



**Advanced Wildland Fire Management Course
A Joint UN Inter-Agency Training Course for the SADC Region
Sponsored by the German Foreign Office, Office for the Coordination of Humanitarian Assistance**

Nelspruit, South Africa, 30 May – 5 June 2004

Executive Summary

The significance of wildland fire in Sub-Sahara Africa, particularly in the SADC region, in shaping fire-adapted and highly productive ecosystems vs. its destructive role of excessive fire threatening the sustainability of natural and land-use systems, requires human resources and capacities enabled to deal with the complexity of the issue. Considering the recent progresses made by cooperation in wildland fire science and management, including wildland fire disaster mitigation and response, it is necessary to provide senior-level officials from SADC countries with an updated and comprehensive advanced fire management training / capacity-building package. The Advanced Wildland Fire Management Course covered (a) an introduction to African fire ecology, (b) fuel and fire management, (c) fire prevention, (d) fire-use, (e) fire fighting, (f) fire behaviour prediction, (g) fire monitoring using remote sensing tools, (h) fire early warning systems and application, and (i) international cooperation in wildland fire management. The role of the UN agencies and programmes involved in the course was to inform SADC member states about the international arrangements and procedures in place or to be developed to enhance multilateral cooperation in wildland fire management including disaster management support. Together with the United Nations University Institute of Environment and Human Security the course was conducted by the Global Fire Monitoring Center (GFMC) in the frame of the outreach programme of the Global Wildland Fire Network of the UN International Strategy for Disaster Reduction (UN-ISDR). Main funding for the course was provided by the German Foreign Office.

Background and Rationale

Fire is a widespread seasonal phenomena in Africa. South of the equator, approximately 168 million hectares burn annually, nearly 17% of a total land base of 1014 million hectares, accounting for 37% of the dry matter burned globally. Savanna burning accounts for 50% of this total, with the remainder caused by the burning of fuelwood, agricultural residues, and slash from land clearing. Fires are started both by lightning and humans, but the relative share of fires caused by human intervention is rapidly increasing. Pastoralists use fire to stimulate grass growth for livestock, while subsistence agriculturalists use fire to remove unwanted biomass while clearing agricultural lands, and to eliminate unused agricultural residues after harvest. In addition, fires fuel by wood, charcoal or agricultural residues are the main source of domestic energy for cooking and heating.

In most African ecosystems fire is a natural and beneficial disturbance of vegetation structure and composition, and in nutrient recycling and distribution. Nevertheless, substantial unwarranted and uncontrolled burning does occur across Africa, and effective actions to limit this are necessary to protect life, property, and fire-sensitive natural resources, and to reduce the current burden of emissions on the atmosphere with subsequent adverse effects on the global climate system and human health. Major problems arise at the interface between fire savannas, residential areas, agricultural systems, and those forests which are not adapted to fire. Although estimates of the total economic damage of African fires are not available, ecologically and economically important resources



International Forest Fire News (IFFN) is an activity of the FAO/UNECE Team of Specialists on Forest Fire and the Global Fire Monitoring Center (GFMC). IFFN is published on behalf of UNECE Timber Committee and the FAO European Forestry Commission and is serving the UN-ISDR Global Wildland Fire Network (GWFN). For the complete IFFN archive see: <http://www.fire.uni-freiburg.de/iffn/iffn.htm>

are being increasingly destroyed by fires crossing borders from a fire-adapted to a fire-sensitive environment. Fire is also contributing to widespread deforestation in many southern African countries.

Most southern African countries have regulations governing the use and control of fire, although these are seldom enforced because of difficulties in punishing those responsible. Some forestry and wildlife management agencies within the region have the basic infrastructure to detect, prevent and suppress fires, but this capability is rapidly breaking down and becoming obsolete. Traditional controls on burning in customary lands are now largely ineffective. Fire control is also greatly complicated by the fact that fires in Africa occur as hundreds of thousands of widely dispersed small events. With continuing population growth and a lack of economic development and alternative employment opportunities to subsistence agriculture, human pressure on the land is increasing, and widespread land transformation is occurring. Outside densely settled farming areas, the clearance of woodlands for timber, fuelwood and charcoal production is resulting in increased grass production, which in turn encourages intense dry season fires that suppress tree regeneration and increase tree mortality. In short, the trend is toward more fires.

Problems in African Societies in Transition

Budgetary constraints on governments have basically eliminated their capacity to regulate from the centre, so there is a trend towards decentralization. However, the shortage of resources forcing decentralization means there is little capacity for governments to support local resource management initiatives. The result is little or no effective management and this problem is compounded by excessive sectoralism in many governments, leading to uncoordinated policy development, conflicting policies, and a duplication of effort and resources. As a result of these failures, community-based natural resource management is now being increasingly widely implemented in Africa, with the recognition that local management is the appropriate scale at which to address the widespread fire problems in Africa. The major challenge is to create an enabling rather than a regulatory framework for effective fire management in Africa, but this is not currently in place. Community-based natural resource management programs, with provisions for fire management through proper infrastructure development, must be encouraged. More effective planning could also be achieved through the use of currently available remotely sensed satellite products.

These needs must also be considered within the context of a myriad of problems facing governments and communities in Africa, including exploding populations and health (e.g. the AIDS epidemic). While unwarranted and uncontrolled burning may greatly affect at the local scale, it may not yet be sufficiently important to warrant the concern of policy makers, and that perception must be challenged as a first step towards more deliberate, controlled and responsible use of fire in Africa.

The prevailing lack of financial, infrastructure and equipment resources for fire management in Sub Sahara Africa goes along with a lack of human resources adequately trained in fire management. The gap between the decreasing fire management resources and the increasing fire problems in Sub Sahara Africa requires immediate response through capacity building.

The Contribution of the Global Wildland Fire Network

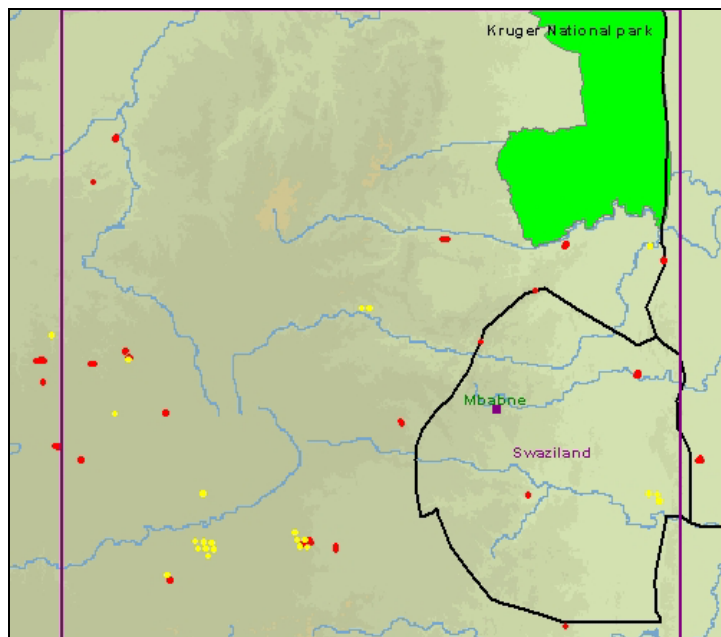
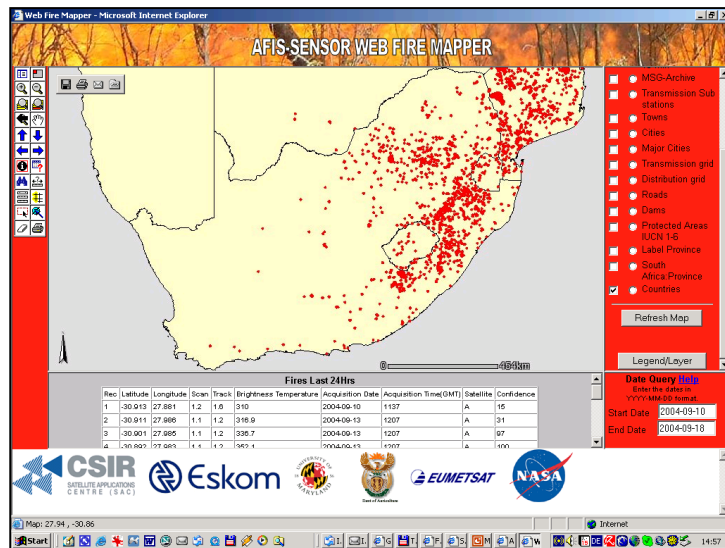
As a first step the Regional Sub Sahara Fire Management Network (AFRIFIRENET) has been founded in July 2002 under the auspices of the Global Fire Monitoring Center (GFMC) and the Working Group on Wildland Fire of the UN International Strategy for Disaster Reduction (ISDR). The objectives of the network include:

- Establishment and maintenance of the network through multilaterally agreed mechanisms of communication and information sharing
- Establishment of topical sub-nets, e.g. fire monitoring, early warning of fire, wildland fire science, fire management cooperation and training, etc.
- Regular communication with network members; contribution to and circulation of International Forest Fire News (IFFN)
- Support of the establishment and facilitate access - and the use of - remote sensing and related technologies for fire and fuel monitoring, fire management planning, and wildfire impact assessment
- Creation of an early wildland fire warning system

- Contribution to a global fuel status, fire monitoring and impact assessment programme which will secure the contribution for and by the continent.
- Improvement of integrated fire management at regional and national scale.
- Improve research and technology with regard to fire science, and to streamline technology transfer
- Assist in wildfire disaster management (emergency support)
- Provide/facilitate training at all levels of fire management.
- Promote communication between wildland fire disciplines of Africa and from other continents, under the umbrella of the GFMC.
- Contribute to the New Partnership for Africa's Development (NEPAD) and the African Union

In preparation of the fire management training activities the GFMC and the coordinator of AFRIFIRENET have produced the "Fire Management Handbook for Subsahara Africa" which was launched at the course. The book provides the state-of-the-art knowledge in fire management for Subsahara Africa. For more information: See book order form at the end of the IFFN issue.

The Advanced Fire Information System (AFIS): Publicly introduced in Nelspruit



Figures 1 and 2. The Advanced Fire Information System (AFIS) was publicly introduced in Nelspruit as a service module of the Wide Area Monitoring Information System (WAMIS), which will deliver fire information products to the Fire Protection Agencies and Disaster managers all over Southern Africa in support of effective decision-making in the monitoring of natural and manmade fires over the Southern African Development Community region. Upper screen shot: AFIS website. Lower map: Example of map distributed by AFIS - Web Fire Mapper e-mail (generated 19 August 2004 02:15:41).