



National University of  
Life and Environmental  
Sciences of Ukraine



Global Fire  
Monitoring Center



Regional Eastern  
European Fire Monitoring  
Center



Council of Europe



EUR-OPA  
Major Hazards Agreement

## Second National Round Table on Fire Management

Kyiv, 9 April 2019

# Recent Challenges and Trends for Developing Holistic Approaches in Landscape Fire Management in Europe

**Johann Georg Goldammer**

Global Fire Monitoring Center (GFMC) Freiburg, Germany



# Rationale (I)

**In most European States wildfire regimes are changing and wildfire impacts increasing due to**

- Land-use change – associated with rural exodus and abandonment of the rural space
- Consequently, reduced land cultivation resulting in increasing flammability of rural landscapes
- Weather extremes associated with regional climate change (increasing severity and duration of droughts)
- Increasing vulnerability of society to fires affecting rural and peri-urban settlements



# Rationale (II)

**The years 2017-2018: Globally the hottest years on record – experienced unprecedented extreme fires throughout Europe and globally**

- Portugal 2017: 111 victims in June and October
- Greece 2018: 100 people killed in the Mati fire
- California 2018: Worst fire season since the recent decades – *Camp Fire*: 86 people killed. Total structures destroyed: 18,000. Total damages: \$3.5 billion



# First Release of the GFMC Global Wildfire Damages Report **2017**

- The evaluation of the damages (fatalities, injuries, structures burned, people evacuated, economic losses):
  - Fatalities: 304 (thereof Europe – 135)
  - Injuries: 1891 (thereof Europe – 615)
  - Evacuations: 546,768
  - Homes destroyed: 10,498
  - Other structures destroyed: 513,370 (+ dozens of other public & commercial structures such as schools, hospitals, super markets or warehouses)
  - Protected areas affected by wildfires: 530,907 hectares (in 23 countries)

# First Release of the GFMC Global Wildfire Damages Report **2017**

- **Economic impacts of wildfires in 2017 in 18 countries (in \$US):**
  - Fire damages: ~\$1,058,175,893
  - Suppression / recovery costs: ~\$5,279,218,766
  - Insured losses: ~\$15,048,350.000
  - Unspecified: ~\$1,363,480,025
  - **Total: ~ \$US 22.7 billion**

# Guiding Frameworks

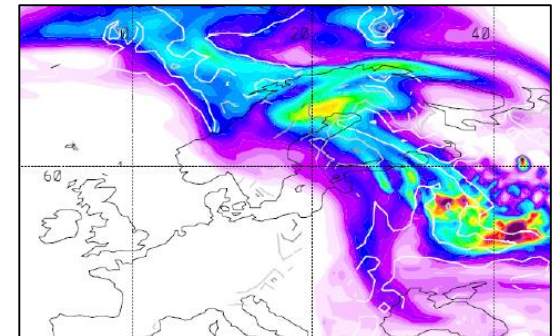
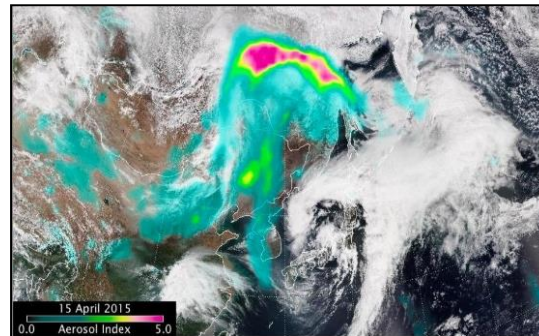
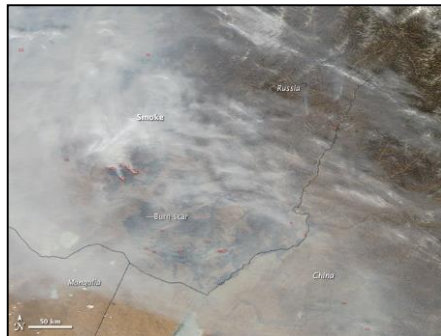
- **Sendai Framework** for Disaster Risk Reduction 2015-2030
- Recommendations of the **UNECE Regional Forum on Cross-boundary Fire Management**: International Wildfire Preparedness Mechanism (2013)
- **Council of Europe** Major Hazard Agreement (EUR-OPA)
- **OSCE Ministerial Council** Decision 6/2014



# The OSCE experience and visions leading to the Ministerial Council Decision 6/2014 (I)

## Specific observations in the first Decade of the 2000s

- Countries that traditionally had limited wildfire problems are subjected to increasing fire occurrence
- Transboundary impacts and sometimes extended large wildfires may temporarily exceed national control capabilities have prompted countries to intensify cross-boundary cooperation in fire management





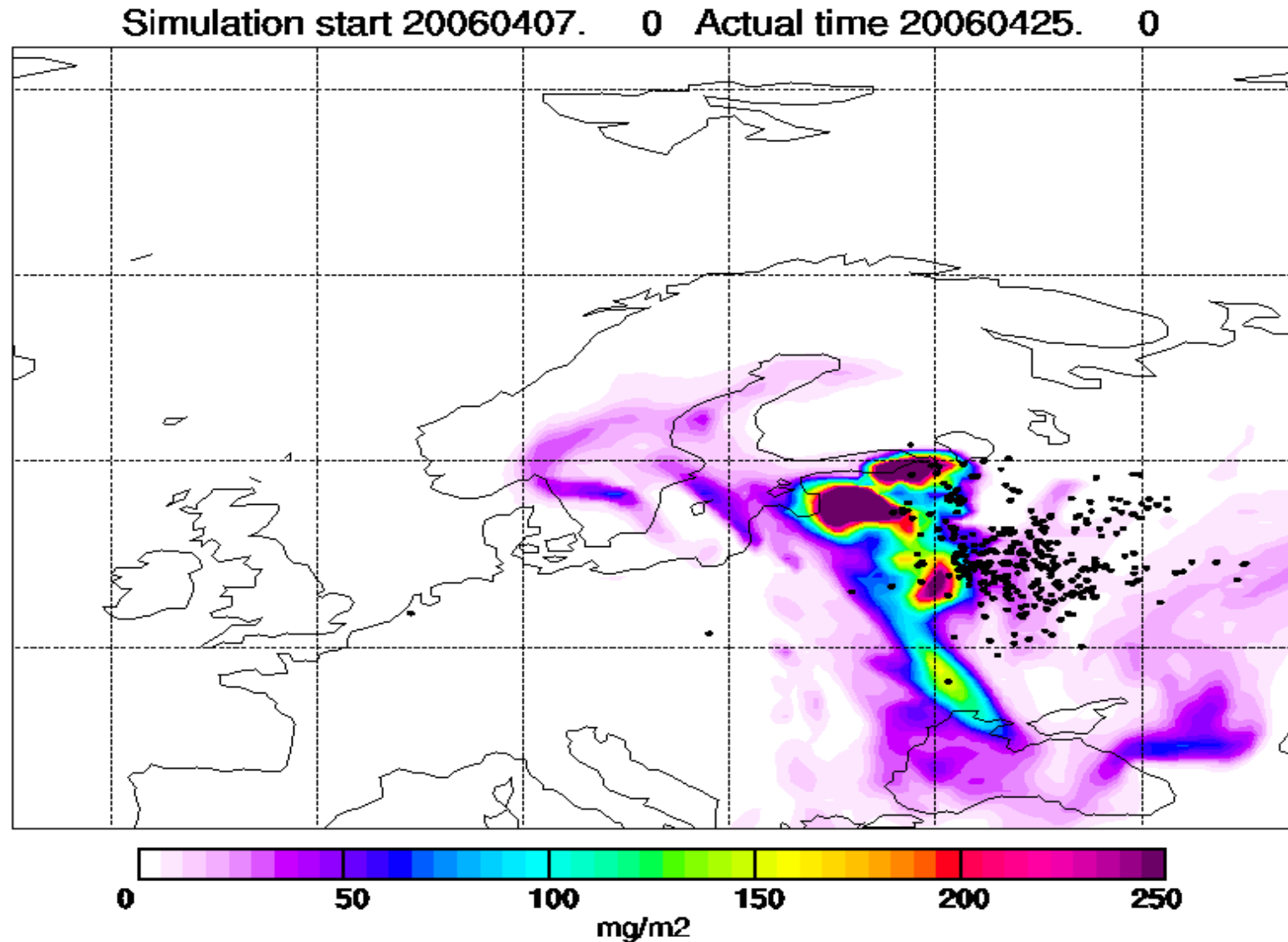
# Agricultural Burning - A major source of *Black Carbon* deposits on the Arctic environment





# Transport of Fire Emissions to the European Arctic

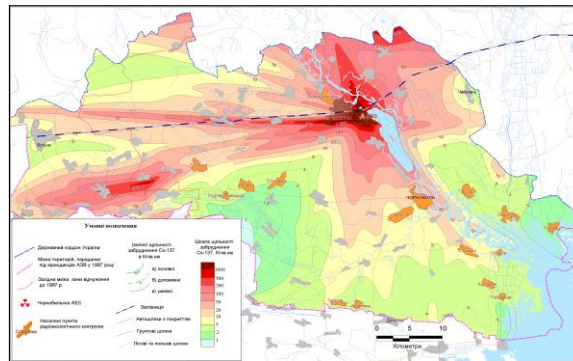
Satellite images courtesy of Norwegian Meteorological Institute



# The OSCE experience and visions leading to the Ministerial Council Decision 6/2014 (II)

## Specific observations in the first Decade of the 2000s

- Specific problems in areas of armed conflict and post-conflict situations: Threats by Unexploded Ordnance (UXO)
- Secondary threats by fires burning on radioactively and otherwise contaminated terrain



# The Ministerial Council Decision 6/2014

**Based on the experience 2009-2014 the MC decision included item 6:**

- Tasks the OSCE executive structures, in particular the OCEEA, within their available resources and mandates, to strengthen the exchange of knowledge and experience, building upon the OSCE's good practices in disaster risk reduction gained particularly in the field of water management, flood risk management, **and fire management**

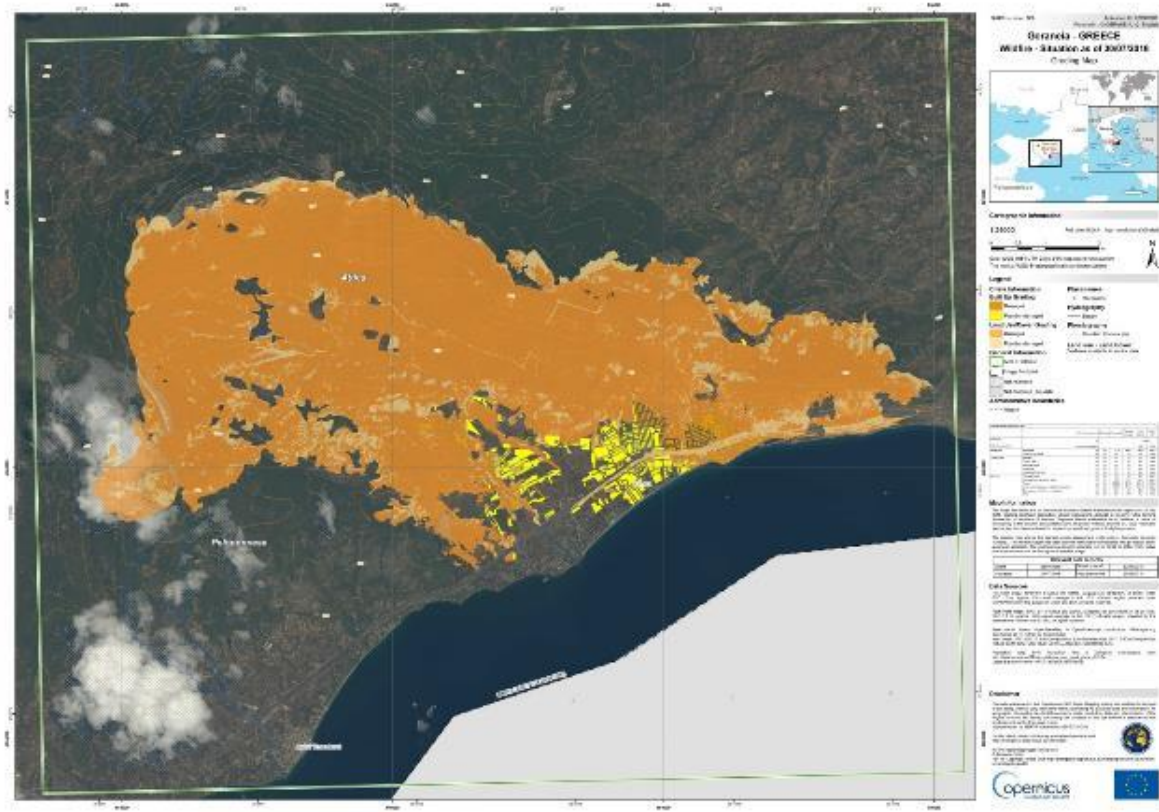
# Greece: The Mati Fire of 23 July 2018

Very high fire danger predicted for 23 July 2018 in Attica, due to extremely strong westerly winds



# The First Fire

A fire started around noon on Geraneia mountain, threatening a Wildland-Urban Interface area (settlement of Kinetta) and an oil refinery.







# The Second Fire at Daou Pentelis

While aerial and ground resources were concentrating on the Kinetta fire, a second fire started, at 16:41 in a settlement called Daou Pentelis in Eastern Attica.



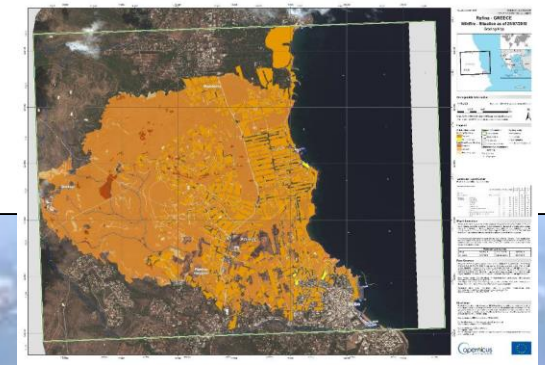






**Burned area: 1300 ha**

Source: Copernicus





















**Burned houses (destroyed or damaged): 3000**









# Independent Commission Appointment

- On 10 September 2018, the Greek Government established an **Independent** Commission to work on the underlying causes of the worsening forest fire problem in Greece and to develop a plan for the future.
- Contrary to past efforts this Commission does not include any politicians



# The Committee



**Ioannis Mitsopoulos**  
Ministry of Environment  
and Energy



**Alexandros  
Dimitrakopoulos**  
Professor  
Aristotle University of  
Thessaloniki



**George Eftychidis**  
Center for Security Studies –KEMEA  
Ministry of Citizen Protection



**George Mallinis**  
Associate Professor,  
Democritus University of Thrace



**Gavriil Xanthopoulos**  
Associate Researcher  
ELGO - DIMITRA

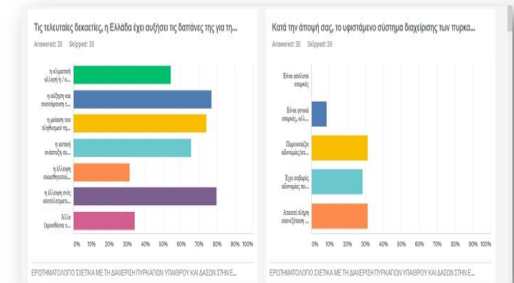


# The Tasks of the Committee

- Analyze / assess the underlying reasons for the increase of landscape fire hazards and risks, in Greece during the recent years.
- Propose an applicable policy and required actions for the reform of the national forest fire management system, notably a national cross-sectoral policy that will take into account the crosscutting nature of landscape

# Modus Operandi of the Committee

➤ Collected and analyzed the views of 73 independent scientists and practitioners, experts



➤ Collected the views of 28 relevant authorities (Ministries, Agencies, Administration etc.) and organizations involved in landscape fire management



➤ Organized a National Round Table on Fire Management (11/12/2018), to allow live discussion and interaction among the key agencies of the country regarding the key findings of the Committee



# Report: Proposals for a new Organization





# **The Proposed New System for Landscape Fire Management**

- The problem of landscape fires should be tackled by the State using a holistic approach, through an integrated and coherent management framework
- The overall and unified planning should address jointly the prevention and suppression of fires, as well as the restoration of burned areas in an integrated manner to ensure and strengthen societal, environmental and economic resilience.
- Application of the law should be strengthened by integrating it into operational planning within the framework of a unified and interagency national plan for the protection of the landscape and the safety and

# The proposed Landscape Fire Management Organization (LFMO)

- The LFMO will operate with all stakeholders involved in landscape fire management
- LFMO will have an **advisory, coordinative and supervisory** role
- Main mission: To develop an **Interagency National, Landscape Fire Management Plan** and to monitor and follow up its application

# **Principles of LFMO (1)**

## **1. Transdisciplinarity and Innovation**

Policy and strategic planning and relevant decision making shall be based on sound scientific knowledge and considering technological capabilities and innovation

## **2. Holistic Policy, Integration and Inclusion**

Policy development and strategic planning shall be holistic, i.e. address the fire problem at landscape level by including all relevant institutional mandates and the potential and capacity of contribution of the civil society.

# **Principles of LFMO (2)**

## **3. Coherence**

The mandates and activities in fire management of State institutions and other stakeholders shall be coherent (harmonized) under a national fire management policy

## **4. Cohesiveness**

The National Landscape Fire Management Plan will be considered cohesive (obligatory) for institutional / sectoral planning and activities.

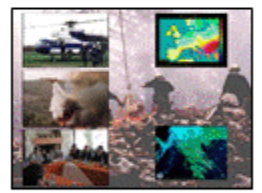
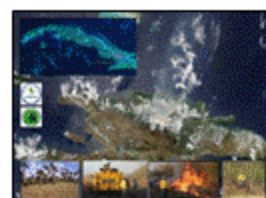
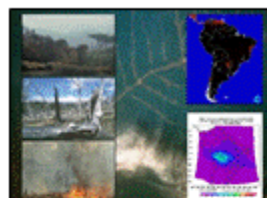
## **5. Coordination**

The implementation of the National Landscape Fire Management Plan will be monitored and coordinated

# The Global Wildland Fire Network in 2019

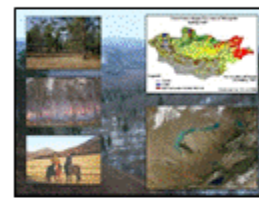
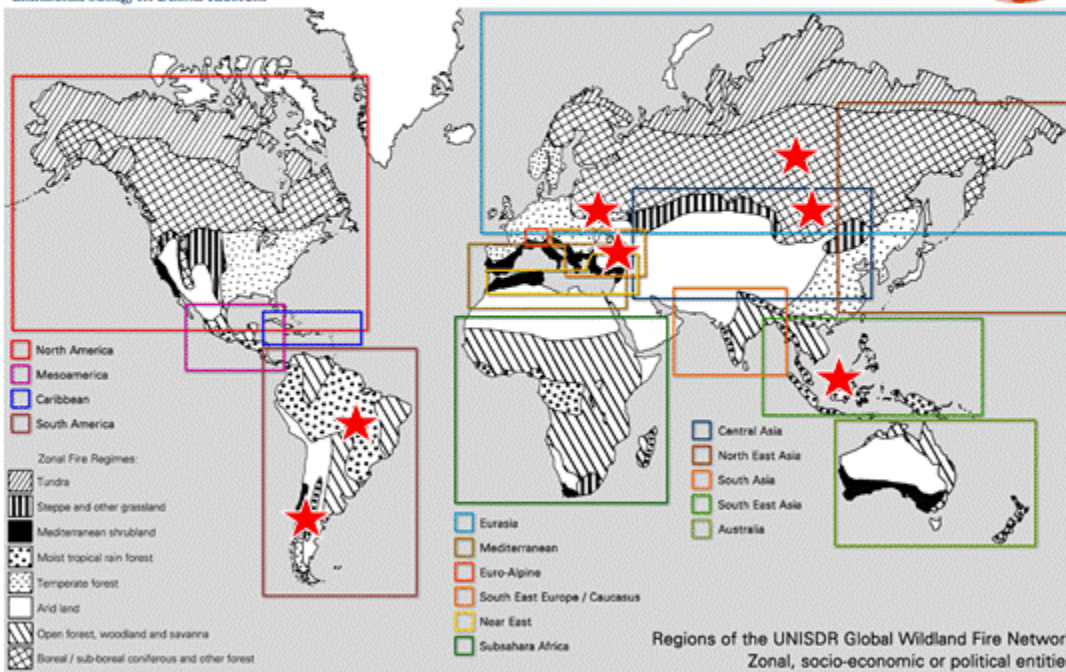
## 14 Regional Wildland Fire Networks

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



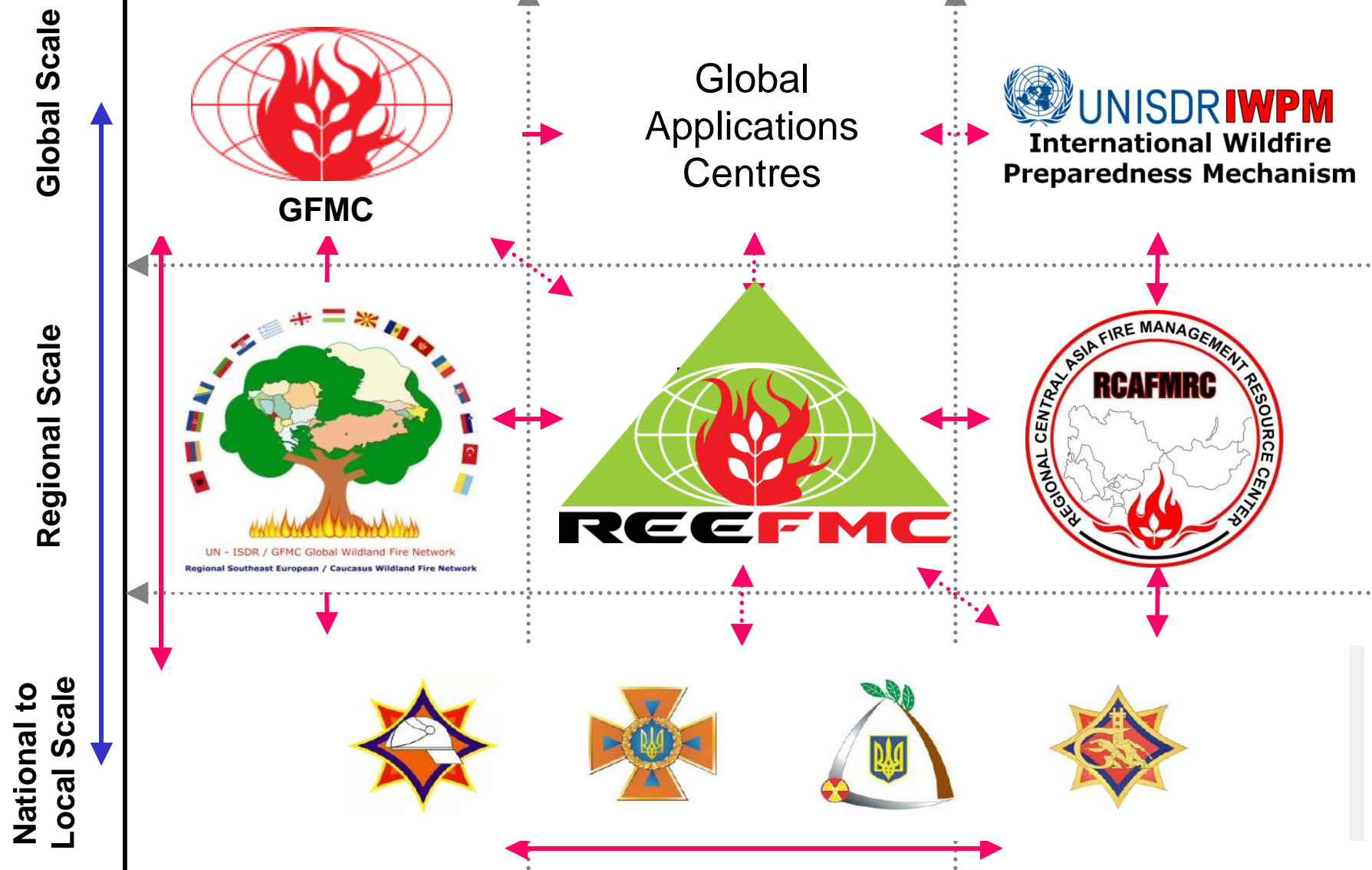
International Strategy for Disaster Reduction

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





# Recent Activities (I)

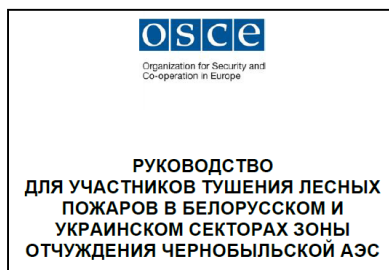
## Strengthening Regional Cross-boundary Governance in Fire Management

- OSCE project “Improving Radiological and Environmental Awareness in Territories Affected by the Chernobyl Accident in Belarus and Ukraine with a Focus on Wildfire Management”
- Table-top exercise in Gomel, Belarus (May 2018)



# Recent Activities (II)

- Publication and dissemination of Guidelines and Terminology and Fire Management in Radioactively Contaminated Terrain



- Publication of public awareness materials







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# **Thanks for Your Attention**

