, supported by the GFMC, proposed to the FAO to develop a Regional Strategy for Cooperation in Wildland Fire Management in Southeast Europe. FAO did not follow up this recommendation.

In June 2006 the GFMC proposed to the Council of Europe (CoE), European and Mediterranean Major Hazards Agreement (EUR-OPA) (Open Partial Agreement on the Prevention of, Protection Against, and Organization of Relief in Major Natural and Technological Disasters), to include the Caucasus region to the network. This suggestion was supported by the GFMC report included in the findings of the OSCE-led Environmental Assessment Mission to Fire-Affected Areas in Nagorno-Karabakh, in Fulfillment of the UNGA Resolution A/RES/60/285 "The Situation in the Occupied Territories of Azerbaijan" (7 September 2006).⁴ Consequently it was proposed to designate the network "Regional Southeast Europe / Caucasus Wildland Fire Network". In March 2007 a Regional Wildland Fire Consultation on the Development of a Strategy on International Cooperation in Wildland Fire Management in the Regional South East European / Caucasus Wildland Fire Network was held in Sofia, Bulgaria, 19-21 March 2007. The results were presented at the 4th International Wildland Fire Conference (Sevilla, Spain, May 2007). In July 2007 the international meeting on "Reducing Risk of Disaster from Catastrophic Wildfires in the Chernobyl Irradiated Forests" was held in Kiev, Ukraine,

⁴ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/N0720860-OSCE-UNGA-ENG.pdf>

26-27 July 2007, with the support of the GFMC/GWFN. After the extreme fire season in the Balkan region in 2007 a fire assessment mission to the FOR Macedonia recommended to call for a regional summit to address the underlying causes of increasing wildfire threats. Two workshops were held in April 2008 on Training on Rapid Fire Area Mapping (24-25 April) in Tirana, Albania, and on Forest fire prevention opportunities in Macedonia (28-30 April) in Skopje, Macedonia. In the aftermath of the armed conflict in Georgia in August 2008 a joint OSCE / UN mission to assess the fire damages in Georgia was conducted (October 2008). As a follow up of the mission a Fire Management Training Course – Southern Caucasus Region was conducted in the frame of the ENVSEC / GFMC project “Enhancing National Capacity on fire Management and Risk Reduction in the South Caucasus” (21-27 June 2009) in Borjomi-Kharagauli National Park, Georgia. In December 2008 a regional network meeting was held for wrapping up the 2007-2008 fire seasons and preparation of the 2009 “Regional Seminar “Wildfires and Human Security: Fire Management on Terrain Contaminated by Unexploded Ordnance (UXO), Land Mines and Radioactivity” (to be held in Kiev and Chernobyl, Ukraine, 6-8 October 2009). A regional workshop “Meteosat Second Generation Land Surface Applications: Drought & Fires” was held in Sofia, Bulgaria, 7-10 September 2009. A number of national and regional activities in capacity building in fire management were held in the South Caucasus and at regional level in Turkey between 2009 and 2014 (ongoing) under the frame of the Environment and Security Initiative (ENVSEC) project “Enhancing National Capacity on Fire Management and Wildfire Disaster Risk Reduction in the South Caucasus”. The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). For details see:

Website of the Regional Southeast Europe / Caucasus Wildland Fire Network:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Balkan/Balkan.html>

Website of the Regional Southeast Europe / Caucasus Fire Monitoring Center (RFMC):

<http://www.rfmc.mk/>

Results of the Antalya Conference with Antalya Declaration:

http://www.fire.uni-freiburg.de/course/meeting/meet2004_05.htm

Recommendations of the Consultations in Ohrid 2005 and Sofia 2007:

http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/SEEurope_1.html

EASTEX FIRE 2005 scope and programme:

http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/SEEurope_4.html

All regional activities 2002-2014

http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/SEEurope_1.html

All regional activities conducted through OSCE/ENVSEC:

http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/SEEurope_1.html

Regional Eurasian (ex: Baltic) Wildland Fire Network

At the Baltic Exercise for Fire Information and Resources Exchange - BALTEX FIRE 2000 (Finland, June 2000) the UN ECE/ECE/ILO Team of Specialists (ToS) on Forest Fires (now: UNECE/FAO Team of Specialists on Forest Fires), through the Global Fire Monitoring Center (GFMC), initiated a communication and coordination process among the countries bordering the Baltic Basin. BALTEX FIRE 2000 was an initiative devoted to strengthen cooperation in forest fire management and transboundary cooperation in large fire disasters between all countries bordering the Baltic Sea. Participants were the nations bordering the Baltic Sea (Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, Russia, Sweden) and neighboring observer countries (Belarus, United Kingdom). The initiative is the starting point for the Regional Baltic Wildland Fire Network structures. On 10 May 2004 a Regional Baltic Wildland Fire Meeting was held in Finland (host: Ministry for Interior, Finland). The conference participants released the *Helsinki Declaration on Cooperation in Wildland Fire Management in the Baltic Region*. One major activity in the Baltic Region is the European Fire in Nature Conservation Network (EFNCN), a networking mechanism in which European Partners cooperate in research and development in cultural and natural history and prehistory of fire, application of prescribed fire in nature conservation and landscape management, and fire ecology. Other active partners include the Pan-European fire research programme FIRE PARADOX (sponsored by the European Commission (2006-2010) and the Forest Fire Commission of the International Association of Fire and Rescue Services (Comité Technique International de Prévention et d'Extinction du Feu - CTIF). In 2006 the EU Leonardo da Vinci Programme granted support to GFMC and CTIF to develop European-wide, multi-lingual on-line training resources entitled „EuroFire”. The EuroFire outputs include: competency standards, training modules, illustrations and general

guidance on a competency based training system. Training resources that can be used by industry practitioners to update their knowledge, learn new skills or increase their understanding of basic wildfire and prescribed fire management techniques. By end of 2013 the EuroFire competency standards are available in 10 languages (c.f. website below).

In 2008 the mandate of the UNECE/FAO (ToS) was extended in the frame of the Strategic Plan 2008-13 of the Joint Integrated Programme on Timber and Forestry of the UNECE Timber Committee and FAO European Forestry Commission. The inaugural meeting of the ToS took place 1 April 2009 in the Palais des Nations, Geneva, Switzerland. The ToS is chaired by GFMC and co-chaired by Russia and Macedonia. The Eurasian Regional Network is co-chaired by Russia, Ukraine, UK and GFMC. In 2013 it was decided that the work of the ToS will [phase out](#) in July 2014 after it has successfully completed its mission. The Regional Wildland Fire Networks covering the UNECE Region will continue to represent the interests of UNECE Member States in the Global Wildland Fire Network and the Wildland Fire Advisory Group and its associated bodies and activities. For details see:

Regional website at GFMC:

<http://www.fire.uni-freiburg.de/GlobalNetworks/BalticRegion/BalticRegion.html>

UNECE/FAO Team of Specialists on Forest Fire website:

<http://www.fire.uni-freiburg.de/intro/team.html>

EFNCN website:

<http://www.fire.uni-freiburg.de/programmes/natcon/natcon.htm>

EuroFire website:

<http://www.euro-fire.eu/>

Regional activities in conjunction with activities of the overlapping regions of the Regional Wildland Fire Networks of SE Europe / Caucasus, Northeast Asia and Central Asia:

http://www.fire.uni-freiburg.de/GlobalNetworks/BalticRegion/BalticRegion_7.html

Regional Mesoamerica Wildland Fire Network

Several recent developments indicate the political willingness of nations in Central America and Mexico to share information and resources in fire management. An important regional initiative has been launched by the First Central Mesoamerican Meeting on Forest Fire Protection (*Primera Reunión Mesoamericana de Cooperación en Materia de Protección contra Incendios Forestales*) held in Guatemala City, 8-9 July 2002. This regional meeting was organized in the frame of the project "Prevención y Combate de Incendios Forestales en Mesoamerica" of the "Programa Mesoamericano de Cooperación 2001-2002", launched at the occasion of the 4th Tuxtla regional dialogue. Delegates of Belice, Costa Rica, El Salvador, Guatemala, Honduras, México, Nicaragua and Panamá participated in the meeting. The countries agreed formally to launch a programme of cooperation which includes sharing of information and resources in fire management as well as in capacity building.⁵

The Mesoamerica Meeting was followed by a meeting in Honduras (*Taller para el Desarrollo de un Plan Estratégico Regional para el Manejo del Gorgojo del Pino y los Incendios Forestales en Centroamérica*, 26-30 August 2002) in which the representatives from Central America developed a strategic plan for fire and bark beetle management in Central America. The momentum created by the Mesoamerican Meeting and the Honduras Strategy is currently coordinated with the *Comisión Centroamericana de Ambiente y Desarrollo* (CCAD). A Technical Commission on Forest Fires and Pests has been established under the Consejo Centroamericano de Bosques y Áreas Protegidas (CCAB/AP).

⁵ In June 2003 consultations were held with the Government of Guatemala concerning cooperation between the *Mesoamerican Cooperation Regarding Protection against Forest Fires* and the GFMC. A Memorandum of Understanding was signed by the Mesoamerican Permanent Technical Group on Forest Fires (*Grupo Técnico Mesoamericano Permanente sobre Incendios Forestales*), represented by the President of the Coordinating Council of the *Sistema Nacional de Prevención y Control de Incendios Forestales* (SIPECIF), Guatemala, and Executive Coordinator of the Presidency of Guatemala, and the Global Fire Monitoring Center (GFMC), UN International Strategy for Disaster Reduction (ISDR), Working Group on Wildland Fire, concerning Cooperation in the Global Wildland Fire Network through active participation of the Regional Mesoamerica Wildland Fire Network.

Based on the Regional Strategic Plan elaborated in Honduras, two workshops were held during 2004 to develop a Regional Programme for Forest Fires and Pests (*Programa Regional de Administración de Plagas e Incendios Forestales*) (26-27 April 2004, Guatemala / 8-9 July 2004, El Salvador). The programme was approved and is receiving financial support from US-AID for the next two years.

Representatives from the Technical Commission on Forest Fires participated at the Foundation meeting of the Regional South America Wildland Fire Network (17 June 2004, Curitiba) (see next section).

The Technical Commission on Forest Fires requested the CCAB/AP (17-19 August 2004, El Salvador) to officially create the Regional Central America and Mexico Forest Fire and Pest Network (*Red Regional de Centro América y México de Incendios y Plagas Forestales*) operating under the CCAD. The recommendations of the network have been presented at the Pan-American Wildland Fire Conference on 23 October 2004, San José, Costa Rica.

At the FAO TCP/RLA/3010 Mesoamerica Subregional Technical Workshop (*Taller Técnico Subregional de Mesoamérica*, 24-26 May 2005, Panama) national fire focal points developed the first draft of the Central American Strategy on Fire Management 2005-2015 (*Estrategia Centroamericana para el Manejo del Fuego*). During the Technical Committee on Forestry (*Comité Técnico de Bosques, CTB*) Meeting (21-22 July 2005, Nicaragua) regional forestry directors accepted draft number 4 of the Strategy and requested the focal points to prepare an Action Plan until the next CTB Meeting to be held on 1-2 September 2005 in Costa Rica. Assistance in developing this Action Plan was provided by the Central American Forest Strategy (*Estrategia Forestal Centroamericana, EFCA*). The final version of the Strategy has been published by CCAD in March 2006. In the frame of this Strategy it was decided to establish the Fire Management Working Group of Central America (*Grupo de Trabajo Centroamericano para el Manejo del Fuego*) (replacing the Technical Commission on Forest Fires and Pests), which has to be consolidated under the CTB of the CCAD. The Working Group will be integrated by the coordinators of the national fire management programmes of each country (acting as focal points) that need to have the official institutional support of their respective governments. The Working Group will be chaired by the focal point, whose country is holding the temporary presidency of the CCAD and co-chaired by the focal point whose country will hold the temporary presidency in the following period.

Together with the South America and Caribbean Strategies (see below) a Regional Strategy on Cooperation in Wildland Fire Management in Latin America and the Caribbean was finalized in a regional meeting in Santiago de Chile, 3-4 November 2005.

On 12-13 June 2006 a Meeting of the Fire Management Working Group of Central America took place at CCAD in El Salvador. It was agreed to strengthen the webpage of the Working Group, consolidate the Regional Central American Wildland Fire Network, carry out meetings with key persons to promote the application of the Central American Strategy on Fire Management in each country, as well as reprint the Strategy and include the logos of FAO, AID and DOI. Together with the three sub-regional strategies, the regional strategy was discussed and approved of during the 24th Session of the Latin American and Caribbean Forestry Commission (Santo Domingo, Dominican Republic, 26-30 June 2006). The strategy was presented at the 4th International Wildland Fire Conference (Spain, 2007) and followed by the "Central American Fire Management Forum (San Salvador, 30-31 October 2007) and the Second Central American Forum on Fire Management (San Salvador, 11-12 November 2008). These activities were followed by a number of regional exercises and capacity building between 2009 and 2013 (cf. last link below). The network attended the [UNECE/FAO Forum on Cross-Boundary Fire Management](#) (Geneva, 28-29 November 2013). Major achievements in the follow up are provided in the links below:

All materials on the cooperative processes in the Mesoamerica Region are available at:

<http://www.fire.uni-freiburg.de/GlobalNetworks/MesoAmerica/MesoAmerica.html>

Results and declaration of the Pan-American Wildland Fire Conference:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Panamerica/Panamerican-Conference.htm>

Activities and achievements up to 2013

http://www.fire.uni-freiburg.de/GlobalNetworks/MesoAmerica/MesoAmerica_6.html

Regional South America Wildland Fire Network

The United Nations Environment Programme (UNEP) in 2001-2002 proposed the creation of a Latin American initiative in fire management. Although this proposal had not been implemented, several regional institutions have indicated their interest to build a Regional South America Wildland Fire Network. The formation of the network was discussed at a foundation meeting which took place in tandem with the [3rd South American Symposium on Forest Fire Control \(3^o Simpósio Sul-Americano sobre Controle de Incêndios Florestais\)](#), 14-17 June 2004, Curitiba, Brazil. This foundation meeting was sponsored by the Global Wildland Fire Network (through GFMC), FAO, GOF-C-GOLD, The Nature Conservancy (TNC) and the U.S. Forest Service. The recommendations of the Network Foundation Meeting finalized after electronic follow-up discussion by mid of July 2004) have been presented to the participants of the Pan-American Wildland Fire Conference, 23 October 2004 in Costa Rica. This conference was a joint event of the Regional Wildland Fire Networks of South America, Mesoamerica and the Caribbean as well as of the joint meeting of the members of the FAO Forestry Commissions of North America and Latin America / Caribbean.

At the FAO TCP/RLA/3010 South America Subregional Technical Workshop (*Taller Técnico Subregional de Sudamérica*, 21-23 June 2005, Curitiba, Brazil) national fire focal points developed the first draft of the South American Strategy on Fire Management 2006-2010 (*Estrategia de Cooperación de América del Sur para el Manejo del Fuego*). In the frame of this Strategy it was decided to establish the Fire Management Working Group of South America under the COFLAC. The network is co-chaired by PREVFOGO / IBAMA (Brasília, Brazil), the Federal University of Paraná (Curitiba, Brazil), and the National Forestry Corporation (CONAF), Chile.

Together with the Central America and Caribbean Strategies a Regional Strategy on Cooperation in Wildland Fire Management in Latin America and the Caribbean was finalized in a regional meeting in Santiago de Chile, 3-4 November 2005 and was discussed and at the 24th Session of the Latin American and Caribbean Forestry Commission (Santo Domingo, Dominican Republic, 26-30 June 2006). In 2007 IBAMA and COFLAC signed a MoU on technical cooperation and development of the South American Strategy on Fire Management (Memorandum De Entendimiento Para la Cooperación Técnica y el Desarrollo de la Estrategia de Cooperación de América del Sur Para el Manejo del Fuego) and agreed on an operational bi-annual plan for the Secretariat of the network (Plan Operativo BIANUAL de la Secretaría Ejecutiva del Grupo de Trabajo de América del Sur de Manejo del Fuego). In 2007 a regional conference "Incendios forestales: amenazas y desafíos en un escenario de calentamiento global" was held at SILVOTECNA XXII (8-9 November 2007, Concepción, Chile) in which consequences of global warming on wildland fires and options for management response were addresses. The next meeting of the regional network took place in the frame of the 5th South American Symposium and 9th Technical Joint Assembly FUPEF / SIF / IPEF on "Forest Fire Control" and 9th Joint Technical FUPEF / SIF / IPEF Meeting on "Forest Fire Control" (V Simpósio Sul-Americano e 9^a. Reunião Técnica Conjunta FUPEF / SIF / IPEF sobre "Controle de incêndios Florestais"; durante a realização da Semana Florestal Brasileira) in Campinas, Sao Paulo, Brazil (11-12 April 2011). In March 2012 a first intercontinental Brazilian-African „International Workshop on the use of Prescribe Fire as a Tool for Wildfire Prevention" was held as a collaboration activity between JICA Brasil and the National Center for Wild Fire Prevention and Combat *Prevfogo*, under the Brazilian Institute of Environment and Natural Renewable Resources *Ibama*. The main objectives of this workshop were to provide a forum for international exchange on a somewhat controversial topic in Brazil – the use of prescribed fire – as well as to obtain a picture of what African countries with similar geography and challenges with wildland fires may be able to gain from cooperating with Brazil in the area of fire management. A major follow-up activity was the fire management field campaign at Ecological Station Serra Geral do Tocantins and in State Park Jalapão; State of Tocantins, Brazil (6-10 July 2013). More information:

Website of the South America Wildland Fire Network:

<http://www.fire.uni-freiburg.de/GlobalNetworks/SouthAmerica/SouthAmerica.html>

Results and declaration of the Pan-American Wildland Fire Conference:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Panamerica/Panamerican-Conference.htm>

Website of the last regional meeting in 2011:

http://www.fire.uni-freiburg.de/course/meeting/2011/meet2011_02.htm

IBAMA JICA Fire Workshop 2012 Report:

<http://www.fire.uni-freiburg.de/GlobalNetworks/SouthAmerica/IBAMA-JICA-Fire-Workshop-March-2012-Summary.pdf>

2013 Campaign:

http://www.fire.uni-freiburg.de/GlobalNetworks/SouthAmerica/SouthAmerica_4.html

Regional Caribbean Wildland Fire Network

Following the initial discussions at the foundation meeting of the Regional South America Wildland Fire Network and the Pan-American Wildland Fire Conference in 2004, a FAO TCP/RLA/3010 Caribbean Subregional Technical Workshop (*Taller Técnico Subregional del Caribe*) was held in Santo Domingo, Dominican Republic, 31 May-2 June 2005. Besides a draft proposal for a Fire Management Cooperation Strategy for the Caribbean 2006-2011 (*Estrategia de Cooperación del Caribe para el Manejo del Fuego*) the national fire focal points agreed to establish the network and request Cuba to take the lead and coordination function. In the frame of this Strategy it was decided to establish the Fire Management Working Group of the Caribbean under the COFLAC.

Together with the Central America and the South America Strategies a Regional Strategy on International Cooperation in Wildland Fire Management in Latin America and the Caribbean was finalized in a regional meeting in Santiago de Chile, 3-4 November 2005.

The network organized a regional meeting in the frame of the Fourth International Symposium on Sustainable Management of Forest Resources (SIMFOR 2006) / First International Workshop on Fire Management, 19-22 April 2006, Pinar del Río, Cuba.

Together with the three sub-regional strategies, the regional strategy was discussed and at the 24th Session of the Latin American and Caribbean Forestry Commission (Santo Domingo, Dominican Republic, 26-30 June 2006). The series of international symposia entitled "Simposio Internacional sobre Manejo Sostenible de los Recursos Forestales" at the University of Pinar del Río, Cuba, included regional fire science and management workshops in 2-years intervals (2006-2014).

Regional website:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Caribbean/Caribbean.html>

Regional North America Wildland Fire Network

The Fire Management Working Group (FMWG) of the North American Forestry Commission (NAFC) – established in 1961 – represents a regional network which is liaising North America's contribution to the Global Wildland Fire Network.

An initial proposal to formally join the Global Wildland Fire Network has been discussed in March 2003 in Melbourne at the occasion of the meeting of the International Liaison Committee (ILC) of the 3rd International Wildland Fire Conference and International Wildland Fire Summit. The proposal has been endorsed by the Fire Management Working Group (FMSG) in 2004. The representatives of the U.S.A., Canada and México endorsed the participation in the Global Wildland Fire Network at the Pan-American Wildland Fire Conference (23 October 2004). The U.S. Forest Service continued to support the international dialogue by financing the ILC and thus playing a major role in facilitating the preparatory process of the International Wildland Fire Conferences. The meetings of the Global Wildland Fire Network and ILC between 2008 and 2010 (GFMC, Germany, July 2008 (June 2010; Sun City, South Africa, May 2009) were cosponsored by the U.S. Forest Service, to be continued in 2012 (see section 2.3, p. 5 of this status report).

For details on the NAFC Fire Management Working Group see:

<http://www.fs.fed.us/global/nafc/fire/aboutus.htm>

<http://www.fire.uni-freiburg.de/GlobalNetworks/NorthAmerica/NorthAmerica.html>

Results and declaration of the Pan-American Wildland Fire Conference:

<http://www.fire.uni-freiburg.de/GlobalNetworks/Panamerica/Panamerican-Conference.htm>

Regional South Asia Wildland Fire Network

Following discussions with representatives from Nepal and India between 2003 and 2006 and earlier offers by the Department of Forests, Nepal, the UNISDR Wildland Fire Advisory Group encouraged Nepal to take the initiative to establish the Regional South Asia Wildland Fire Network. The foundation meeting was held in the premises of the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu, Nepal, 2-3 March 2007. The meeting was funded by the Global Fire Monitoring Center (GFMC), cosponsored by the International Centre for Integrated Mountain Development (ICIMOD) and assisted by the Nepal GIS Society (NEGISS), the Agro-Farm Foresters' Association Nepal (AFFAN) and the Center for Biological Conservation Nepal, in line with several declarations made in international conferences and summits, *inter alia* the Declaration of the Tenth SAARC Summit Colombo 1998 on Environment and the decision made in the meetings of UN-ISDR Working Group on Wildland Fire, and the UNISDR Wildland Fire Advisory Group / Global Wildland Fire Network. The foundation meeting "Fire and Livelihoods in the South Asian Region" released the Kathmandu Declaration in which the international donor community was challenged to support the region in building local, national and regional cooperative fire management capacities. A three-level fire management project in Nepal was implemented in 2007-2008 with the support of GFMC to develop principles and framework for fire management at local (community), district and national Level, to be used as a model for the regional network. In 2009 the project "Development of a Forest Fire Management Strategy and Implementation Plan for Nepal with Emphasis on Community Participation and Regional Cooperation" sponsored by the International Tropical Timber Organization (ITTO) and to be implemented by the GFMC and the National Chapter of the UNISDR Regional South Asia Wildland Fire Network was initiated.

Regional website:

http://www.fire.uni-freiburg.de/GlobalNetworks/South_Asia/Front_RSAWFN.html

Recent meetings:

http://www.fire.uni-freiburg.de/GlobalNetworks/South_Asia/Meetings_activities/Southasia_meetings.html

Sub-regional Euro-Alpine Wildland Fire Network

In July 2008 the UNISDR Wildland Fire Advisory Group (WFAG) followed the suggestions of the countries of the European Alpine region to address the specific forest fire problems in the high-altitude region of the Alps and to establish a Sub-Regional Wildland Fire Network. The sub-regional network is located between the geographic areas of the Eurasian, the SE European / Caucasus and the Mediterranean Regional Wildland Fire Networks. It is also part of the region of the United Nations Economic Commission for Europe (UN-ECE) region in which the [UNECE/FAO Team of Specialists on Forest Fire](#) is operational. With the launch of the Austrian Forest Fire Research Initiative (AFFRI) and the Alpine Forest Fire Warning System (ALPF FIRS) project in 2009 consensus was reached that these two projects would play an important role in advancing research and development in the Euro-Alpine region. The project Alpine Forest Fire Warning System (ALPF FIRS) aims to improve forest fire prevention in the Alpine Space with the creation of a shared warning system based on weather condition affecting fire potential. The main goal is the development of a decision support tool for actors involved in forest fire prevention and suppression, consisting in a daily fire danger level assessment and forecast to identify critical periods in advance of their potential occurrence. After various thematic meetings the ALPF FIRS mid-term meeting was held 1-2 February 2012 in Desenzano del Garda (Brescia-Italy), followed by the first cross-border exercise between Canton Ticino and Lombardia Region on cooperation in forest fires fighting (5 May 2012). For details see:

Regional website

<http://www.fire.uni-freiburg.de/GlobalNetworks/EuroAlpine/EuroAlpine.html>

ALPF FIRS website

<http://www.alpfirs.eu/>

Regional Near East Wildland Fire Network

At the FAO Ministerial Meeting on Forests at which wildland fire was a major agenda item (Rome, 14 March 2005) and the 17th Session of the FAO Committee on Forestry (COFO) (Rome, 15-19 March

2005) ministers and representatives of agencies responsible for forestry discussed a proposal directed to the United Nations concerning a coordinated effort in international cooperation in wildland fire management. At this meeting GFMC reported about the status of the Global Wildland Fire Network and on wildfire incidence in the Eastern Mediterranean Basin and the informal arrangements and actions by several countries to mutually assist in fire emergency situations. Syria proposed to establish a fire management network in the Near East. As a follow-up to the NEFC discussions in Larnaka, Cyprus, June 2006 and Khartoum, Sudan, February 2008 as well as the 18th Session of COFO, 2007, a proposal to establish the Near East Network on Forest and Wildland Fires (NENFIRE) was prepared at a regional workshop in Lattakia, Syria, in November 2009. The mission of NENFIRE would promote collaboration, sharing of expertise and information, and implementation of projects to predict, combat and manage forest and wildland fires in the region, for the mutual benefit of member countries. A Secretariat, including Algeria, Cyprus Lebanon, Morocco, Syria, Turkey and Yemen, is proposed. Cyprus was designated as focal point. Members of the Network will include Near East Forestry Commission member countries, who will nominate a formal focal point. Individual experts may be invited from time to time. Partnerships are proposed with i) The Near East Forestry Commission's Task Force; ii) *Silva Mediterranea* Working Group on Fire; iii) The Forest Fire Action Alliance; and iv) other fire networks. A regional website with an information system has not yet been established and no activities of the network have been noted by May 2012.

In order to fill this gap two regional conferences in 2011 and 2012 were co-organized by the host countries and GFMC / Global Wildland Fire Network in the Islamic Republic of Iran and in Israel. The conferences addressed fire science, management and policy development in the Near East / Middle East:

- First International Conference of Wildfire on Natural Resources Lands (Islamic Republic of Iran, October 2011): http://www.fire.uni-freiburg.de/course/meeting/2011/meet2011_18.htm
- Climate Change & Forest Fires in the Mediterranean Basin: Risk Reduction & Management (Israel, January 2012): http://www.fire.uni-freiburg.de/course/meeting/2012/meet2012_07.htm

Annex 1

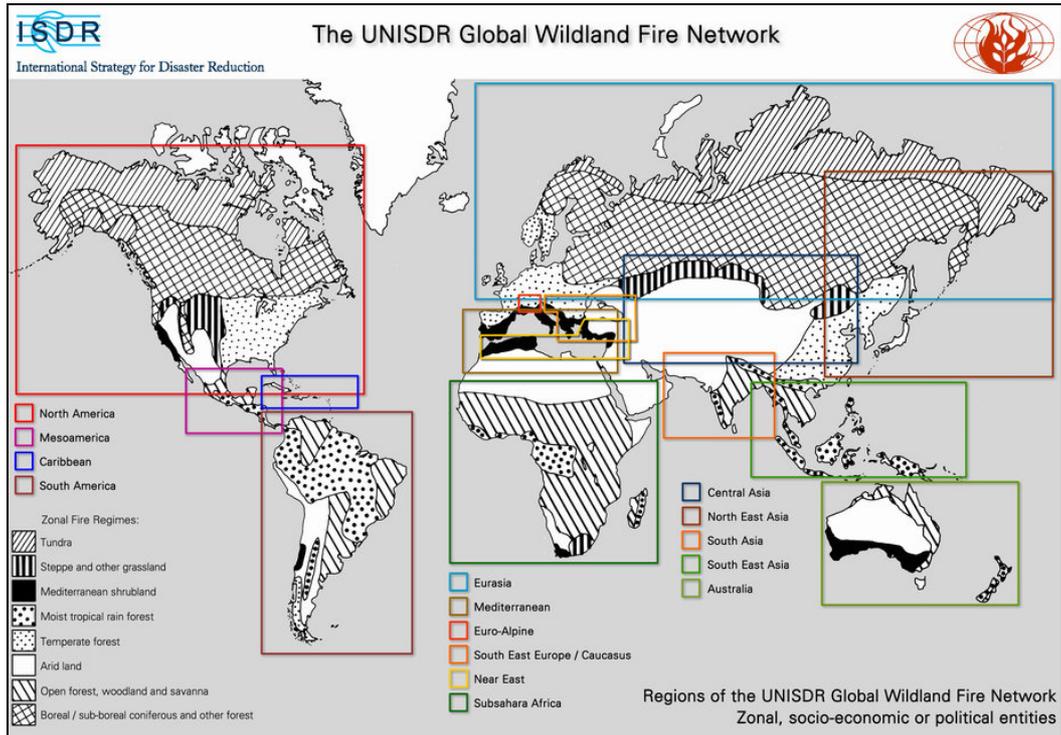


Figure 1. Delineation of regions within the Global Wildland Fire Network (Status: 2014)

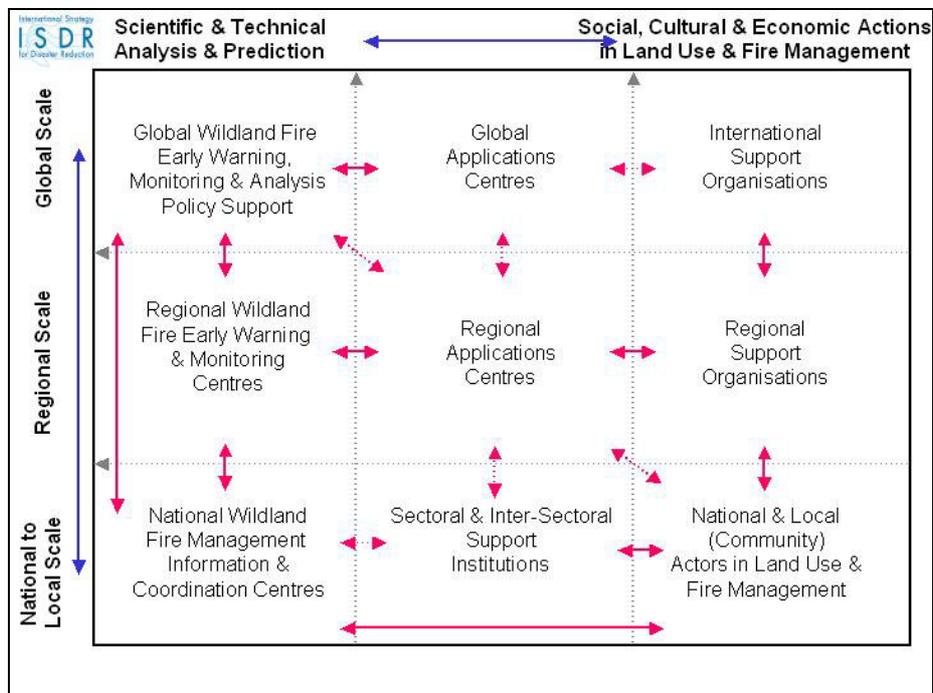


Figure 2. International networking in the wildland fire arena will involve inter-sectoral and inter-agency participation of international to local actors with responsibilities ranging from scientific and technical analysis to land users and fire management actors on the ground, i.e. the local communities.

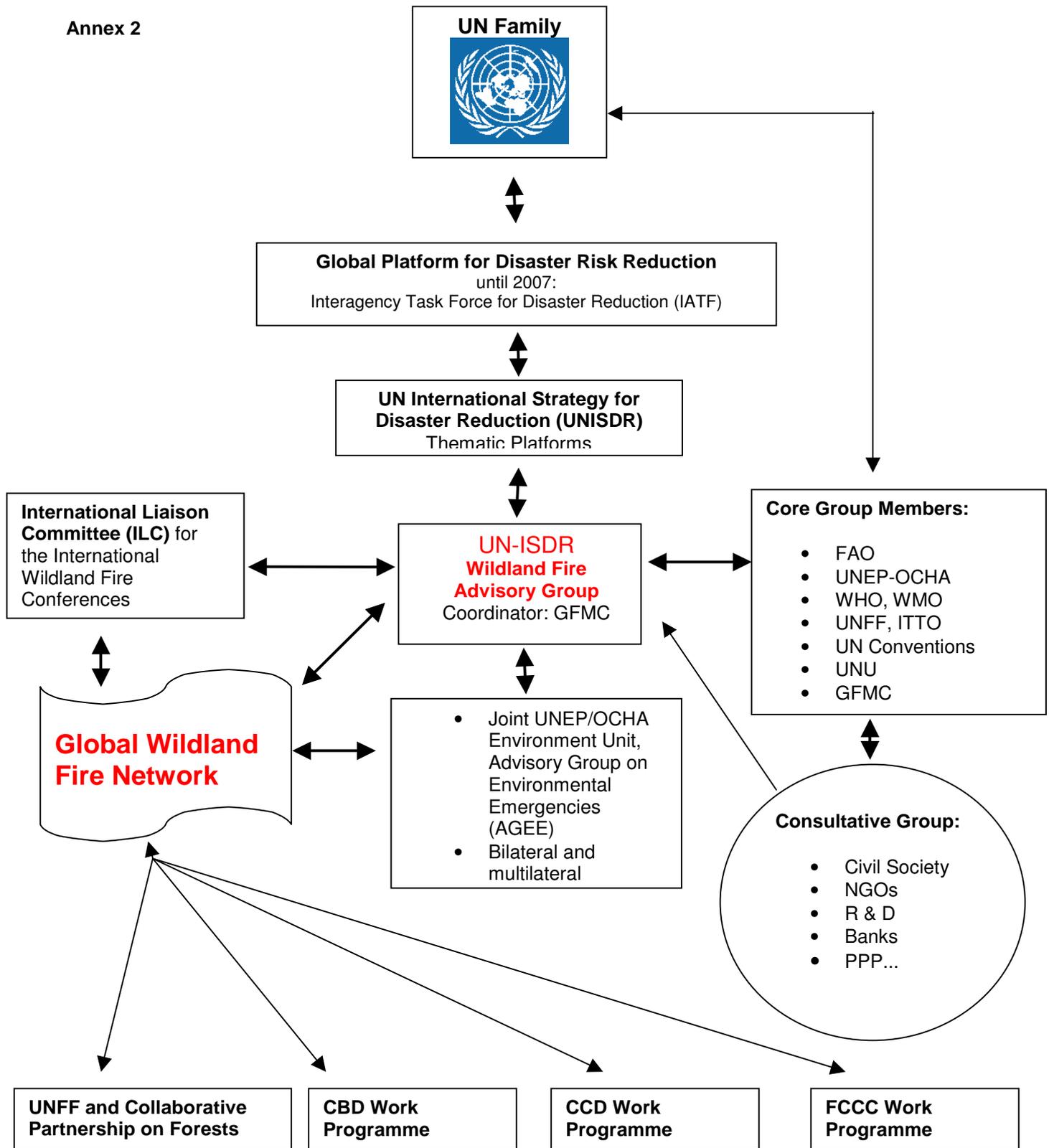
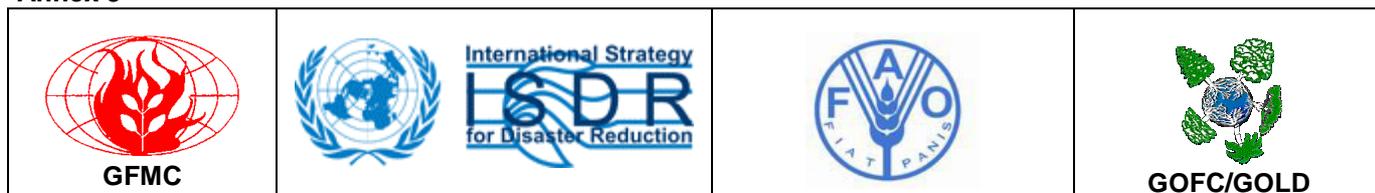


Figure 3. Scheme of cooperative relationships between the Wildland Fire Advisory Group, the Global Wildland Fire Network and the International Liaison Committee of the series of International Wildland Fire. The Global Wildland Fire Network is now a “Thematic Platform” under the Global Platform for Disaster Risk Reduction.

Annex 3



Framework for the Development of the International Wildland Fire Accord

Rationale, Status and Future Activities

Date of original first version: 1 May 2004

Final (13th) Update (this document): 12 April 2005

Authors: Global Fire Monitoring Center (GFMC) in cooperation with FAO, ISDR and GOFC/GOLD

1. Introduction: Purpose of this document

Over the past decade a growing trend of excessive fire application in land-use systems and land-use change, and occurrence of wildfires of extreme severities has been observed in many regions of the world. Some of the effects of wildland fires are of transboundary nature, e.g. the consequences of smoke pollution on human health and safety, loss biodiversity, or consequences of destabilization at landscape level leading to desertification or flooding at transnational scale. The depletion of terrestrial carbon by fires burning under extreme conditions in some vegetation types, including organic terrain in peatland biomes, is one of the driving agents of disturbance of global biogeochemical cycles, notably the global carbon cycle. This trend is calling the international community to commonly address this problem. The development of informal partnerships, joint projects and formal agreements between government and non-government institutions are essential to enable nations to develop sustainable fire management capabilities. United Nations agencies, programmes and conventions, as well as governments and civil society are calling for developing synergies aimed at enhancing efficiency and international cooperation in wildland fire management. This paper proposes the development of an International Wildland Fire Accord to reinforce and strengthen international cooperation in wildland fire management.

This Paper provides

- a brief global situation assessment (including an annex with references)
- a list of major international actors involved in, or having expressed the intent of support, building an international alliance (UN, non-UN international organizations, NGOs, science community, civil society, and governments) to address global wildland fire problems
- a list of major international events up to 2004 manifesting the interests of the international community
- framework and activities to support the development of the International Wildland Fire Accord (2004-2005)

2. Rationale: Global Wildland Fire Status and Trends

Between the mid 1990s and 2004 significant changes have been noted in the occurrence and impacts of wildland fire in some regions of the world:

- Extended droughts triggered by the El Niño – Southern Oscillation (ENSO) phenomenon first experienced in Indonesia in 1983 and again in 1997-98 favoured excessive application of fire in land-use change and occurrence of large wildfires in the tropics, resulting in above-average emission pulses of greenhouse gases and near-ground smoke pollution affecting human health and security.
- Uncontrollable wildfires in the USA between 2000 and 2003 are considered to be a consequence of earlier fire exclusion policies and regional climate change.

- The CIS countries and other countries in transition suffered institutional shortcomings which resulted in widespread wildfires, particularly in the Russian Federation, the Balkans and Central Asia.
- Radioactive emissions from fires burning in forests contaminated by the Chernobyl disaster and other nuclear accidents in the Ukraine, the Russian Federation and Belarus continue to constitute a high threat to human health and security.
- Abandonment of the rural space in the Southern European countries involves less intensive utilization of vegetation biomass, thus resulting in increasing severities of fires with subsequent land degradation and secondary disasters.
- Increasing vulnerability of residential areas at the wildland-urban interface has been noted in North America and Australia where wildfires in the past decade have caused extremely high economic losses.
- The international community has responded to the increasing destructivity of wildland fires around the globe by drafting protocols, agreement guidelines and common terminology for enhancing international cooperation in wildland fire management.
- The Global Fire Monitoring Center (GFMC) and the FAO are instrumental to facilitate cooperative efforts and support UN policies through the UNISDR Global Wildland Fire Network and the UNISDR Wildland Fire Advisory Group.

Summary of global wildland fire trends:

- Trends are determined by local to national socio-economic and political developments; needs have emerged to integrate fire management with the aim of distributing management responsibilities from governments to local populations
- Globalisation of markets determine fire use and fuel loads
- Increasing fire severity observed in many regions as a consequence of coupled direct and indirect impacts of human interference and environmental change
- Other regions experiencing the consequences of fire suppression or reduced fire use, with consequences on biodiversity, carrying capacity, landscape patterns, etc.
- Alarming trend of fire-induced carbon transfer from the terrestrial sphere to the atmosphere, especially from drained or climatically altered wetlands

3. Formation of the Global Wildland Fire Alliance towards the development of an International Wildland Fire Accord

In the following the most important international organizations, institutions and other entities are listed that are currently contributing (or recently have contributed) to promoting the agenda of cooperation in the wildland fire arena at international level.

3.1 Facilitation

- Global Fire Monitoring Center (GFMC): Founded in 1998; support of UN institutions through its host institution (Fire Ecology Research Group) since the late 1980s, coordinating the facilitation through membership and mandate of:
 - UN International Strategy for Disaster Reduction (UN-ISDR): Working Group on Wildland Fire (2001-2003) and UNISDR Wildland Fire Advisory Group (since 2004), serving as inter-agency advisory body to the UN (chaired by the GFMC)
 - Global Wildland Fire Network: Programme facilitated by the GFMC, as an inter-agency programme of the ISDR, funded by the German government and FAO

3.2 United Nations agencies, programmes and conventions mandated to address wildland fire

- FAO: Promotion of international cooperation in wildland fire management; technical cooperation programmes (TCP) in the field, and information dissemination through seven Regional Forest Commissions; Global Forest Fire Assessments (FRA 2000 and 2005) jointly with GFMC; Fire Management Guidelines for Temperate and Boreal Forests jointly with GFMC; Wildland Fire Management Terminology update jointly with GFMC, promotion of

Community-Based Fire Management (CBFiM); information dissemination and international documentation with global reactivation since 1998.

- Regional teams of wildland fire experts:
 - ECE / FAO / ILO Team of Specialists on Forest Fire
 - North American Forestry Commission, Fire Management Working Group
 - FAO *Silva Mediterranea*, Forest Fire Working Group
- WHO: Development of Health Guidelines for Vegetation Fire Events (currently no active position)
- WMO: Early warning of El Niño, fire weather, smoke transport
- UNESCO: Disaster reduction programmes (currently no specific programme)
- UNEP/OCHA: Joint UNEP/OCHA Environment Unit; Advisory Group on Environmental Emergencies (AGEE), WSSD Type II Partnership on Environmental Emergencies (GFMC member, FAO maintaining a Fire Alert Web Page to relay national fire emergency requests)
- ITTO: Guidelines for Fire Management in Tropical Forests, support of national fire management programmes, including CBFiM
- UNU: Establishment of the Institute for Environment and Human Security (2004), with wildland fire module (first UN inter-agency activity in 2004: Joint GFMC / ISDR / FAO / OCHA / UNU / NEPAD Advanced Wildland Fire Management Training Workshop for SADC Countries)
- UN Conventions: Agreement with the secretariats of the three Rio Conventions on cooperation with GFMC/ISDR, at the Workshop "Forests and Forest Ecosystems: Promoting Synergy in the Implementation of the Three Rio Conventions" (Viterbo, April 2004)
- Convention on Biodiversity (CBD): Member of the ISDR-IATF Wildland Fire Advisory Group (since 2003)
- Convention on Combat of Desertification (CCD): collaborative arrangement with GFMC started in 2004
- Framework Convention of Climate Change (FCCC): collaborative arrangement with GFMC started in 2004
- UN Forum on Forests (UNFF): Member of the ISDR-IATF Wildland Fire Advisory Group (since 2003)

3.3 Non-Governmental Organizations

- IUCN-TNC-WWF: Global Fire Partnership founded in September 2003; strategic meeting with international participation (May 2004) International Technical Committee for the Prevention and Extinction of Fire (Comité Technique International de Prévention et d'Extinction du Feu - CTIF): Reactivation of the Commission on Forest Fires (September 2003), First Conference: *Experiences from 2002-2003 Wildland Fire Seasons: Are we prepared for the challenges ahead?* (Austria, October 2003); Development of a Forest Fire Control Handbook for European Fire Services (by GFMC)
- Global Observation of Forest and Land Cover Dynamics (GOFC/GOLD) Fire Monitoring and Mapping Implementation Team: Global Forest Fire Assessment by spaceborne assets

4. Precursor activities to support the International Wildland Fire Accord (before 2004)

- International Decade of Natural Disaster Reduction (IDNDR): The decade (1990s) promoted synergies between international groups and entrusted the GFMC to coordinate the programme "Early Warning of Wildland Fire and Related Hazards"
- ECE/FAO Conference Forest, Fire and Global Change (Russian Federation, 1996): Elaboration of a proposal for international cooperation in wildland fire management
- FAO Consultations on Public Policies and Cooperation (1998, 2001)
- International Wildland Fire Conferences in Vancouver (1997) and Sydney (2003)
- International Wildland Fire Summit (2003): Agreement on principles, international strategies and participatory fire management

5. Framework and activities to support the International Wildland Fire Accord (2004-2005)

In 2004 and early 2005 (up to the FAO Ministerial Meeting on Forests, 14 March 2005) a number of regional conferences and consultations have addressed international cooperation in wildland fire management:

- Northeast Asia (Korea, March 2004): Foundation of the Regional Northeast Asia Wildland Fire Network, hosted by the Korean Forest Service
- ECE/FAO conference on Cooperation in Wildland Fire Management in the Eastern Mediterranean, Near East, Balkans, Central Asia (Turkey, 30 March – 2 April 2004): Consolidation of the Regional Wildland Fire Networks for the Balkans, Eastern Mediterranean / Near East, Western and Central Asia, hosted by the Forest Service of Turkey (see “Antalya Declaration on Cooperation in Wildland Fire Management in the Balkans, Eastern Mediterranean, Near East and Central Asia”); Turkey to host a Regional Wildland Fire Advisory Group, and Bulgaria to host the Balkans Network.
- Baltic Region (Finland, May 2004): Regional Baltic Wildland Fire Meeting (follow-up to ECE/FAO BALTEX FIRE 2000), hosted by the Ministry for Interior, Finland; consolidation of the Regional Baltic Wildland Fire Network and the regional work of the ECE/FAO Team of Specialists on Forest Fire
- South America (Brazil, June 2004): Foundation of the Regional South America Wildland Fire Network, meeting hosted by the University of Paraná, Curitiba, co-sponsored by FAO, GFMC, USFS, UNEP, TNC and others
- Central America (July-September 2004): Consolidation of cooperation arrangements in Central America (CCAD/CCAB, Mesoamerica Agreement, Implementation of the Honduras Strategy) Joint meeting of the Regional Wildland Fire Networks of South America, Central America, Caribbean (foundation meeting), and North America (NAFC Fire Management Working Group) in preparation of the Pan-American Wildland Fire Conference (Costa Rica, 21-22 October 2004) Signing of a Memorandum of Understanding between FAO and GFMC on joint activities related to increase international cooperation in wildland fire management, including a thematic report for the Global Forest Resources Assessment 2005.
- Pan-American Wildland Fire Conference (Costa Rica, 23 October 2004): Meeting of the FAO Regional Forestry Commissions of North America, Latin America and the Caribbean. Objective (among other): endorsement of the regional networking concepts prepared in Brazil and Costa Rica; recommendations for the FAO Ministerial Meeting on Forests (2005)
- Meeting of the ASEAN Haze Technical Task Force (HTTF) and ASEAN Ministerial Meeting on Haze, back to back with the First Meeting of COP to the Haze Agreement (Hanoi, Viet Nam, 8-11 November 2004)
- Presentation of the Regional Central Asia Wildland Fire Network and the Global Wildland Fire Network at the Regional Central Asian Forest Congress “Forest Policy: Problems and Solutions” (Bishkek, Kyrgyz Republic, 25-27 November 2004)
- Meeting of the UN-ISDR Wildland Fire Advisory Group and the Global Wildland Fire Network (GFMC / Germany, 3-4 December 2004): Preparation of recommendations for the FAO Ministerial Meeting on Forests (2005) reflecting the results of the regional and global consultations carried out in 2004.
- UN World Conference on Disaster Reduction (Japan, January 2005): The conference reviewed the Yokohama Strategy and Plan of Action (of 1994), including its wildland fire component, define WSSD-related specific activities and provided an opportunity for the Global Wildland Fire Network and UN-ISDR Wildland Fire Advisory Group to report on the Framework for the Development of the International Wildland Fire Accord

At the FAO Ministerial Meeting on Forests at which wildland fire was a major agenda item (Rome, 14 March 2005) and the 17th Session of the FAO Committee on Forestry (COFO) (Rome, 15-19 March 2005) ministers and representatives of agencies responsible for forestry discussed a proposal directed to the United Nations concerning a coordinated effort in international cooperation in wildland fire management.

Results

At the FAO Ministerial Meeting on Forests (Rome, 14 March 2005) ministers and representatives of agencies responsible for forestry

- “called on FAO, in collaboration with countries and other international partners, including the International Strategy for Disaster Reduction, to develop a strategy to enhance international cooperation on wildland fires, that advances knowledge, increases access to information and resources and explores new approaches for cooperation at all levels”.

At the 17th Session of the FAO Committee on Forestry (COFO) (Rome, 15-19 March 2005) an “Action Programme for FAO in Forestry” was agreed. It included recommendation No. 53

- “that FAO continue its support for regional and national networks to combat fire as well as insects and disease, in collaboration with relevant organizations such as the United Nations International Strategy for Disaster Reduction and the Global Wildland Fire Network, and further requested that FAO work with partners to develop voluntary guidelines on the prevention, suppression and recovery from forest fire”.

All documents of the FAO Ministerial meeting and the 17th Session of COFO can be downloaded at these FAO web pages:

- FAO Ministerial Meeting: <link expired>
- 17th Session of COFO: <http://www.fao.org/docrep/meeting/009/j5015e.htm>

In addition all documents referring to the development of an international wildland fire accord / global strategy are compiled on the website of the Global Wildland Fire Network:

- <http://www.fire.uni-freiburg.de/GlobalNetworks/RationaleandIntroduction.html>

Editorial Note:

FAO and GFMC agreed to terminate the updating process of this framework document with the decisions of the ministerial meeting and COFO-17. The results were presented to UNFF-5 (New York, 16-27 May 2005) during which the Wildland Fire Advisory Group, jointly with FAO, The Nature Conservancy (TNC) and the U.S. Forest Service, organized a side event “Development of a Strategy or Agreement on International Cooperation in Wildland Fire Management” (18 May 2005).

The follow-up process will be reflected by reports of the FAO and the UNISDR Wildland Fire Advisory Group. These reports will be published or linked on the above-mentioned website of the Global Wildland Fire Network.

ANNEX - References

Wildland Fire Advisory Group. 2003. Vegetation fires globally. An analysis for policy makers prepared for the (UN-ISDR Inter-Agency Task Force for Disaster Reduction and the International Wildland Fire Summit. ECE/FAO International Forest Fire News (IFFN) No. 29

<http://www.fire.uni-freiburg.de/summit-2003/Summit%20Background%20Paper%20Global%20Situation.pdf>

Global Fire Monitoring Center (GFMC)

<http://www.fire.uni-freiburg.de/>

FAO Wildland Fire Websites and FAO Global Forest Fire Assessment 1990-2000

http://www.fire.uni-freiburg.de/programmes/un/fao/Wp55_eng.pdf

UN-ISDR Wildland Fire Advisory Group

<http://www.unisdr.org/eng/task%20force/ff-working-groups4-eng.htm>

Global Wildland Fire Network

<http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html>

International Wildland Fire Summit

<http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

ECE/FAO International Forest Fire News (IFFN)

<http://www.fire.uni-freiburg.de/iffn/iffn.htm>

Convention on Biological Diversity

<http://www.fire.uni-freiburg.de/programmes/un/cbd.htm>

Joint UNEP/OCHA Environment Unit / WSSD Partnership for Environmental Emergencies

<http://www.reliefweb.int/ochaunep/>

<http://www.reliefweb.int/ochaunep/tools/wssd.htm>

WHO: Health Guidelines on Vegetation Fire Events

http://www.who.int/docstore/peh/Vegetation_fires/vegetation_fires.htm

International Tropical Timber Organization (ITTO) Wildland Fire Websites

<http://www.itto.or.jp/live/index.jsp>

http://www.fire.uni-freiburg.de/programmes/itto/itto_start.htm

Global Observation of Forest Cover / Global Observation of Landcover Dynamics (GOFCC/GOLD) - Fire Mapping and Monitoring

<http://gofcc-fire.umd.edu/>

Crutzen, P.J., and J.G. Goldammer (eds.) 1993. Fire in the environment: The ecological, atmospheric, and climatic importance of vegetation fires. Dahlem Workshop Reports. Environmental Sciences Research Report 13. John Wiley & Sons, Chichester, 400 p.

Ahern, F., J.G. Goldammer, and C. Justice (eds.). 2001. Global and regional vegetation fire monitoring from space: Planning a coordinated international effort. SPB Academic Publishing bv, The Hague, The Netherlands, 302 p.

Annex 4



Sevilla, ESPAÑA, 13 -17 mayo 2007
4ª CONFERENCIA INTERNACIONAL SOBRE INCENDIOS FORESTALES

4th International Wildland Fire Conference

Sevilla, 17 May 2007

Conference Statement

As agreed by the Representatives of 13 Regional Wildland Fire Networks and Participants of the Joint Regional Sessions

The 4th International Wildland Fire Conference was held in Sevilla, Spain, 14-17 May 2007. The conference was held under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR), the Food and Agriculture Organization of the United Nations (FAO) and the European Commission and hosted by the Government of Spain and the Regional Government of Andalusia. The conference brought together 1531 participants from 88 countries from throughout the world, representing government organizations and civil society from all regions of the world, the United Nations and other international organizations.

The participants of the 4th International Wildland Fire Conference presented the state-of-the art in fire science, fire management and fire management training in all continents. A commercial exhibition provided insight in innovative fire management technologies, including fire detection, monitoring, suppression, and firefighters and public health and safety. A number of organizations and international associations involved in the wildland fire arena held side meetings and recommended enhancing the international dialogue.

The FAO and partners presented progress in the development of a Strategy to Enhance International Cooperation in Fire Management, requested by the Ministerial Meeting in 2005. The Strategy is being progressed through a multi-stakeholder process and includes a Global Assessment of Fire Management, a Review of International Cooperation and Fire Management Voluntary Guidelines. During the Conference, and as part of the Strategy, the Fire Management Actions Alliance was launched to promote, implement and update the Voluntary Guidelines. At the time of the launching event 35 partners – national agencies, universities and international organizations – had signed up to the Alliance.

Fire management specialists, many of them organized and cooperating in Regional Wildland Fire Networks, reported the state of the fire situation in their home countries and in the 13 regions. With reference to the global developments impacting on the fire situation in the regions of the world, the national and regional analyses of the fire situation and a self-assessment of fire management capabilities, the representatives of the Regional Wildland Fire Networks and the participants of the joint regional sessions recognized the global issues impacting on fire occurrence and the consequences of fire on the environment and humans in the regions of the world, notably the

- Demographic changes resulting in alterations of sustainable fire regimes, e.g. the consequences of rural exodus or – vice-versa – exurban migrations, coupled with a loss of traditional, sustainable land-use systems;
- Widespread poverty associated with unemployment, exurban migrations and land tenure conflicts and resulting in increasing human-caused fires;
- Land-use change involving increasing fire use for conversion of vegetation, notably in the tropics, and expansion of land use to fire-sensitive lands, e.g., peatlands, drained or otherwise desiccating wetlands, and other fire-sensitive vegetation;

- Increasing costs of fire suppression;
- Expansion of the wildland-urban interface in some countries and increasing vulnerabilities and greater exposure of rural settlements to increasing occurrence of severely damaging fires;
- Consequences of, and the contribution to, climate change, resulting in increasing occurrence of extreme droughts in most regions, desiccation of wetlands, thawing of permafrost sites, and a general trend of increasing area burned, fire intensity, fire severity, and longer fire seasons;
- Human health and security threatened by increasing wildfire activity and land-use fires causing release of a greater amount of pollutants and resulting in greater public exposure to hazardous emissions, including transboundary transport of fire smoke pollution at regional to global levels;
- Human security and peace threatened by fires burning on radioactively contaminated lands, by fires on areas with unresolved conflicts, and on territories with post-war hazards such as landmines and unexploded ordnance.

Being cognizant of the global issues, as listed above, the representatives of the Regional Wildland Fire Networks and the participants of the joint regional sessions agreed to the need to develop synergies through coordinated and collective action to address the most pressing problems related to fire management globally. Further the conference participants recommend that:

- The international wildland fire community pursue the development of a global-scale international resource sharing strategy to assist countries with fire management planning activities (including prescribed fire for ecological purposes and fuels management), and active support during periods of wildland fire;
- The FAO promote the global adoption of Incident Command System (ICS) including the publishing of an annual list of countries which have implemented ICS;
- Regional strategies for fire management be developed and designed to the specific needs of regions;
- An international framework for fire management standards be developed and regional wildland fire training be supported, especially to meet the needs for capacity building in developing countries;
- Scientific research programmes addressing the consequences of changes of climate, land use and land cover, and socio-economic changes on fire regimes, environment and society must be supported at all levels;
- The Strategy to Enhance International Cooperation in Wildland Fire Management and the implementation of the Fire Management Voluntary Guidelines be encouraged and endorsed;
- Agencies and groups be encouraged to participate in the Fire Management Actions Alliance in support of their adoption of the Voluntary Guidelines;
- The UNISDR Global Wildland Fire Network, the Regional Wildland Fire Networks and the Secretariat of the global network, the Global Fire Monitoring Center (GFMC), be supported by national agencies and international donors aimed at fostering international cooperation in fire management, including collecting and disseminating fire information, arranging and enhancing international policy dialogue, and supporting projects;
- A series of Regional Consultations tentatively addressing “Global Change and Wildland Fire: Regional Solutions for Fire Management” – be held globally, within the next 1-2 years, to progress the global issues that are impacting people, resources and livelihoods;
- The 2nd International Wildland Fire Summit – tentatively addressing “Global Change and Wildland Fire: Fire Management Solutions for Mitigation and Adaptation” – be held within the next 2 to 4 years under the auspices of the United Nations and partners.

The conference participants thanked the organizers and hosts of the conference for bringing together the international community responsible for wildland fire management. The participants welcomed the offer of South Africa to host the 5th International Wildland Fire Conference, tentatively in 2011.

Annex 5



5th International Wildland Fire Conference – ‘Wildfire 2011’
Sun City / Pilanesberg National Park, South Africa, 9-13 May 2011

Conference Statement

Background and Rationale

The 5th International Wildland Fire Conference ‘Wildfire 2011’ was held in Sun City / Pilanesberg National Park, South Africa, 9-13 May 2011. The conference was held under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR) and the Food and Agriculture Organization of the United Nations (FAO) in conjunction with the Third Session of the Global Platform for Disaster Risk Reduction in Geneva. The Secretary General of the United Nations, Mr. Ban Ki-moon, conveyed an opening statement to the 500 delegates from 61 countries. He welcomed the efforts of fire specialists from around the world to develop a spirit of global cooperation in addressing the role of fire in the global environment and its impacts on society. The conference participants elaborated on both the need for the wise use of fire in sustainable management of natural and cultural ecosystems, and on the adverse effects of wildfires at local to global scales. They expressed strong concern at the escalation of wildfires across the globe, many unprecedented in the modern era for the severe impact on communities, the environment and the world economy. The conference participants acknowledged the benefits derived through collaboration in sharing information and researching new ways to tackle emerging issues. The conference participants, including the representatives of Regional Wildland Fire Networks and international thematic networks, concluded that efforts be strengthened in capacity building in wildland fire science and management, and that this can be fostered by international cooperation and sharing of expertise and resources.

Recommendations

The following recommendations are addressing common international concerns and reflect the consensus that priority has to be given to:

Areas of concern

Rural and industrialized societies have altered the natural environment and fire regimes. Vice-versa, humans are becoming increasingly vulnerable to the consequences of wildfires. This is calling for:

- Increase of fire management efforts on terrain contaminated by radioactivity, unexploded ordnance, land mines and chemical deposits, notably in the regions affected by the nuclear fallout of the nuclear power plant failures in Chernobyl (1986) and Fukushima (2011)
- Increase of efforts on securing peat bog / wetland ecosystems that are subjected to drainage and climate-driven desiccation to become affected by fire
- Increase of effort to reduce unnecessary burning on croplands, fallow and other lands to reduce the negative impact of greenhouse gas and black carbon emissions on the regional, arctic and global environment
- Address the increasing vulnerability of society at the wildland-urban interface by wildfires
- Provide necessary awareness and means to protect human health and security from wildland fire smoke pollution

Peoples participation

Experience in the involvement of civil society in fire management through participatory approaches (community-based fire management) to successfully reduce wildfire hazards, and enhance productivity and stability of land and the environment, is calling for:

- Creation of operational environments where community decision-making and implementation balance traditional and contemporary fire management requirements
- Management of fire on its benefits, through controlled burning, to improve livelihoods and health of local populations, and reduce greenhouse gases over vast areas of the globe
- Promotion of establishment of volunteer groups to assist state authorities in rural fire management
- Convention of an international conference on community-based fire management

Common international principles

Considerable success has been made in applying advanced principles in fire management and promoting fire management tools adapted to local conditions. The need for widespread application of these principles in practice is calling for:

- Application of the Voluntary Guidelines for Fire Management (FAO, ITTO, WHO/UNEP)
- Translation of the International Wildland Fire Management Terminology to other languages
- Global adoption of the Incident Command System (ICS) for the management of incidents
- Integration of forest fire management principles and tools in the REDD+ scheme
- Application of methods and approaches in risk management decisions that as far as possible are common across the organization, jurisdictions and countries and reflect recognized contemporary best practice.
- Acknowledgement that fire management is a fundamental element for consideration in all policy, legislation and practices related to land management planning and objectives

Common international tools

Successful development of advanced technologies for wildland fire science and management, notably Satellite Earth Observation products, meteorological observations and forecasting, and climate modeling, is calling for systematic application in support to fire management:

- Development of fire weather and early warning systems at local to global levels
- Capacity Building in the use of fire satellite products
- Design and implementation of a global fire assessment (including fire regime assessment) and establishment of a constantly updated long term satellite fire record which is consistent, validated and endorsed by the Satellite Earth Observation community
- Support national reporting of area burned and emissions
- Support the establishment of regional fire monitoring centers

International cooperation

Experience of a number of successful bilateral and multilateral agreements on cooperation in fire management is calling for:

- Promotion of bilateral and multilateral / regional agreements on cooperation in wildland fire management and mutual assistance in wildland fire emergencies
- Development of a proposal for a Global Agreement on Transboundary Cooperation in Fire Management
- Further involvement of the six FAO Regional Forestry Commissions and the National Platforms for Disaster Risk Reduction in the implementation of principles as laid down in the fire management guidelines and the “Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters”

Efficiency of sharing ground and aerial fire management resources

Mutual assistance on suppression operations demands protocols to dispatch ground and aerial resources and to set operational procedures based on technical criteria, standardization and harmonization of terminology, and training and certification of human resources. This is calling for:

- Country support the International Fire Aviation Working Group's project to identify appropriate standards and best-management practices on which to base the development of voluntary guidelines.

Development of policies addressing global change and fire

In response to global change (interaction of climate change, socio-economic changes, and land-use change) and taking into account that global warming is a reality and will lead to an increasing occurrence and severity of wildland fires globally, and increasing impacts of society. Thus the following is recommended:

- Development of adaptive fire policies and strategies for mitigation, adaptation and protection at national to international levels
- Integration of fire management in the frame of natural resources / land management at landscape level, including use of plant biomass as a renewable and sustainable source for energy production for wildfire hazard reduction
- Support of countries to conduct fire management assessments, formulate legal frameworks and strategies, build sustainable fire management capabilities and institutions, develop fire management plans and human resources

Follow-up International Wildland Fire Conferences

In following up the 5th International Wildland Fire Conference, considering also the outcomes of the International Wildland Fire Summit (2003), it is recommended:

- That the regions organize Consultations, bringing together the operational fire experts and fire scientists be held globally, within the next 1-2 years, to further examine the fire issues resulting from population change and global warming
- That the 2nd International Wildland Fire "Summit" of operational fire experts and scientist, be held within the next 2 to 4 years under the auspices of the United Nations, with a view to developing recommendations for the United Nations, to address the global issues raised during this Conference's Regional Sessions
- That future wildland fire conferences consider expanding their audience beyond the fire management community

The conference participants thanked the organizers and hosts of the conference for bringing together the international community responsible for wildland fire science and management. The participants welcomed the offer of South Korea to host the 6th International Wildland Fire Conference in 2015.