



Thirty Years International Wildland Fire Conferences: Rationale and Achievements of an Intercontinental Journey from Boston to Campo Grande

Johann Georg Goldammer



The Global Fire Monitoring Center (GFMC)

Boston 1989

Meeting Wildland Fire Challenges: The People. The Land. The Resources



- Co-organized by agencies of the U.S.A., Canada and Mexico
- 400 leaders of public and private organizations from 32 countries
- Discuss issues, programs, and strategies to reduce serious wildland fire losses
- Promote international cooperation in the decade of the 1990s and beyond.

Boston 1989

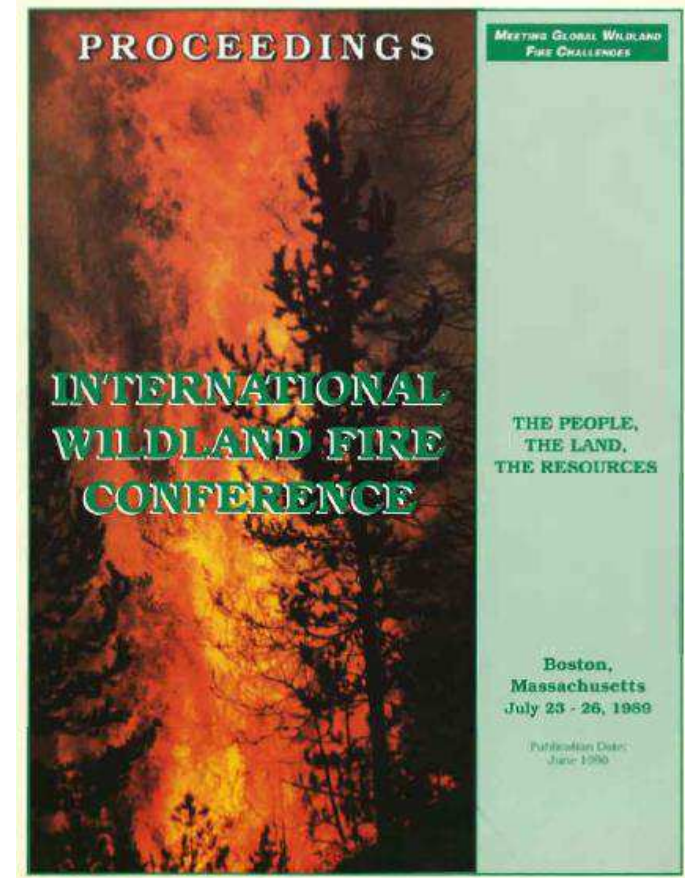
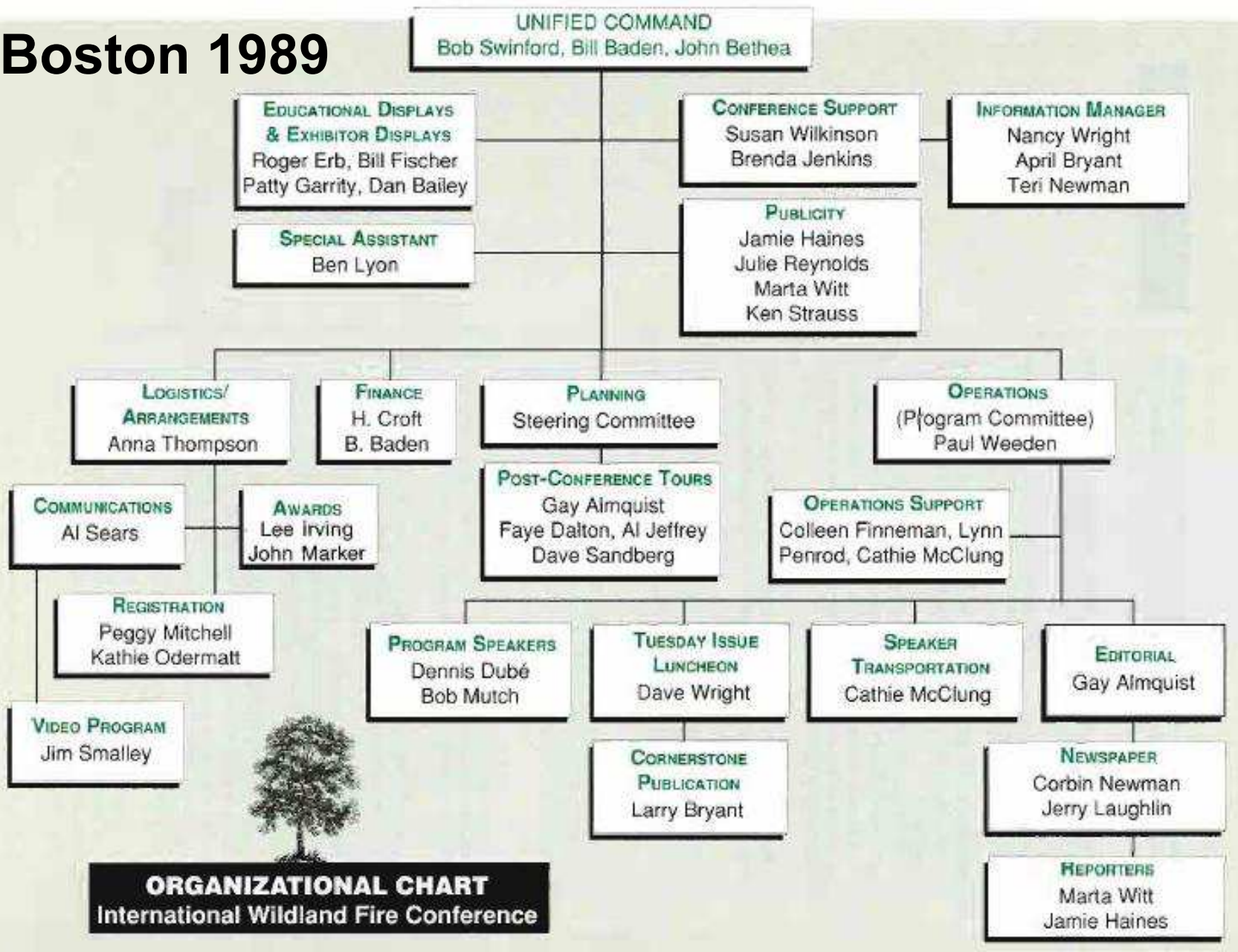
Through participation of the United Nations Disaster Relief Organization (UNDRO) (> predecessor arrangement of UNDRR / UNISDR and custodian of concerted international implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030):

- Official recognition of the Boston conference as an activity of the UN International Decade for Natural Disaster Reduction (IDNDR).



Chair: Alan West

Boston 1989

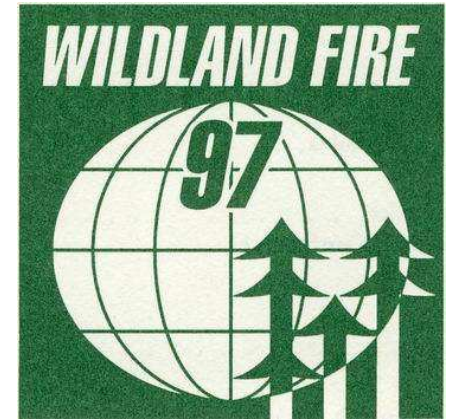


Why Programs
Panel:
Are Successful



Vancouver 1996

- Hosted by Canada in Vancouver
- Recommendation



“That a group formally established under the auspices of the United Nations to facilitate addressing global wildland fire needs”

- **1998:** Establishment the Global Fire Monitoring Center (GFMC) (seed funding: Government of Germany, Foreign Office)
- **2001:** Working Group on Wildland Fire in 2001 established within the UNISDR Interagency Task Force for Disaster Reduction
- **2003:** Main outcome – the Global Wildland Fire Network and its Wildland Fire Advisory Group

2001 > Initiation of the follow-up of Boston and Vancouver

- Formation of the Wildland Fire Advisory Group
- Joining hands with the International Liaison Committee of the conferences
- Meeting in the UN Geneva, hosted by WMO
- Decision to go ahead to Australia in 2003



Sydney 2003

3rd International Wildland Fire Conference



In 2003 the international community of wildland fire scientists, managers and policy makers reconvened at the IWFC-3 in Sydney, Australia, and provided the stage for the International Wildland Fire Summit, at which an agenda for strengthening international cooperation in fire management was set for the coming years.

Endorsement by

- UN Office for the Coordination of Humanitarian Affairs (UN OCHA)
- UN Convention on Biological Diversity

Sydney 2003

International Wildland Fire Summit:



Agreement of an agenda for strengthening international cooperation in fire management for the coming years. Main outcomes – Four Strategic Papers:

- Guiding Principles for Wildland Fire Management
- International Wildland Fire Management Agreements Template
- Incident Command System (ICS)
- A Strategy for Future Development of International Cooperation in Wildland Fire Management
- Community Based Fire Management (CBFiM)

Sydney 2003

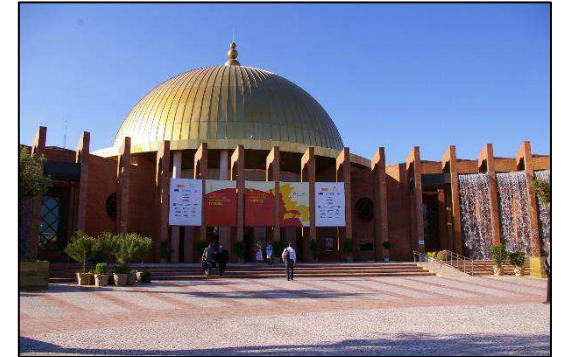


IWFC 4 – Sevilla 2007



The conference was held in Sevilla, Spain, 13-17 May 2007 – attended by 1531 participants from 88 countries. Recommendation – among others:

- The international wildland fire community pursue the development of a global-scale international resource sharing strategy to assist countries with fire management planning activities (including prescribed fire for ecological purposes and fuels management), and active support during periods of wildland fire



IWFC 5 – Sun City, South Africa 2011



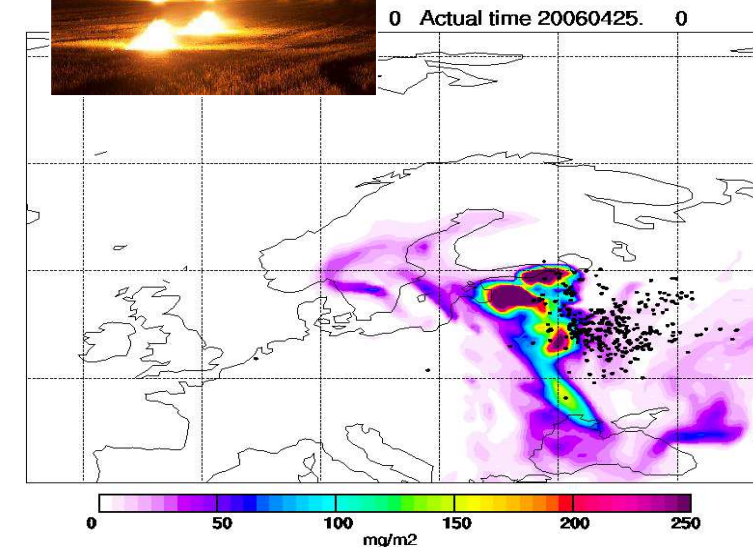
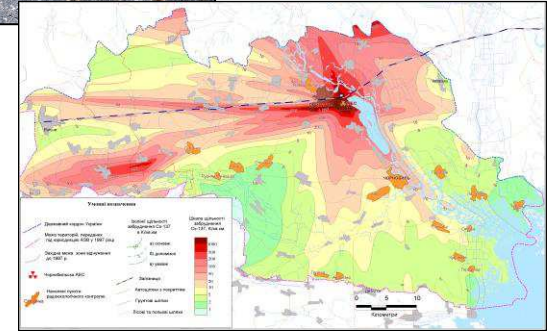
Participants defined key areas of concern:

- Rural and industrialized societies have altered the natural environment and fire regimes. Vice-versa, humans are becoming increasingly vulnerable to the consequences of wildfires.
- Increase of efforts on securing peat bog / wetland ecosystems that are subjected to drainage and climate-driven desiccation to become affected by fire



Key areas of concern (continued):

- This is calling for: Increase of fire management efforts on terrain contaminated by radioactivity, unexploded ordnance, land mines and chemical deposits, notably in the regions affected by the nuclear fallout of the nuclear power plant failures in Chernobyl (1986) and Fukushima (2011)
- Increase of effort to reduce unnecessary burning on croplands, fallow and other lands to reduce the negative impact of greenhouse gas and black carbon emissions on the regional, arctic and global environment
- Provide necessary awareness and means to protect human health and security from wildland fire smoke pollution



UNITED NATIONS



NATIONS UNIES

THE SECRETARY-GENERAL

Opening Statement to the
Fifth International Wildland Fire Conference (2011)



“The transboundary effects of wildland fires associated with long-range smoke transport and emissions are prompting the international community to strengthen cooperation in fire management.

International organizations and civil society groups are working to build capacity, develop advanced technologies and promote sustainable land-use practices.

The UN system is strongly committed to this effort. Our work encompasses many aspects of fire management.

We welcome the efforts to build a culture of prevention and to develop a spirit of global cooperation.

IWFC 6 – South Korea 2015



Pyeongchang, Republic of Korea, 12-16 October 2015

Attended by representatives of 73 countries and international organizations who discussed

- How science and management could address the challenges ahead, to contribute to the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030
- How to assist countries to achieve the Sustainable Development Goal 15, and
- To deliver inputs to the 21st Conference of the Parties of the UN Framework Convention for Climate Change (COP 21) (December 2015)

IWFC 6 – South Korea 2015



2015 세계산불총회
International
Wildland Fire Conference
KOREA

Pyeongchang Declaration directed to COP 21 (Paris): An appeal to the international community to consider two tiers of response:

International policies and concerted action:

- Collective international efforts are needed to address impacts of vegetation fires that are of transboundary nature and currently affecting at an unacceptable level common global assets.
- Systematic application of principles of Integrated Fire Management (IFM): The COP 21 is encouraged to acknowledge the role and endorse the support of IFM as an accountable contribution to reduce greenhouse gas emissions, maintain or increase terrestrial carbon pools in all vegetation types and ensure ecosystem functioning.

IWFC 6 – South Korea 2015

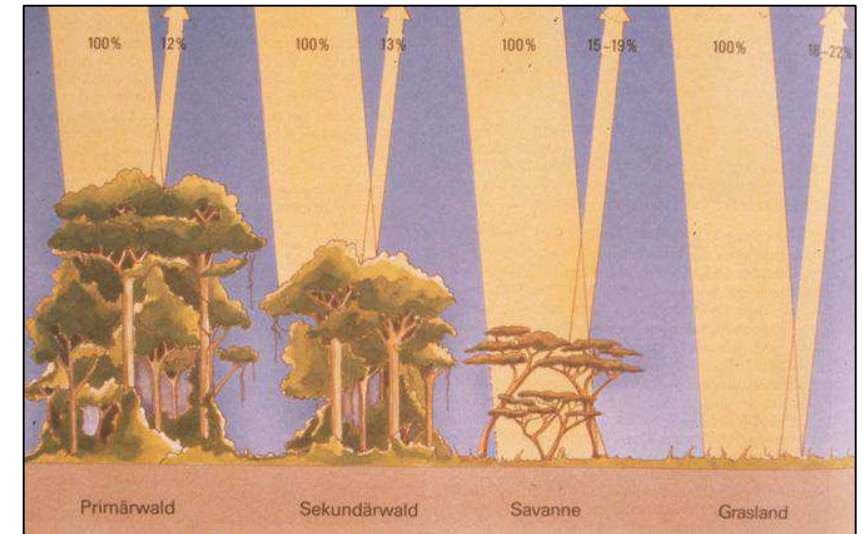
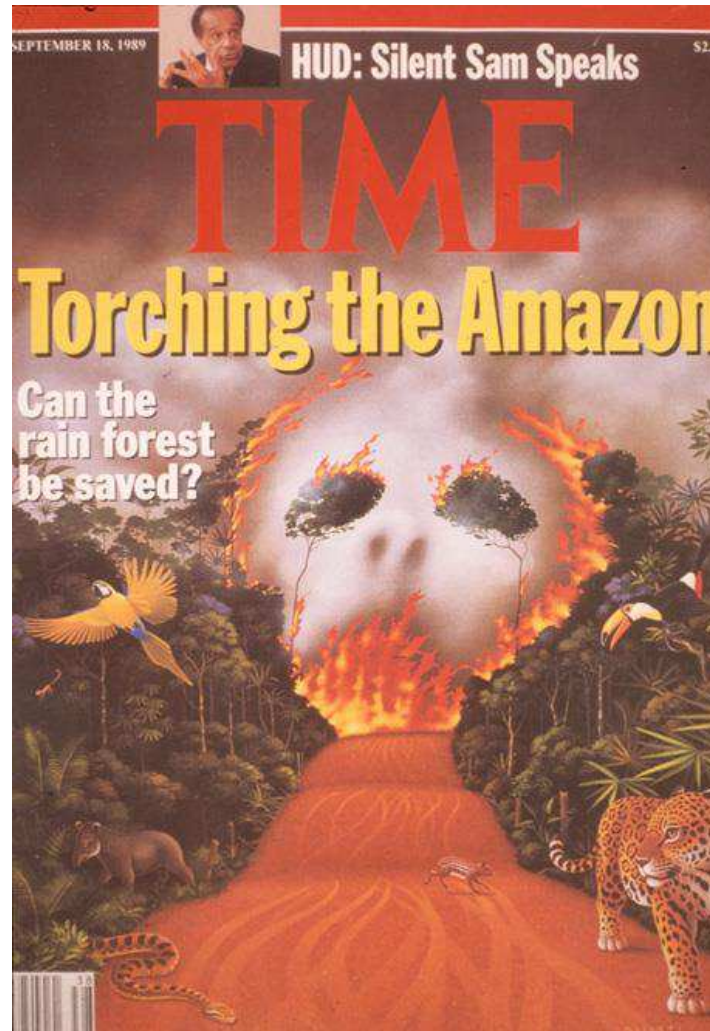
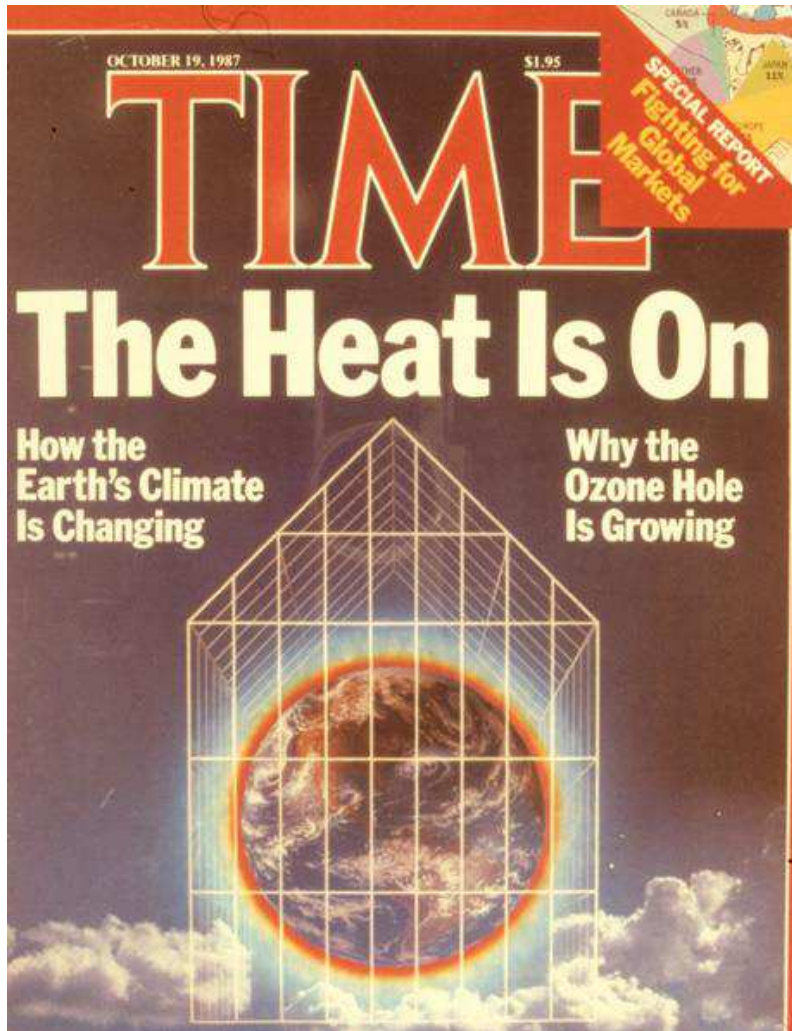


2015 세계산불총회
International
Wildland Fire Conference
KOREA

Capacitation of nations to address the challenges in fire management:

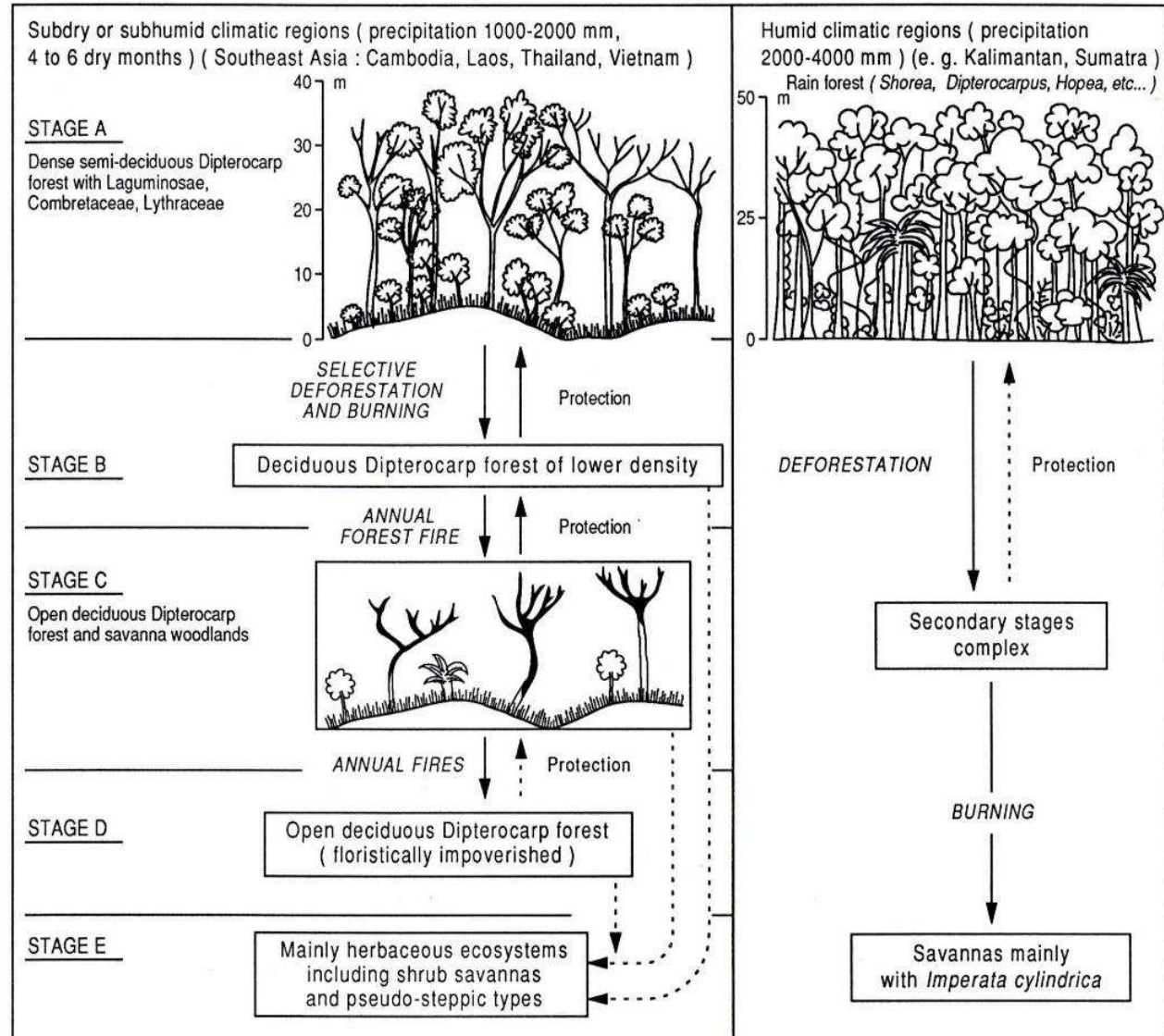
- In order to implement IFM there is a demand for capacity building, investments and outreach work at global level.
- Since traditional and advanced knowledge of IFM principles is available for all vegetation types, the systematic application of IFM, notably community-based fire management approaches, could be promoted by exchange of expertise between countries.
- The development of regional programmes and / or resource centres for capacity building including training in fire management should be supported by countries and international organizations. Bilateral agreements and multilateral voluntary exchange instruments should also be supported.

The late 1980s: Scientific and Public Discussions about Climate Change and the Role of Deforestation and Forest Degradation



Time Magazine – 1987 and 1989

The late 1980s: Scientific and Public Discussions about Climate Change and the Role of Deforestation and Forest Degradation



The late 1980s: Scientific and Public Discussions about the Role of Deforestation and Forest Degradation on Climate Change



East Kalimantan

The consequences of El Niño
Droughts and fires in 1982-83
and 1987



ITTO / GTZ-DFS Project "Rehabilitation the Areas of East Kalimantan Seriously Affected by Fire in 1983":

Results:

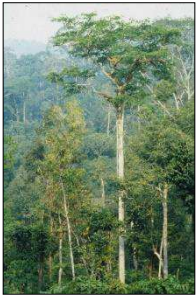
Mapped study area: 4.7 million ha
Total burned area: 3.2 million ha
Thereof rain forest: 2.7 million ha

Damages:

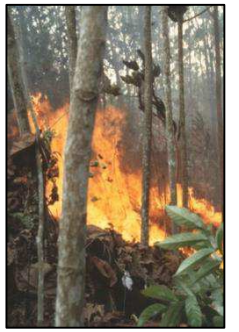
Loss of timber values: ca. US\$ 8.3 billion

Loss of timber and non-timber values and
rehabilitation costs: ca. US\$ 9.075 billion

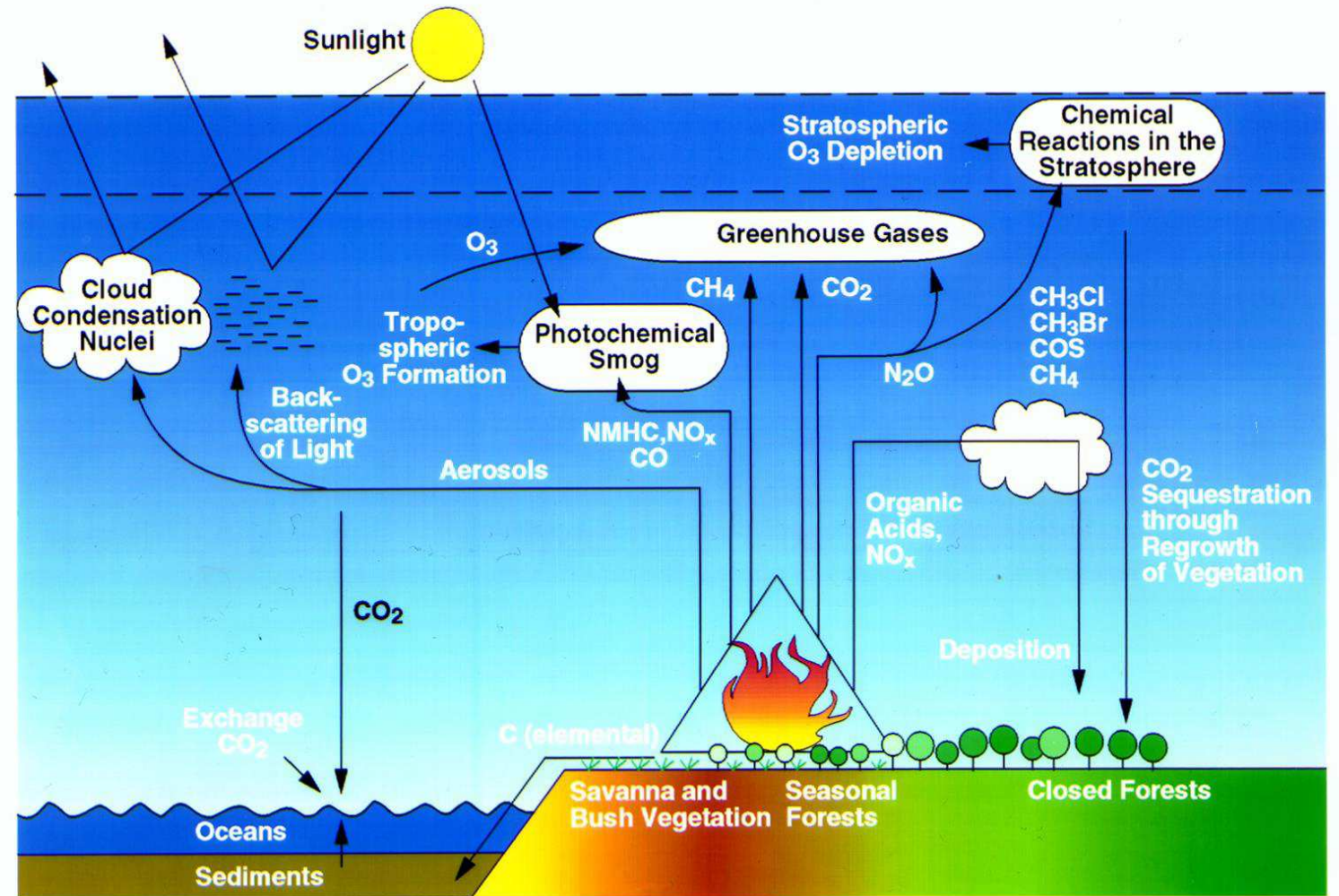




East Kalimantan: Forest Degradation by Multiple Fire Events

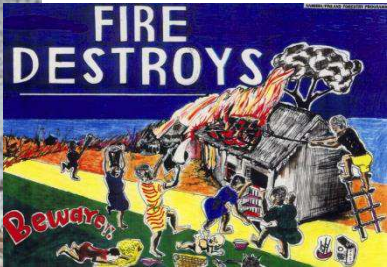
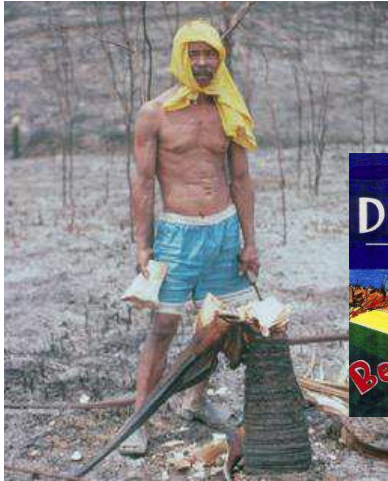


The late 1980s: the role of vegetation fire emissions on biogeochemical cycles, the atmosphere and climate

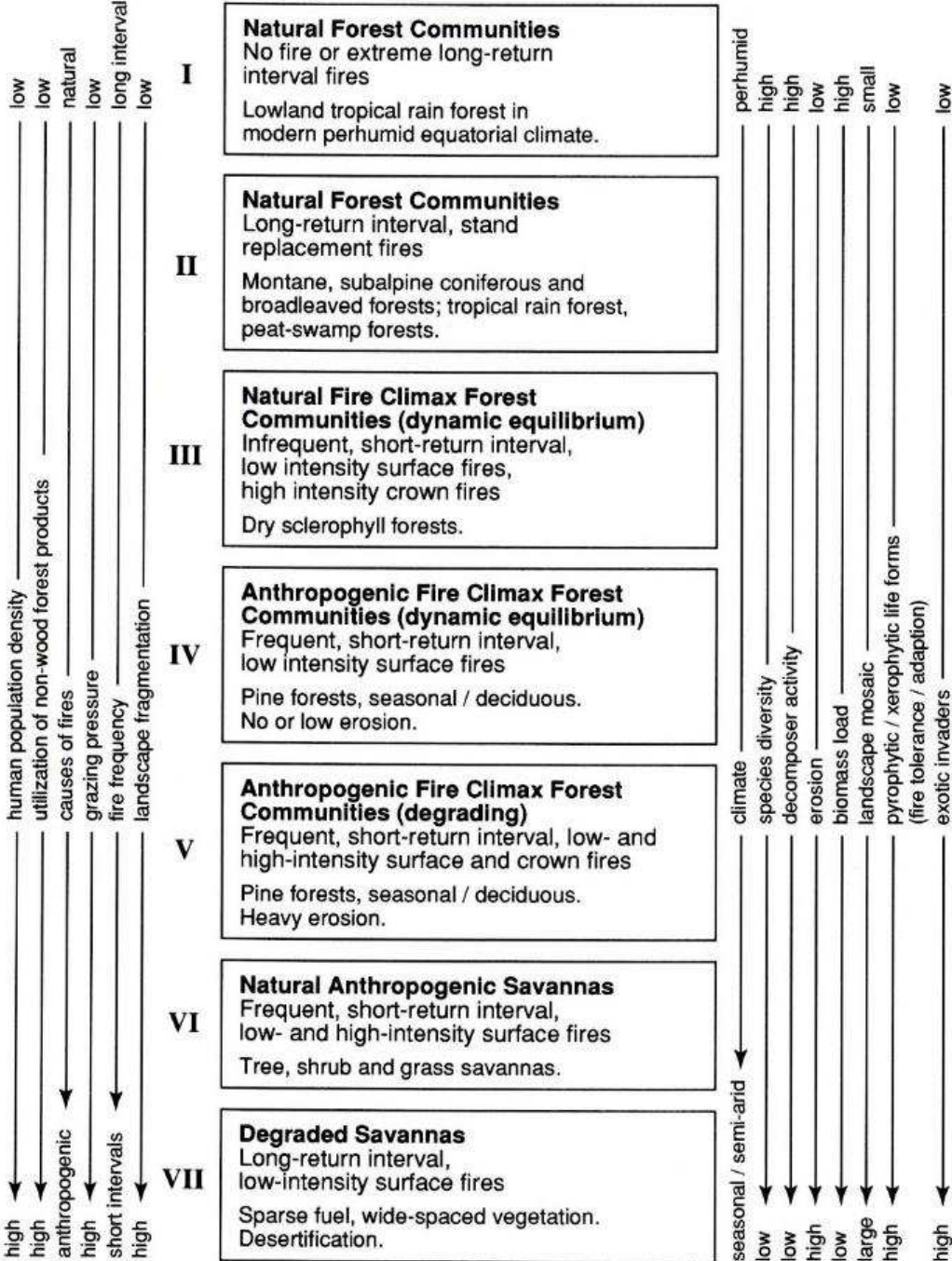


The impact of gaseous and aerosol emissions from vegetation fires on atmosphere and climate

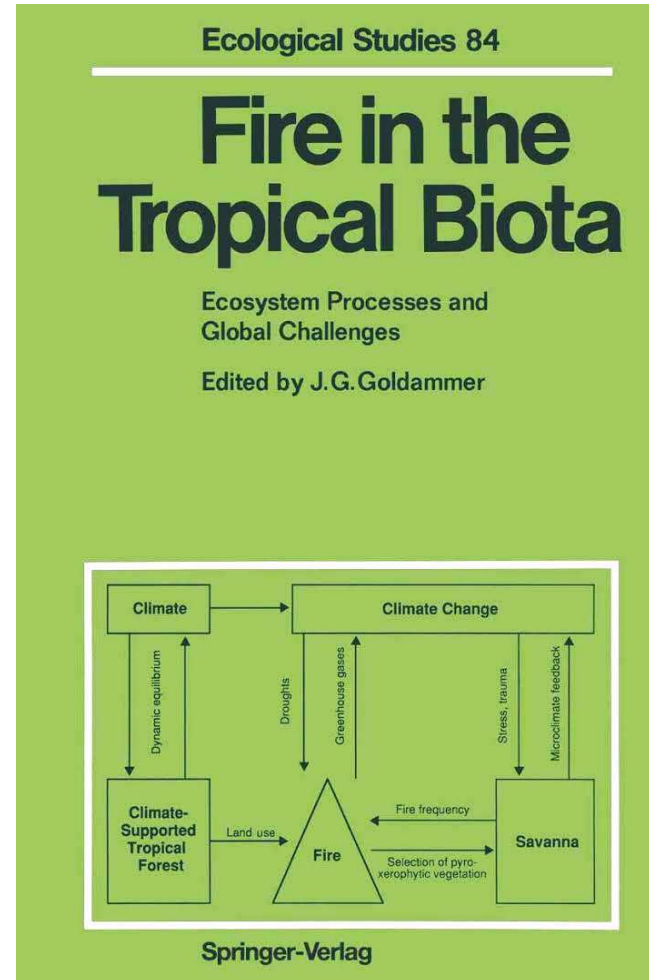
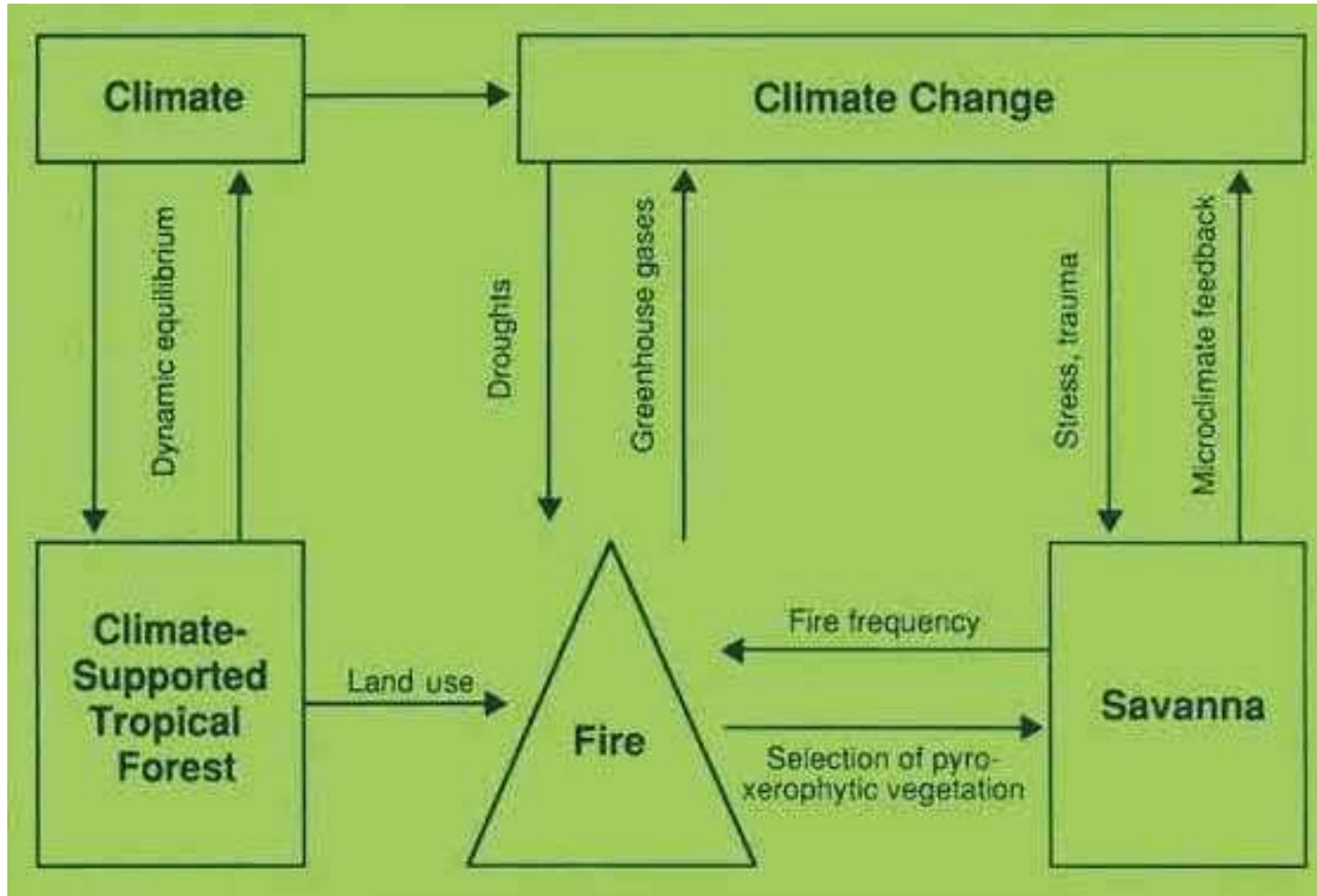
The late 1980s: and the demographic, socio-economic and land-use changes



Credit: GIZ-IFFM / A.A.Hoffmann
H. Abberger



1989: First International Conference “Fire in the Tropical Biota” convened in response to the escalating fire problems in the tropics

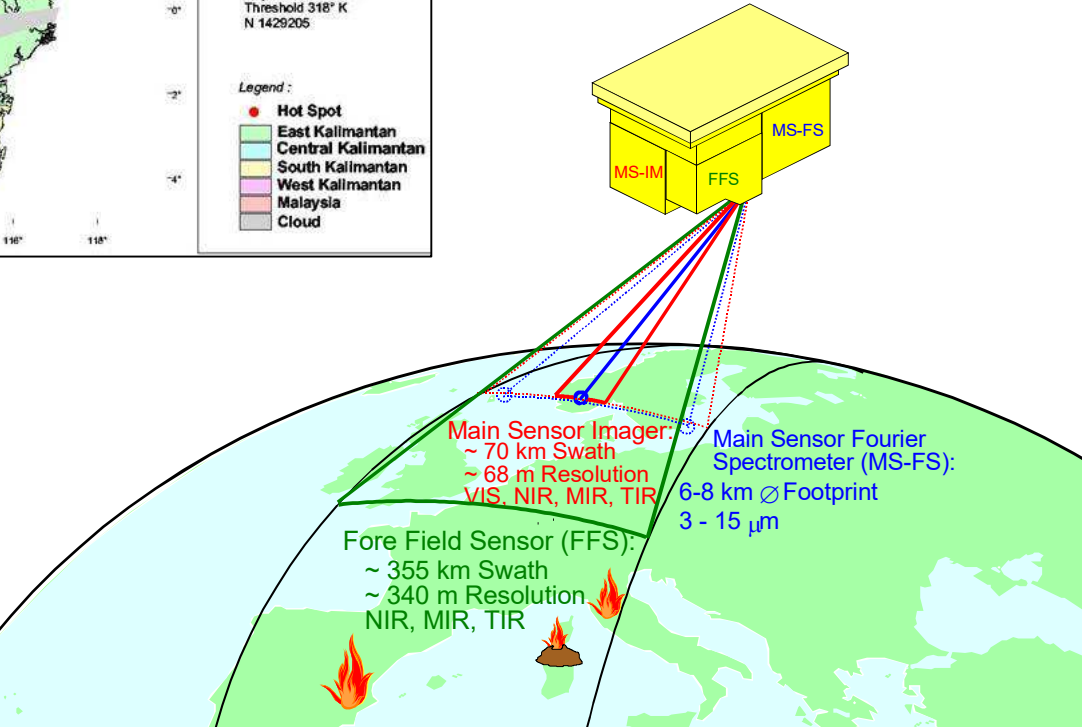
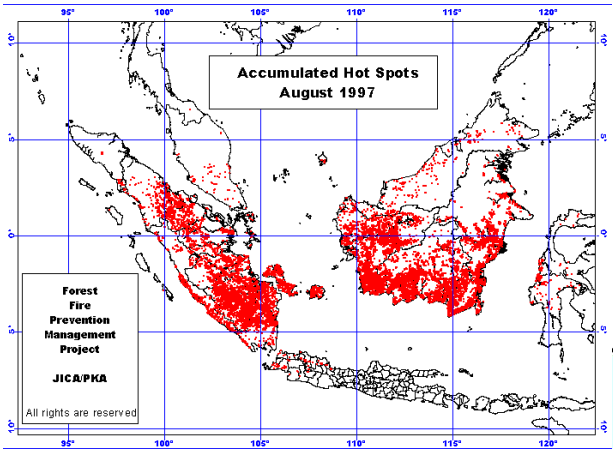
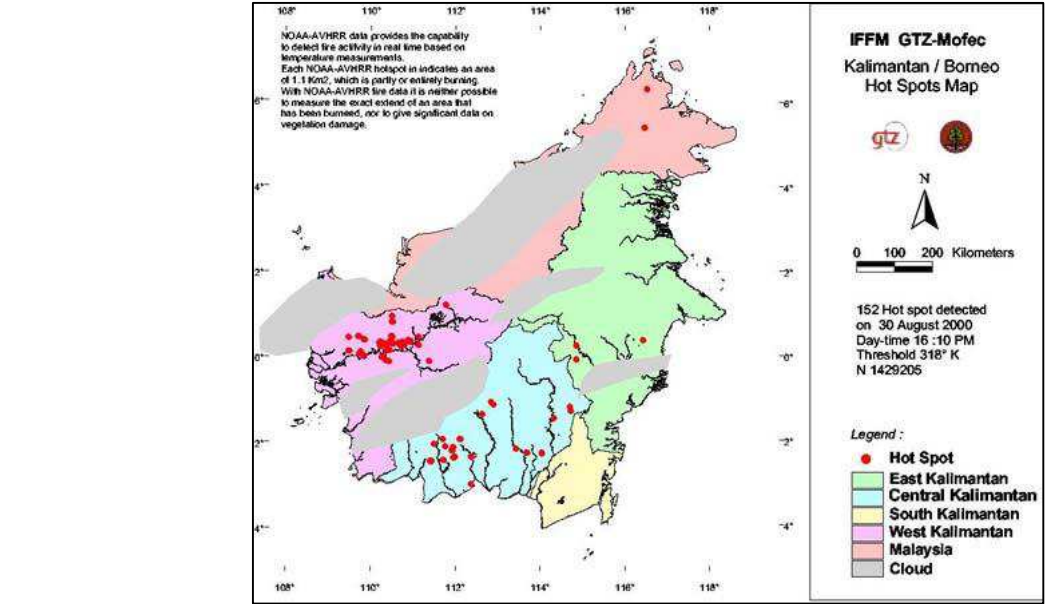
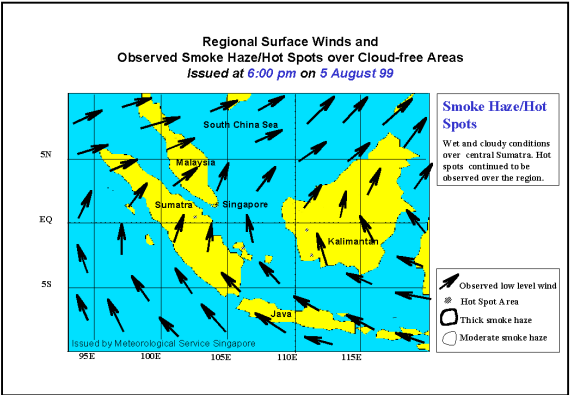
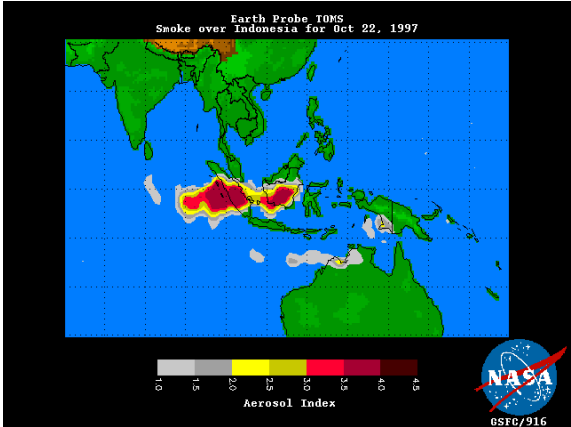


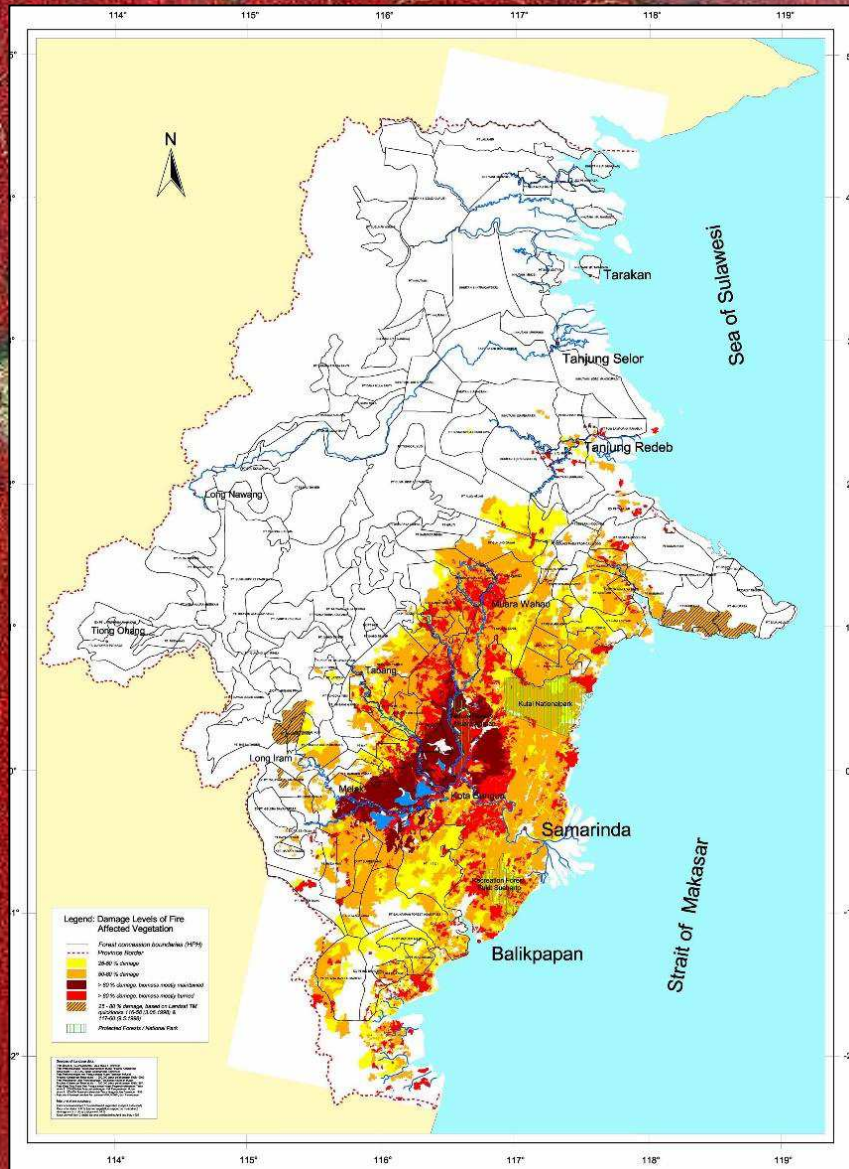
The “Freiburg Declaration on Tropical Fires” (20 May 1989)

An Action Plan

- Both more research and immediate action are needed. Education must begin now to bring about long-term changes in attitudes towards fire and nature.
- Without waiting for further results, much could be done to translate what we already know into action.
- These actions include reforming the policies of international lending institutions and development assistance programs to give greater consideration to the environmental impacts of policies that either provoke or eliminate fires

The 1990s: Progress in Indonesia – from NOAA AVHRR to BIRD (Bispectral InfraRed Detection)



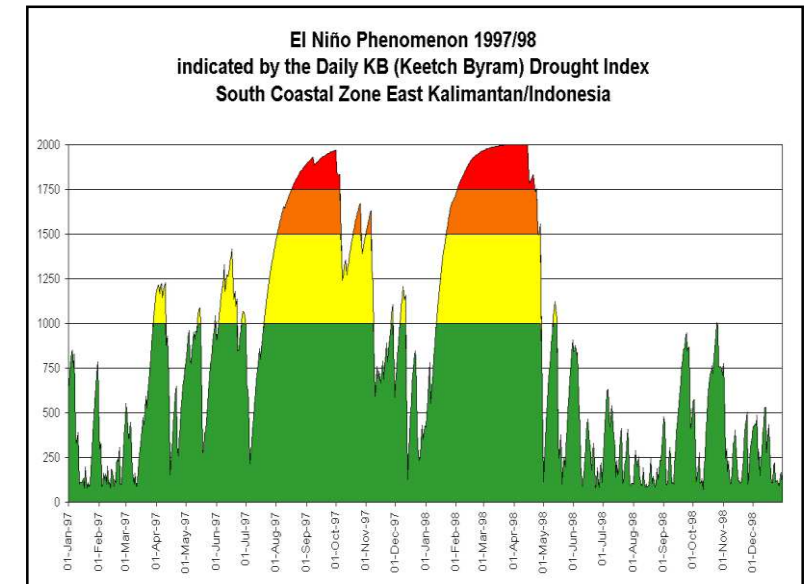
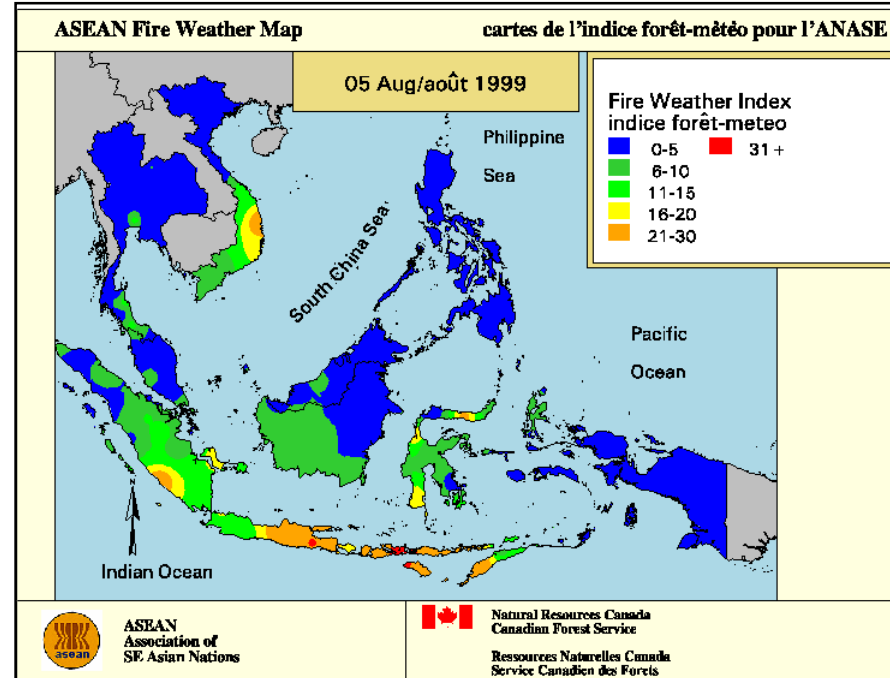
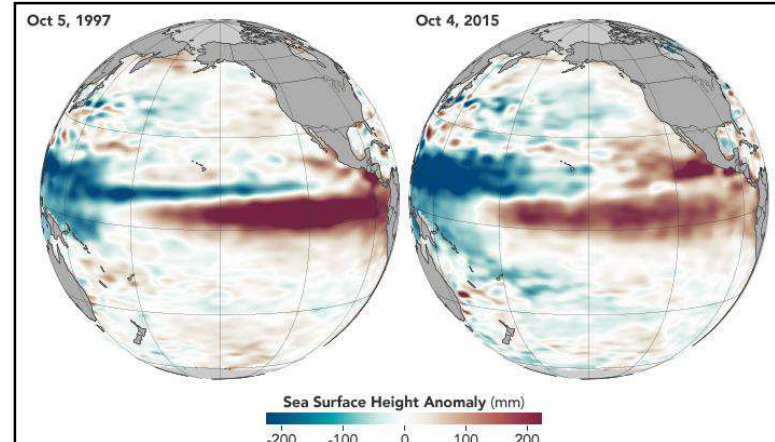
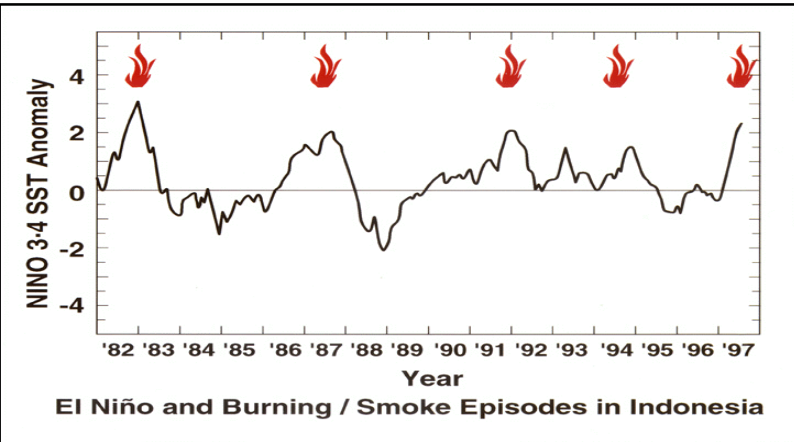


Credit: GIZ-IFFM / A.A. Hoffmann

First assessment of damages caused by the fire episode of 1997-98 in Indonesia

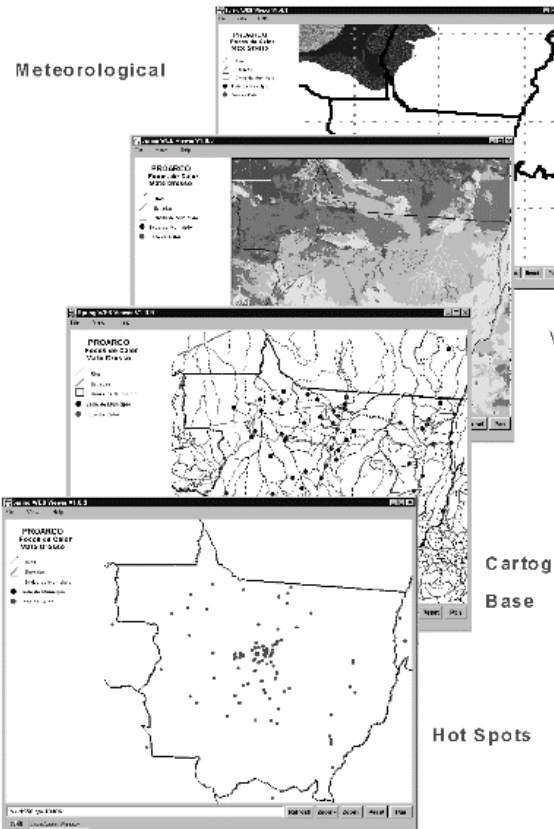
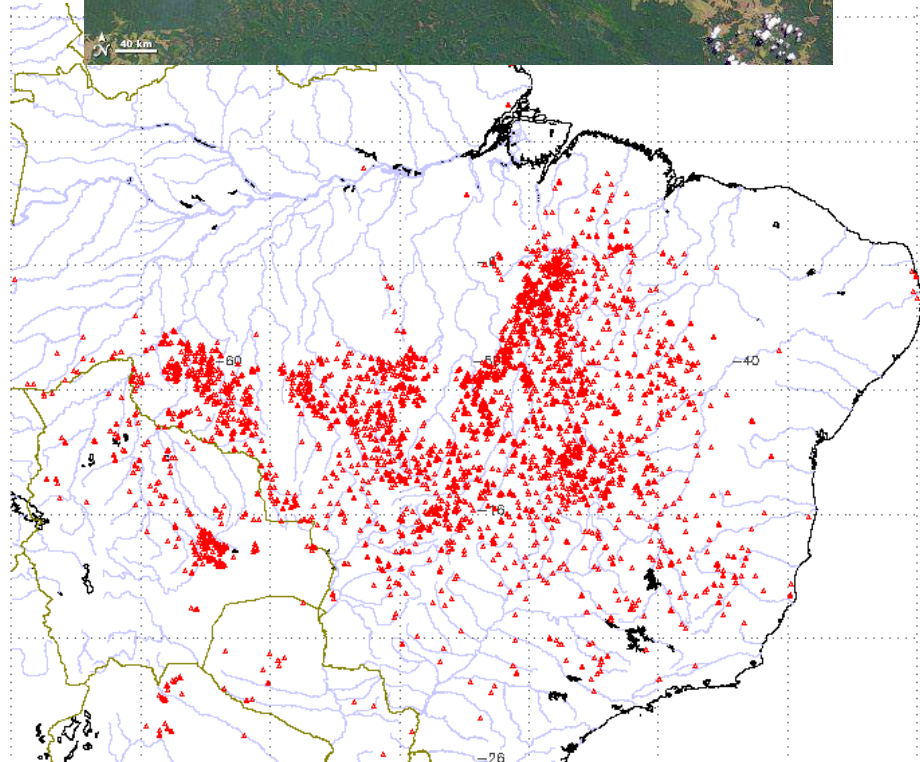
High-resolution sensors like SPOT

The 1990s: Fire, Climate Variability and Fire Weather



Credit: CFS / GIZ-IFFM

The 1980s: Brazil



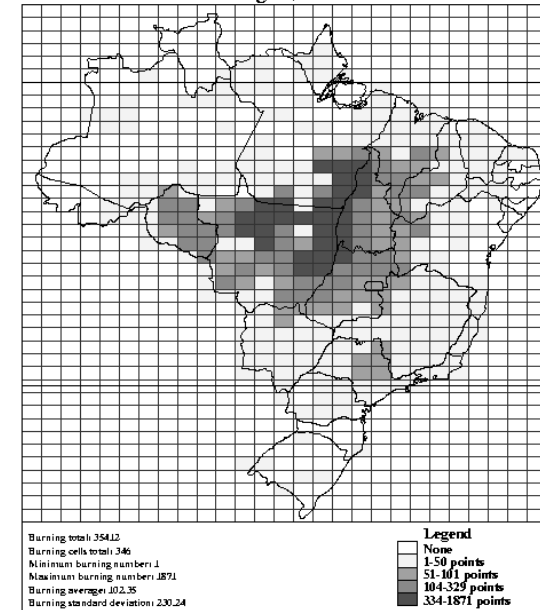
Embrapa

Satellite Monitoring

Orbital Monitoring of Burned Areas

Brazil

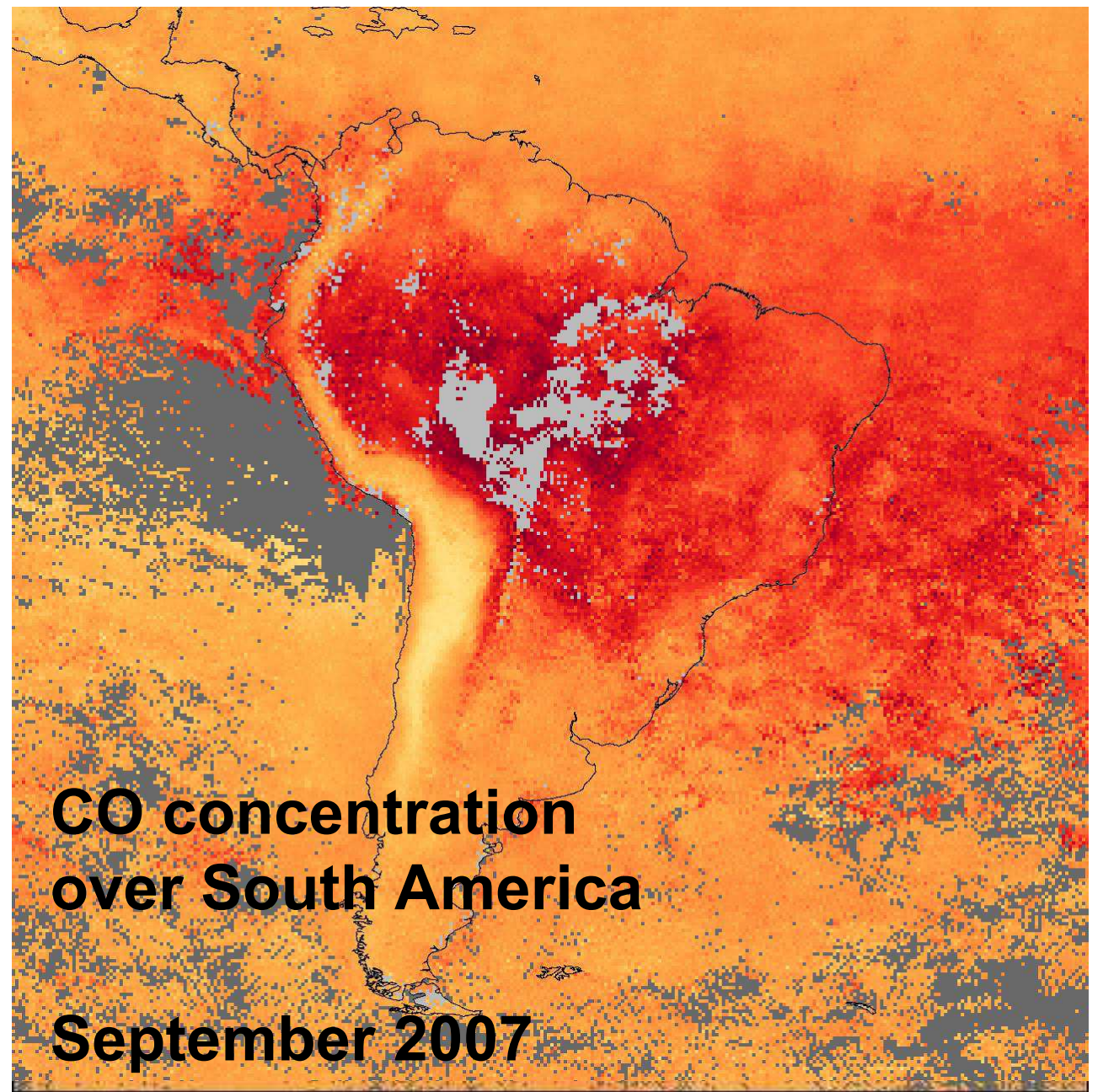
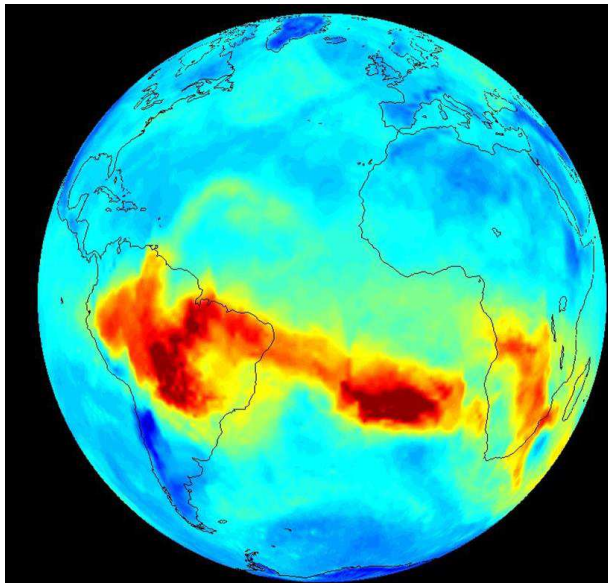
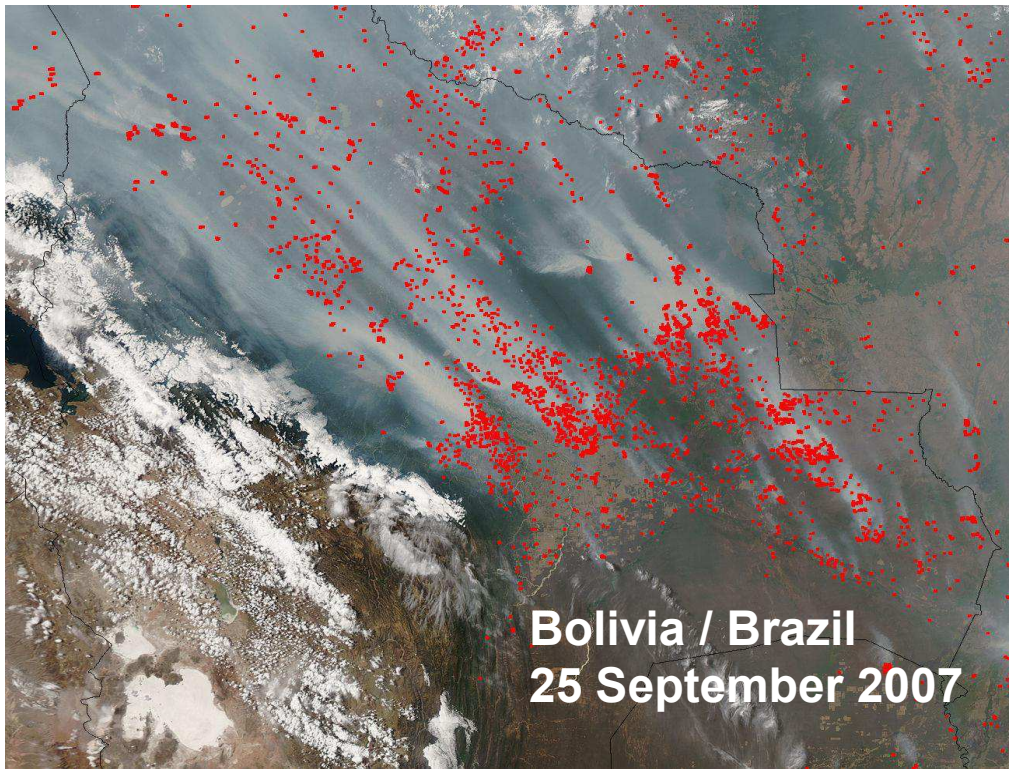
August, 1998



NOAA Satellite Data: National Institute for Space Research (INPE-MCT)
 Air and Digital Mapping: Environmental Monitoring Center (Embrapa-NMA)
 Satellite Data Interpretation and Environmental Analysis (ECOFORC/A)
 Diffusion: Agência Estado (AE)

ALERT SYSTEM

Everyday on Internet
 or by Fax,
 for the counties in the
 Arch of Deforestation



September 2007

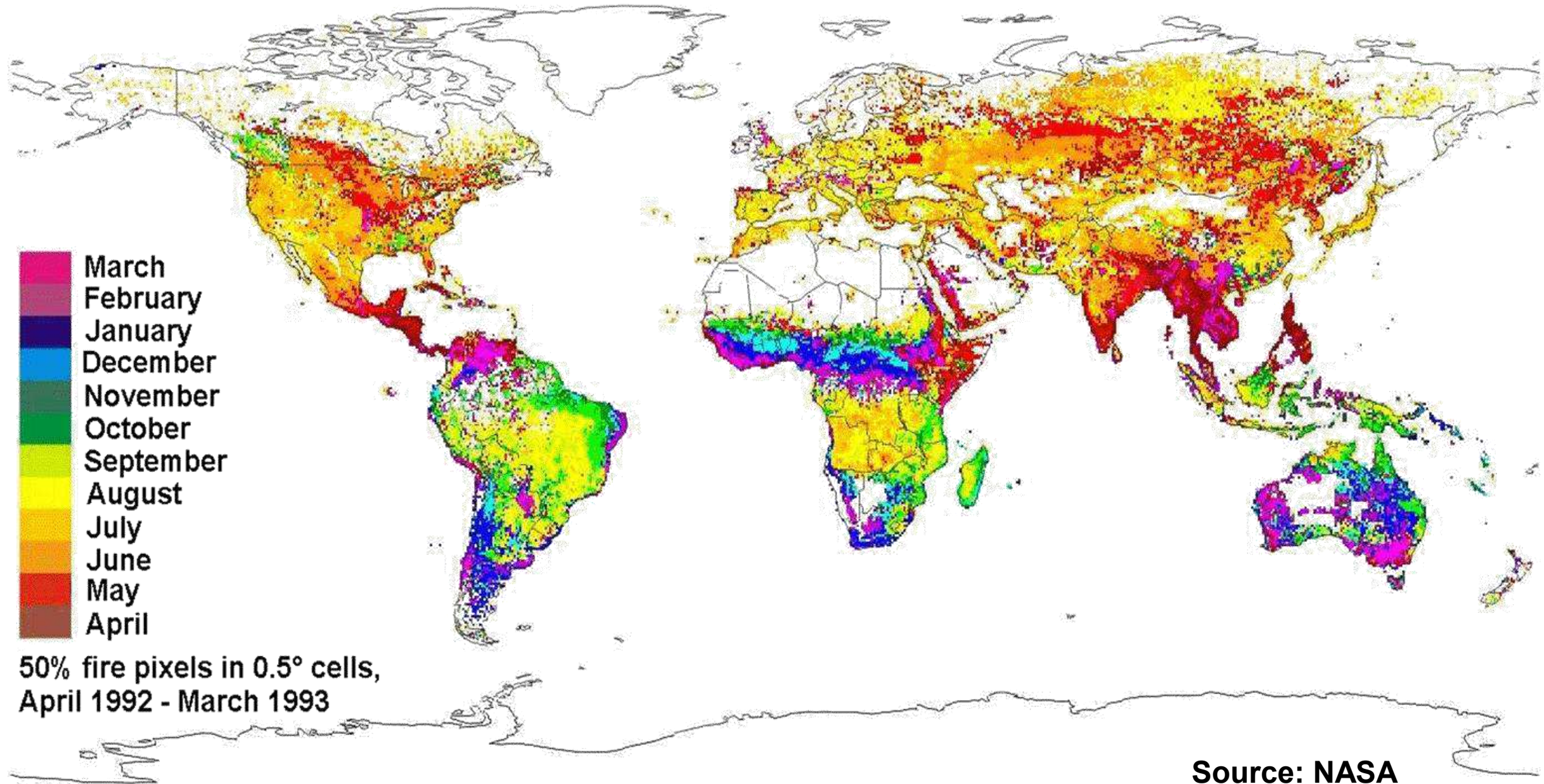
Carbon Monoxide Column Density ($\times 10^{18}$ molecules/cm²)





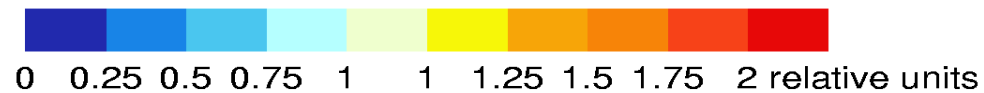
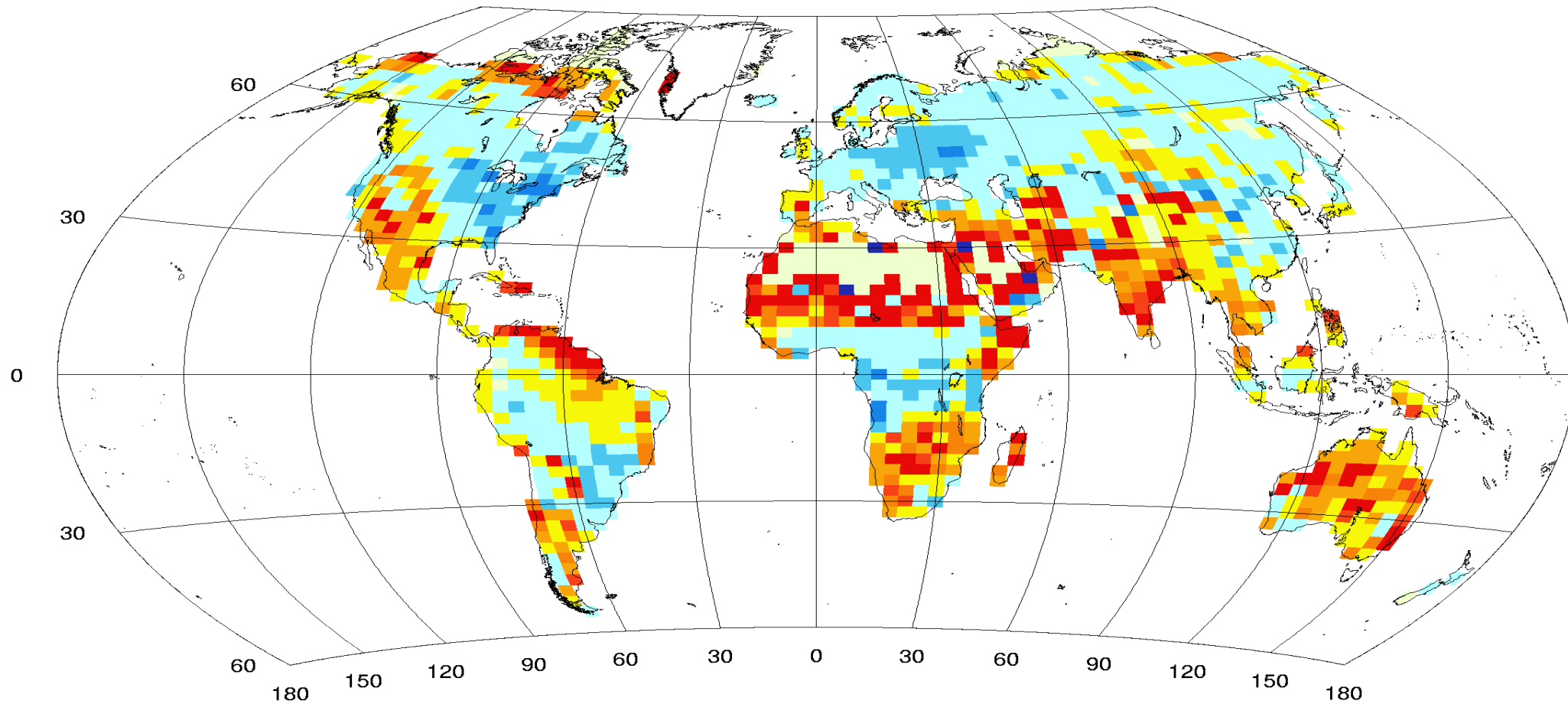
25 August 2019

The 1990s: Global Fire Monitoring



The 1990s: Global Fire Modelling up to 2099

Potential change in area burnt, averaged over 2000-2099

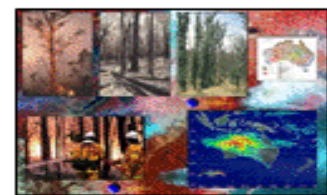
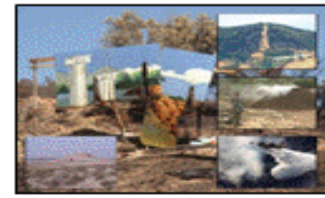
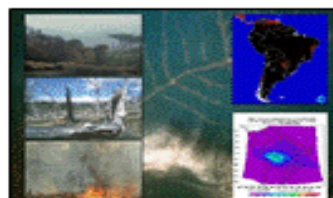
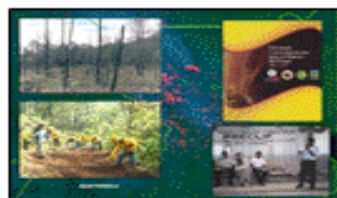


Source: PIK

The Global Wildland Fire Network in 2019

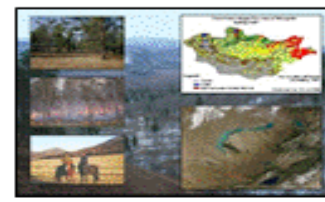
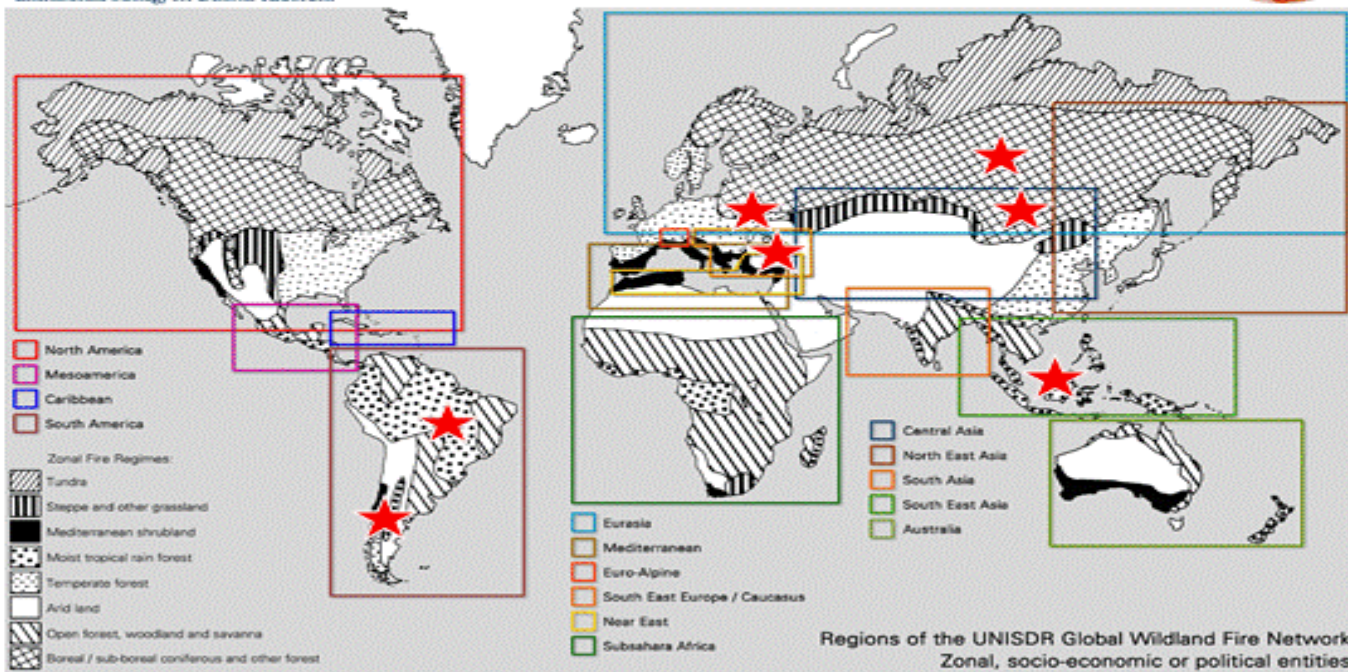
14 Regional Wildland Fire Networks

and 6 Regional Fire Management Resource Centers ★ (South America in Foundation)



International Strategy for Disaster Reduction

The UNISDR Global Wildland Fire Network



The Regions of the UNISDR Global Wildland Fire Network and the Regional Hubs
 North America – Mesoamerica – **South America** – Caribbean – Mediterranean – Near East –
Southeast Europe/ Caucasus – Subsahara Africa – South Asia – **Southeast Asia**
 Australasia – Northeast Asia – **Central Asia** – **Eurasia** – Euro-Alpine

Functions of “Regional Fire Monitoring Centers” (RFMC) / Regional Management Resource Centers” (RFMRC)

➤ Advisory support to nations and to the regional organizations:

- Development and implementation of fire management policies
- Support of participating countries of the region to develop informal or formal agreements / protocols for cross-boundary cooperation in fire management

Establishment of Regional Fire Monitoring / Fire Management Resource Centers

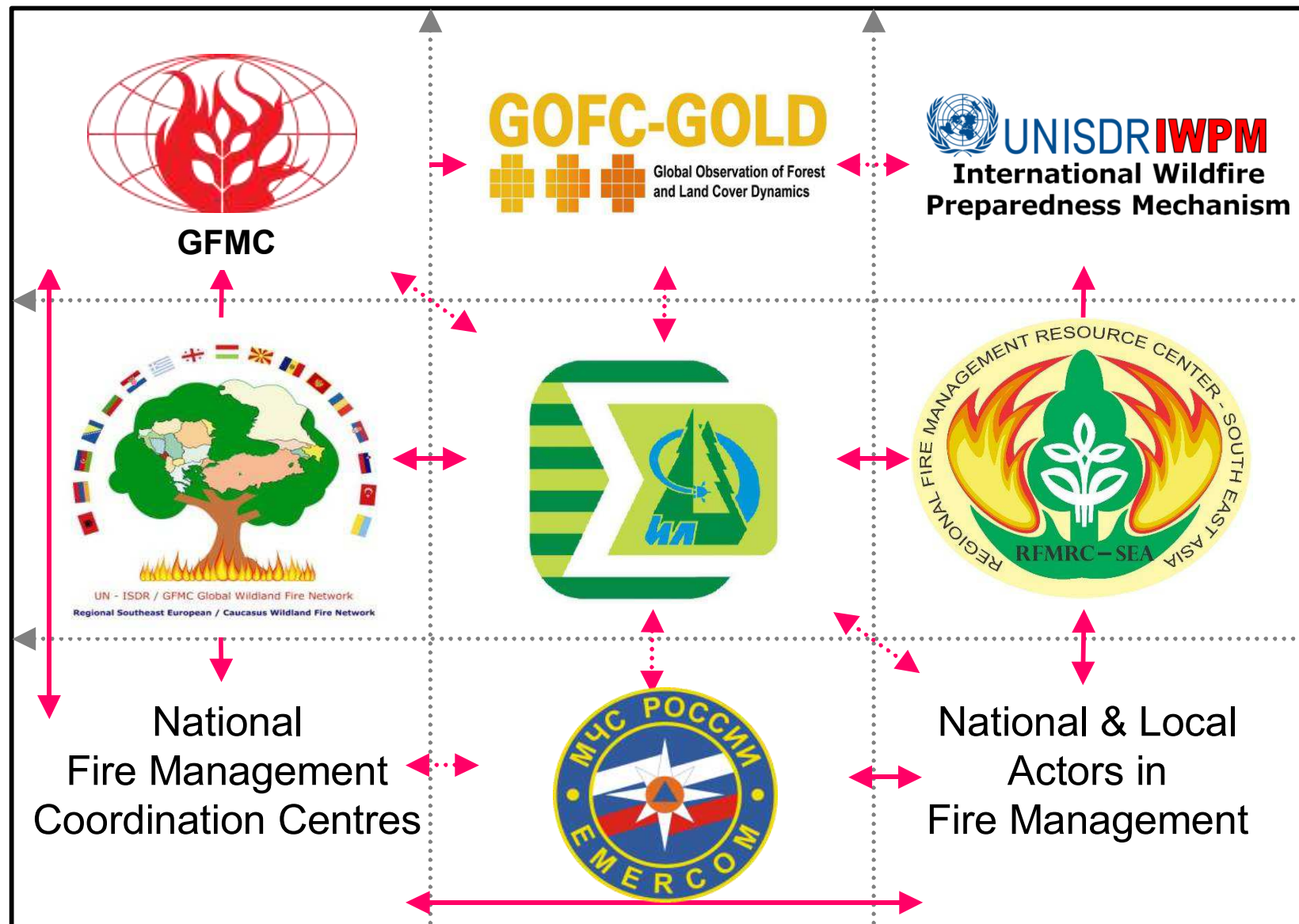
- 2010 / 2013: Establishment of the first Regional Fire Monitoring Centers for Southeast Europe / Caucasus Region (Skopje, FYR Macedonia) and Eastern Europe (Kyiv, Ukraine)
- 2015: Establishment of the Regional Fire Management Resource Center in Central Asia (Ulaanbaatar, Mongolia)
- 2017: Establishment of the Regional Fire Management Resource Center in South East Asia (Bogor, Indonesia)
- 2017 / 2019: Signing of an agreement to establish the Regional Eurasia Fire Monitoring Center at the Federal Research Center «Krasnoyarsk Science Center SB RAS – opened on 27 August 2019



Global Scale

Regional Scale

**National to
Local Scale**



History of Regional Cooperation in Fire Management: The Regional South America Network (!)

- **Foundation** of the Regional South America Wildland Fire Network 15 years ago: June 2004 (Curitiba)
- **Chairs:** Chile and Brazil
- **Regional exchange** between scientists, practitioners and policy makers



History of Regional Cooperation in Fire Management: The Regional South America Network (II)



- Inter-regional cooperation with the Central American and Caribbean Networks



Landscape fire ecology of Central Brasil

First Modern Cerrado Jalapão Fire Expedition – 2013



Landscape fire ecology of Central Brasil

First Modern Cerrado Jalapão Fire Expedition – 2013



Activities (III)

In recognition of the need to enhance preparedness and interoperability of South American countries for fire emergency situations

▪ **First Regional Consultation on Cross-boundary Fire Management (Republic of Uruguay, May 2016)**

➤ Participating countries: Argentina, Brazil, Chile, Paraguay, Uruguay



First Regional Consultation on Cross-boundary Fire Management (Republic of Uruguay, May 2016)

- Introduction of the EuroFire Competency Standards in Spanish and Portuguese (Brazilian)
- Introduction of the International Fire Aviation Guidelines



International competency standards for training of firefighters



June 2019:

**Available in 22
languages for the
use in 60+ countries**

www.euro-fire.eu



Estándares de Competencias y Materiales de Entrenamiento

Versión en Español para América Latina y el Caribe

Incluido Estándares en Portugués

Introducidos para la ocasión del

**Primer Simposio Regional de Cooperación en
Manejo del Fuego Inter-Fronterizo en Sudamérica**

Parque Nacional Santa Teresa, Uruguay, 30 de Mayo al 02 de Junio 2016



Con el patrocinio de:



en virtud de un convenio
del Bundesrat Alemán

Activities 2016-2017



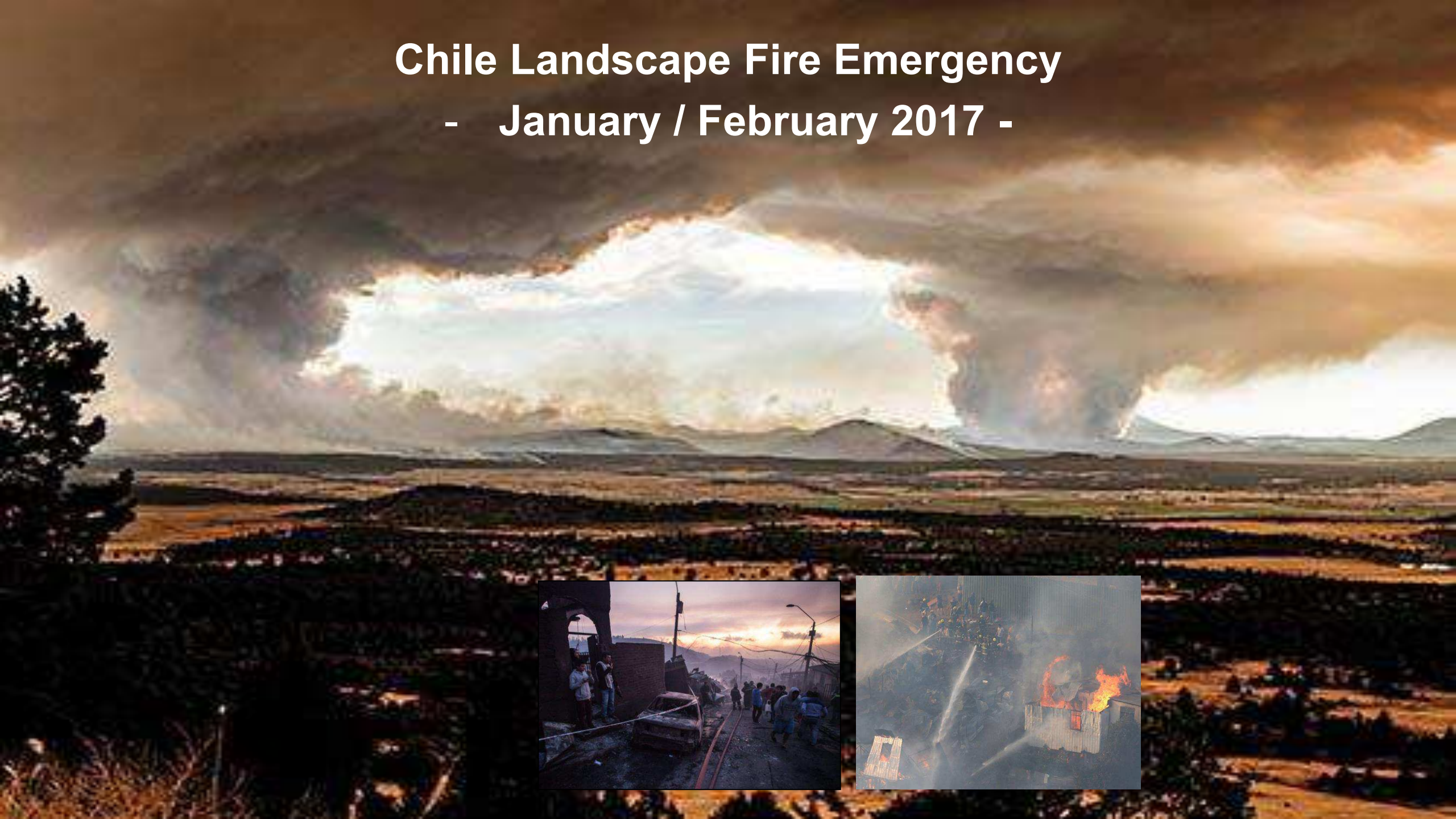
▪ Brazil and South America (2016-2017)

- Regional Seminar between scientists practitioners and policy makers (Gurupi, Tocantins, November 2016):
- Opening of the Environmental Monitoring and Fire Management Center (Gurupi, Tocantins, November 2016)
- Proposal to establish a Regional Fire Management Resource Center for South America (likely with 2 nodes in Gurupi [Brazil] and Santiago [Chile])



Chile Landscape Fire Emergency

- January / February 2017 -





3-4 October 2017: Regional Consultation on Transboundary Cooperation in Fire Management accomplished

- 10 South American Countries attending with representation at high level





3-4 October 2017: Regional Consultation on Transboundary Cooperation in Fire Management accomplished

- Viña del Mar Declaration
- Official document that shall be endorsed and followed up by all South American countries
- Initiation of the formal dialogue between government agencies in 10 South American countries
- Recommendation for the establishment of the Fire Management Resource Center – South America Region (FMRC-SAR)



Thanks for Your Attention



The Global Fire Monitoring Center (GFMC)