



Global Fire Monitoring Center (GFMC)



UNITED NATIONS
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UN Inter-Agency Cooperation and Coordination in Wildland Fire Management Including Key International Organizations

A Review by the Global Fire Monitoring Center (GFMC)
Secretariat, UNISDR Wildland Fire Advisory Group

Final Draft – 07 November 2012

Preface

Convened by the Secretariat of the UN International Strategy for Disaster Reduction (UNISDR) and the UNECE/FAO Forestry and Timber Section, an *Informal Consultation on Global Wildland Fire* was held at the United Nations, Geneva, 29 June 2012. The consultation provided an opportunity for UN organizations active in addressing wildland fire risk to convene around the issue of better integration of existing initiatives related to wildland fire risk management. The discussions were structured around defining current strengths and gaps in international cooperation in fire management, discussing needs for cooperation, identifying stakeholders and opportunities for the UN to advance the topic further. Among the action points and follow-up it was recommended to establish a small, time-bound Consultative Group of UN partners on Wildland Fires. The Consultative group shall ensure information exchange and coherence with regard to UN work on wildland fires and in particular:

- Map UN engagement in fire management and look at roles and responsibilities
- Bridge the gap between ongoing discussion on forestry and land management and the DRR processes (COFO, FOD and Global Platform, Regional Platforms etc...)
- Assist UNECE with the organization of the International Conference on Cross-boundary Cooperation in Fire Management in 2013
- Make recommendations on how the UN can more effectively support and sustain global coordination, knowledge and clearinghouse functions of the Global Fire Monitoring Center (GFMC)
- Address wildland fires in the post-HFA consultation. Modalities need to be defined.

This report is a first follow-up addressing the request to map the UN engagement in fire management. However, this report goes beyond reviewing the role of UN agencies and programmes in fire management and additionally includes the work other international and multilateral organizations that are working directly and closely with the GFMC.

Summary

The initiation of a concerted international dialogue of UN partners and other international organizations in fire management in the 1990s has made significant progress during the last decade. Joint efforts in many cases resulted in coordinated action at various levels ranging from capacity building in fire management at national to local levels, development of national fire management policies, development of bilateral and multilateral agreements on transboundary cooperation in fire management, development of technological assets that can be shared globally, e.g. satellite earth

observation tools and early warning systems, standards and guidelines. International forums have been created to facilitate the dialogue between the scientific, technical and policy-making communities.

The GFMC, founded in 1998 as an institution to further international cooperation in fire management, and the UNISDR Wildland Fire Advisory Group, operational since 2004, have served this process. Besides a continuing international dialogue common activities have been developed through the efforts of the Global Wildland Fire Network, particularly through Regional Wildland Fire Networks. The overall efficiency of all UN partners and international organizations, however, has been limited in the past due to a lack of political and financial commitments.

However, with increasing public and political perception of fire as a major factor in natural and human-driven processes in the Earth system, this situation has changed during the last years. An increasing vulnerability of ecosystems and society to wildfires and land-use fires, increasing damages of wildfires to human assets, human health and security, interaction of climate change and fire, and altering fire regimes as a consequence of civilization, are prompting enhanced international efforts to recognize wildland fires as a major factor that need to be addressed by the UN and partners.

The proposed Consultative Group should be recruited out of the members the UNISDR Wildland Fire Advisory Group, should devise and advise the UN system to strengthen synergies of the UN in addressing the increasing wildland fire problems globally.

1. Introduction and Rationale: Cooperation and Coordination of International Efforts in Fire Management

In the 1990s the need was recognized for the establishment of an international (global) clearing house serving as a documentation and monitoring center and facilitator of international cooperation in wildland fire science, management and policy development. Following the explicit recommendations of the

- UN-IDNDR World Conference for Natural Disaster Reduction (Yokohama, Japan, 1994)¹
- Chapman Conference "Biomass Burning and Global Change" (Williamsburg, Virginia, USA, 1995)²
- UNECE/FAO/ILO Conference "Forest, Fire, and Global Change" (Shushenskoe, Russian Federation, 1996)³
- 2nd International Wildland Fire Conference (Vancouver, Canada, 1997)⁴, and the
- The Guidelines on Fire Management in Tropical Forests of the International Tropical Timber Organization (ITTO) of 1997⁵

and in following up the extended fires and smoke pollution in South East Asia in 1997-98, during which limited capabilities of nations and international organizations to interpret the reasons of and to respond to the situation became evident, the Government of Germany and the Max Planck Society for the advancement of Sciences (Germany) agreed to establish the Global Fire Monitoring Center (GFMC). The GFMC was constructed to serve as a global center of excellence to facilitate knowledge transfer at the interface between wildland fire science, practitioners and policy makers. The GFMC operates as a non-profit organization and as a contribution to the UN International Decade for Natural

¹ <http://www.fire.uni-freiburg.de/summit-2003/Yokohama%20Declaration.pdf>

² <http://www.fire.uni-freiburg.de/summit-2003/WILLIAMSBURG%20DECLARATION.pdf>

³ <http://www.fire.uni-freiburg.de/summit-2003/Shushenskoe%20Declaration%201996.pdf>

⁴ <http://www.fire.uni-freiburg.de/summit-2003/Wildlandfire-97%20Outputs.pdf>

⁵ <http://www.fire.uni-freiburg.de/programmes/itto/inst.htm>

Disaster Reduction (IDNDR).⁶ After the phasing out of the IDNDR the GFMC moved under the auspices of the UNISDR.

Institutional Arrangement and Mandate of the GFMC

The GFMC is hosted by the Fire Ecology Research Group of the Max Planck Institute for Chemistry in Germany, based at Freiburg University. In addition, GFMC is an Associate Institute to the United Nations University (UNU) Institute for Environment and Human Security (UNU EHS)⁷ and is serving as a Specialized Euro-Mediterranean Center under the European and Mediterranean Major Hazards Agreement (EUR-OPA) of the Council of Europe.⁸

GFMC provides a global portal and clearing house for wildland fire documentation, information and monitoring. Much of its services are publicly accessible through the internet.⁹ However, services are predominantly provided in response to direct requests and direct communication. Besides a comprehensive repository of wildland fire data, reports and “grey literature”, regularly updated national and global wildland fire information is generated and reported by a worldwide network of cooperating institutions. Some of the GFMC’s tools and products include global early warning of fire danger, near-real time monitoring of fire events, and interpretation, synthesis and archiving of global fire information.

Most important, however, the GFMC supports countries, directly or through assistance of international organizations, in the development, application, adoption or acculturation of

- National fire management policies
- Implementation strategies for wildland fire management
- Community-based fire management approaches
- Voluntary guidelines and competency standards for fire management personnel
- Advanced wildland fire management training.

GFMC has signed interface procedures or MoUs and / or is implementing joint activities with a number of UN agencies and UN-led activities and other international organizations, which are explained in detail below. Through membership in the Wildland Fire Advisory Group key partner organizations of GFMC are sharing information and often coordinate / harmonize dedicated activities in fire management.

During wildland fire emergencies the GFMC provides an emergency hotline and liaison capabilities to provide rapid assessment and decision support under cooperative agreements with OCHA’s Emergency Services Branch (cf. further down).

2. UN Institutions active in Wildland Fire Management

In the following the work of the UN partners active in fire management is reviewed in brief. Special emphasis is given to the cooperation with the Global Wildland Fire Network and the UNISDR Wildland Fire Advisory Group the GFMC in order to highlight the interaction between the work of the respective UN partner with the global programme and also with the Global Wildland Fire Network

⁶ Under IDNDR the GFMC facilitated the Working Group *Fire and Related Environmental Hazards* under the IDNDR Early Warning Programme.

⁷ <http://www.fire.uni-freiburg.de/programmes/un/unu/unu.htm>

⁸ http://www.coe.int/t/dg4/majorhazards/centres/presentation/gfmc_EN.asp

⁹ <http://www.fire.uni-freiburg.de/>

and the UNISDR Wildland Fire Advisory Group.¹⁰ This review does not intend to provide an all-embracing review of institutions and groups active in international cooperation in fire management.¹¹

2.1 UN International Strategy for Disaster Reduction (UNISDR)

Creation of the Global Wildland Fire Network and the UNISDR Wildland Fire Advisory Group

In 2000 the World Conservation Union (IUCN) and the GFMC, acting also on behalf of the UN-FAO/ECE/ILO Team of Specialists on Forest Fire, proposed the creation of a UN Interagency *Working Group on Wildland Fire*. This proposal was in line with the declarations made in the international conferences cited in Section 1. The proposal 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 and international organizations to realize their common interests of fire risk management and disaster reduction at global scale through synergies and cooperation. 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 an interagency and inter-sectoral forum of the UN and other international agencies and programmes was established with the aim to share information and tasks in *reducing the negative impacts of fire on the environment and humanity and promoting the ecologically benign role of natural fire and the wise use of fire in land management*. 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 in December 2001 it was decided to establish the *Global Wildland Fire Network* be built on existing formal or informal networks structures and initiatives, and to create networks in those regions where no such arrangements were in place. The 3rd *International Wildland Fire Conference* and the *International Wildland Fire Summit* (Sydney, Australia, 2003)¹² was used as a platform to convene for the first time representatives from *Regional Wildland Fire Networks* under the collective umbrella of the *Global Wildland Fire Network*. In the recommendations of the Summit the following agreement was included:¹³

“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 UNISDR Working Group on Wildland Fire”.

At the International Wildland Fire Summit a meeting of 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, the Fire Management Working Group of the North American

¹⁰ A dedicated web page on the GFMC portal proves an overview of the UN activities in fire management: <http://www.fire.uni-freiburg.de/programmes/un/un.htm>

¹¹ A more detailed review on international actors and cooperation in fire management is currently in preparation.

¹² <http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

¹³ For details of the outcomes of the International Wildland Fire Summit see: <http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

Forestry Commission and the Forest Fire Group of FAO *Silva Mediterranea*) was convened by the GFMC. A key output of this first 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. This recommendation was made with regards to the constitution of the IATF and the expected lifetime of a Working Group of ca. two to three years.

Following the IATF rules WG-4 terminated its work by end of 2003 and transited to the *Global Wildland Fire Network* (GWFN).¹⁴ To support the work of the GWFN the IATF accepted the proposal to create the *Wildland Fire Advisory Group* (WFAG) under the auspices of the UNISDR Secretariat.¹⁵ The mandate of WFAG is to serve as an advisory body to the UN system which provides technical, scientific and policy-supporting advice to the UN family through UNISDR, 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 was considered essential: UN agencies and programmes, other international organizations, non-government organizations, 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).

The GFMC serves as Secretariat of the Global Wildland Fire Network and the Wildland Fire Advisory Group.¹⁶

Facilitation of UN Inter-Agency Dialogue by GFMC and the Wildland Fire Advisory Group

Since more than a decade UN agencies and other international organizations listed below have been in a continuous dialogue through the GFMC. Priority was given to involve to either request / involve advisory support or financial capabilities international partners in furthering fire management projects globally, or in creating the necessary attention in the international policy dialogue affecting forestry, land use, human security and health, or technology development, including outer space affairs.

With the participation of major UN agencies and international organizations in the Wildland Fire Advisory Group¹⁷, together with the representatives from regions globally (coordinators or focal points of the Regional Wildland Fire Networks)¹⁸ this global group constitutes a unique dedicated platform addressing global wildland fire issues of joint interest of the scientific, technical and policy making communities.

Financial constraints of the GFMC to regularly invite all WFAG members for regular group meetings have prioritized joint meetings at regional level and every four years in the frame of the International Wildland Fire Conferences. Since 2004 the WFAG members are invited to biennial meetings at the GFMC in Freiburg, Germany.

With the increasing awareness of UN agencies of vegetation fires playing a major role in the Earth System, and agency mandates to be reviewed and possibly adjusted to contribute to a unified “One UN” effort addressing fire and fire management globally, not without involving non UN partners, the Secretariats of the UNISDR and the UNECE/FAO Forestry and Timber Section convened an *Informal*

¹⁴ <http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html>

¹⁵ <http://www.fire.uni-freiburg.de/GlobalNetworks/Rationale-and-Introduction-1.html>

¹⁶ **Note:** This report does not include the broad range of activities of the Global Wildland Fire Network in the arenas of capacity building, support of development of national fire management policies, or the continuously organized thematic or regional seminars, consultations, etc.

¹⁷ The WFAG member list is continuously updated under the following (non-changing) URL: <http://www.fire.uni-freiburg.de/GlobalNetworks/WFAG-GWFN-Members.pdf>

¹⁸ The GWFN member list is continuously updated under the following (non-changing) URL: <http://www.fire.uni-freiburg.de/GlobalNetworks/GWFN-Status.pdf>

Consultation on Global Wildland Fire at the United Nations, Geneva, 29 June 2012, which is followed up by this review.

Partnership for Environment and Disaster Risk Reduction (PEDRR)

Formally established in 2008, the Partnership for Environment and Disaster Risk Reduction (PEDRR) is a global alliance of UN agencies, NGOs and specialized institutes. As a global thematic platform of the UNISDR, PEDRR seeks to promote and scale-up implementation of ecosystem-based disaster risk reduction and ensure it is mainstreamed in development planning at global, national and local levels, in line with the Hyogo Framework for Action.¹⁹

It provides technical and science-based expertise and applies best practices in ecosystems-based DRR approaches. PEDRR is guided by its vision of: “Resilient communities as a result of improved ecosystem management for disaster risk reduction (DRR) and climate change adaptation (CCA)”. Its objective is to pool expertise and advocate for policy change and best practice in ecosystem management for DRR and CCA, based on science and practitioners experiences.

The GFMC is one of the prime partners of PEDRR and has implemented several activities in 2012:

- Conference *Vocational Education and Training in Forest Management for State Forestry Personnel*, with a Fire Management component (Pushkino, Moscow, Russia, March 2012)
- National seminar on the use of prescribed fire in nature conservation and landscape management, jointly organized by GFMC and Federal Forest Service of Germany (Germany, March 2012)
- PEDRR Workshop “Ecosystem-based Disaster Risk Reduction for Resilient and Sustainable Development” for the South Caucasus Region (Armenia, Azerbaijan, Georgia), with field day on “Progress in Capacity Building in Fire Management at Community Level” at Borjomi-Kharagauli National Park (Georgia)
- International Fire Management Week, Russian Federation (September 2012).
- National Fire Management Week, Azerbaijan (September 2012).

International Fire Aviation Working Group (IFAWG)

Capacity building in fire management, i.e. enhancing national capabilities in the preparedness and suppression of wildfires, including management of extremely severe and large wildfire incidents, is one of the core activities of the Global Wildland Fire Network and a number of other organizations globally. Increasing emphasis is given to enhance interoperability between countries which are willing to receive and provide resources during wildfire emergencies. Development of bilateral protocols or agreements go along with first attempts to develop standards for ground and aerial firefighting operations, e.g. the ongoing work of the International Fire Aviation Working Group (IFAWG). IFAWG is working under the framework of the UNISDR Wildland Fire Advisory Group as an advisory committee with the following principal objectives:²⁰

- Sharing of relevant information, especially information that will support the promotion and improvement of safety in the sector;
- Providing a conduit or facilitation mechanism for the sharing of resources between jurisdictions;

¹⁹ <http://www.pedrr.net/>

²⁰ <http://www.ifawg.org/>

- Identifying of opportunities for harmonization of operating practices and establishment of consistent standards, where appropriate; and recommend or initiate suitable harmonization action, including the development of voluntary guidelines.
- Providing advice and guidance to nations and the United Nations regarding fire aviation through the UNISDR Wildland Fire Advisory Group / Global Wildland Fire Network.

Medium-term both the aerial and the ground-based firefighting community aims to develop standards and guidelines that would correspond or be compatible with the INSARAG Guidelines.

2.2 Food and Agriculture Organization (FAO)

In the past decades FAO has been supporting more than 60 field projects globally together with the UNDP and a number of bilateral donors.²¹ The FAO Ministerial Meeting on Forests and the 17th Session of the FAO Committee on Forestry (2005) called upon FAO, in collaboration with countries and other international partners, including the UNISDR, to develop a strategy to enhance international cooperation in fire management, that advanced knowledge, increased access to information and resources and explored new approaches for cooperation at all levels. They also requested preparation of voluntary guidelines on the prevention, suppression and recovery from forest fire. An international expert consultation in wildland fires in 2006 agreed that a non-legally binding Strategy to Enhance International Cooperation in Fire Management includes the overarching framework and four components: i) Fire Management Voluntary Guidelines; ii) Implementation Partnership; iii) Global Assessment of Fire Management; and iv) Review of International Cooperation in Fire Management. Serving as Secretariat of the Fire Management Actions Alliance (FMAA), which has been created in 2011 to promote the use of the Fire Management Voluntary Guidelines, FAO is disseminating electronic newsletters to members.

FAO coordinates global fire assessments in the frame of the Forest Resources Assessment 2000 and 2005 and hosts the Global Fire Information Management System (GFIMS), which integrates remote sensing and GIS technologies to deliver MODIS fire locations and burned area. GFIMS is a monitoring system hosted at the Department of Natural Resources (NRD) of the Food and Agriculture Organization of the United Nations (FAO). This product derives from the Fire Information for Resource Management System (FIRMS) developed at the University of Maryland (U.S.A.). Current active FAO partnerships in field projects and workshops give emphasis on cooperation with the *Silva Mediterranea* Working Group on Forest Fires²² and the Joint Research Center (JRC) of the European Commission, which is hosting the European Forest Fire Information System (EFFIS).²³

GFMC support of the work of FAO

In December 2004 FAO and the GFMC signed a Memorandum of Understanding on cooperation to

- improve the dissemination of information about forest fires through any appropriate means, including internet linkages, publications of relevant reports such as 'FAO and the State of the World's Forest (SOFO)', and through the respective websites of the Parties
- develop fire management information systems
- develop, display and maintain wildland fire databases and country fire profiles
- jointly organize regional and international consultations, round tables and fire management workshops
- collaborate in preparing press releases or other materials for the media concerning wildland fire

²¹ <http://www.fao.org/forestry/firemanagement/en/>

²² <http://www.fao.org/forestry/35587/en/>

²³ <http://effis.jrc.ec.europa.eu/>

- collaborate in Global Wildland Fire Assessments in the frame of the Global Forest Resources Assessments
- collaborate at UN inter-agency level to develop an international wildland fire agreement

This MoU built on previous cooperation of GFMC and its precursor institution (the Fire Ecology Research Group). Since the mid-1980s the GFMC implemented for FAO:

- Field implementation of FAO Technical Cooperation Projects in the Philippines, India and Burma between 1985 and 1990
- Co-editor of the Wildland Fire Management Terminology (1986)
- Author of the update of the online Wildland Fire Management Terminology (1999)²⁴
- First author of the Global Forest Fire Assessment 1990-2000²⁵
- First author / coordinator of the FAO Guidelines on Fire Management in Temperate and Boreal Forests (2002)²⁶
- Coordinator and editor of the Global Forest Assessment 2005 – Regional Fire Reports²⁷
- Backstopper of the synthesis report of the Fire Management Global Assessment 2006²⁸
- Author of “Fire management: Review of international cooperation“ (2006)²⁹

Furthermore the GFMC and representatives of the Global Wildland Fire Network produced the UN Voluntary Guidelines on Fire Management, an effort facilitated by the FAO.³⁰

Since 2006 there is no ongoing active cooperation between FAO and GFMC or the Global Wildland Fire Network. The FAO is member of the UNISDR Wildland Fire Advisory Group.

2.3 United Nations Economic Commission for Europe

As a result of limited secretariat resources, countries members of the Joint FAO/ECE/ILO Committee on Forest Technology, Management and Training, have taken the challenge to undertake more work themselves, by entrusting to Teams of Specialists several of its activities, especially those where specific expertise is required. The Team of Specialists (ToS) on Forest Fire was created in the 1980s and reorganized in 1993.³¹ The Team's main task is to provide a critical link in communication and cooperation between fire scientists, managers and policy makers. The main activities embrace (1) the production of International Forest Fire News (IFFN)³² through the Global Fire Monitoring Center (GFMC); (2) organization of seminars; and (3) promotion of synergistic collaboration between governments, non-government institutions, and individuals, with emphasis on science and technology transfer, and support for developing fire management policies. The scope of the work of the Fire Team includes the countries belonging to the six Regional Wildland Fire Networks geographically located within the ECE region, as well as countries and Regional Wildland Fire Networks outside the ECE. Main emphasis of the work of the Team is in assisting countries of the Eastern Europe, Caucasus and Central Asia (EECCA) region in building national capacity in fire management, development of national policies and addressing the specific problems in the region, including transboundary cooperation in fire management. With this regional focus it is intended not to overlap with the ongoing work of the European Commission through its European Forest Fire Information

²⁴ Online version updated in 2003: <http://www.fire.uni-freiburg.de/literature/glossary.htm>

²⁵ <http://www.fao.org/docrep/006/AD653E/AD653E00.HTM>

²⁶ http://www.fire.uni-freiburg.de/programmes/un/fao/fao_4.htm

²⁷ <http://www.fao.org/forestry/firemanagement/35853/en/>, mirrored in the GFMC repository: http://www.fire.uni-freiburg.de/programmes/un/fao/fao_5.htm

²⁸ <http://www.fao.org/docrep/009/a0969e/a0969e00.htm>

²⁹ <http://www.fao.org/docrep/009/J9406E/J9406E00.htm>

³⁰ <http://www.fao.org/docrep/009/j9255e/j9255e00.htm>

³¹ <http://www.unece.org/forests/fcp/methodsandprocesses/forestfire.html>

³² <http://www.fire.uni-freiburg.de/iffn/iffn.htm>

System (EFFIS) in the Western part of the UNECE region, notably in the Mediterranean space (in conjunction with the Silva Mediterranea Fire Group) and the North American Forestry Commission “Fire Management Working Group”.

A large number of thematic seminars, conferences and training courses for capacity building in fire management have been conducted by the UNECE/FAO Team of Specialists on Forest Fire between 1981 and 2012.³³

One of the key outcomes of the work of the Team of Specialists in the late 1990s and early 2000s was the kick-off of the Global Wildland Fire Network. Other regions of the world, where no dedicated networks were in place, were assisted to build similar networking structures. The ToS is planning currently to bring all these regional networks together under the umbrella of the planned “UNECE Regional Forum on Cross-boundary Fire Management”, a regional UNECE activity aiming at developing a proposal for an agreement on international cooperation to enhance fire management capability in the UNECE region, but having a global scope (tentatively 2013).³⁴

The current leader of the UNECE/FAO Team of Specialists on Forest Fire is the head of the Global Fire Monitoring Center (GFMC), mandated by appointment as Team Member by the Government of Germany, and elected as Team Leader by the Team Members, is actually coordinating the inter-agency work within the UN and other international bodies.

2.4 United Nations Environment Programme (UNEP)

UNEP/OCHA Environment Unit (JEU)

The Joint UNEP/OCHA Environment Unit (JEU) is the UN mechanism responsible for mobilizing and coordinating international response to environmental emergencies. The JEU works with affected countries to identify and mitigate acute negative impacts stemming from emergencies. It also assists the transition from the relief to the recovery phase by liaising with organizations dedicated to medium- and long-term rehabilitation. Recognizing the need to improve international response to environmental emergencies, UNEP and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) established a partnership that resulted in the JEU. The JEU integrates UNEP’s technical environmental expertise into the humanitarian response coordination structure of OCHA.

The JEU responds to international environmental emergencies through coordination of international assistance, deployment of experts to identify impacts and assist national authorities, and facilitation of coordination between affected countries and nations willing to donate resources. The JEU maintains, on a voluntary basis, contact points and a roster of experts that provide support in emergency response. When not responding to emergencies, the JEU helps countries with capacity development and strengthening the response system.

The JEU has to date responded to every environmental emergency for which it has received a request for assistance. It has been involved in the response to more than 100 environmental emergencies, including industrial accidents, land slides, mining accidents, train accidents involving chemical spills, maritime oil spills, wildland fires, a tsunami, earthquakes, hurricanes and various other emergencies.

³³ <http://www.fire.uni-freiburg.de/intro/team.html>

³⁴ <http://www.fire.uni-freiburg.de/intro/UNECE-Fire-Forum-2011-Draft-Agenda.pdf>

Advisory Group on Environmental Emergencies (AGEE)

The JEU serves as the Secretariat for the Advisory Group on Environmental Emergencies (AGEE), an international forum that brings together environmental experts and disaster managers from around the world to improve prevention, preparedness and response to environmental emergencies.

Post-Conflict and Disaster Management Branch

As the focal point for environment within the UN crisis response system, UNEP also works to integrate environmental considerations within humanitarian and peacekeeping operations. Coordinated by UNEP's Post-Conflict and Disaster Management Branch, the Disasters and Conflicts sub-programme is delivered through several key actors and partners, including the JEU and the APELL (Awareness and Preparedness from Emergencies on a Local Level) Programme.

UNEP Governing Council Decision 26/15

Pursuant to UNEP Governing Council Decision 26/15, *Strengthening International Cooperation on the Environmental Aspects of Emergency Response and Preparedness*, UNEP and OCHA recently hosted a workshop entitled *Framework for Environmental Emergency Response and Preparedness* in Geneva (30-31 May 2012) to advise and inform UNEP and OCHA's work to strengthen the UN response mechanism for the coordination and mobilization of international assistance to environmental emergencies. In this context a wildfire emergency is defined as an environmental emergency. Participants representing sixteen organizations, including the GFMC, agreed that UNEP and OCHA's work should focus on strengthening coordination within existing structures rather than developing a new international platform, overarching centralized response mechanism or joint-management plan framework. Participants advised UNEP and OCHA that what was most needed to perform their work in a more coordinated manner was an information-sharing mechanism which allowed for a clear understanding of which organizations had a responding mandate in a different type of environmental emergency and/or geographical location.

GFMC Contribution to the work of UNEP / OCHA

With the increasing interest of UNEP to address global wildland fire issues in the 1990s the Executive Director of UNEP played a major role in prompting ASEAN member states to develop the "ASEAN Agreement on Transboundary Haze Pollution", which was signed in June 2002. GFMC participated in the signing event after having accompanied the ASEAN process since the first major haze pollution episode in the 1980s. GFMC also provided background support to UNEP's global wildland fire assessment "Wildland Fires and the Environment: a Global Synthesis" published in 1999.³⁵

A UN-Interagency consultation on global wildland fire issues, hosted by the Executive Director of UNEP in August 2005 at the UN Geneva, confirmed the cooperative work between UNEP, GFMC and the Global Wildland Fire Network.

In the following UNEP-led initiatives the GFMC is representing the interests and contributions of the Global Wildland Fire Network:

- Member of the Senior-Level Expert Advisory Group *Awareness and Preparedness for Emergencies at Local Level* (APELL) (since 2003)
- Member of the Advisory Group on Environmental Emergencies (AGEE) (since 2003)³⁶

³⁵ Levine, J.S., Bobbe, T., Ray, N., Singh, A. and R.G. Witt. 1999. Wildland Fires and the Environment: A Global Synthesis, UNEP.

³⁶ The 2003 joint meeting of APELL and AGEE was co-chaired by GFMC: <http://www.fire.uni-freiburg.de/summit-2003/AGEE-Partnership-Final%20Report.pdf>

- Environmental Emergencies Partnership (March 2004)
- The Rosersberg *Initiative Strengthening the International System for Environmental Emergency Response* (since 2007)
- Development an Initial Concept for a Global Climate Early Warning System (CLIM-WARN) (launched in November 2010)
- Wildfire contribution to the OCHA/UNEP-led *Environmental Emergencies Center*, which is set up in 2012 and provides a new OCHA and UNEP tool to support national capacity-development activities in responding to industrial and technological accidents, and the environmental impacts of natural disasters and complex emergencies. The Center offers online and in-person training for emergency planners, disaster managers, national and local authorities in vulnerable low- and middle-income countries who must plan for and respond to these types of emergencies.³⁷

Most importantly are the interface procedures signed between the Joint UNEP / OCHA Environment Unit and GFMC in 2001 (followed by additional concrete terms of reference for addressing global wildfire emergency situations in October 2004) which regulate, among other, provisions for Mutual Assistance in addressing wildfire emergencies:³⁸

- **Responsibilities of the Joint UNEP/OCHA Environment Unit**
 - Whenever the Joint Unit receives a request for international assistance related to a wildland fire incident of national to international significance, the Joint Unit would inform the GFMC and discuss the coordinate of possible actions and avoid duplication of efforts.
 - The Joint Unit will routinely supply the GFMC with available information and situation reports related to wildland fire incidents that the Unit might addressing.
- **Responsibilities of the GFMC**
 - The GFMC agrees to inform the Joint Unit of any request for assistance received in conjunction with a major wildland fire, and to coordinate activities wit the Joint Unit, as appropriate.
 - The GFMC agrees to provide technical assistance and incident information related to wildland fires, to the extent possible, when requested by the Joint Unit.

Most recent fire assessment missions were conducted in cooperation with the Organization for Security and Cooperation in Europe (OSCE) (cf. section 3.4 of this report).

The Joint UNEP/OCHA Environment Unit is member of the UNISDR Wildland Fire Advisory Group.

2.5 World Health Organization (WHO)

Smoke from vegetation fires consists mainly of fine particulate matter in the respirable range and to a lesser extent, of carbon monoxide and polycyclic aromatic hydrocarbons, which are not generally relevant to the long distance transport of air pollutants. During the episode of smoke in the South East Asian countries, monitoring of particulate matter of mean aerodynamic diameter at or below 10 micrometers has shown that short-term air quality standards of WHO's Air Quality Guidelines (1987) for respirable particulate matter are largely exceeded. The WHO therefore became active in three major planning meetings aimed to prepare programmes and guidelines which will contribute to prevent and manage disasters caused by smoke from vegetation fires and to mitigate their effects on human health:

³⁷ <http://www.eecentre.org/>

³⁸ http://www.fire.uni-freiburg.de/emergency/int_agree.htm

- Organization of the *WHO Bi-Regional Workshop on Health Impacts of Haze-related Air Pollution* (Kuala Lumpur, June 1998)³⁹
- Co-sponsoring of the *WMO Regional Workshop on Transboundary Smoke and Haze in Southeast Asia* (Singapore, June 1998)⁴⁰
- Organization of the Workshop on and drafting of *WHO Health Guidelines for Episodic Vegetation Fire Events* (Lima, 6-9 October 1998)⁴¹
- Subsequent publication of the *Health Guidelines for Vegetation Fire Events – Guideline document*, the *Background Papers*, and the *Teachers’ Guide* (1999)⁴²

On 6 November 2001 the WHO and the Max Planck Institute for Chemistry, representing the Global Fire Monitoring Center (GFMC), signed a Letter of Agreement (LoA) on collaboration in joint research and training related to the reduction of vegetation fire smoke impacts on human health (A6/374/10, OEH/DS/117/nh).

In 2012 a new activity of WHO and GFMC was activated. A Workshop on *Health aspects of wildfire smoke* was organized jointly by the National Institute for Health and Welfare (THL), Finland, and the WHO European Centre for Environment and Health in Bonn on 21 May 2012, with support of the GFMC, back-to-back with the 15th Meeting of the Task Force for Health (TFH) of the UNECE Convention on Long-range Transboundary Air Pollution (22-23 May 2012). This provided an opportunity for interaction between the scientific experts and representatives of the Parties to the Convention. In the conclusions of the meeting the Task Force for Health suggests strengthening of interdisciplinary collaboration between experts and professionals on health and experts on landscape fire assessment and management, such as the Global Fire Monitoring Center (GFMC), the European Forest Fire Information System and the Global Wildland Fire Network. The improved co-operation would greatly enhance the capabilities to mitigate severe health effects in the vulnerable groups and impaired well-being in the general population, particularly in countries such as those in Southern Mediterranean and Eastern Europe, where landscape fires are a prominent feature.

The WHO is member of the UNISDR Wildland Fire Advisory Group. After retirement and lack of replacement within WHO the former WHO focal point (Dr. Schwela) is serving as a special expert in WFAG. The WHO European Centre for Environment and Health has been invited to become member of the Wildland Fire Advisory Group.

2.6 World Meteorological Organization (WMO)

The WMO has initiated and supported a series of activities, which address problems arising from vegetation fires and smoke impacts on human health and the environment. In June 1998 the WMO organized the Regional Workshop on Transboundary Smoke and Haze in Southeast Asia. The workshop closely interacted with the results of the WHO Bi-Regional workshop on Health Impacts of Haze-related Air Pollution (Kuala Lumpur, June 1998). WMO also co-sponsored the workshop on WHO Health Guidelines for Vegetation Fire Events, a publication co-authored by GFMC.⁴³

One of the eight Technical Commissions of the WMO is the Commission of Agricultural Meteorology (CAgM). The CAgM Publications Repository includes three fire-related publications:

³⁹ <http://www.fire.uni-freiburg.de/programmes/un/who/whwsh.htm>

⁴⁰ <http://www.fire.uni-freiburg.de/programmes/un/wmo/wmorep.htm>

⁴¹ <http://www.fire.uni-freiburg.de/programmes/un/who/whorep.htm>

⁴² <http://www.fire.uni-freiburg.de/programmes/un/who/who.html>

⁴³ See footnotes in Section 2.5

- Forecasting for Fire Services (1961)⁴⁴
- Wildland Fires Particularly in the Tropical Regions (1982)⁴⁵
- Fire in Forests, Rangelands and Agricultural System (2006) (with GFMC contribution)⁴⁶

The WMO global network of hydrometeorological services are the backbone of the Global Wildland Fire Early Warning System hosted by the GFMC.⁴⁷

In a joint IGAC/iLEAPS/WMO Workshop, hosted by WMO in July 2012, discussions were held of a new activity focusing on biomass burning that will coordinate and facilitate research on all aspects of biomass burning in order to better quantify the impact of biomass burning on atmospheric chemistry and climate.⁴⁸

The WMO is member of the UNISDR Wildland Fire Advisory Group, hosted the second meeting of the Working Group on Wildland Fires (WG-4) of Inter-Agency Task Force for Disaster Reduction (December 2001), and attended most meetings of the UNISDR Wildland Fire Advisory Group.

2.7 United Nations University (UNU)

The mission of the United Nations University (UNU) is "to contribute, through research and capacity building, to efforts to resolve the pressing global problems that are the concern of the United Nations, its Peoples and Member States". UNU is the "Think Tank" of the UN and ranked globally as a Top-Ten Government-Affiliated Think Tank and Top-Ten International Development Think Tank in 2010.

One of the UNU Institutes is the Institute for Environment and Human Security (UNU EHS). UNU-EHS addresses the probability of the occurrence of risks which are the consequence of complex –both acute and latent- environmental hazards. It aims to improve the in-depth understanding of the cause-effect relationships to find possible ways to reduce risks and vulnerabilities. The Institute is conceived to support policy and decision makers with authoritative research and information.

GFMC and United Nations University

Since October 2005 the GFMC is an Associated Institute of UNU and a formal partner of UNU EHS. The activities of a UNU-GFMC Joint Programme are based on the scope of the UNU mandate as stipulated by the Strategic Directions of UNU. The five thematic areas of UNU, namely, (i) Environment and Sustainability, (ii) Science, Technology and Society, (iii) Development and Poverty Reduction, (iv) Good Governance – from Local to Global, and (v) Peace and Security, will receive contributions from the Joint Programme in a cross-cutting and synergetic way.

The contribution of the GFMC to the UNU-EHS mandate includes applied research for the development of concepts for capacity building in advanced wildland fire management. Depending on projects and requests the GFMC services aim to cover:⁴⁹

- Methods of science and technology transfer for application in local fire management (wildland fire prevention, preparedness, suppression, rehabilitation) under different cultural, socio-economic and ecological environments

⁴⁴ <http://www.fire.uni-freiburg.de/programmes/un/wmo/WMO-CAGM-NT42-1961-Forecasting-Fire-small.pdf>

⁴⁵ <http://www.fire.uni-freiburg.de/programmes/un/wmo/WMO-CAGM10-1982-Wildland-Fires-Tropics-small.pdf>

⁴⁶ <http://www.fire.uni-freiburg.de/programmes/un/wmo/WMO-CAGM99-2006-Fire-Forests-Agriculture-small.pdf>

⁴⁷ <http://www.fire.uni-freiburg.de/gwfews/index.html>

⁴⁸ <http://www.fire.uni-freiburg.de/bibex/Welcome.html>

⁴⁹ <http://www.fire.uni-freiburg.de/programmes/un/unu/unu.htm>

- Methods and application of people-centered fire management (Community-Based Fire Management)
- Development of national strategies and policies for wildland fire management, including legislation
- Development of standards for international cooperation in wildland fire management (common terminology, standard procedures for cooperation in wildland fire emergencies)
- Training courses for international wildland fire management specialists, including experts for assessment and intervention missions

In practice numerous national and regional advanced seminars, conferences and training courses have been conducted by GFMC on behalf of UNU, particularly those addressing wildland fire and human security, e.g. the Advanced Seminar “Wildfires and Human Security: Fire Management on Terrain Contaminated by Radioactivity, Unexploded Ordnance (UXO) and Land Mines“ organized by GFMC in 2009 under the auspices of UNU, Council of Europe, UNECE, and OSCE / ENVSEC.⁵⁰

The UNU EHS is member of the UNISDR Wildland Fire Advisory Group.

2.8 United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO considers the objectives of the GFMC to be in line with those of UNESCO in the field of disaster prevention and mitigation and since they tie in particularly with UNESCO's action to promote and disseminate scientific information, knowledge and know-how with a view to reducing the negative impacts of fire. A Letter of Co-sponsorship of GFMC signed by UNSECO Director-General Frederico Mayor. 11 December 2011, on promoting and dissemination of scientific information, knowledge and know-how with a view of reducing the impacts of fire. UNESCO has authorized GFMC to use the logo of UNESCO.⁵¹

A first joint effort of UNESCO and GFMC was the organization of the International Scientific Conference "Fires in the Mediterranean Forests: Prevention - Suppression - Soil Erosion - Reforestation" (Athens, Greece, 1999).

The UNESCO World Heritage Centre (WHC) was established in 1992 to serve as the Secretariat for the World Heritage Convention.⁵² The WHC aims to ensure the long term protection and conservation of inscribed natural heritage sites and their World Heritage values. This includes undertaking monitoring missions in cooperation with site management agencies to evaluate the state of conservation of World Heritage sites, providing technical assistance, and building capacity in the States Parties. In pursuance of these and other crucial tasks the Centre has increasingly attempted to mobilize international support from public and private sectors. In October 2006 the WHC published the UNESCO World Heritage Centre's Natural Heritage Strategy, which was endorsed by the World Heritage Committee. The strategy considers addressing emergency situations such as forest fires as potentially irreversible damages to the protected sites. Thus WHC established the Rapid Response Facility (RRF) in cooperation with Fauna and Flora International (FFI) and the United Nations Foundation.⁵³

After demonstrating the need for strategic fire management planning in the pilot project “Forest Fire Threat in Qadisha Valley, Lebanon: Precautionary Action to Prevent Damage or Destruction of the UNESCO World Heritage Site”, implemented by GFMC, a database UNESCO World Heritage Sites

⁵⁰ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/GFMC-CoE-OSCE-Seminar-Ukraine-Brochure-Final-06-Oct-2009.pdf>

⁵¹ <http://www.fire.uni-freiburg.de/programmes/un/unesco/unseco.htm>

⁵² <http://whc.unesco.org/>

⁵³ See also the web page on disaster risk reduction of the WHC: <http://whc.unesco.org/en/disaster-risk-reduction/>

which will include a vulnerability analysis of wildfire threats, or the need for the use of prescribed natural or prescribed management fires, will be established by GFMC. A collaboration agreement between UNESCO / WHC and GFMC is underway aimed at enhancing GFMC / Global Wildland Fire Network support to WHC / RRF.

UNESCO has been invited to become member of the UNISDR Wildland Fire Advisory Group

2.9 United Nations Development Programme (UNDP)

The UNDP for many years has been partnering with the GFMC and the Global Wildland Fire Network in implementing UN-funded activities in the field of fire management. To mention **examples** of significant policy-supporting projects and capacity building:

- FYR Macedonia (2007): Ecological Damage Assessment of the Wildfires in the Former Yugoslav Republic of Macedonia in 2007. Joint Mission by the UNEP-OCHA Joint Environment Unit, UNEP, UNDP and GFMC⁵⁴
- Joint Fire Management Projects of OSCE / ENVSEC and UNDP/GEF in enhancing fire management capabilities in the Republic of Armenia, as laid down by the proceedings of the Conference "Forecast, Prevention and Suppression of Forest and Grassland Fires" (14 September 2011, Yerevan, Armenia)⁵⁵

UNDP country offices are briefed by GFMC and invited to national round tables on fire management in countries where GFMC is active in capacity building or national policy development.

2.10 United Nations Forum on Forests (UNFF)

The United Nations Forum on Forests (UNFF), a subsidiary body of the Economic and Social Committee of the United Nations (ECOSOC), was established in October 2000 with the main objective to promote "... the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end..." based on the Rio Declaration, the Forest Principles, Chapter 11 of Agenda 21 and the outcome of the IPF/IFF Processes and other key milestones of international forest policy.

The GFMC representing the UNISDR Wildland Fire Advisory Group and the Global Wildland Fire Network attended UNFF-5 (16-27 May 2005) and organized, jointly with and co-sponsored by the U.S. Forest Service, a side meeting "Development of a Strategy or Agreement on International Cooperation in Wildland Fire Management" (18 May 2005).⁵⁶

The note by the UNFF Secretariat on *Enhanced Cooperation and Policy and Programme Coordination* (E/CN.18/2005/5) stated:⁵⁷

37. Global Wildland Fire Advisory Group. The Wildland Fire Advisory Group of the United Nations International Strategy for Disaster Reduction has been working towards enhancing international cooperation and collaboration on preventing and combating forest fires. The members of the Advisory Group represent a number of government forest and forest fire services, United Nations organizations, research institutions,

⁵⁴ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/FYROM-2007.pdf>

⁵⁵ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/Armenia-Wildland-Fire-Conference-2011-Proceedings.pdf>

⁵⁶ <http://www.fire.uni-freiburg.de/programmes/un/ISDR-WFAG-GWFN-UNFF5-18-May-2005-4.pdf>

⁵⁷ <http://www.fire.uni-freiburg.de/programmes/un/UNFF-5-Cooperation-E-CN-18-2005-5.pdf> (paragraph 37, p. 16)

academia and non-governmental organizations. It has a number of regional wildland fire networks covering all regions of the world, and its close link to forests and sustainable forest management warrants closer collaboration with the Forum. The Forum secretariat attended the first meeting of the Advisory Group, held in Freiburg, Germany, on 3 and 4 December 2004.

2.11 The “Rio” Conventions

The workshop on "Forests and Forest Ecosystems: Promoting Synergy in the Implementation of the Three Rio Conventions", held in April 2004 in Viterbo, Italy. The workshop was organized by the Secretariats of the UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (CCD) and the UN Convention on Biological Diversity (CBD), in cooperation with the Secretariat of the UN Framework Convention on Climate Change (UNFCCC). The goal of the workshop was to encourage the implementation of specific actions at the local level on forests and forest ecosystems and their use and conservation and further develop synergistic processes in this sector in order to contribute to a more effective implementation of the Rio conventions. The Global Fire Monitoring Center (GFMC) participated at the workshop and addressed wildland fire as a main theme of cross-cutting issues between the work under the auspices of the three UN convention secretariats. The joint statement of the secretariats concluded that “Wildland fire management is therefore of common concern for the three Rio conventions and is an important area for collaboration.”⁵⁸

Some of the proposals made at the workshop, as noted by the Earth Negotiations Bulletin (Vol. 4 No. 174), meanwhile are being implemented through enhanced activities and progress made in e.g. the field of community-based fire management, or the development of wildland fire early warning systems.⁵⁹

The Secretariats of the three conventions are members of the UNISDR Wildland Fire Advisory Group.

Cooperation with UN FCCC

One activity of the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the UNFCCC is the Nairobi Work Programme (NWP). Its objective is to assist all Parties, in particular developing countries, including the least developed countries and small island developing States to improve their understanding and assessment of impacts, vulnerability and adaptation to climate change; and make informed decisions on practical adaptation actions and measures to respond to climate change on a sound scientific, technical and socio-economic basis, taking into account current and future climate change and variability.

The NWP is implemented by Parties, intergovernmental and non-governmental organizations, the private sector, communities and other stakeholders. The SBSTA encourages active engagement of adaptation stakeholders in the implementation of the NWP under mandated programme activities and work areas. The NWP disseminates knowledge and information on adaptation, and highlights the work of partners as widely as possible through a variety of knowledge products and publications.

The GFMC in its function of Secretariat of the Global Wildland Fire Network is a contributing member of the NWP.

⁵⁸ <http://www.fire.uni-freiburg.de/programmes/un/Viterbo-Final-Report-GFMC-Website.pdf>

⁵⁹ <http://www.fire.uni-freiburg.de/programmes/un/Earth-Negotiations-Viterbo-Workshop-Report-GFMC.pdf>

Cooperation with UN CBD

The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources. The Convention on Biological Diversity provides an adequate framework to address the negative impacts of human-induced fires on tropical, temperate, and boreal forest biological diversity.

In the following three documents the role / contribution of the GFMC is described.

- CCBD Report “Impacts of human-induced fires on biodiversity and ecosystem functioning, and their causes in tropical, temperate and boreal forest biomes” (UNEP/CBD/SBSTTA/7/INF/1, 24 October 2001)⁶⁰
- Report of the sixth meeting of the Conference of the Parties to the Convention on Biological Diversity (UNEP/CBD/COP/6/20, 27 May 2002)⁶¹
- Forest biological diversity: elements for a possible joint work programme on fire prevention and management. Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), 9th Meeting, Montreal, 10-14 November 2003 UNEP/CBD/SBSTTA/9/INF/15, 11 October 2003)⁶²

The GFMC is working closely with the CBD Secretariat on procedures for cooperation.

Upon request of the GFMC the Executive Secretary of CBD delivered an opening statement at the International Wildland Fire Summit (Sydney, Australia, 8 October 2003).⁶³

Cooperation with UN CCD

The Secretariat has nominated a focal point for the UNISDR Wildland Fire Advisory Group.

2.12 United Nations Office for Outer Space Affairs

The UN Office for Outer Space Affairs (UNOOSA) is the Secretariat for the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), a specialized committee of the UN General Assembly. At the Forty-fourth session of the COPUOS Scientific and Technical Subcommittee (Vienna, 12-23 February 2007) a special session “Space-system-based disaster management support“ included a joint contribution of GFMC, GEO Secretariat and GOFC-GOLD on “Use of Space Systems for Wildland Fire Early Warning, Monitoring and Decision Support in Wildfire Disaster Management“.⁶⁴

The *United Nations Platform for Space-based Information for Disaster Management and Emergency Response* UN-SPIDER aims at providing universal access to all types of space-based information and services relevant to disaster management by being a gateway to space information for disaster management support; serving as a bridge to connect the disaster management and space communities; and being a facilitator of capacity-building and institutional strengthening.⁶⁵ UN-SPIDER provides a Wildfire section and is partnering closely with GFMC.⁶⁶

⁶⁰ <http://www.fire.uni-freiburg.de/programmes/un/sbstta-07-inf-01-en.pdf>

⁶¹ <http://www.fire.uni-freiburg.de/programmes/un/cop-06-20-en.pdf>

⁶² <http://www.fire.uni-freiburg.de/programmes/un/sbstta-09-inf-15-en.pdf>

⁶³ <http://www.fire.uni-freiburg.de/summit-2003/CBDStatement.pdf>

⁶⁴ <http://www.fire.uni-freiburg.de/programmes/un/oosa/COPUOS-STSC-2007-06E.pdf>

⁶⁵ <http://www.un-spider.org/>

⁶⁶ <http://www.un-spider.org/disaster-and-risk-management-guides/wildfire>

2.13 Office of the Secretary General

The increasing significance of wildland fires in the global system has attracted greater political attention. The UN Secretary General BAN Ki-moon in 2011 delivered an opening statement at the 5th International Wildland Fire Conference (South Africa, May 2011)⁶⁷, which on his behalf was presented by the Director of GFMC, and observed a Round Table “Addressing Wildland Fire Risk“ which connected the conference (by video) with the Third Session of the Global Platform for Disaster Risk Reduction (GPDRR), which took place in the same week at the UN Geneva.⁶⁸ In September 2012 the Secretary General recommended upon the request of a national Foundation of Greece to utilize the services of the GFMC to follow up the severe wildfires on the Greek Island of Chios of August 2012.

3. Other International Organizations

3.1 The International Tropical Timber Organization (ITTO)

The ITTO is an intergovernmental organization established by a United Nations-negotiated treaty to promote sustainable development through tropical forest management, tropical forest conservation, and a sustainable tropical timber trade. ITTO formulates policies related to the sustainable management of tropical forests (including on the management of forest fire) and funds projects to implement such policies in the forest.

The GFMC has worked with ITTO in Wildland Fire Management since the late 1990s and authored co-organized to

- Development of the ITTO Guidelines on Fire Management in Tropical Forests (1997)⁶⁹
- International Cross-Sectoral Forum on Forest Fire Management in South East Asia, Jakarta, Indonesia (7-8 December 1998)⁷⁰
- ITTO Mission on Forest Fire Prevention and Management to Indonesia and Malaysia (Sarawak) (1998)⁷¹

Reports from ITTC Meetings included the collaborative activities with GFMC and the Global Wildland Fire Network:

- ITTO's Role in Tropical Forest Fire Management: Report on a side-event held in conjunction with the 32nd Session of the International Tropical Timber Council (2002)⁷²
- Decision of the 33rd Session of the ITTC concerning support of member countries, co-sponsorship of the 3rd International Wildland Fire Conference and Summit (Australia, October 2003), and cooperation with the Global Fire Monitoring Center (GFMC) (2002)⁷³
- Report to the International Tropical Timber Council from the 43rd Session of the Committee on Reforestation and Forest Management (2009)⁷⁴
- ITTO Biennial Work Programme for the years 2012-2013⁷⁵

⁶⁷ <http://www.fire.uni-freiburg.de/southafrica-2011/00-Wildfire-2011-UN-Secretary-General-Opening-Statement.pdf>

⁶⁸ <http://www.preventionweb.net/globalplatform/2011/documents/GP2011-Proceedings.pdf>

⁶⁹ <http://www.fire.uni-freiburg.de/programmes/itto/itto.htm>

⁷⁰ <http://www.fire.uni-freiburg.de/programmes/itto/cross.pdf>

⁷¹ <http://www.fire.uni-freiburg.de/programmes/itto/itto%20mission.pdf>

⁷² <http://www.fire.uni-freiburg.de/programmes/itto/ITTO%20side%20event.pdf>

⁷³ <http://www.fire.uni-freiburg.de/programmes/itto/E-C33-27.D6-short.pdf>

⁷⁴ <http://www.fire.uni-freiburg.de/programmes/itto/ITTO-43-Session-Report-13-Nov-2009.pdf>

⁷⁵ <http://www.fire.uni-freiburg.de/programmes/itto/ITTO-Biennial-Work-Programme-2012-2013.pdf>

Furthermore, GFMC and recipient countries have implemented field programmes sponsored by the ITTO, e.g., *Development of a Policy, a Strategy and Building Capacities in Local, National and Transboundary Forest Fire Management for Nepal*.⁷⁶

The ITTO is a member of the UNISDR Wildland Fire Advisory Group.

3.2 Council of Europe

The Council of Europe (CoE), through its Directorate of Culture and Cultural and Natural Heritage, European Open Partial Agreement on the Prevention, Protection Against and Organization of Relief in Major Natural and Technological Disasters (EUR-OPA Major Hazards Agreement), created in 1987, is a platform for co-operation in Europe and the Southern Mediterranean countries in the field of major natural and technological disasters: its field of action covers the knowledge of hazards, risk prevention, risk management, post-crisis analysis and rehabilitation. It has to date 25 Member States.

In addition to the political drive given by Ministerial Sessions, backed by its Committee of Permanent Correspondents (representatives from national Ministries in the field), the technical contribution from its Network of Specialized Centers; 25 Centers covering different types of risk), is an essential element of the Agreement's mechanism. These structures facilitate the concrete contribution to the common objectives of the various partners through implementation of European expertise and research, formation and information programs. Their specific role is thus to develop projects, both at the national and regional level, who aim to improve the awareness and resilience to major risks within the population.

The two Centers working in the arena of wildland fires are:

- European Centre on Forest Fires (ECFF) (Athens, Greece)⁷⁷
- Global Fire Monitoring Center (GFMC) (Freiburg, Germany)⁷⁸

As a contribution of the European and Mediterranean Major Hazards Agreement (EUR-OPA) a special paper was prepared by ECFF and GFMC for the 4th International Wildland Fire Conference in 2007:

- *Vegetation Fire Smoke: Nature, Impacts and Policies to Reduce Negative Consequences on Humans and the Environment. A Publication of the Council of Europe*.⁷⁹

An innovative activity was the *Advanced Seminar Wildfires and Human Security: Fire Management on Terrain Contaminated by Radioactivity, Unexploded Ordnance (UXO) and Land Mines*, held in Kiev and Chernobyl, Ukraine, 6-8 October 2009, coordinated by the Global Fire Monitoring Center (GFMC) in the frame of the activities of the Council of Europe (CoE) and the joint project "Enhancing National Capacity on Fire Management and Risk Reduction in the South Caucasus" (Environment and Security Initiative [ENVSEC]), the UNISDR Regional Southeast Europe / Caucasus and Central Asia Wildland Fire Networks and the UNECE / FAO Team of Specialists on Forest Fire.⁸⁰

⁷⁶ http://www.fire.uni-freiburg.de/GlobalNetworks/South_Asia/ITTO-Project-Outline.pdf

⁷⁷ http://www.coe.int/t/dg4/majorhazards/centres/presentation/ecff_EN.asp?

⁷⁸ http://www.coe.int/t/dg4/majorhazards/centres/presentation/gfmc_EN.asp

⁷⁹ <http://www.fire.uni-freiburg.de/sevilla-2007/Council-Europe.pdf>

⁸⁰ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/GFMC-CoE-OSCE-Seminar-Ukraine-Brochure-Final-06-Oct-2009.pdf>

At the 61st meeting of the EUR-OPA Committee of Permanent Correspondents held 29-30 September 2011 in Yerevan (Armenia) a proposal adopted on „Preventing and Fighting Wildland Fires in context of Climate Change“ (recommendation 2011-2).

- Recommendation 2011-2 on Preventing and Fighting Wildland Fires in context of Climate Change⁸¹

With the funding of the EUR-OPA Major Hazards Agreement the GFMC has supported setting up two Regional Fire Monitoring Centers (RFNC) in

- Southeast Europe / Caucasus, in the frame of the UNISDR Southeast Europe / Caucasus Wildland Fire Network, in Skopje, FYR Macedonia⁸²
- The Regional Eastern European Fire Monitoring Center, in Kiev, Ukraine (initiated in 2012, under construction)

This is an important move towards decentralizing and strengthening the efficiency of the UNISDR Regional Wildland Fire Networks. Following the initiative of the Council of Europe similar Regional Fire Monitoring Centers are currently in the phase of establishment in Central Asia (Mongolia), South Asia (Nepal) and Latin America (Brazil).

The Council of Europe, represented by the Secretariat of the EUR-OPA Major Hazards Agreement, is a member of the UNISDR Wildland Fire Advisory Group.

3.3 Organization for Security and Cooperation in Europe (OSCE)

Organization for Security and Cooperation in Europe (OSCE)

Since wildfires and vegetation fire smoke can easily spread over boundaries, thus making fire management become an additional source of contention to already strained relations between neighboring countries. Hence, because of the transboundary nature of wildfires and their potential impact, co-operating on fire management across borders is in the interest of all sides involved. Thus, like water management, fire-management has great potential to be a source of co-operation and an avenue for confidence-building.⁸³

The Environment and Security (ENVSEC) Initiative transforms environment and security risks into regional co-operation. ENVSEC comprises the Organization for Security and Co-operation in Europe (OSCE), Regional Environmental Centre for Central and Eastern Europe (REC), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), and the North Atlantic Treaty Organization (NATO) as associate partners. To assist the South Caucasus countries Armenia, Azerbaijan and Georgia in enhancing their fire management capacities, the OSCE, within the framework of the ENVSEC Initiative, launched the project “Enhancing National Capacity in Fire Management and Wildfire Disaster Risk Reduction in the South Caucasus”.⁸⁴

Conducted through the Global Fire Monitoring Center (GFMC) and the UNISDR Regional Southeast Europe / Caucasus Wildland Fire Network, the project aims to reduce wildfire risks in the region by improving national capacities to efficiently prevent wildfires, and to enhance the preparedness of state

⁸¹ <http://www.fire.uni-freiburg.de/programmes/europe-org/EUR-OPA-Recommendations-Wildland-Fires-Climate-Change-2011.pdf>

⁸² <http://www.rfmc.mk/>

⁸³ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/OSCE-Guide-CBM-Measures-2012-Extract-Fire.pdf>

⁸⁴ <http://www.fire.uni-freiburg.de/GlobalNetworks/SEEurope/ENVSEC-OSCE-South-Caucasus-2012-Extract-Fire.pdf>

authorities and civil society to respond to wildfires. Furthermore, the project aims to strengthen national capacities in fire management through the hand-over of training modules in the three national languages, and conducting practical and theoretical training for firefighters based on the *EuroFire Competency Standards* on safety, fire management techniques and tactics, use of hand tools and ignition. Model round tables and workshops for selected local communities provide an opportunity to explore the reasons for fire use in agricultural and pasture lands, the causes and consequences of wildfires, and possible solutions by participatory approaches in fire management. National Round Tables on Fire Management have been convened in the three countries to assess and review the fire problems in the country, to review the existing national legislative, regulatory and institutional framework of forest and land management concerning the reduction of wildfire hazard, prevention and control of wildfires, and the use of fire (including issues of responsibilities of government agencies, stakeholders of civil society, particularly local communities and individual land users), and to define needs for action. Furthermore, the Round Tables serve to facilitate an inter-agency dialogue to enhance coordination in fire management, and to consider the development of national forest fire management policies and implementation strategies.

Border-crossing cooperation between neighboring countries and the harmonization of work with international agencies, institutions and networks are an important component of the ENVSEC project. Several events were cosponsored by UNECE and the Council of Europe (through its European and Mediterranean Major Hazards Agreement – EUR-OPA). The Global Wildland Fire Network, which is operating under the umbrella of the UNISDR, and particularly its UNISDR Regional Southeast Europe / Caucasus Wildland Fire Network, was successful in bringing together partners in technical meetings and conferences. In the framework of this project, the first of two regional fire management training workshops was held in Antalya, Turkey.

The experience gained between 2006 and 2012 within the frame of this ENVSEC Project reveals that stable and long-term relationships between participating countries and the facilitating entities, in this case OSCE and its implementing partner GFMC, are necessary to successively build relationships both institutionally and personally with experts. Technical cooperation in building preparedness and response capabilities to wildfire disasters may become more sustainable over multi-year projects, while short-living projects may not meet the demands for building stable relationships.

In September 2012 the OSCE asked international organizations to a workshop “International Response to Major Natural and Man-made Disasters: The Role of the OSCE” (Vienna, 17 September 2012). The projects addressing fire management, at the same time serving as confidence-building measures, were presented as flagship projects and models for a possible future role of the OSCE in the arena of international response to major natural and human-made Disasters.⁸⁵

The OSCE, represented by office of the Coordinator of OSCE Economic and Environmental Activities, is a member of the UNISDR Wildland Fire Advisory Group.

3.4 The World Bank

Reducing disaster risks is an integral part of the fight against poverty. Sensible and cost effective risk reduction programs – such as early warning systems, strengthened building codes, and emergency preparedness strategies – are the best defense against future catastrophes.

The World Bank has been involved in post-disaster recovery and reconstruction for more than 25 years, with a trend toward increasing lending for risk reduction and mitigation, mainly by integrating risk reduction into investment programs. Natural disaster assistance accounted for 9.4 percent of total World Bank commitments between 1984 and 2005. This share has been increasing steadily over the

⁸⁵ <http://www.fire.uni-freiburg.de/intro/OSCE-Disaster-Workshop-17-Sep-2012-Agenda.pdf>

years. In the last four fiscal years alone, the Bank has approved \$9.2 billion for more than 215 disaster-related projects, including non-lending technical assistance.⁸⁶

The history of the World Bank's involvement in the field of wildland fire disaster management is reflected by the following activities:

- World Bank Finances Emergency Fire Prevention and Control Project in the Amazon Rainforest⁸⁷
- Amazon Emergency Fire Prevention and Control Project PROARCO⁸⁸
- World Bank Workshop "Fire Hazards, Transboundary Haze and Sustainable Forestry in East Asia and the Pacific"(Surabaya, Indonesia, 9-12 December 1998)⁸⁹
- A World Bank funded fire management project in Russia was launched in 2005: Fire Management in High Conservation Value Forests of the Amur-Sikhote-Alin Ecoregion⁹⁰

The GFMC has supported the development of this project and co-organized a seminar with a dedicated publication of the UNECE / FAO International Forest Fire News (No. 32, 2005).⁹¹

Currently the GFMC is cooperation with the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR)⁹², e.g. addressing wildland fire issues in the APEC region and with the Russian Federation.

3.5 North Atlantic Treaty Organization (NATO)

Since the early 1990s the Global Fire Monitoring Center (GFMC) and its predecessor institution (Fire Ecology Research Group) has cooperated with the NATO Scientific Affairs Division. The following reports and papers covering regional to global wildland fire issues were prepared at the GFMC:

- NATO Workshop: Science Policy: New Mechanisms for Scientific Collaboration between East and West (Novosibirsk, Russia, 22-25 November 1993)⁹³
- NATO Workshop: Sediment Records of Biomass Burning and Global Change (Algarve, Portugal, 11-14 October 1994)⁹⁴
- NATO Targeted Program of Cooperative Research (Moscow, Russia, 30-31 October 2000)⁹⁵

The Euro-Atlantic Disaster Response Coordination Centre (EADRCC) was created in 1998 as the focal point for coordinating disaster relief efforts of the 46 Euro-Atlantic Partnership

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http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/EXTDISMGMT/0,,_menuPK:341021~pagePK:149018~piPK:149093~theSitePK:341015,00.html

⁸⁷ http://www.fire.uni-freiburg.de/programmes/world_bank/w-bank_1.html

⁸⁸ http://www.fire.uni-freiburg.de/programmes/world_bank/w_bank_2.html

⁸⁹ http://www.fire.uni-freiburg.de/course/coursere/id_coure_2.htm

⁹⁰

<http://web.worldbank.org/external/projects/main?pagePK=104231&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P068386>

⁹¹ http://www.fire.uni-freiburg.de/iffn/iffn_32/content32.htm

⁹² <http://www.gfdr.org/gfdr/>

⁹³ http://www.fire.uni-freiburg.de/programmes/nato/nato_2.htm

⁹⁴ http://www.fire.uni-freiburg.de/programmes/nato/nato_3.htm

⁹⁵ http://www.fire.uni-freiburg.de/programmes/nato/nato_4.htm

Council (EAPC) nations in case of natural or technological disasters within the EAPC geographical area.⁹⁶ The GFMC is linked to EADRCC.

For the first time a large forest fire exercise has been prepared under the auspices of EADRCC. The field exercise "Taming the Dragon - Dalmatia 2002" was a Croatian contribution to the Partnership Work Programme (PWP). The exercise will be primarily conducted as a PWP Euro-Atlantic Disaster Response Coordination Centre (EADRCC) and Euro-Atlantic Disaster Response Unit (EADRU) activity. It will also involve other existing networks and organizations such as the Disaster Preparedness and Prevention Initiative (DPPI) of the Stability Pact, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and the South East Europe Group (SEEGROUP). GFMC participated in the exercise.⁹⁷

NATO is partner of the ENVSEC Initiative which is currently implementing the project "Enhancing National Capacity in Fire Management and Wildfire Disaster Risk Reduction in the South Caucasus".⁹⁸

4. International Scientific-Technical Organizations

4.1 Global Observations of Forest and Land Cover Dynamics (GOFD/GOLD)

Currently available space borne systems for the detection and monitoring of vegetation fires and fire impacts are not yet fully utilized by all countries. Satellite-derived information generated by institutions that already have satellite data receiving and processing capabilities must be systematically disseminated and utilized by all countries. Political and financial support for further development of dedicated satellite instruments and information systems designed to support fire management must be enhanced.

The Global Observations of Forest and Land Cover Dynamics (GOFD/GOLD) project, an element of the Global Terrestrial Observing System (GTOS) programme, sponsored by the Integrated Global Observing Strategy (IGOS), provides a forum for international information exchange, observation and data coordination, including calibration and validation of sensors and algorithms, and a framework for establishing the necessary long-term monitoring systems. The GOFD/GOLD Fire Mapping and Monitoring Theme is aimed at refining and articulating the international observation requirements and making the best possible use of fire products from the existing and future satellite observing systems, for fire management, policy decision-making and global change research

GOFD/GOLD and GFMC are closely interacting with the United Nations Office for Outer Space Affairs (UNOOSA), UNOSAT (Operational Satellite Applications Programme of the United Nations Institute for Training and Research – UNITAR), the International Charter "Space and Major Disasters", and the Group on Earth Observations (GEO) with its Global Earth Observing System of Systems (GEOSS).

Among a series of products the GFMC has been partnering with the Canadian Forest Service in the launch of the Global Wildland Fire Early Warning System.⁹⁹

⁹⁶ <http://www.nato.int/eadrcc/>

⁹⁷ <http://www.nato.int/eadrcc/tdragon/exercice2002.htm>

⁹⁸ see Section 3.3 of this report

⁹⁹ <http://www.fire.uni-freiburg.de/gwfews/index.html>

Mutual agreements include:

- GFMC serving as co-chair of the GOFC-GOLD Fire Implementation Team and is member of the GOFC-GOLD Executive Committee
- GOFC-GOLD Fire Implementation Team is an integrated partner of the Global Wildland Fire Network

The GOFC/GOLD project, represented by the Secretariat and the Coordinator of the Regional Fire Implementation Teams, is a member of the UNISDR Wildland Fire Advisory Group.

4.2 International Union of Forestry Research Organizations (IUFRO)

IUFRO Unit 8.03.05 “Forest Fire” (former Subject Group S 1.09, followed by Research Group 8.05.00 and Unit 8.01.10) is a group supporting and fostering forest (wildland) fire research. Until the early 1990s the activities of was restricted to co-sponsoring fire conferences. In 1994 it was intended to involve IUFRO more actively in fire research. It was recognized, however, that several international organizations had developed focused forest fire research programmes. At the IUFRO XX World Congress in Finland it was agreed to keep the group alive as a liaison node between IUFRO and the other fire research programmes.¹⁰⁰

IUFRO supports the work of the UNECE/FAO Team of Specialists on Forest Fire and is a co-sponsor UN-FAO/ECE International Forest Fire News and the Global Fire Monitoring Center.

The GFMC has served as Chair or Co-chair IUFRO Group 8.03.05 Forest Fire Research (Co-Chair 1987-92, Chair: 1992-95, Co-Chair 1998-2004). The current chairmanship is by Canada and Malaysia.¹⁰¹

Both Co-chairs of IUFRO Group 8.03.05 are members of the UNISDR Wildland Fire Advisory Group.

In 2012-2014 a forest fire research specialist of the Korean Forest research Institute (KFRI) is seconded to IUFRO and the International Institute for Applied Systems Analysis (IIASA), working with the GFMC and the Canadian Forest Service on the regional calibration of the Global Wildland Fire Early Warning System (cf. section 2.6. of the report).

5. Regional Organizations

5.1 ASEAN

Association of South East Asian Nations (ASEAN)

As a consequence of extended fire and smoke episodes since the early 1980s and especially in the 1990s ten member states of the Association of Southeast Asian Nations (ASEAN) commenced negotiations for a ASEAN agreement addressing regional air pollution resulting from land-use fires and wildfires. In June 2002 the Agreement on Transboundary Haze Pollution was adopted and came into force on 25 November 2003, with nine states currently participating (Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam).

¹⁰⁰ <http://www.fire.uni-freiburg.de/programmes/other/iufro.html>

¹⁰¹ <http://www.iufro.org/science/divisions/division-8/80000/80300/80305/>

This Agreement marks a world-first, as the first regional arrangement binding a group of contiguous states aimed at tackling transboundary haze pollution resulting from land and forest fires.¹⁰² The Agreement requires the Parties to:

- Cooperate in the development and implementation of measures to prevent, monitor, and mitigate transboundary haze pollution by controlling sources of land and/or forest fires, developing monitoring, assessment and early warning systems, exchanging information and technology, and allowing the provision of mutual assistance;
- Respond promptly to a request for relevant information sought by a State or States that are or may be affected by such transboundary haze pollution, with a view to minimizing the consequence of the transboundary haze pollution; and
- Take legal, administrative and/or other measures to implement their obligations under the Agreement.

The Agreement establishes an ASEAN Coordinating Centre for Transboundary Haze Pollution Control to facilitate cooperation and coordination in managing the impact of land and forest fires - in particular haze pollution arising from such fires. Pending the establishment of the Centre, ASEAN Secretariat and ASEAN Specialized Meteorological Centre (ASMC) co-performed the interim functions of the Centre.

GFMC participated in the signing event of the agreement, after having accompanied the ASEAN process since the first major haze pollution episode in the 1980s and serving as co-organizer in several dedicated conferences in the region.¹⁰³ Through GIZ the GFMC contributed to further development, such as conducting a workshop „Technical Input for the Implementation of the National Management Plan on Open Burning Smoke Haze Control“ (Thailand).¹⁰⁴

The ASEAN Secretariat is member of the UNISDR Wildland Fire Advisory Group.

5.2 Southern African Development Community (SADC)

In the last two decades, vegetation fires have become a major concern in the region of the Southern African Development Community (SADC) with regard to the negative impacts they have on the welfare of the environment and humans.¹⁰⁵ The SADC region of 14 Member States is home to 238 million people, of which approximately 75% are rurally based. The perceived rise in the number of wildfires negatively affects these rural communities which are often situated near the forests that provide them with their basic needs. The on-going process of climate change has the potential to exacerbate this situation by altering the frequency, intensity, severity and seasonality of fires in the SADC region.

A SADC regional fire management programme was proposed in 2010. It provides a framework for cooperation on fire management issues across national boundaries. Fire management is a technical, socio-cultural and political challenge that requires an effective network of willing partners that include governments, the private sector, local communities and international partners to find the appropriate balance between developing and conserving natural resources and managing unwanted

¹⁰² See ASEAN website „Haze Online“: <http://haze.asean.org/hazeagreement/>, and the full text of the agreement at: <http://haze.asean.org/docs/1128506236/ASEANAgreementonTransboundaryHazePollution.pdf/view>

¹⁰³ See also footnotes in the sections about UNEP, WHO and WMO

¹⁰⁴ http://www.fire.uni-freiburg.de/intro/about4_2010-Dateien/Thailand-ASEAN-Tech-Input-Nat-Open-Burning-Mgmt-Plan-17-December-2011.pdf

¹⁰⁵ Draft SADC Regional Fire Management Programme Document (June 2010): <http://www.fire.uni-freiburg.de/GlobalNetworks/Africa/SADC%20Regional%20Fire%20Management%20Programme%20Document-Final-6.pdf>

fires while at the same time promoting the safe and beneficial use of fire. The expected activities and outcomes of the SADC Regional Fire Management Programme include the establishment of a Regional Fire Management Resource Center. In late 2010 a trilateral project between South Africa, Tanzania and Germany (Trilateral Cooperation Fund – TRI-CO Fund) was launched to improve coordination and exchange of techniques, resources, science and other capacity building measures related to fire and fire management amongst contributing parties and SADC member states (duration: 2010-2013). The GFMC and associated specialists are supporting the GIZ and South Africa to implement the project.

Through the participation of a Focal Point of the UNISDR Regional Sub-Saharan Wildland Fire Network (AfriFireNet) in the UNISDR Wildland Fire Advisory Group is ensuring African inputs in this group.

5.3 Asia-Pacific Economic Cooperation (APEC)

In October 2010 the first “International Conference on Forest Fires: Management and International Cooperation in Preventing Forest Fires in APEC Region” was convened at the initiative of the Russian Federation. The aim of this conference was to strengthen cooperation between the emergency services of the APEC member economies in order to emphasize the readiness of the region to reduce the risks of disasters.¹⁰⁶ Following a deep and comprehensive analysis of the problem of forest fires in the APEC region and other regions, the conference identified the urgent necessity for joint efforts, mutual help and cross-border cooperation in forest fire risk reduction. The conference released the “Khabarovsk Recommendations on Management and International Cooperation in Preventing Forest Fires in the APEC Region”. The following priority directions of international cooperation under APEC were among those proposed:

- Development of an international mechanism to monitor and enhance responsibility of APEC member economies to ensure forest fire protection on their territories and coordinate action under APEC using existing institutions of international cooperation, such as UNISDR Global Wildland Fire Network, ASEAN, UNECE and others.
- Development of bilateral agreements on cooperation in fire management, particularly between APEC economies sharing common borders, and a voluntary regional agreement on cooperation in fire management, aiming at harmonizing cooperation with neighboring regional entities such as the UNECE and ASEAN, particularly in the light of overlapping membership of some economies.
- Development of long-term fire management strategies in each economy that allow for mitigation of the consequences of climate change.
- Improvement of strategic and operational early warning mechanisms in the APEC region as a regional activity to be coordinated with the Global Wildland Fire Early Warning system.
- Reconvene and contribute to the 6th International Wildland Fire Conference scheduled for 2015 (South Korea).

A priority follow-up activity has already included a joint fire management study course offered to APEC countries in 2011, hosted by the Russian Federation.¹⁰⁷

On request of APEC Secretariat and the Government of the Russian Federation the GFMC is serving as facilitator of the APEC dialogue in enhancing cooperative efforts in fire management between the APEC economies.

¹⁰⁶ <http://lesscentr.ru/en/en/index0.htm> and GFMC repository: <http://www.fire.uni-freiburg.de/GlobalNetworks/CentralAsia/APEC-Fire-Conference-2010-Recommendations-ENG.pdf>

¹⁰⁷ <http://www.fire.uni-freiburg.de/intro/APEC-EMERCOM-Wildfire-Management-Study-Course-2011-Agenda.pdf>

Several APEC economies are represented by regional network focal points members of the UNISDR Wildland Fire Advisory Group.

5.4 Mesoamerican Permanent Technical Group on Forest Fires

The Mesoamerican Permanent Technical Group on Forest Fires (*Grupo Técnico Mesoamericano Permanente sobre Incendios Forestales*) went into an agreement on cooperation in fire management through a Memorandum of Understanding signed between the *Secretaría de Coordinación Ejecutiva de la Presidencia*, Guatemala C.A., and GFMC in June 2001.¹⁰⁸

The participation of the Coordinator of the Regional Mesoamerican Wildland Fire Network ensures regional inputs to the UNISDR Wildland Fire Advisory Group.

5.5 European Union (EU)

In the 1980s and 1990s there was some exchange of firefighting expertise within the EU but little formal cooperation. The European Union Civil Protection Mechanism was established in 2001 and further strengthened in 2007. It provided a new capacity for coordination for Europe and now plays a central role in the EU forest fire risk prevention and forest firefighting coordination at EU level. There are currently 31 countries participating in the Mechanism („Participating States”): The 27 Member States of the European Union (EU) together with Iceland, Liechtenstein, Norway and Croatia. The Mechanism, which is managed by the European Commission, has tools to cope with wildfires in three phases of the disaster management cycle. The three main responsibilities and the tools allocated to the European Commission (Monitoring and prevention; Preparedness; Response) are outlined as follows:

Monitoring and prevention

The core operating body of the European Union Civil Protection Mechanism is the Monitoring and Information Centre (MIC). The MIC’s three major roles are:

- to provide a coordination platform for exchanging requests for assistance and offers of resources among Participating States;
- to be an agent for information exchange and dissemination regarding natural and man-made disasters worldwide and the regarding Mechanism interventions;
- to act as a coordinator in identifying gaps and developing solutions on the basis of the information it receives, facilitating the pooling of common resources where possible and supplying expert teams to the disaster location to tackle the problems more effectively.

The Common Emergency Communication and Information System (CECIS) facilitates coordination between the MIC and national authorities. The main tasks of CECIS include hosting a secure and reliable database on potentially available assets for assistance; handling requests for assistance on the basis of this data; facilitating the exchange of information and documenting all action and message traffic. The MIC receives fire risk assessment information from the European Forest Fire Information System (EFFIS). This web-based platform, which consists of a scientific and technical infrastructure, was developed jointly by the European Commission Joint Research Centre and Directorate General Environment (European Commission).

¹⁰⁸ <http://www.fire.uni-freiburg.de/GlobalNetworks/MesoAmerica/MoU-Spanish.pdf>

Preparedness

The EU Civil Protection Mechanism intermediates information dissemination activities and exchange of best practice knowledge between Participating States

Response

Through the EU Civil Protection Mechanism, the European Commission (EC) is able to:

- Mobilize small teams of experts to the site of an emergency;
- Provide and distribute information during an emergency/intervention;
- Play a facilitating role in the coordination of assistance requests and offers from Participating States;
- Coordinate with other actors at the international level and with other EU services; and
- Provide co-financing for the transport of assistance to the affected areas, on the request of the offering Participating States.

The EC has organized a Forest Fire Expert Group, which is meeting biannually and considered as a network of experts.

The GFMC has occasional cooperation with the EC, e.g. in targeted projects like:

- The Integrated Project “FIRE PARADOX - An Innovative Approach of Integrated Wildland Fire Management Regulating the Wildfire Problem by the Wise Use of Fire: Solving the Fire Paradox”, an international and interdisciplinary forest fire research programme with the participation of 31 institutions from 12 implemented between 2006 and 2009¹⁰⁹
- Leader of the EU Leonardo da Vinci Project “EuroFire Competency Standards” (Implemented 2006-2008), which produced competency standards, training modules, illustrations and general guidance on a competency based training system. The 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.¹¹⁰
- Partner of the „Study on wild fire fighting resources sharing models“, prepared for DG ECHO, European Commission (October 2010), in which the author participated.¹¹¹

6. International Non-Government Organizations

6.1 World Conservation Union (IUCN)

IUCN with the GFMC was the founding partner of WG-4 in the ISDR-IATF, finally leading to the formation of the Global Wildland Fire Network and the UNISDR Wildland Fire Advisory Group (cf. section 2.1. of this report). Relationships with IUCN’s programme in *Nature-based Disaster Risk Reduction* shall be explored in 2012.¹¹² Currently IUCN, together with GFMC, is contributing to the Partnership for Environment and Disaster Risk Reduction (PEDRR) (cf. Section 2.1 of this report).

¹⁰⁹ <http://www.fireparadox.org/>

¹¹⁰ <http://www.euro-fire.eu/>

¹¹¹ http://ec.europa.eu/echo/civil_protection/civil/prote/pdfdocs/future/Wildfire_Exec_Summary.pdf

¹¹² http://www.iucn.org/about/work/programmes/ecosystem_management/disaster/about_drr/

6.2 Comité Technique International du Feu (CTIF)

The International Technical Committee for the Prevention and Extinction of Fire / International Association of Fire and Rescue Services (Comité Technique International du Feu – CTIF) is a prime partner of the GFMC / Global Wildland Fire Network in building competency-based capacities of fire services. GFMC served to CTIF to reactivate its *Forest Fires Commission* in 2003. In the following years the CTIF cosponsored and co-worked in the EU Leonardo da Vinci programme the development of the EuroFire Competency Standards.¹¹³

Until 2011 CTIF was member of the UNISDR Wildland Fire Advisory Group. Renewal of membership is currently pending.

6.3 Green Cross International (GCI)

The Green Cross International¹¹⁴ and GFMC in 2012 initiated cooperation in assisting nations and international organizations to build and enhance preparedness of local communities to prevent the occurrence of wildfires and to reduce the adverse impacts of wildfires on the environment, human livelihoods, health and security. Capacity building of local to national actors includes also the wise use of prescribed fires in fire-dependent or adapted land-use systems and ecosystems, in which prescribed natural and management fires contribute to enhance stability, productivity and carrying capacity, and reduce the occurrence of uncontrolled, damaging wildfires.¹¹⁵

GCI has been invited to become member of the UNISDR Wildland Fire Advisory Group.

6.4 Australasian Fire Authorities Council (AFAC)

The Australasian Fire Authorities Council signed a letter agreement to become a member of Global Wildland Fire Network (Signed by AFAC CEO, November 2004).

AFAC is member of the UNISDR Wildland Fire Advisory Group.

7. National Governmental and Non-Government Organizations

Among national organizations collaborating with the GFMC and the Global Wildland Fire Network a few examples are quoted to highlight the spectrum of collaborative efforts.

Senegal

Centre de Suivi Ecologique (CSE)

Letter of Agreement (1999) on cooperation in remote sensing and fire ecology research

South Africa

Working on Fire

Memorandum of Understanding (2004) on cooperation in capacity building in fire management

Paraguay

Corpo de Bomberos Voluntarios del Paraguay

Reciprocal Cooperation Agreement with GFMC (2005)

¹¹³ See Section 5.5 of this report, and footnote 104

¹¹⁴ <http://www.gcint.org/>

¹¹⁵ <http://www.gcint.org/partners/global-fire-monitoring-center>

Cuba

Universidad de Pinar del Rio (2009)
Scientific cooperation agreement

Russian Federation

Aerial Forest Fire Center Avialesookhrana (2009)
Cooperation agreement in fire management (2009-2014)

Tomsk State University (2012)
Scientific cooperation agreement

Australia

Bushfire CRC (2011)
Cooperation agreement