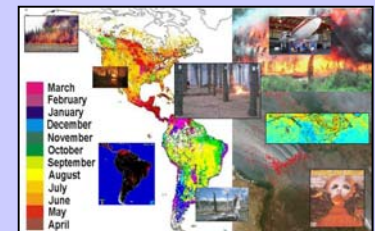


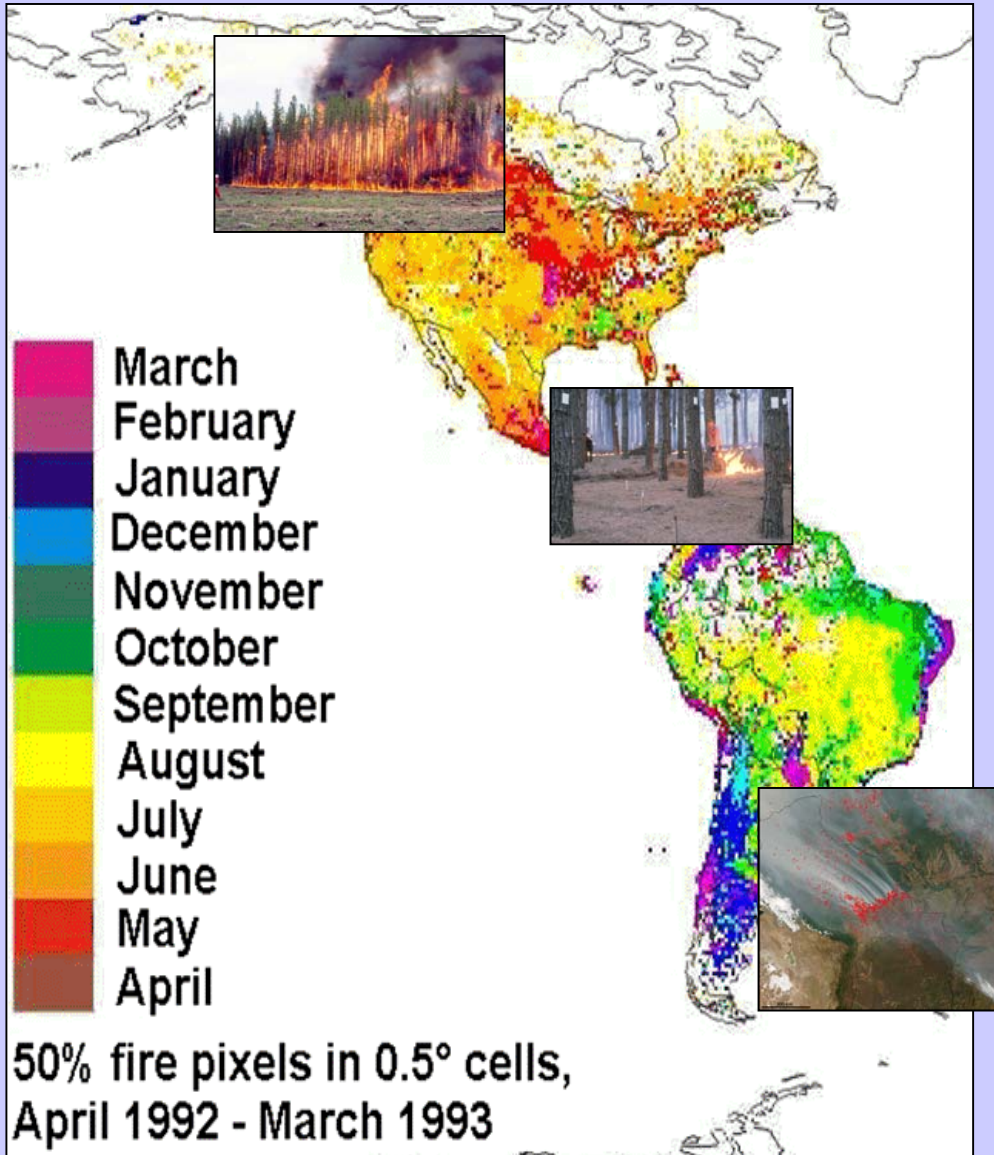


Strengthening International Cooperation in Wildland Fire Management: Towards Developing an International Wildland Fire Accord

Johann G. Goldammer
Global Fire Monitoring Center (GFMC)

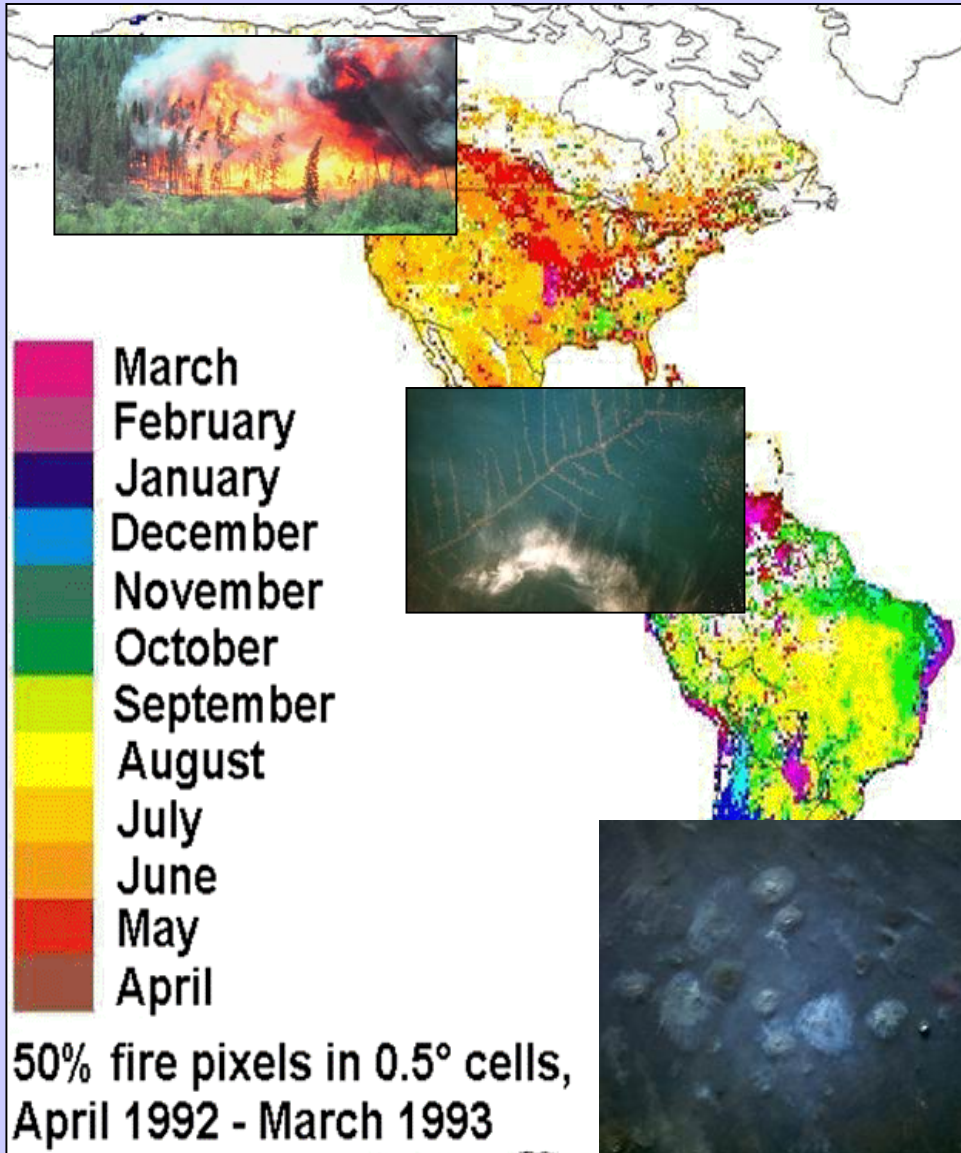
UN International Strategy for Disaster Reduction (ISDR)
Wildland Fire Advisory Group
Global Wildland Fire Network





The Americas - A region with a high diversity of

- ecosystems
- socio-cultural and economic conditions
- fire regimes
- fire seasons

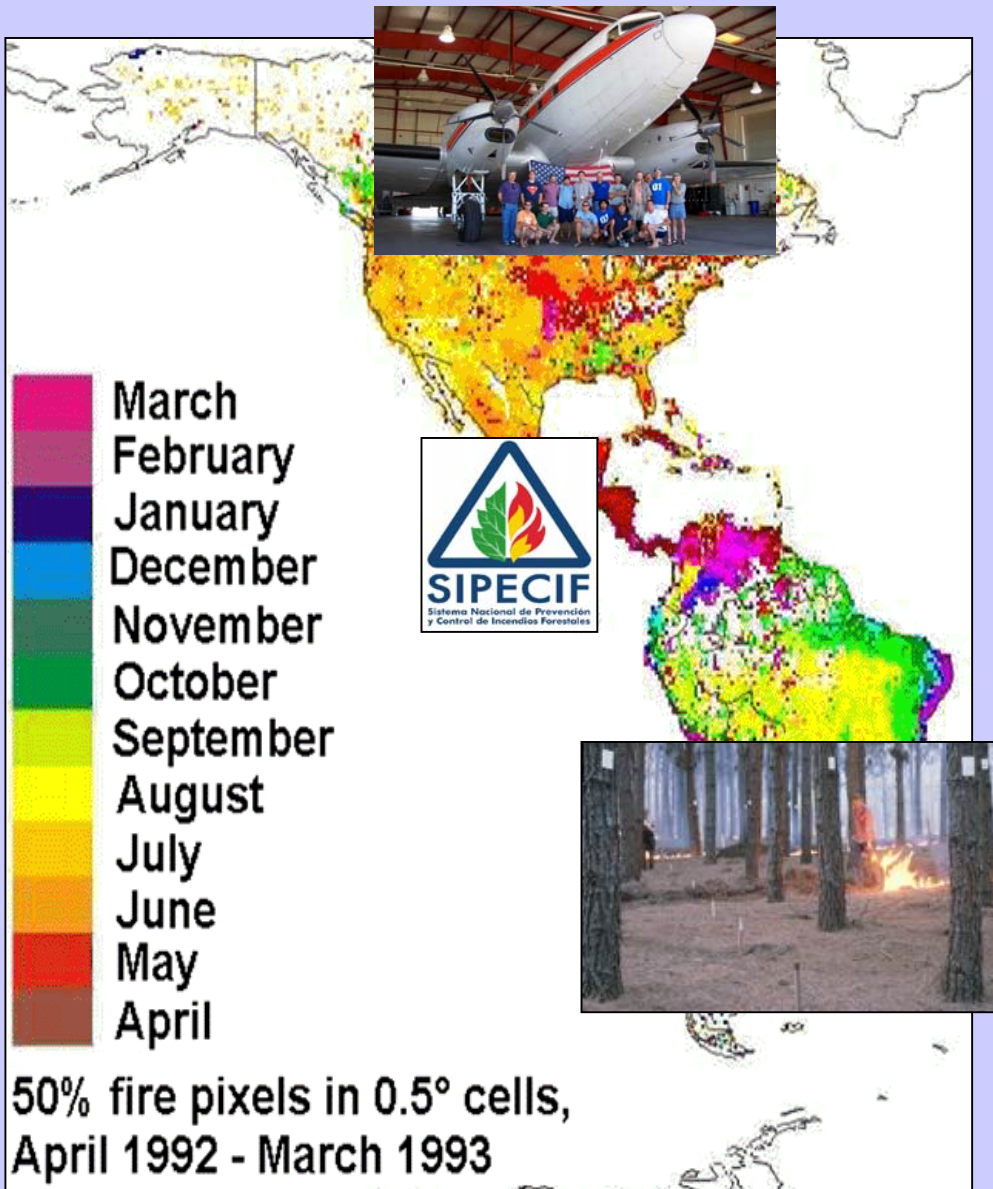


The Americas - A region experiencing changing wildland fire regimes due to

- land-use change
- migrations (ex-urban)
- climate variability

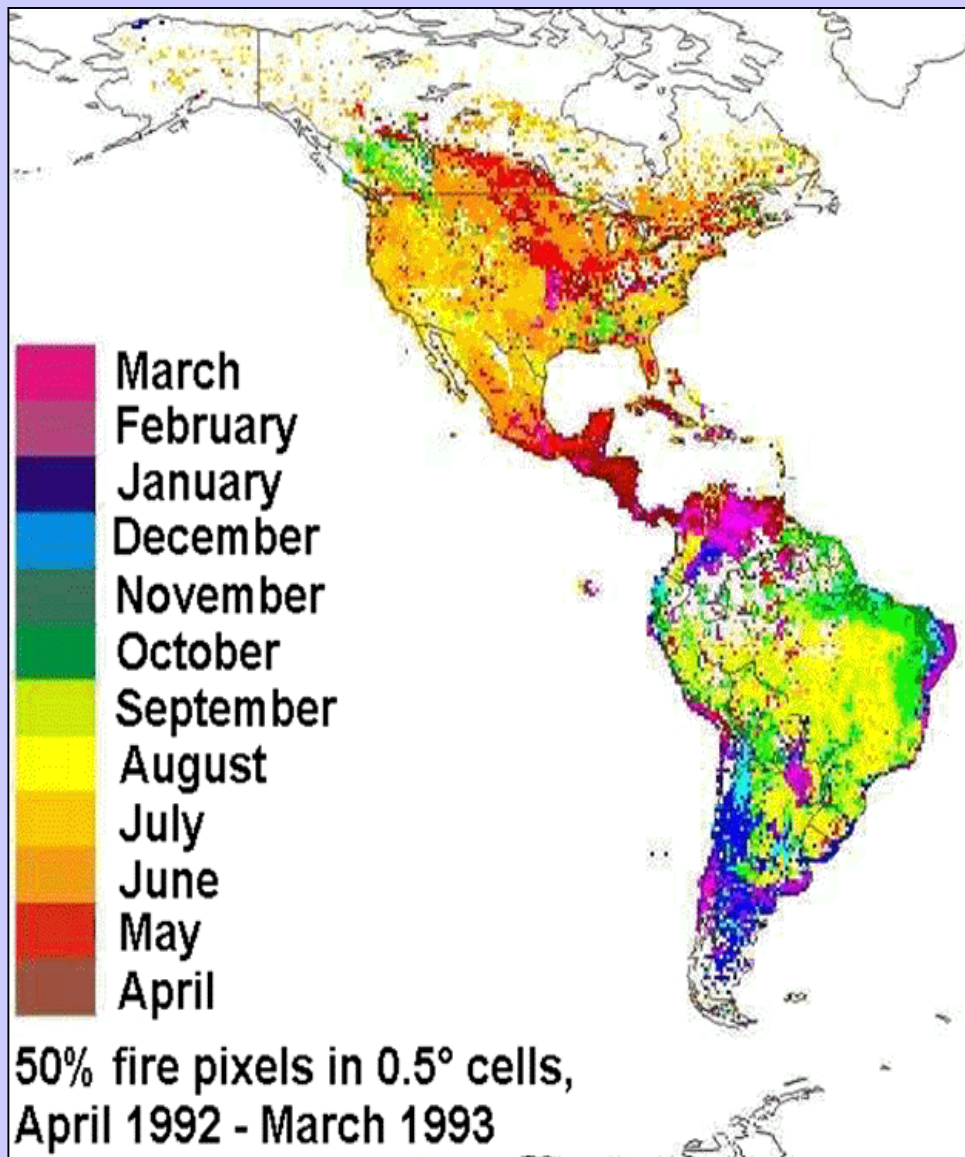
resulting in

- increasing vulnerability of ecosystems and humans to fire



The Americas - A region ready to share

- experience and best practices in sustainable use and protection of vegetation resources
- fundamental knowledge, and
- human and technological resources for wildland fire management



Objectives of the Pan-American Wildland Fire Conference:

Strengthening
International
Cooperation
in Wildland Fire
Management



Objective of this presentation

- **Overview of regional and international arrangements to cooperate in wildland fire research and development**
- **Goals of the Global Wildland Fire Network**
- **Roadmap for the development of the International Wildland Fire Accord:**
 - **from the Panamerican Wildland Fire Conference**
 - **towards an international wildland fire agreement**



..... reflecting

- **Views of the UN-ISDR Wildland Fire Advisory Group, in partnership with the FAO**
- **Strategic vision of the Global Fire Monitoring Center (GFMC)**
- **Rationale of the Global Wildland Fire Network**
- **Recommendations of the International Wildland Fire Summit (2003)**



Formation of the International Wildland Fire Alliance

Main partners and mechanisms involved

- **Science community**
- **Non-government organizations (NGOs)**
- **Bilateral and multilateral agreements**

Currently involved

Thematic Wildland Fire Networks (I)

- **International Union of Forestry Research Organizations (IUFRO)**
Forest Fire Research Group 8.05



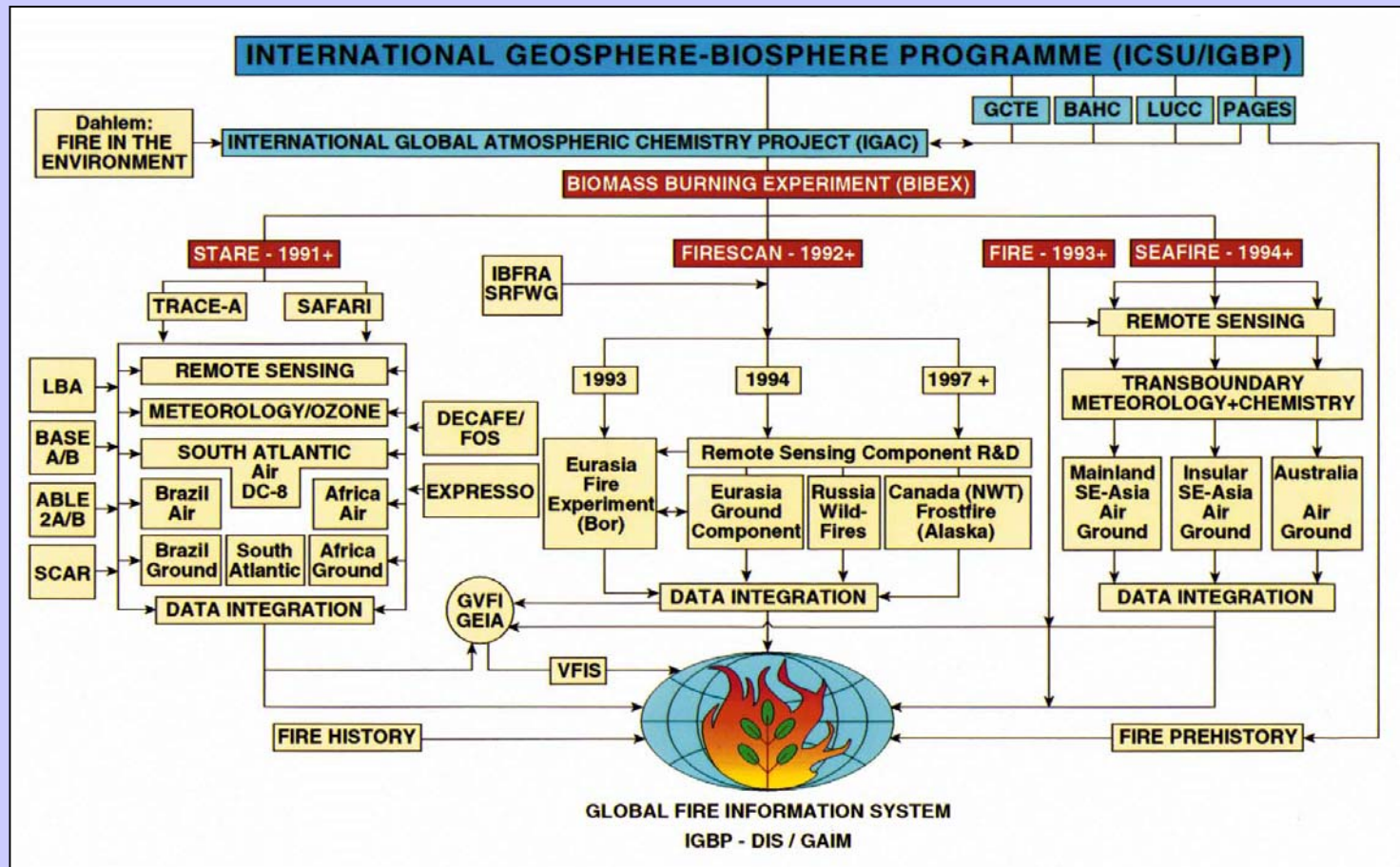
- **International Boreal Forest Research Association (IBFRA)**
Wildland Fire Working Group
(ex: Stand Replacement Fire Working Group)



Assessment of the Global Wildland Fire Status (I)

Contribution of Wildland Fire Science, e.g.

International Geosphere-Biosphere Programme (IGBP)

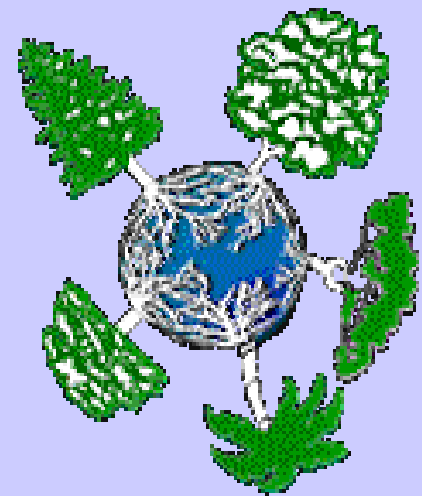
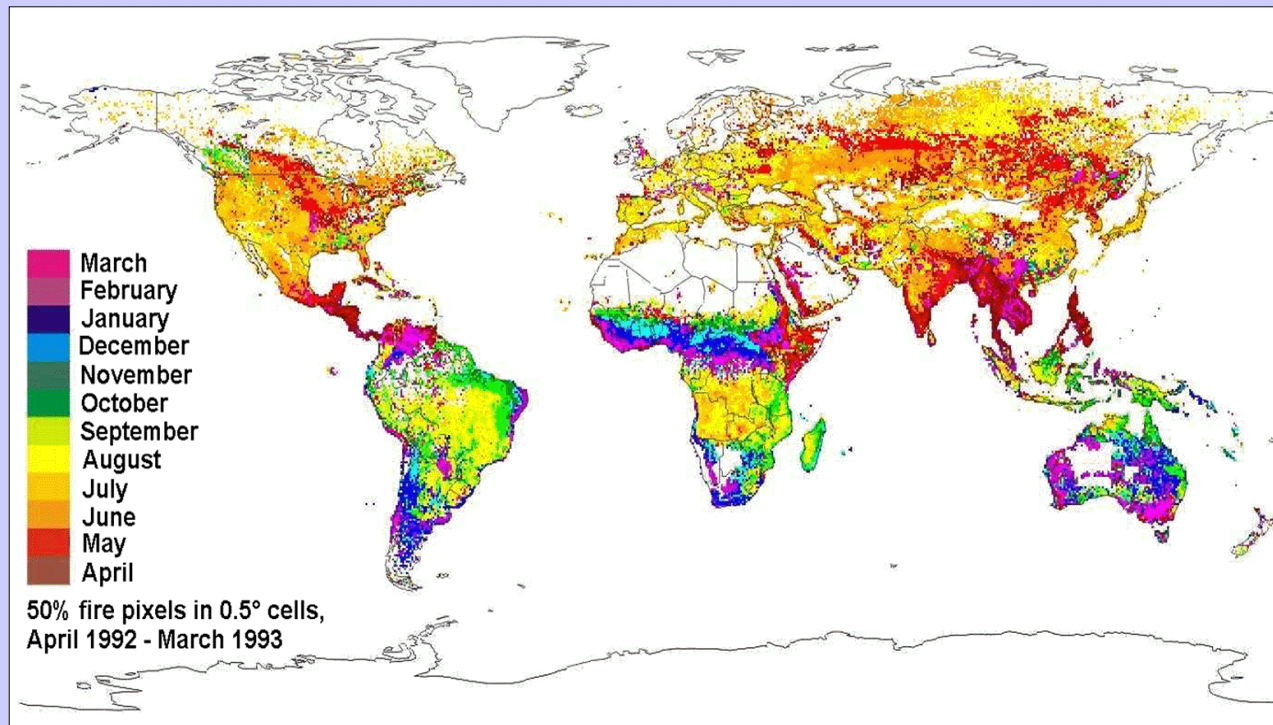


Assessment of the Global Wildland Fire Status (II)

Contribution of Thematic Wildland Fire Networks, e.g.

IGOS Global Observation of Forest and
Land Cover Dynamics (GOFC/GOLD):

Implementation Team: Fire Monitoring and Mapping



Currently involved

Thematic Wildland Fire Networks (III)

- **International Association of Wildland Fire (IAWF)**
 - International Journal of Wildland Fire
(published by CSIRO Publishing)
 - Wildfire Magazine
- **International Fire Information Network**
Special Interest Network (SIN) facilitated by
Charles Stuart University (CSU) Node and
Australian National University (ANU) Node



<http://www.csu.edu.au/firenet/firenet.htm>

Currently involved

Thematic Wildland Fire Networks (IV)

- **Non-Governmental Organizations**

IUCN-WWF-TNC Global Fire Partnership

- **Founded on 10 September 2003, Durban, South Africa**
- **Strategic Meeting with International Participation: 16-18 May 2004**



Currently involved

Thematic Wildland Fire Networks (V)

- **International Technical Committee for the Prevention and Extinction of Fire (Comité Technique International de Prévention et d'Extinction du Feu - CTIF)**

Commission on Forest Fires

- **Reactivated 18 September 2003, Budapest, Hungary**
- **UK Wildland Fire Conference, Aberdeen, Scotland, 5 October 2004**
- **Balkan Regional Network: Multilateral forest fire exercise in Bulgaria (2005)**
- **Forest Fire Management Handbook for European Fire Services (GFMC)**



COMITÉ TECHNIQUE INTERNATIONAL DE PRÉVENTION ET D'EXTINCTION DU FEU

INTERNATIONAL TECHNICAL COMMITTEE FOR THE PREVENTION AND EXTINCTION OF FIRE

МЕЖДУНАРОДНЫЙ ТЕХНИЧЕСКИЙ КОМИТЕТ ПО ПРЕДОТВРАЩЕНИЮ И ТУШЕНИЮ ПОЖАРОВ

INTERNATIONALES TECHNISCHES KOMITEE FÜR VORBEUGENDEN BRANDSCHUTZ UND FEUERLOSCHWESEN

COMITATO TECNICO INTERNAZIONALE DI PREVENZIONE ED ESTINZIONE INCENDI



Currently involved

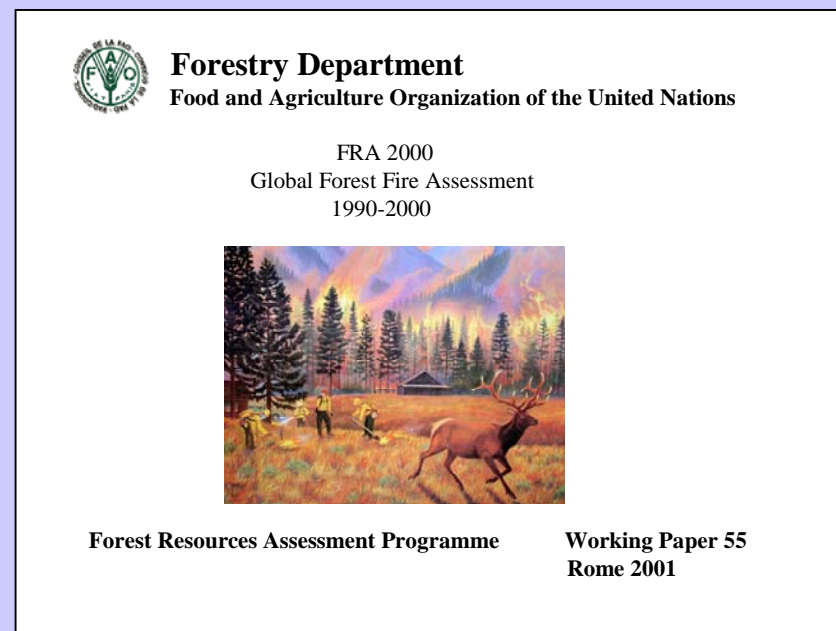
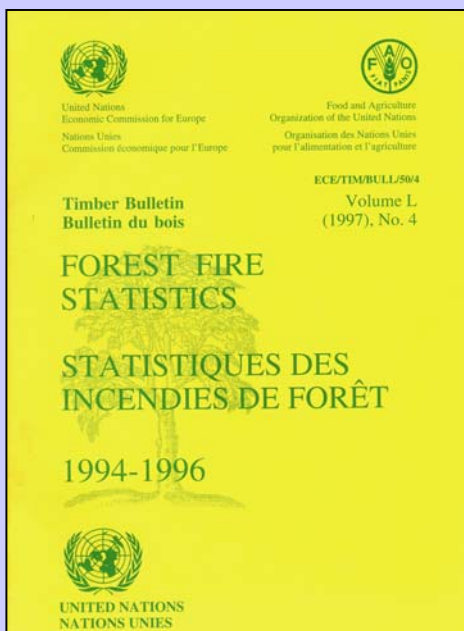
Wildland Fire Networks within the UN (I)

- **Economic Commission for Europe European Forestry Commission**
(Europe, CIS, USA, Canada)
UNECE / FAO Team of Specialists on Forest Fire
- **North American Forestry Commission**
Fire Management Working Group
- **FAO Silva Mediterranea**
Forest Fire Working Group

Currently existing Wildland Fire Networks within the UN (II)



Joint Products / Publications





Forestry Department

Food and Agriculture Organization of the United Nations

FRA 2000
Global Forest Fire Assessment
1990-2000



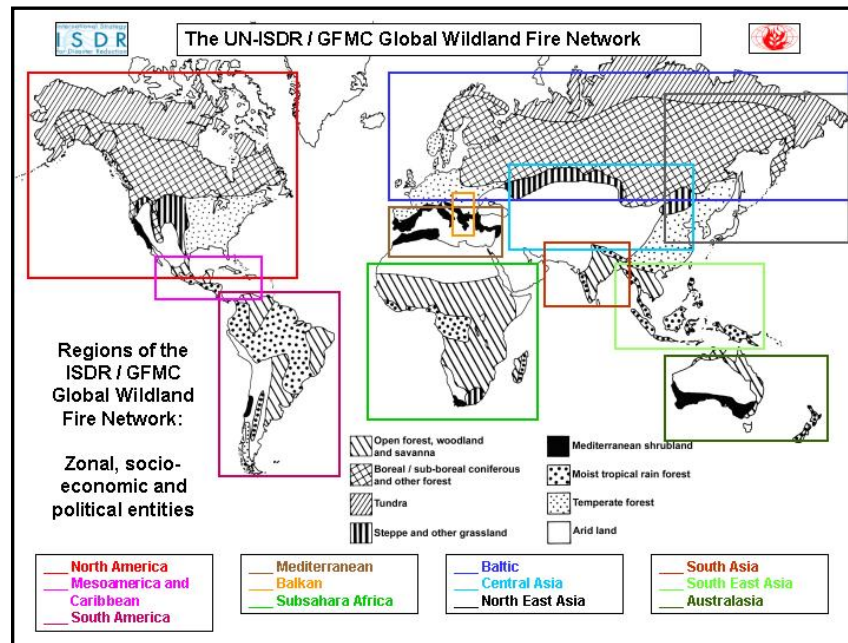
Forest Resources Assessment Programme
Working Paper 55
Rome 2001



Forestry Department

Food and Agriculture Organization of the United Nations

FRA 2005 Global Forest Fire Assessment 2000-2005



Forest Resources Assessment Programme Rome 2005



Currently involved

Wildland Fire Networks within the UN (III)

- **United Nations Office for the Coordination of Humanitarian Affairs (OCHA) & United Nations Environment Programme (UNEP)**

Joint UNEP/OCHA Environment Unit

Advisory Group on Environmental Emergencies (AGEE)

Mandate:

- **Coordinate the UN response to environmental emergencies, including wildfire disasters**
- **Cooperate with GFMC / ISDR / FAO / UNU ... in improving prevention and preparedness by conducting Advanced Wildland Fire Management Training**



Currently involved

Wildland Fire Networks within the UN (IV)

➤ Inter-Agency and international cooperation through

- **UN International Strategy for Disaster Reduction (UN-ISDR)**

Inter-Agency Task Force for Disaster Reduction

Working Group on Wildland Fire (2001-2003)

UN-ISDR Wildland Fire Advisory Group (since 2004)

Objectives

- Advisory body to the UN
- Global inter-agency, inter-sectoral and interdisciplinary platform for the wildland fire community
- Facilitation of the Global Wildland Fire Network

Main UN Partners of the Wildland Fire Advisory Group



Besides the mentioned regional arrangements and networks:

- UN Food and Agriculture Organization (FAO)
- WHO, WMO, UNESCO
- UN Forum on Forests (UNFF) (since 2003)

- UN Conventions
 - Convention on Biodiversity (CBD) (since 2003)
 - Convention on Combat of Desertification (CCD) (since 2004)
 - Framework Convention of Climate change (FCCC) (expression of interest, since 2004)

- United Nations University, Institute for Environment and Human Security



The Global Wildland Fire Network

Objectives (I):

- Establishment / support of Regional Wildland Fire Networks
- Promotion of the dialogue between wildland fire scientists, managers and policy makers
- Promotion of formal agreements on cooperation in wildland fire management between countries (bilateral, multilateral)
- Sharing of wildland fire management resources (e.g., costly equipment such as aerial assets)
- Development of standards
- Joint fire management training

The Global Wildland Fire Network



Objectives (II):

- Establishment of an international dialogue / sharing of information and resources between regions and international organizations
- Implementation of recommendations of international conferences and the International Wildland Fire Summit
- Preparation of an International Wildland Fire Accord

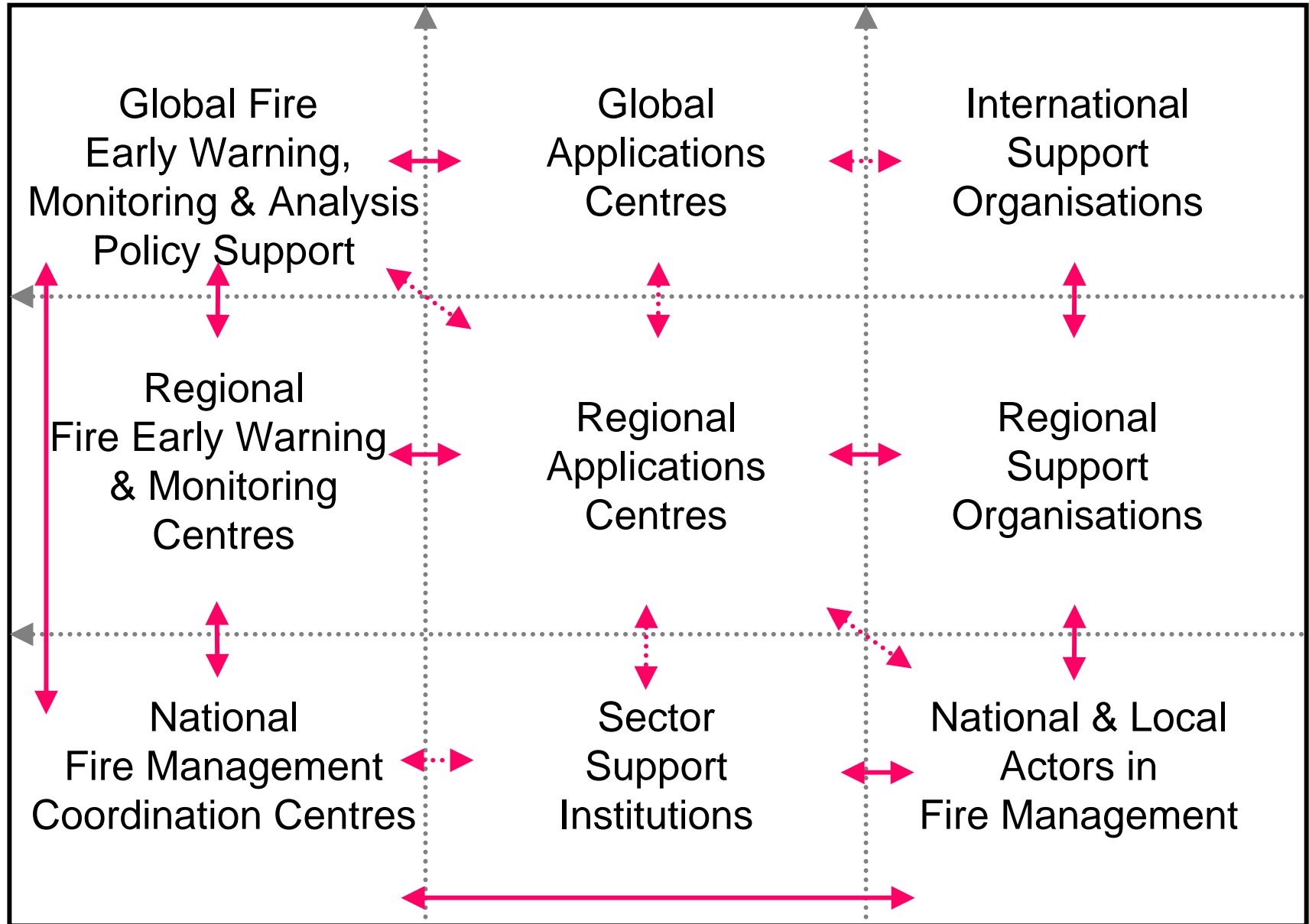
**Scientific & Technical
Analysis & Prediction**

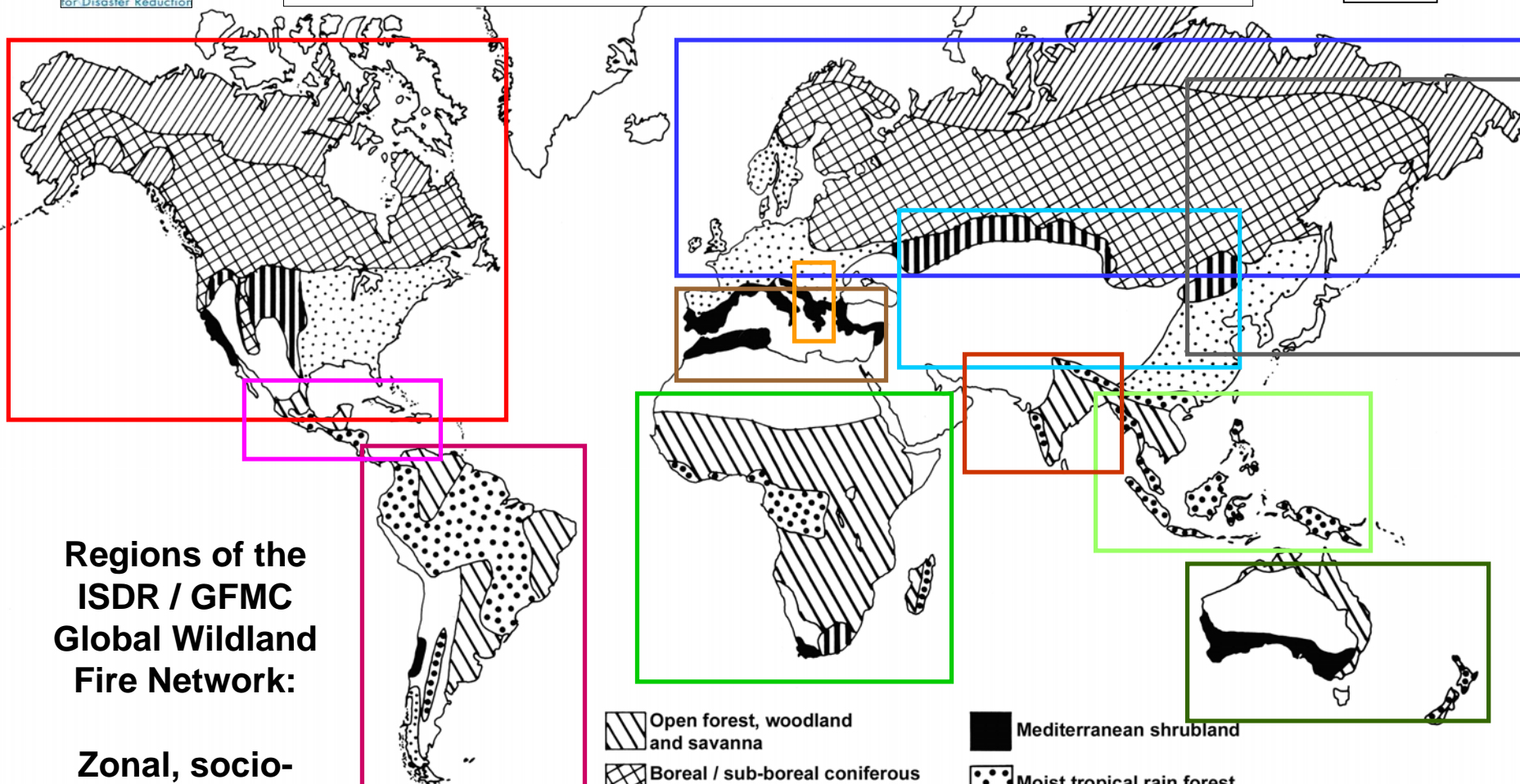
**Social & Economic Actions;
Fire Management**

Global Scale

Regional Scale


**National to
Local Scale**







**Regions of the
ISDR / GFMC
Global Wildland
Fire Network:**

**Zonal, socio-
economic and
political entities**

 Open forest, woodland
and savanna

 Boreal / sub-boreal coniferous
and other forest

 Tundra

 Steppe and other grassland

 Mediterranean shrubland

 Moist tropical rain forest

 Temperate forest

 Arid land

— North America
— Mesoamerica and
Caribbean
— South America

— Mediterranean
— Balkan
— Subsahara Africa

— Baltic
— Central Asia
— North East Asia

— South Asia
— South East Asia
— Australasia

Currently existing and planned Regional Wildland Fire Networks (I)



- **Regional South East Asia Wildland Fire Network (ASEAN)**



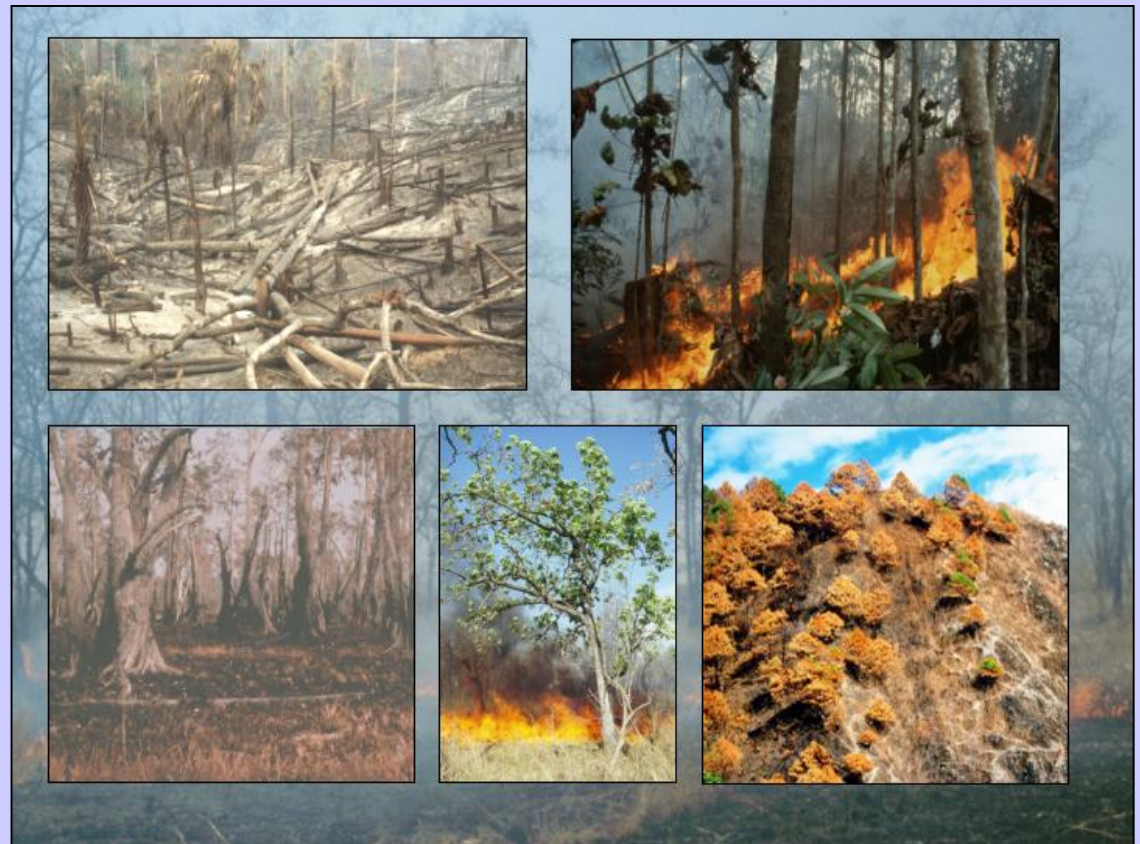
ASEAN Transboundary Haze Agreement

Signed: June 2001

In Force: Nov 2003

Next COP meeting:

November 2004



Currently existing and planned Regional Wildland Fire Networks (II)



- Regional Subsahara Africa Wildland Fire Network**

Afrifirenet / SAFNet

Founded: July 2002



Recent alarming trends:

**Increasing fire pressure on
vulnerable forest ecosystems of Sub-
Sahara Africa:**

Example: Afro-montane forests of Ethiopia



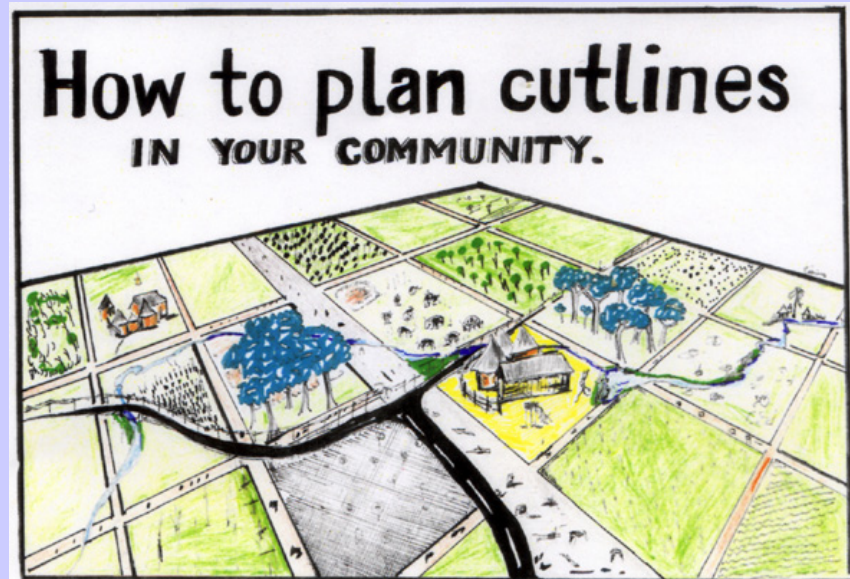
Priorities defined since the late 1990s

Development of National to Regional Forest Fire Management Strategies through Round Tables on Forest Fire

- Namibia 1999
- Ethiopia 2000
- Sub-Saharan
Region 2004
(FAO-GFMC-
Afrifirenet)



Priority: Community-Based Fire Management



Currently existing and planned Regional Wildland Fire Networks (III)



- **Regional Mediterranean Wildland Fire Network**
FAO Silva Mediterranea



Zaragoza Meetings

June 2003

27 September –
1 October 2004





WORKSHOP ON MULTILATERAL ASSISTANCE AGAINST FOREST FIRES

FAO/Silva Mediterranea/Ciheam/DGCN

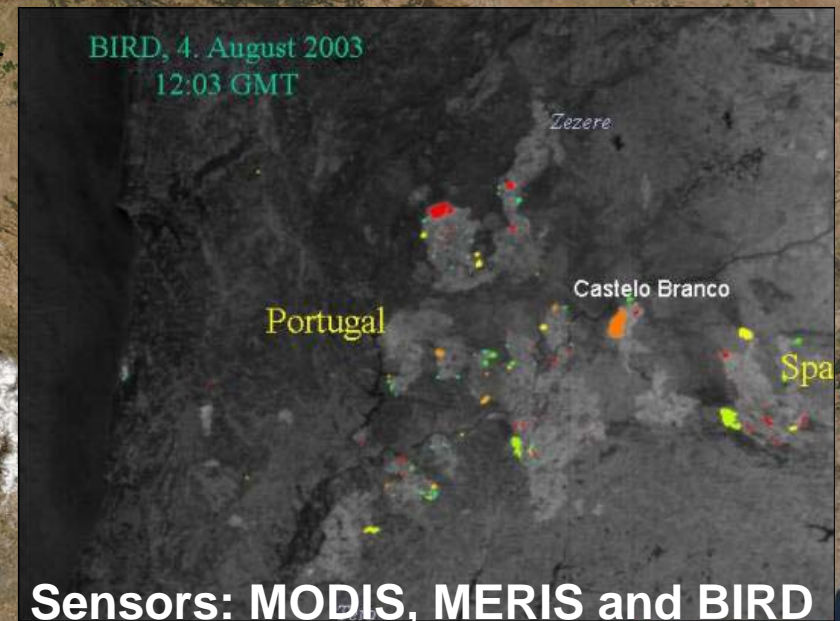
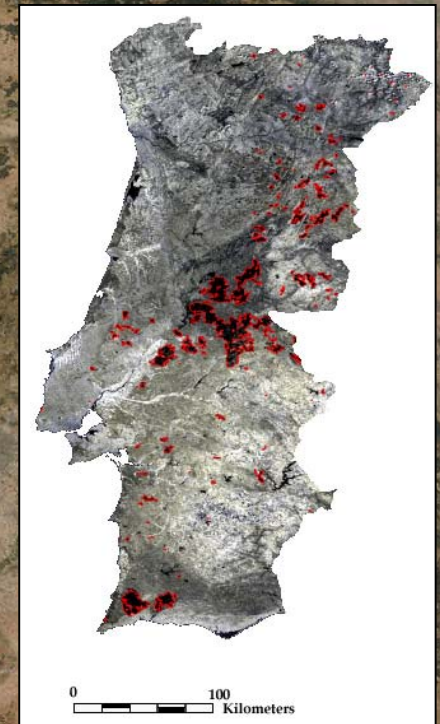


Zaragoza, June 2003

MINISTERIO DE MEDIO AMBIENTE

Dirección General de Conservación de la Naturaleza
Area de Defensa contra Incendios Forestales

Portugal 2003 – Unprecedented Fire Intensities and Severities



Currently existing and planned Regional Wildland Fire Networks (IV)



- **Regional Australasia Wildland Fire Network**
Australasian Fire Authorities Council (AFAC)

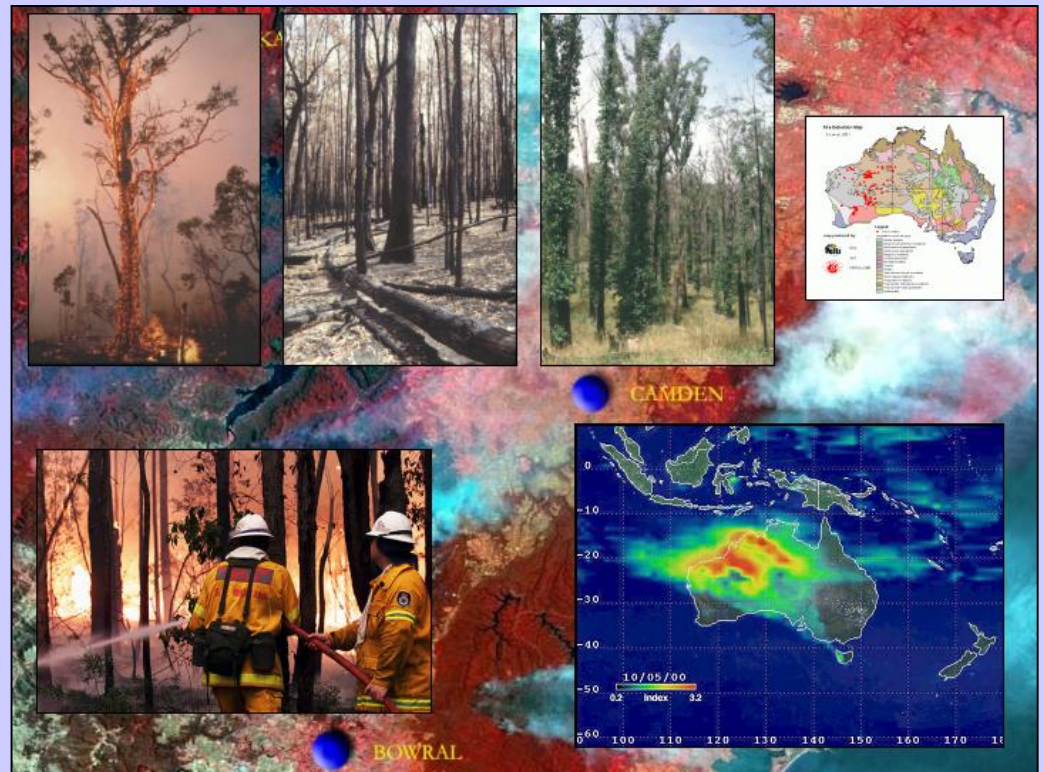
Originally: Australia

Now regional:

Australia, New Zealand

Pacific Region

Agreements between
AUS-NZ-USA



Increasing vulnerability of the Wildland / Urban Interface

Australia: January 2003

Suburban fires in Canberra
Loss of 474 houses with a
total insurance damage of
\$AUS 285 Million.

U.S.A.: October 2003

Suburban fires in
California: Loss of 3640
homes, 33 commercial
properties, and 1141 other
structures causing a total
damage of more than \$US
2 billion, with possible
insurance claims estimated
to top \$US 10 billion.



Currently existing and planned Regional Wildland Fire Networks (V)



- **Regional North America Wildland Fire Network**
FAO NAFC Fire Management Working Group



Regional Partner of the
Global Wildland Fire
Network



Currently existing and planned Regional Wildland Fire Networks (VI)



- Regional Balkan Wildland Fire Network**

UN-ECE Region: Team of Specialists on Forest Fire

Founded: 2002

Monitoring Center

Bulgaria 2004+

Regional Wildland Fire

Advisory Group

Turkey 2004



Exercising Partnerships:

Exercise Taming the Dragon – Croatia 2002

**Coordinated by NATO - Euro-Atlantic Disaster
Response Coordination Centre (EADRCC)**



Taming the Dragon – Croatia 2002



Currently existing and planned Regional Wildland Fire Networks (VII)

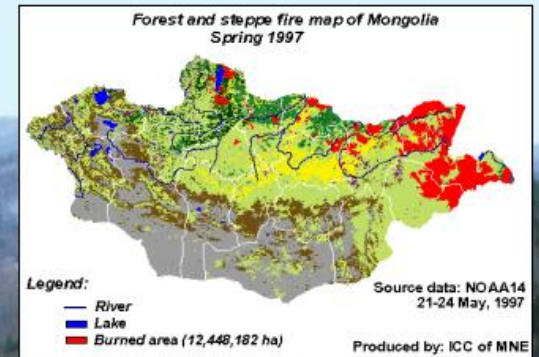
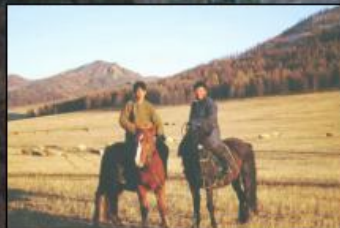


- Regional Central Asia Wildland Fire Network**

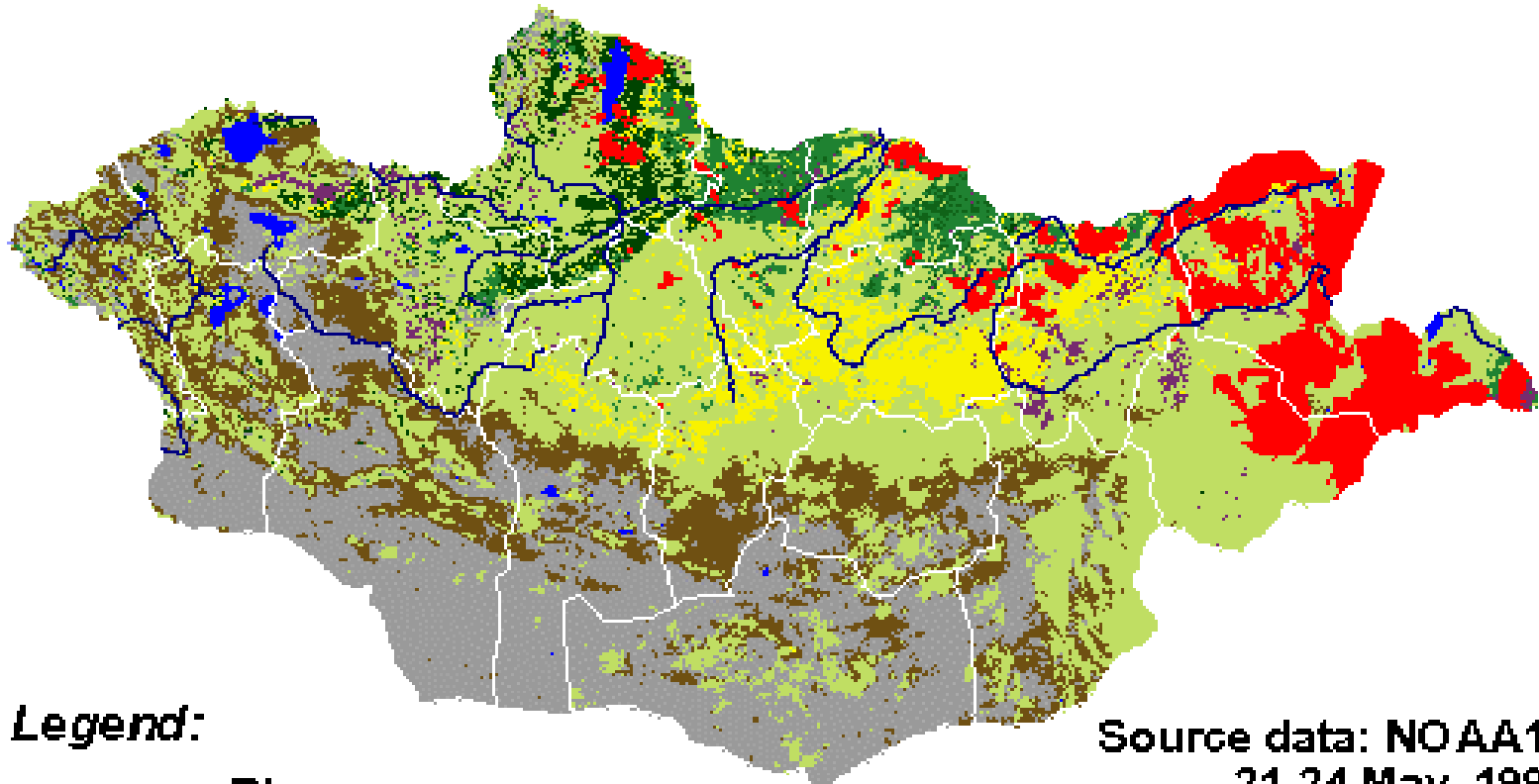
UN-ECE Region: Team of Specialists on Forest Fire

Regional Wildland Fire
Advisory Group
Turkey 2004

See:
Antalya Declaration
1 April 2004



Forest and steppe fire map of Mongolia
Spring 1997

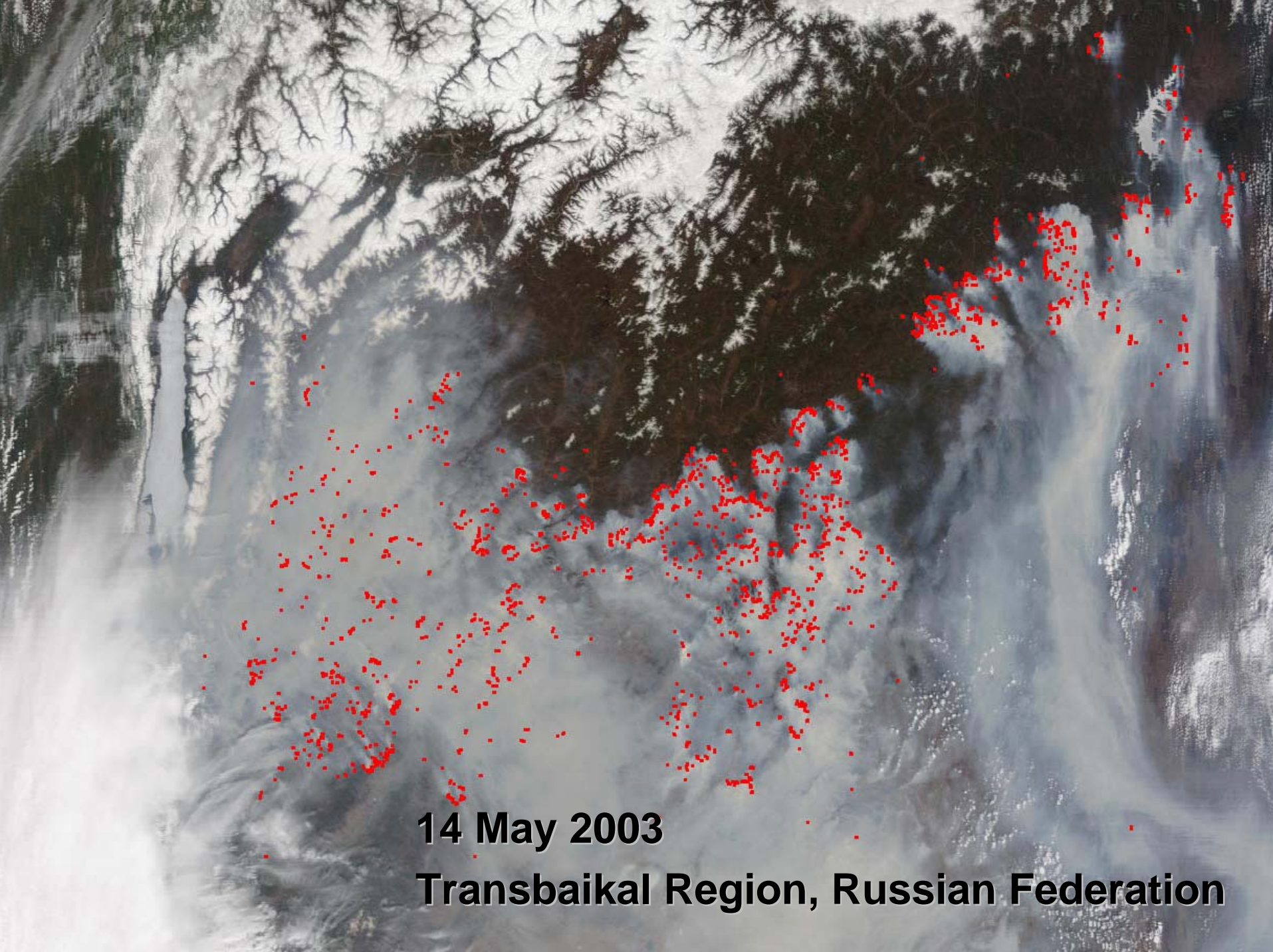


Legend:

-  *River*
-  *Lake*
-  *Burned area (12,448,182 ha)*

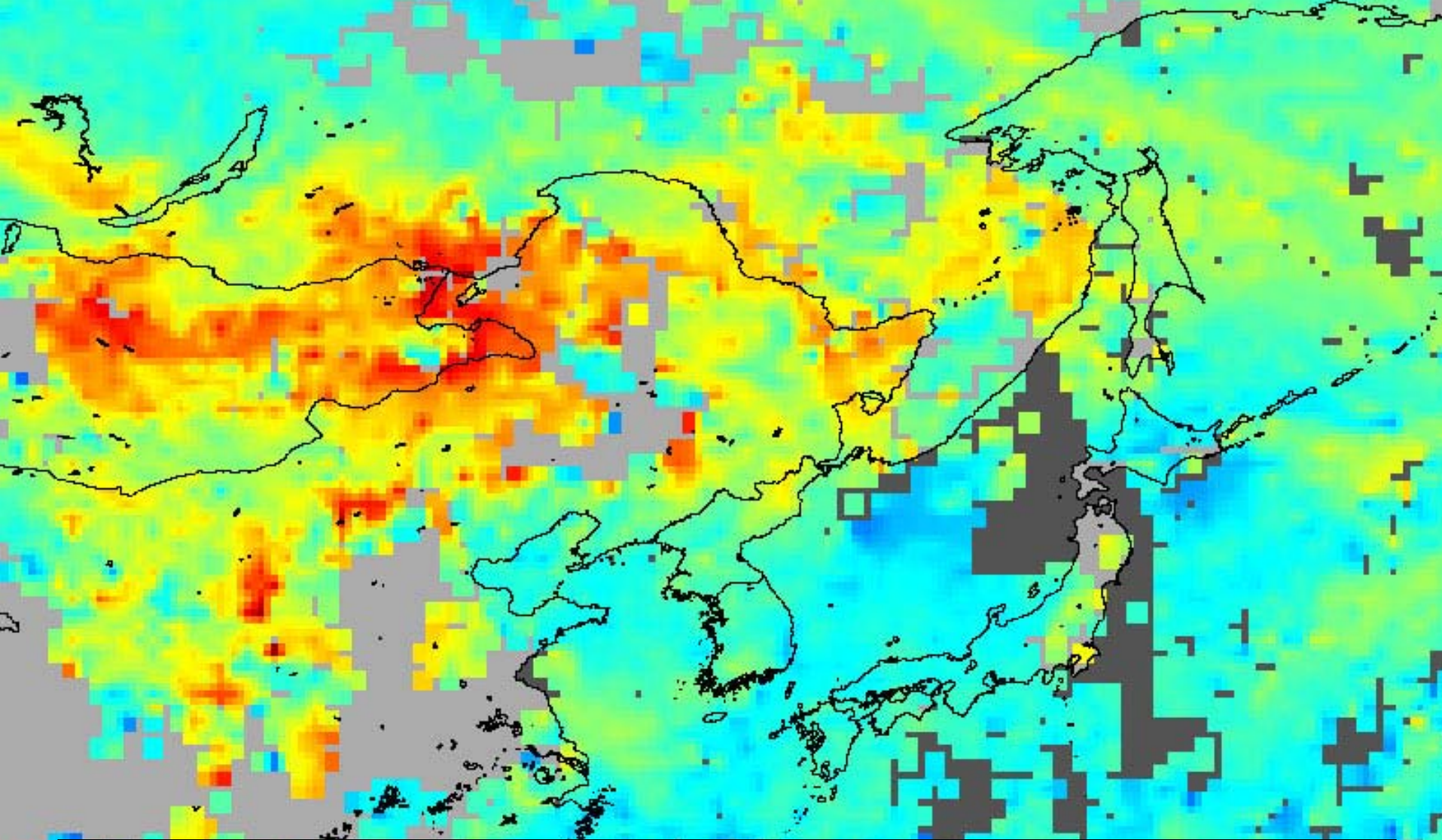
Source data: NOAA14
21-24 May, 1997

Produced by: ICC of MNE



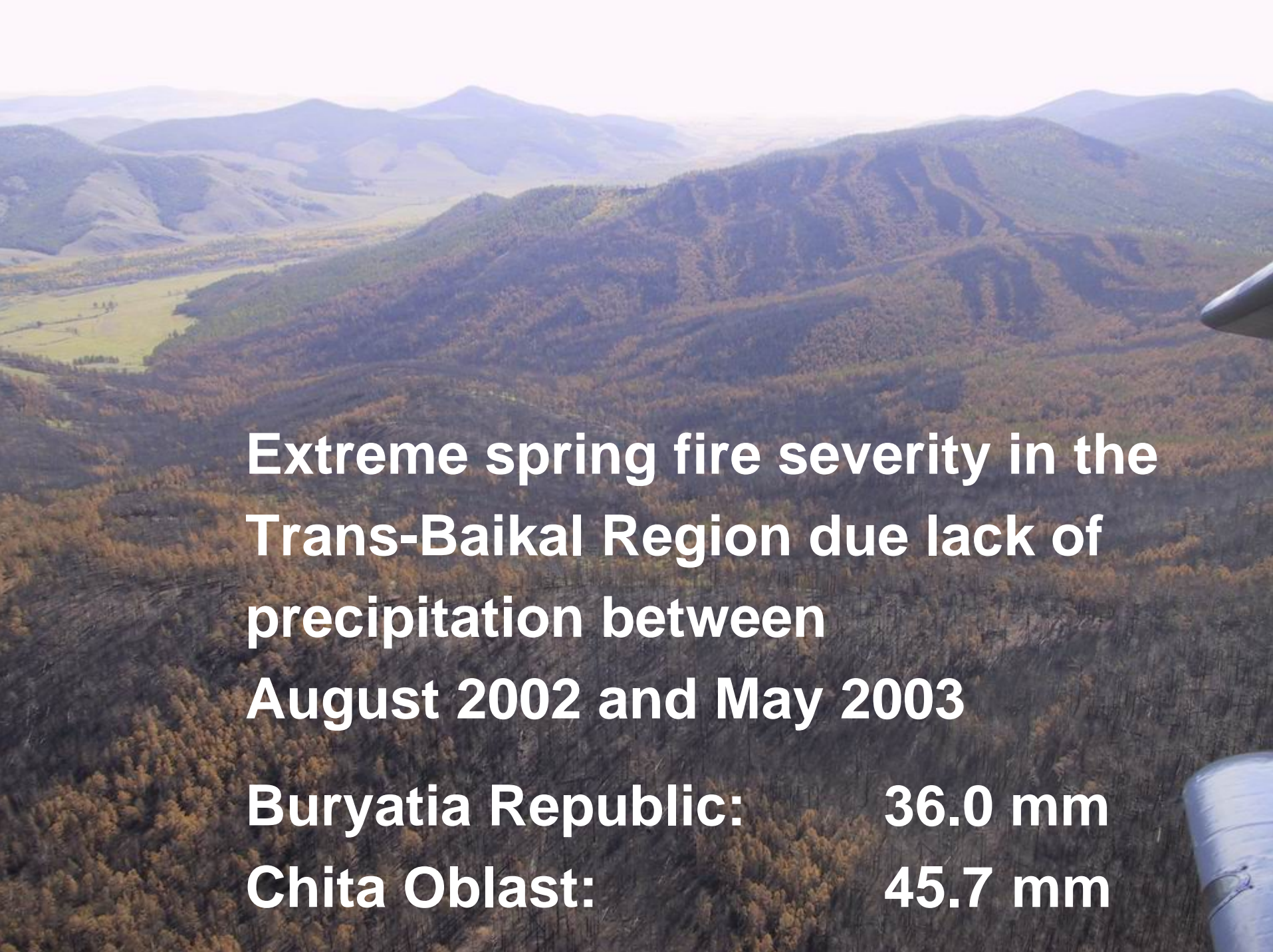
14 May 2003

Transbaikal Region, Russian Federation



**3-8 May 2003 carbon monoxide concentration
originated by smoke from fires in the Transbaikal Region
(MOPPIT on Terra – Source: NASA)**






**Extreme spring fire severity in the
Trans-Baikal Region due lack of
precipitation between
August 2002 and May 2003**

Buryatia Republic: 36.0 mm

Chita Oblast: 45.7 mm



Large fires as a consequence of economically motivated arson, to satisfy the markets in China and Korea with salvage-logged timber

- **Illegal logging**
- **corruption**

25.08.2003-04.09.2003

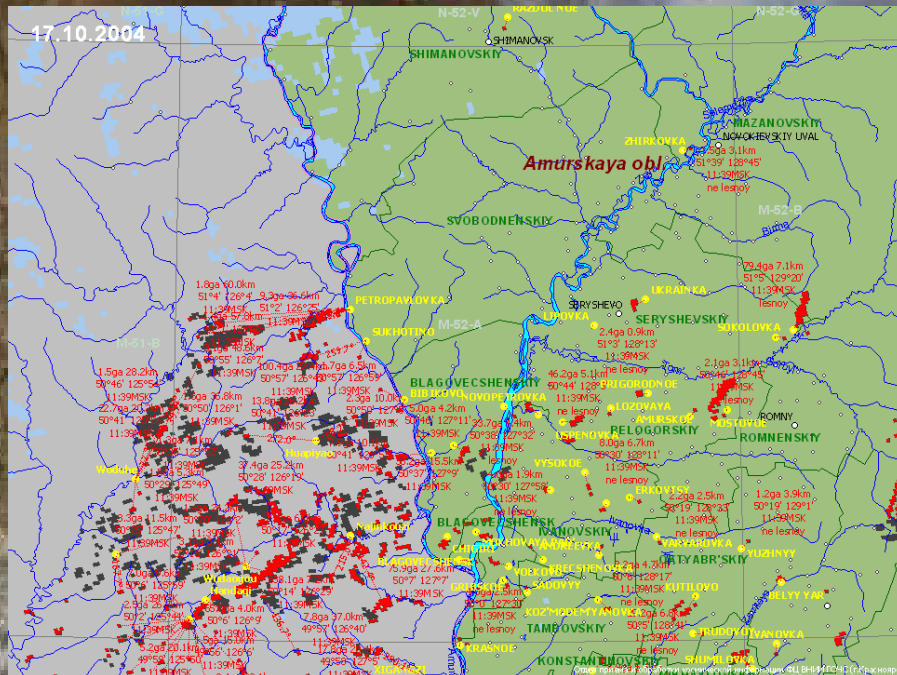
**Total area affected by wildfires in
The Russian Federation:
> 20 million ha**



Current Situation in Central-Eastern Asia:

Wildfires in NE China / Far East of Russia

18 October 2004



Currently existing and planned Regional Wildland Fire Networks (VIII)



- **Regional North East Asia Wildland Fire Network**

Founded: March 2004

Host: Korea Forest
Service (with ISDR)



Members:

South Korea

Japan

China

Russia (Far East)

Next Regional

Meeting:

Japan (January 2005)



Currently existing and planned Regional Wildland Fire Networks (IX)



- **Regional Baltic Wildland Fire Network**

Core Activity Region within the UN-ECE Region:
FAO / ECE Team of Specialists on Forest Fire



Regional Consultations:

Russia 1996

Poland 1998

Finland 2000

Finland 2004



Regional Baltic Wildland Fire Conferences

1996 Russian Federation

Forest, Fire and Global Change



1998 Poland

First Baltic Conference on Forest Fires



2000 Finland

Baltic Exercise in Fire Information and Resources Exchange - BALTEX FIRE 2000

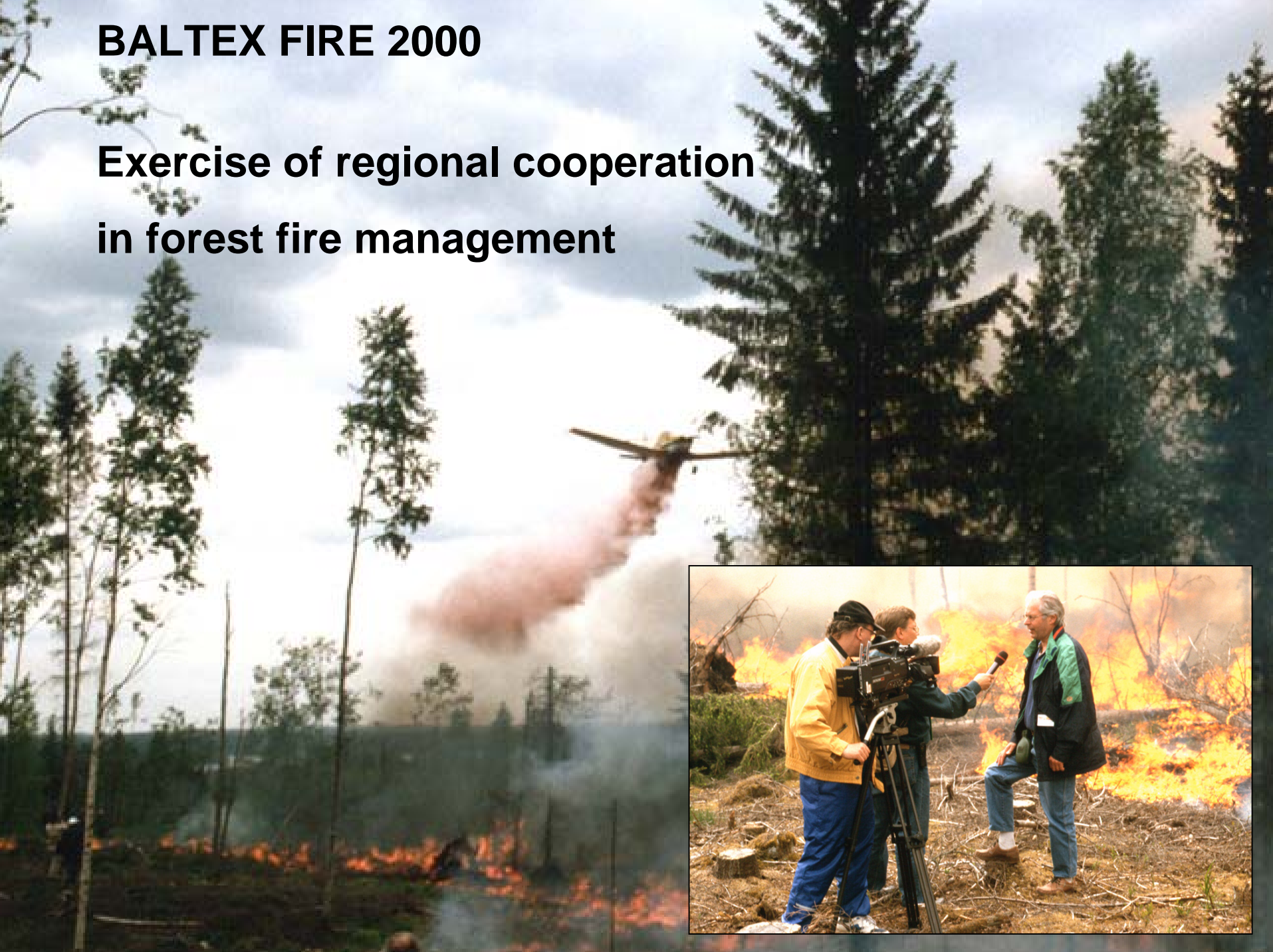
2004 Finland

*Baltic Wildland Fire Meeting:
Towards increasing efficiency of
regional cooperation in
wildland fire management*



BALTEX FIRE 2000

**Exercise of regional cooperation
in forest fire management**





Sweden: Use of prescribed fire

Photo: M. Niklasson

Finland: Reconstruction of historic swidden agriculture

Photo: L. Lovén, Koli NP



Example of formerly fire-grazing-maintained Ecosystems: *Calluna* Heathlands in NW Europe Result of hundreds of years of intensive cultivation





Hedebrand Randbøl Hede.



Germany, UK, Denmark;

New Approaches in maintenance and restoration of biodiversity and ecosystem functioning by application of prescribed fire

Currently existing and planned Regional Wildland Fire Networks (X)



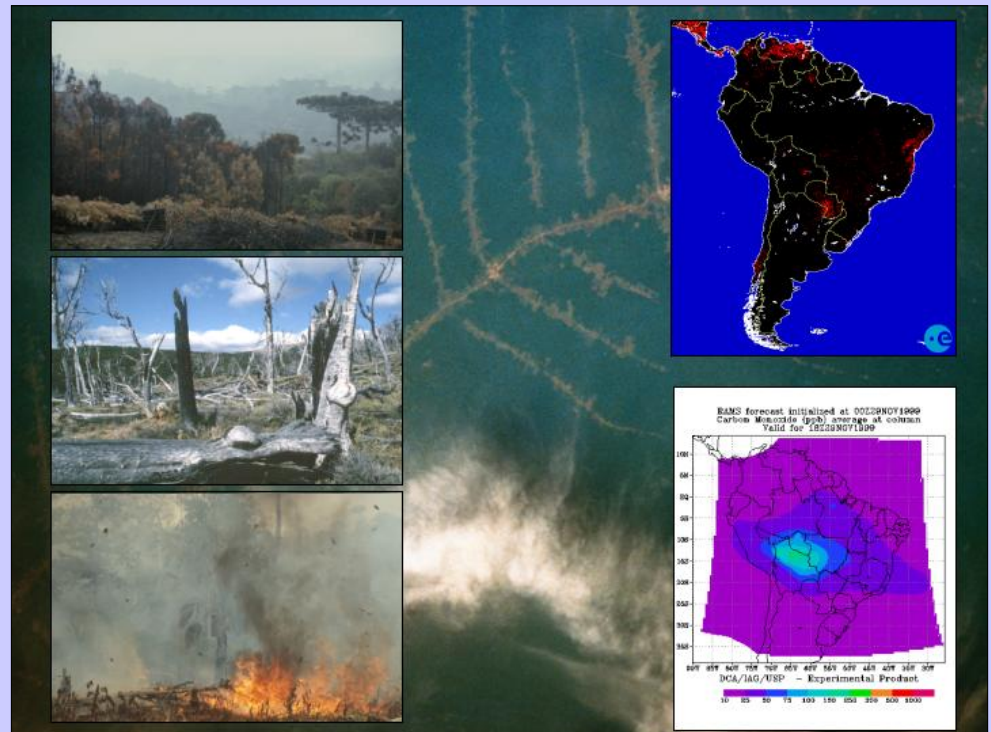
- **Regional South America Wildland Fire Network**

Start: 17 June 2004

Curitiba, Brazil

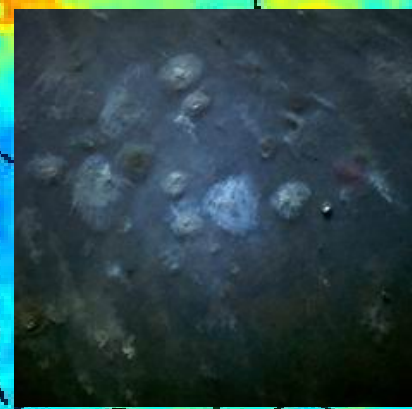
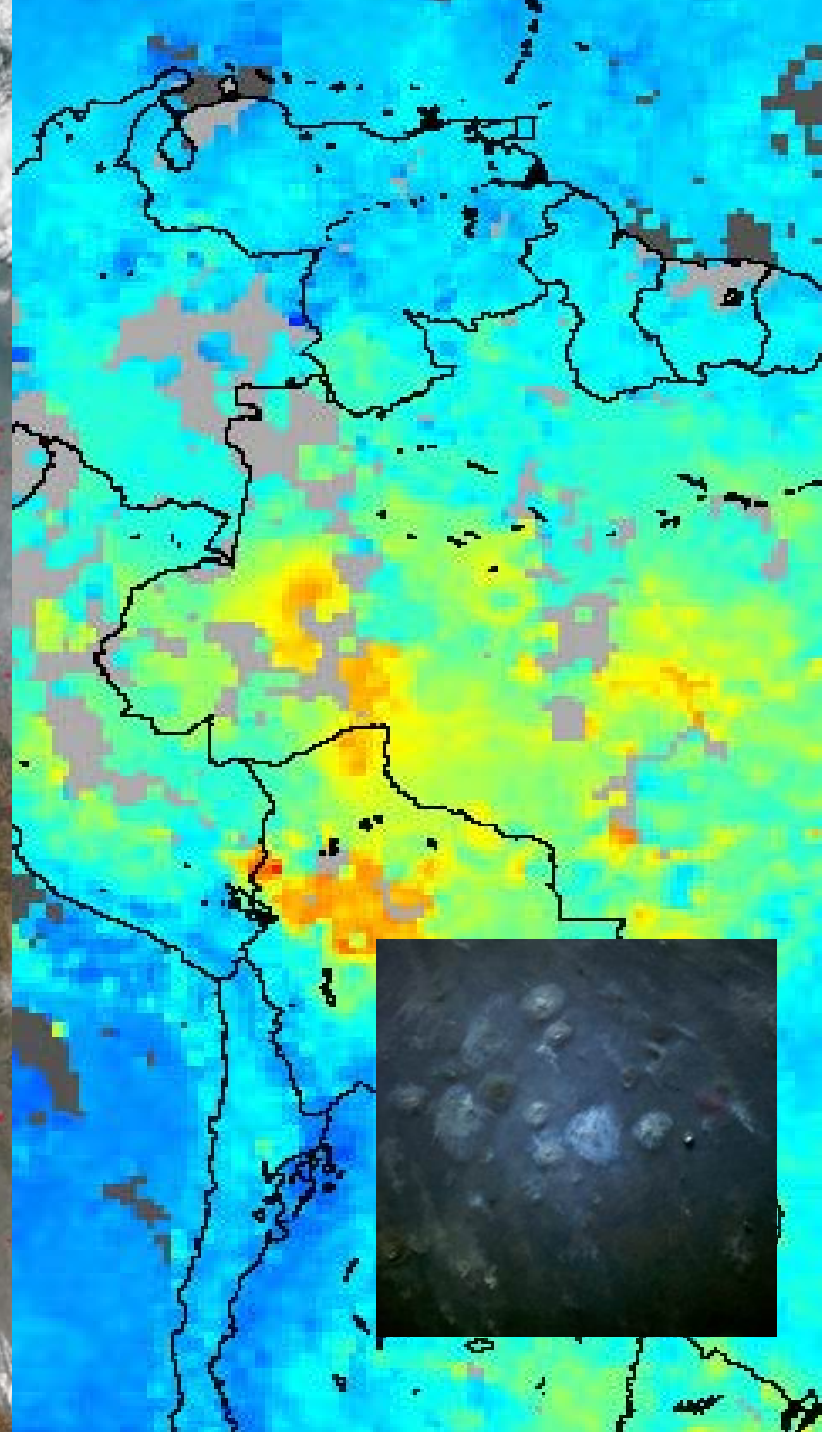
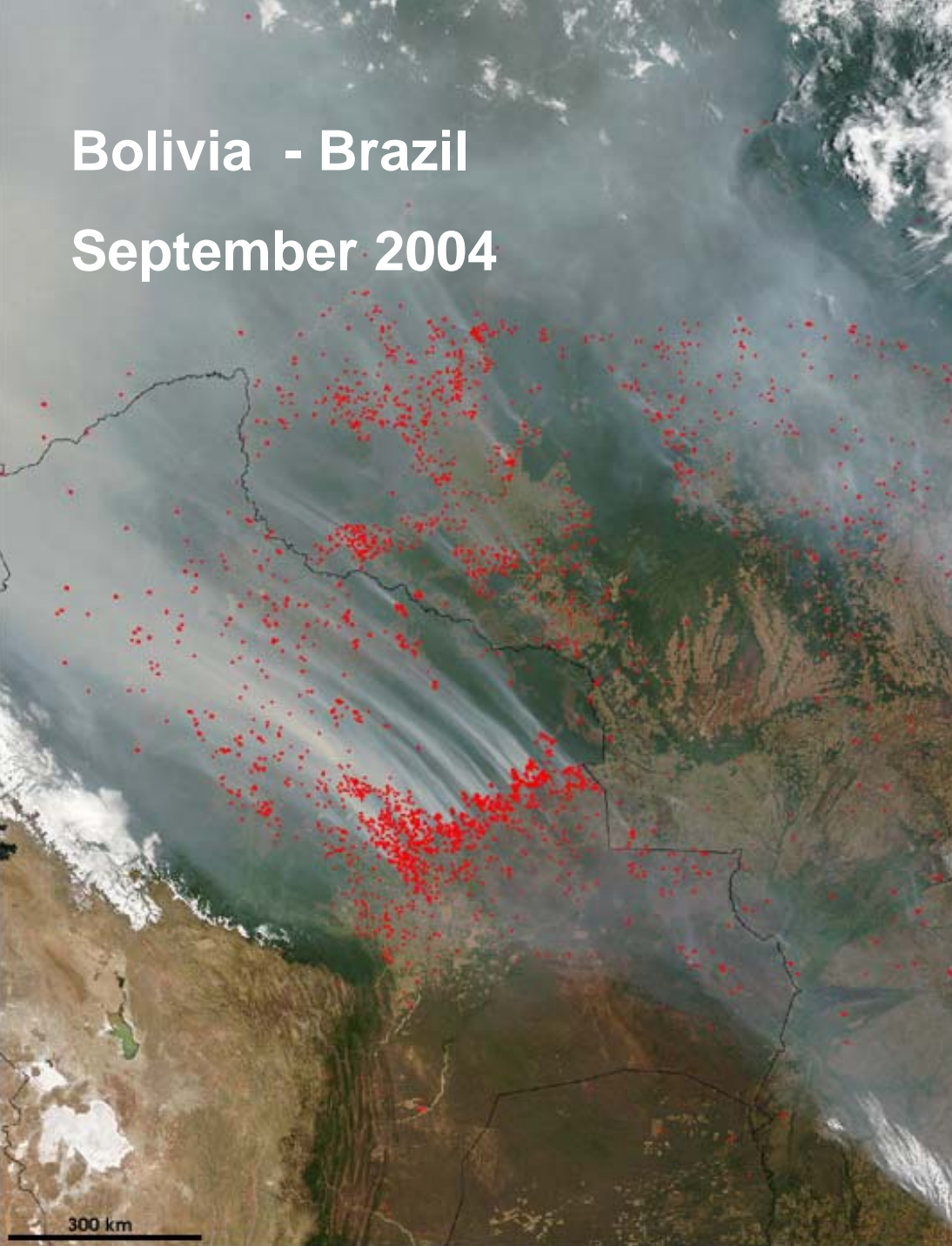


Follow-up regional meeting:
21-22 October 2004
in tandem with the
Pan-American Wildland
Fire Conference
Costa Rica, 23 October 2004



Bolivia - Brazil

September 2004



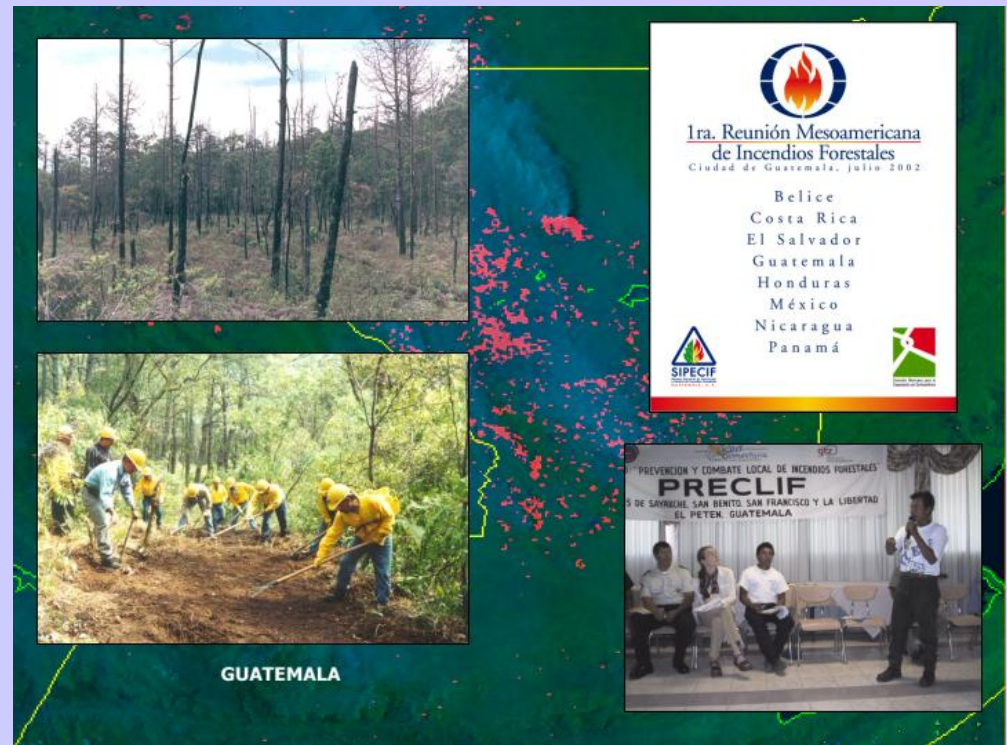
Currently existing and planned Regional Wildland Fire Networks (XI)

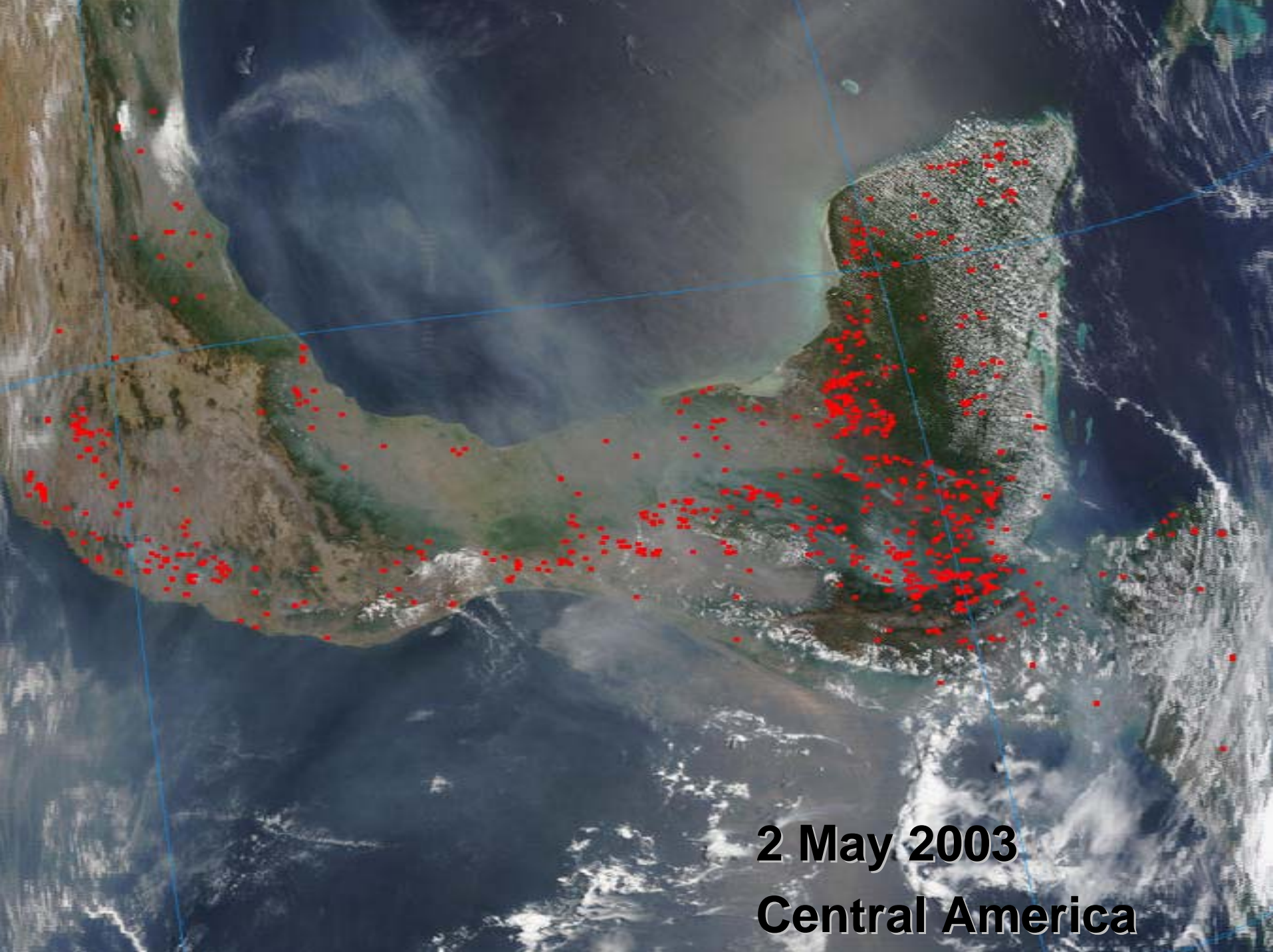


- **Regional Mesoamerica Wildland Fire Network**
Mesoamerica Regional Agreement
Signed: July 2002



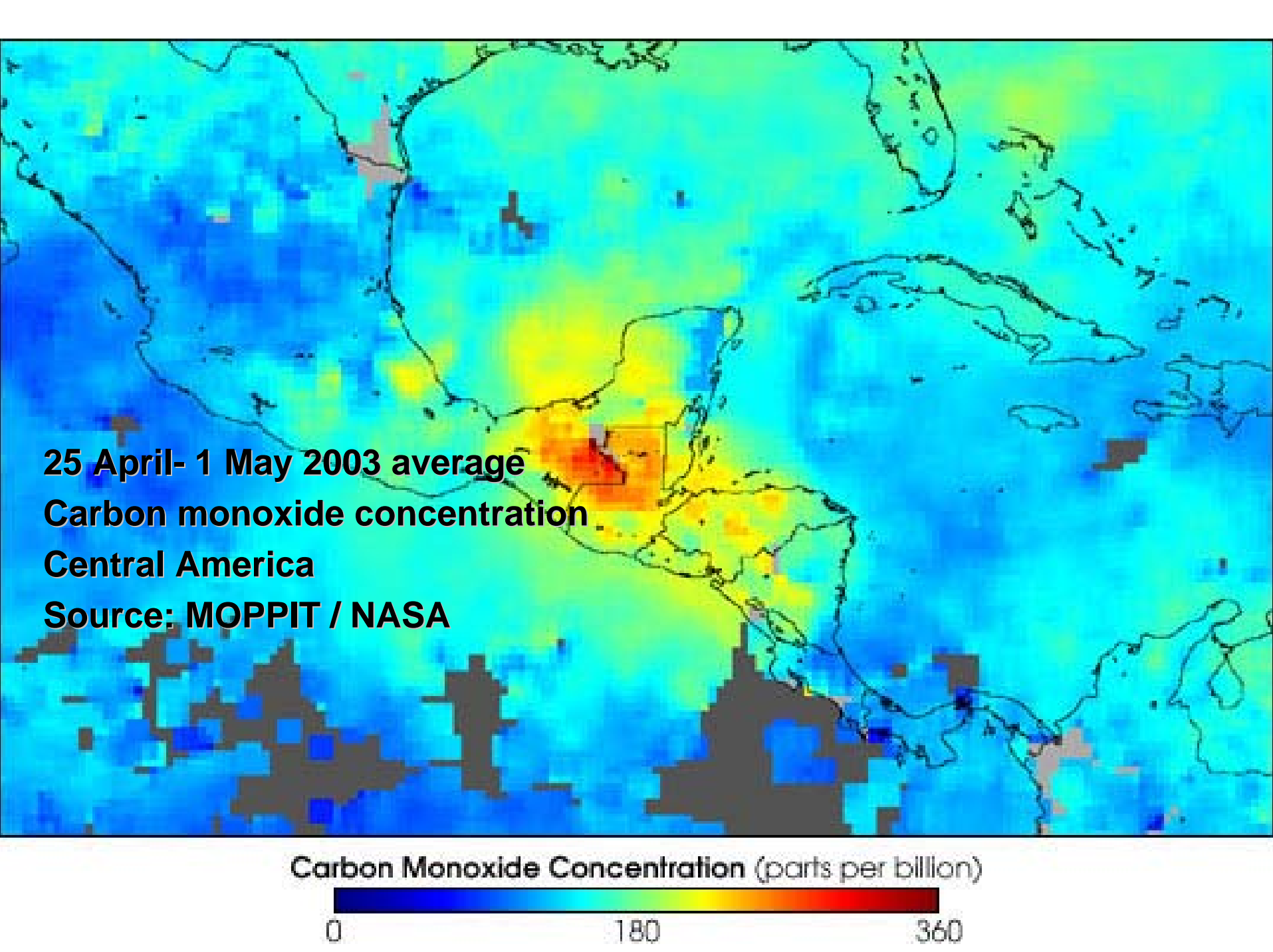
Follow-up regional meeting:
21-22 October 2004
in tandem with the
Pan-American Wildland
Fire Conference
Costa Rica, 23 October 2004





2 May 2003

Central America



25 April- 1 May 2003 average
Carbon monoxide concentration
Central America
Source: MOPPIT / NASA

This figure is a map of Central America and the surrounding regions, including parts of Mexico, the Caribbean Sea, and northern South America. The map is color-coded to represent carbon monoxide concentration in parts per billion (ppb). A color bar at the bottom indicates the scale, ranging from 0 (dark blue) to 360 (dark red), with intermediate values at 180 (yellow) and 360 (red). The map shows a significant area of high concentration (red/orange) in the central part of the region, likely corresponding to the Amazon basin and surrounding areas. The concentration decreases as one moves away from this central area, with lower values (blue/cyan) seen in the northern and southern parts of the map. The map also shows the outlines of the continents and major water bodies.

Carbon Monoxide Concentration (parts per billion)

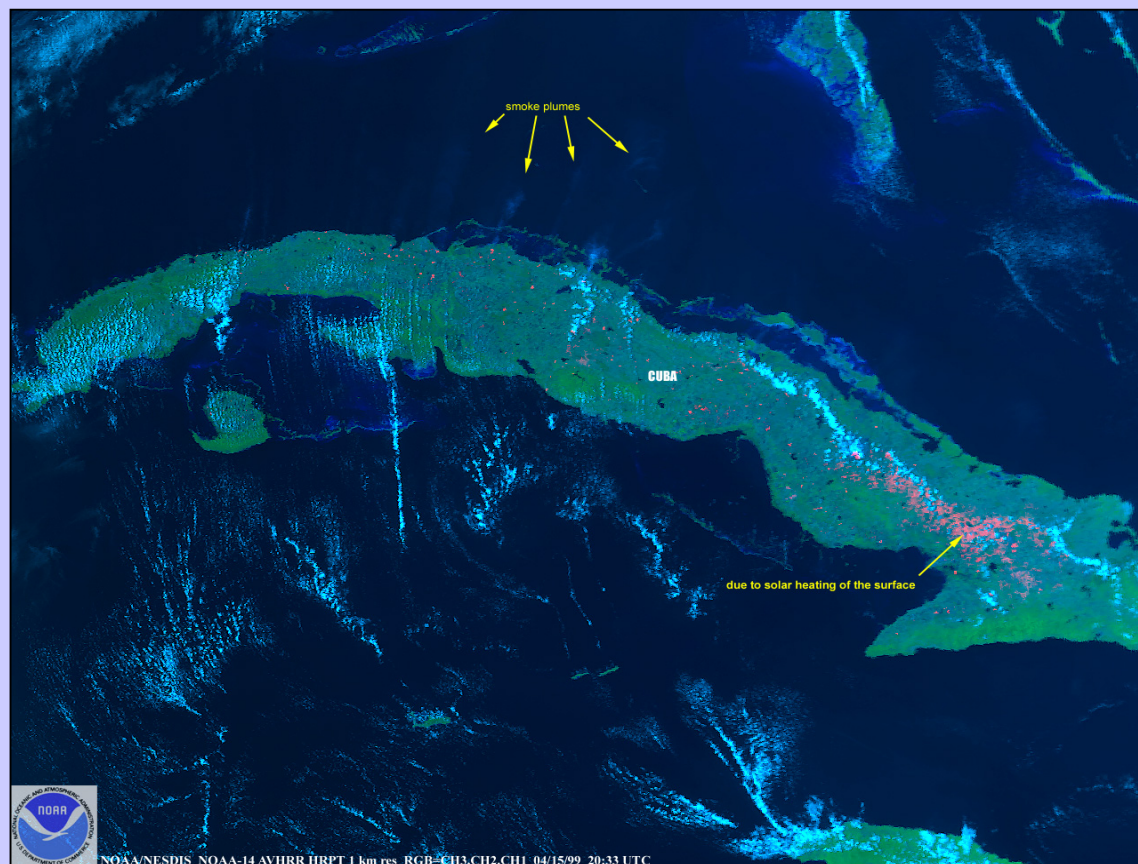


Currently existing and planned Regional Wildland Fire Networks (XII)



- Regional Caribbean Wildland Fire Network

t.b.d.



Currently existing and planned Regional Wildland Fire Networks (XIII)



- **Regional South Asia Wildland Fire Network**

t.b.d.

Countries to be
involved

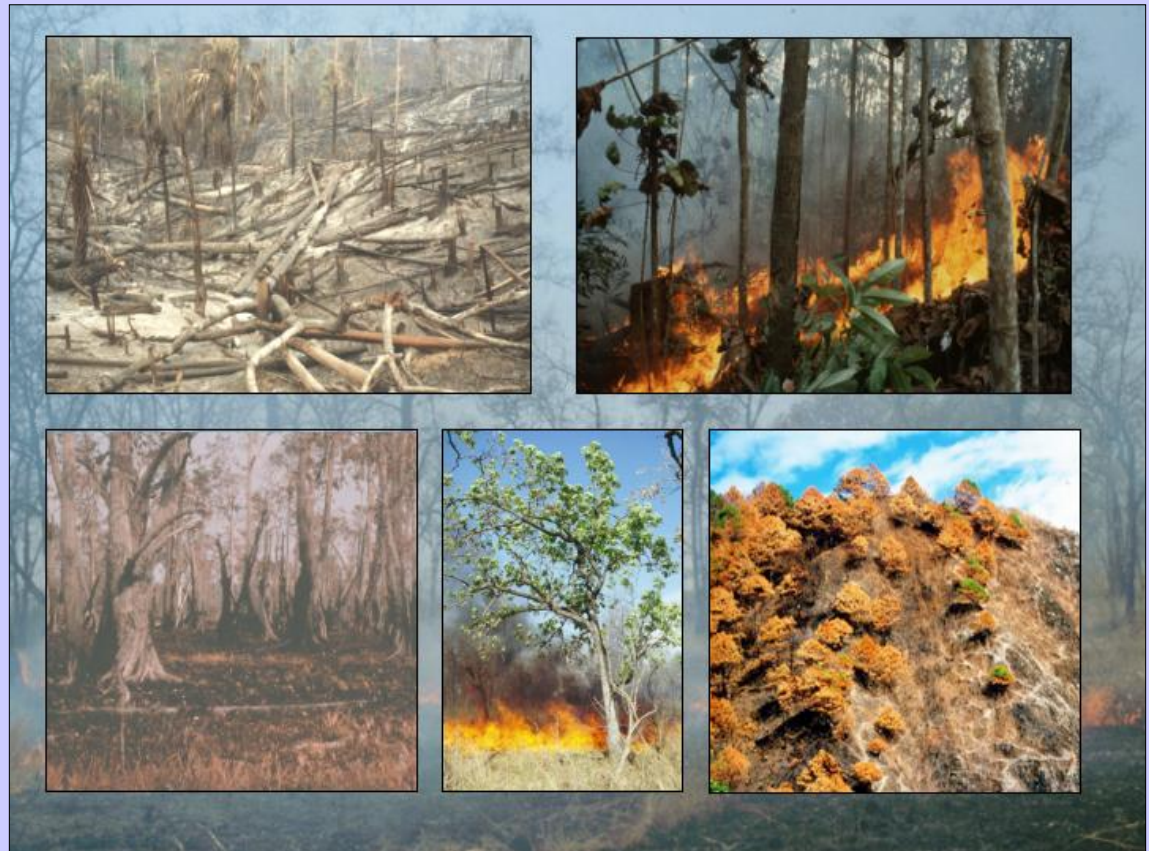
India

Bhutan

Nepal

Sri Lanka

Pakistan

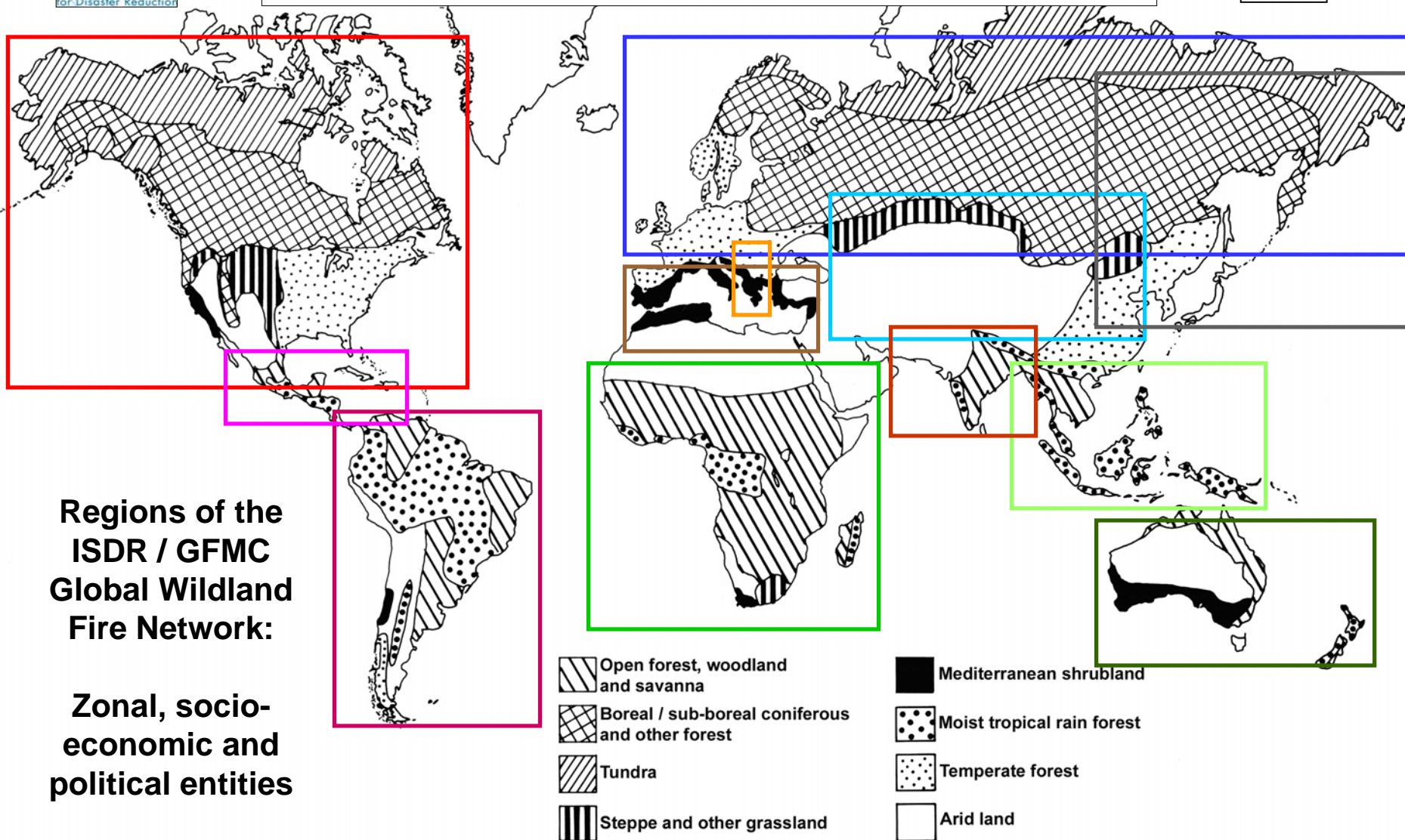


Summary of global wildland fire trends (I)

- **Trends are determined by local to national socio-economic developments**
- **Globalisation of markets determine fire use and fuel loads**
- **Increasing fire severity observed in many regions as a consequence of coupled direct and indirect impacts of human interferences and environmental change**

Summary of global wildland fire trends (II)

- **Other regions experiencing the consequences of fire suppression or reduced fire use, with consequences on biodiversity, carrying capacity, landscape patterns, etc.**
- **Alarming trend of fire-induced carbon transfer from the terrestrial sphere to the atmosphere, especially from drained or climatically altered wetlands**



**Regions of the
ISDR / GFMC
Global Wildland
Fire Network:**

**Zonal, socio-
economic and
political entities**

— North America
— Mesoamerica and
Caribbean
— South America

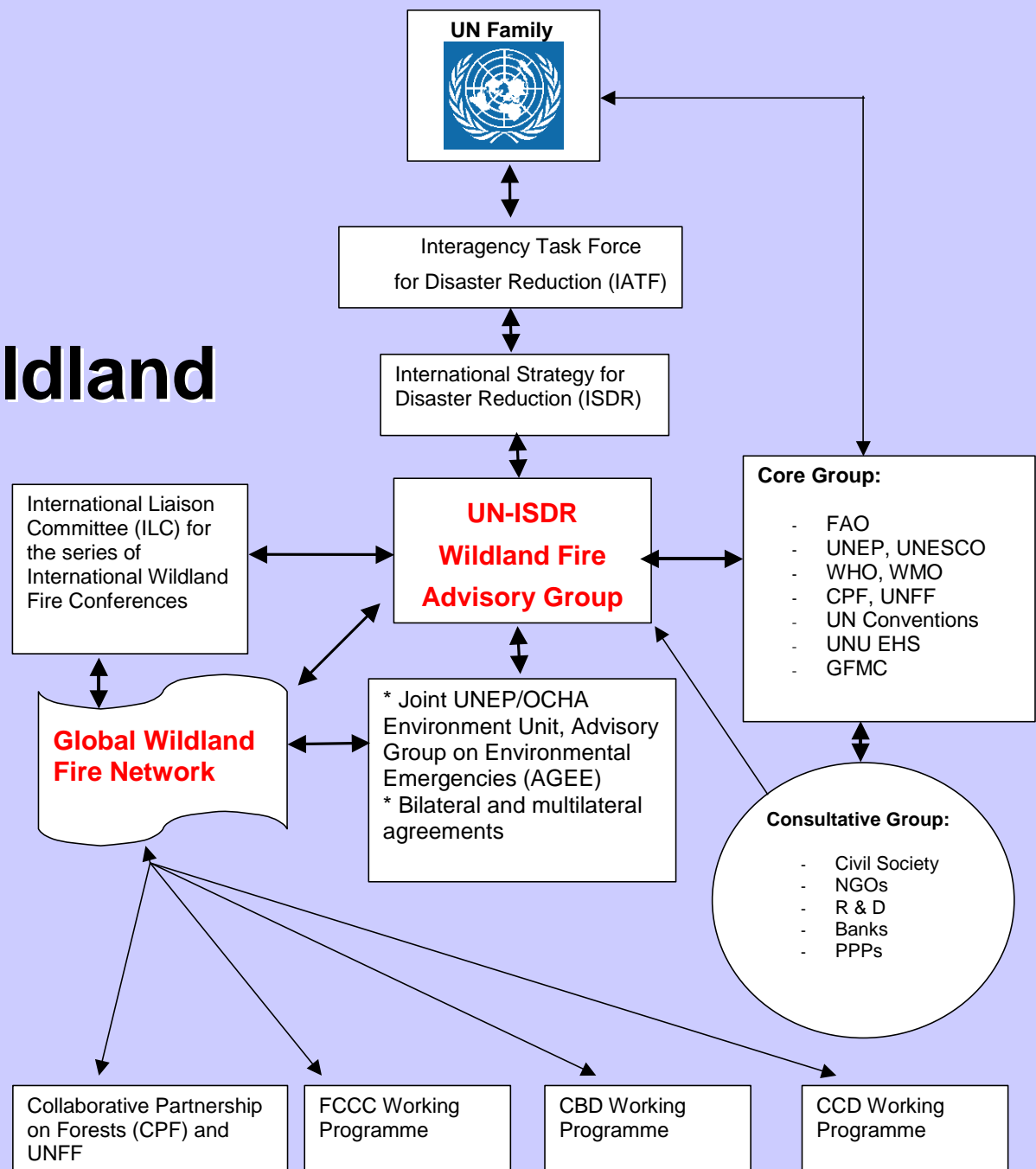
— Mediterranean
— Balkan
— Subsahara Africa

— Baltic
— Central Asia
— North East Asia

— South Asia
— South East Asia
— Australasia

Towards developing the International Wildland Fire Accord:

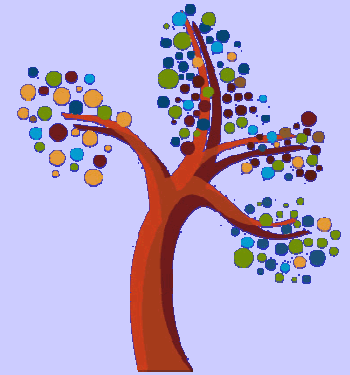
Partner
organizations
cooperating
with the UN



Roadmap to support the Development of an International Wildland Fire Accord (before 2004)

- **International Decade of Natural Disaster Reduction (IDNDR – 1990s)**
- **ECE/FAO Conference Forest, Fire and Global Change (Russian Federation, 1996)**
- **FAO Consultations (1998, 2001)**
- **International Wildland Fire Conferences in Vancouver (1997) and Sydney (2003)**
- **International Wildland Fire Summit (2003)**

International Wildland Fire Summit (8 October 2003, Sydney, Australia)

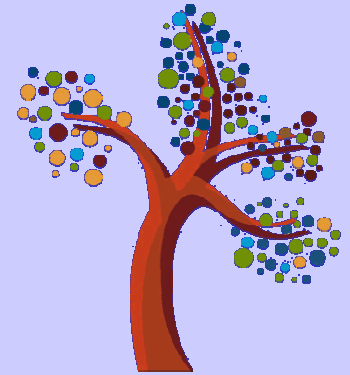


Summit Theme:

Fire Management and Sustainable Development:

**Strengthening international cooperation to
reduce the negative impacts of wildland fires
on humanity and the global environment**

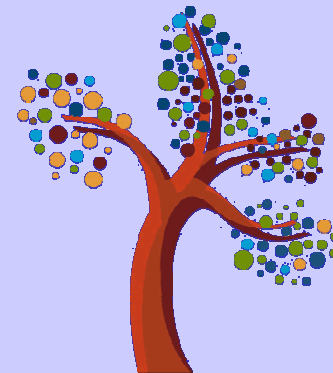
International Wildland Fire Summit (8 October 2003, Sydney, Australia)



Summit Outputs:

(1) An agreement on the principles that should apply to international wildland fire management projects

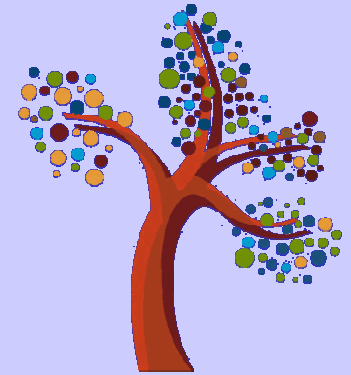
International Wildland Fire Summit (8 October 2003, Sydney, Australia)



Summit Outputs:

(2) An agreement on a template document that can be used by countries wishing to form a cooperation arrangement with one or more other countries for mutual assistance with wildfire management

International Wildland Fire Summit (8 October 2003, Sydney, Australia)

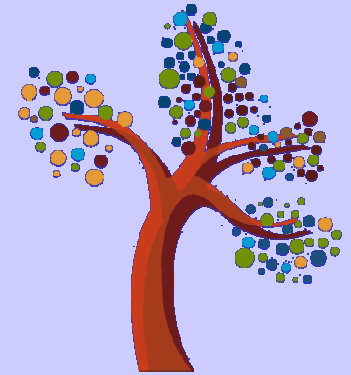


Summit Outputs:

(3) An agreement that the Incident Command System (ICS) will become the international standard for all wildfire incident management

- **International ICS Guidelines**
- **that can be used by countries with limited infrastructures and personnel capabilities**

International Wildland Fire Summit (8 October 2003, Sydney, Australia)



Summit Outputs:

(4) An agreement to a strategy for future development of the issues and international responses to wildland fires

➤ **Recommend the UN to follow up**



Roadmap to support the Development of an International Wildland Fire Accord (2004)

➤ Regional conferences and consultations held in

- Northeast Asia (Korea, March 2004)**
- Eastern Mediterranean, Near East, Balkans, Central Asia (Turkey, April 2004)**
- Baltic Region (Finland, May 2004)**
- Sub-Saharan Africa (South Africa, June 2004)**
- South America (Brazil, June 2004)**



Roadmap to support the Development of an International Wildland Fire Accord (2004)

- **Regional conferences and consultations (end of 2004):**
 - **Pan-American Wildland Fire Conference (Costa Rica, October 2004)**
 - **COP of ASEAN Transboundary Haze Pollution Agreement (Viet Nam, November 2004)**
 - **Global Wildland Fire Network / UN-ISDR Wildland Fire Advisory Group Meeting (GFMC, December 2004)**



Roadmap to support the Development of an International Wildland Fire Accord (2005)

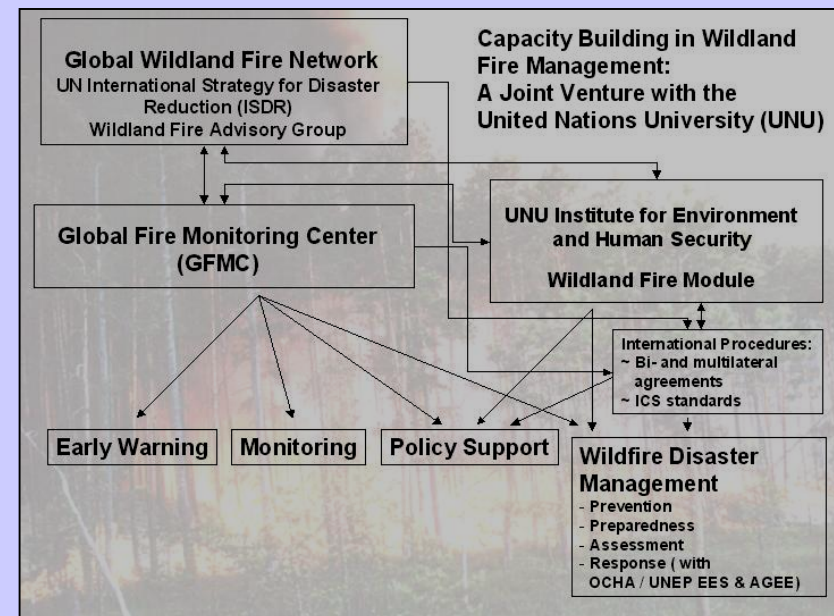
The final leg in 2005:

- **UN ISDR World Conference on Disaster Reduction (WCDR), in tandem with 2nd Regional NE Asia Wildland Fire Network Meeting (Japan, January 2005)**
- **FAO Ministerial Meeting (Rome, 14 March 2005)**
- **UN General Assembly Resolution on Cooperation in Wildland Fire Management ?**



Finally – A new initiative to strengthen capacity building in advanced wildland fire management

**Cooperation with
the United Nations
University Institute
“Environment and Human
Security”
(UNU-IEHS)**





UNU-IEHS

First Joint Activities:

Courses

“SADC Advanced Wildland Fire Management Training”

and

“Community-Based Fire Management”

(June / November 2004)



Global Wildland Fire Network
UN International Strategy for Disaster
Reduction (ISDR)
Wildland Fire Advisory Group

**Capacity Building in Wildland
Fire Management:
A Joint Venture with the
United Nations University (UNU)**

**Global Fire Monitoring Center
(GFMC)**

**UNU Institute for Environment
and Human Security
Wildland Fire Module**

International Procedures:
~ Bi- and multilateral
agreements
~ ICS standards

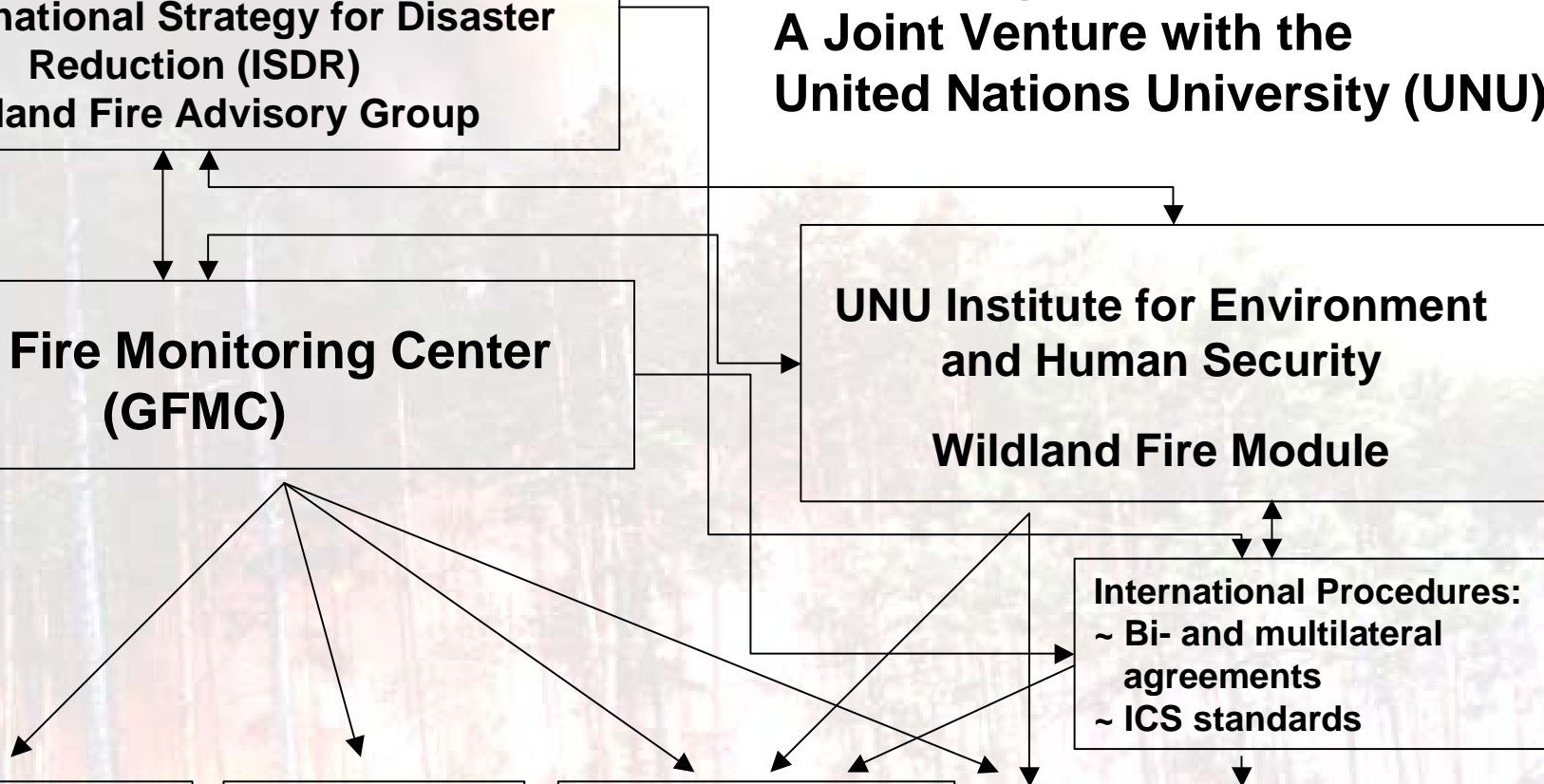
Early Warning

Monitoring

Policy Support

**Wildfire Disaster
Management**

- Prevention
- Preparedness
- Assessment
- Response (with
OCHA / UNEP EES & AGEE)





Thank you for your attention - on behalf of the

UN Wildland Fire Advisory Group

and

the GFMC Team

www.gfmc.org

