



**8<sup>TH</sup>**  
**INTERNATIONAL**  
**WILDLAND FIRE**  
**CONFERENCE**

**GOVERNANCE PRINCIPLES:**  
Towards an International  
Framework  
[www.wildfire2023.pt](http://www.wildfire2023.pt)

Porto-Portugal  
May 16-19<sup>th</sup>  
2023

## **8<sup>th</sup> International Wildland Fire Conference**

### **Global Wildland Fire Network – Statement of the sub-Saharan Africa Region, East Africa Region – Regional Eastern Africa Fire Management Resource Center (REAFMRC)**

16 May 2023

---

#### ***Introductory remarks***

Africa is referred to as the « *Fire Continent* » because of the widespread occurrence of biomass burning, particularly in savanna ecosystems. Although some fires occur by natural phenomena such as lightning strikes or volcanic eruptions, the majority of fires in East Africa are caused by human activities usually associated with land-use practices. Fire is used to prepare the land for crop planting or after crop harvest; clear rangelands for livestock grazing or for regeneration of pastures; clear forest for settlements and crop production (rice, maize), and for tea or coffee plantations in some specific areas. Fire is also used to collect wild honey and to make charcoal in woodland and dry forests. These fires started by human ignitions, whether intentionally (for land management or arson) or by accident, often spread out of control and cause significant loss of human and animal lives, destruction of properties, natural habitats and biodiversity. Furthermore, the smoke plumes from these fires pose acute respiratory health risks while increasing the amount of greenhouse gases in the atmosphere. Under the effects of climate change combined with unsustainable management practices, the risk of wildfires will increase and thereby making East African region more vulnerable to wildfires.

The Regional Eastern Africa Fire Management Resource Center (REAFMRC) is serving countries of the Sub-Saharan Africa, notably East Africa, by provision, archiving and interpreting scientific-technical information and satellite-derived near-real time and historic data on landscape fires. Furthermore, the Center contribute to close interaction between all departments in wildfire monitoring for early warning information on active burning, fire danger and burned area monitoring. In this scope, the REAFMRC is

1. Generating, archiving, interpreting, and disseminating scientific-technical and satellite-derived near-real time and historic data and information on landscape fires.
2. Organizing consultations in order to generate awareness and foster cooperation among decision-makers of all concerned sectors about the importance of fire management at landscape level as a prerequisite for the implementation of national land management and environment policies.
3. Supporting advanced landscape fire management training courses combined with field practice for professionals working in the institutions with a task in landscape fire management or disaster risk reduction.
4. Supporting national authorities in reaching out to civil society and their active participation in wildfire prevention and risk reduction, notably at local community level.

#### ***Specific landscape fire problems of the region***

In Eastern Africa region, rural landscapes are regularly affected by fires, especially during dry season. Nearly all wildfires are human-caused and result from a complex set of social, political and economic circumstances. These are rooted in interrelated factors such as rural poverty, growing population pressure and low agricultural productivity (which drives smallholders to expand the area they farm), the absence of



**8<sup>TH</sup>**  
**INTERNATIONAL**  
**WILDLAND FIRE**  
**CONFERENCE**

**GOVERNANCE PRINCIPLES:**  
Towards an International  
Framework  
[www.wildfire2023.pt](http://www.wildfire2023.pt)

Porto-Portugal  
May 16-19<sup>th</sup>  
2023

operational land-use policies, and weak capacity in forest tenure and law enforcement (Lemessa and Perault, 2001).

Over the past few decades, the East African region has experienced a number of increasing incidences of unprecedented large and disastrous wildfires affecting forests and an increasing frequency, intensity and vulnerability to extreme events, primarily droughts and floods. Particularly, many national parks and protected areas in some countries in the region (Ethiopia, Kenya, Madagascar, Tanzania, and Uganda) have been affected by severe wildfire emergencies in recent years. This is further aggravated by the climate change. According to IGAD Climate Prediction & Applications Centre (ICPAC), projected higher temperatures and extended drought conditions coupled with population growth pressure are likely to increase occurrence and intensity of wildfires in the region in the future.

### ***Gaps in fire management capacity***

Several capacity gaps need to be addressed in order to develop effective fire management (Livingstone et al., 2022):

- Incomplete understanding of the root causes of human-induced fires
- Limited data on trends in fire frequency and intensity, and high-risk areas
- Lack of a national land-use policy and plan
- Limited coordination between the forest law and laws in other sectors
- Weak enforcement of existing laws
- Poor coordination and communication between various actors at various levels of government in and between regional states; and
- Lack of firefighting equipment and trained firefighters, with a heavy reliance on international support and using local citizens and security personnel for fire suppression.

### ***Main advances achieved since the last International Wildland Fire Conference***

1. Establishment of the Regional Eastern Africa Fire Management Resource Center (REAFMRC) was at the Land, Landscape and Development Research Lab at the University of Antananarivo, with the assistance of the Global Fire Monitoring Center (GFMC).
2. Launch of fire management tools by an open-access geoportal of REAFMRC that allows fire information to be shared with all stakeholders, from members of the public to policy makers. Fire information is about daily fire hotspots provides by NASA FIRMS (Fire Information for Resource Management System), 1-day fire danger forecast is based on the Forest-Weather Index Method (FWI) and monthly and annually burned area monitoring from Sentinel-2 data in Madagascar and dozen East African countries (Tahintsoa et al., 2022).
3. Implementation of 65 km agricultural fuelbreaks, mainly around Ankarafantsika National Park in northern Madagascar between 2021 and 2022. This effort was supported by the GIZ PAGE2 project (*Programme de Protection et Exploitation Durable des Ressources Naturelles à Madagascar*), the Land, Landscape and Development Research Lab, and the Regional Eastern Africa Fire Monitoring Resource Center. Established in generally open landscapes dominated by grassy savanna, these fuelbreaks limit the spread of fires, which occur with varying frequency. They also create an additional 615 ha of farmland for crop production; this should help to limit further slash-and-burn activities in the national park and so further reduce the potential for future fire ignitions (Rakoto Ratsimba et al., 2022).



**8<sup>TH</sup>**  
**INTERNATIONAL**  
**WILDLAND FIRE**  
**CONFERENCE**

**GOVERNANCE PRINCIPLES:**  
Towards an International  
Framework  
[www.wildfire2023.pt](http://www.wildfire2023.pt)

Porto-Portugal  
May 16-19<sup>th</sup>  
2023

4. Capacity building in fire monitoring from satellite images and geographic information system (GIS) of the Ministry of Environment and Sustainable Development in Madagascar at national and regional level.
5. Provision of fire-fighting equipment (Wildland Water Backpack and spades) to Regional Directorate for the Environment and Sustainable Development and the municipalities of the Boeny region in northwestern of Madagascar.

### **Conclusions and recommendations**

The threat from wildfires to the sustainability of natural resources and the livelihoods of rural population will become increasingly dangerous in the coming years as a consequence of climate change and socio-economic and demographic changes in the Eastern Africa region. To fill the gaps in fire management and solve the landscape fire problems, it is recommended to:

- Carry out efficient measures to prevent wildfire
- Establish and implement a mechanism to rapidly detect and suppress wildfires
- Promote innovative practice which will sustain fire resilient landscapes
- Improve post-fire restoration activities
- Implement guidelines for developing fire management plans for protected areas
- Support the development of fire management planning processes at local, landscape and national levels
- Create an enabling environment from all local and international technical and financial partners for financial, technical and other resource support and motivation to local people for wildland fire management; and
- Enhance cooperation among countries within the region and at inter-regional levels, aimed at knowledge transfer, sharing technology, expertise and data exchange in fire management.

### **References**

Lemessa D and Perault M. 2001. Forest fires in Ethiopia: Reflections on socio-economic and environmental effects of the fires in 2000. Assessment Study: June–September 2001. UNDP-EUE. <https://reliefweb.int/report/ethiopia/forest-fires-ethiopia-reflections-socio-economicand-environmental-effects-fires>

Livingstone J, Kassa H, Yimam K, Hagazi N, Shibeshi A and Zewdie S. 2022. Fire management in Ethiopia: past, present and future. DOI: <https://doi.org/10.55515/AQVV3055>

Rakoto Ratsimba H, Andriamiharimanana, JN, Braun M. and Goldammer, JG. 2022. Agricultural fuelbreaks in sustainable fire-resilient landscapes in Madagascar. DOI: <https://doi.org/10.55515/PJMX6791>

Tahintsoa GH, Raherinjatovoarison D, Rakotoarinivo HZ, Ratsimandresy RN and Rakoto Ratsimba H. 2022. Using satellite images to monitor burned areas in Madagascar. DOI: <https://doi.org/10.55515/FIOP8254>

ICPAC (IGAD Climate Prediction & Applications Centre). 2020. Wildfires in Eastern Africa — will climate change increase the intensity of wildfires? <https://icpac.medium.com/wildfires-in-eastern-africa-will-climate-change-increase-the-intensity-of-wildfires-573ba35a5e10>