



Development of a Policy, a Strategy and Building Capacities in Local, National and Transboundary Forest Fire Management for Nepal

1. Introduction

Forest fire is considered as a major cause of forest degradation in Nepal. About 400,000 hectares (ha) forest area burned annually. About 90 percent of the forested area in the plain was burnt annually. Moreover, there are regular winter fires affecting the coniferous forests in the high mountains of Nepal. Humans cause most of the fires. At least one hundred villages are burned annually by wildfires in Nepal. Wildfires do not only contribute to the degradation of forest ecosystems and the environment, but also lead to deterioration of social and economic conditions in some land-use systems and natural vegetation types. Fires result in losses in regenerative capacity of the forest (ca. 90% regeneration of *Shorea robusta* is completely damaged by fire). Fire-induced loss of soil cover negatively affects hydrological regimes and soil properties, leading to severe erosion and loss of productive topsoil, also resulting in flooding, landslides and debris-flows. High economic losses are caused by damaging valuable timber and non-timber resources, natural regeneration, and planted forests.

Major issues with respect to wildland fires in the country are:

- National wildland fire management assessment
- Human resources development
- Legal, institutional and policy frameworks
- Research and development
- International cooperation

2. Footprints Behind

2.1 Establishment of Regional South Asia Wildland Fire Network (RSAWFN)

An increasing frequency and destructive force of unwanted wildfires worldwide – including the excessive use of fire in the conversion of forests into other land uses in the tropical countries – is affecting human lives, health and well-being, economic assets, property, biodiversity, water resources, soil, atmosphere and climate.

Fire management solutions and strategies, which include preparedness and early warning, cannot be generalized due to the multidirectional and -dimensional effects of fire in the different vegetation types and the large variety of cultural, social, and economic factors influencing them. However, unlike the majority of the geological and hydro-meteorological hazards, wildfires represent a natural but predominantly human-influenced hazard, which can – to a certain extent – be predicted, controlled and prevented.

The current state of wildland fire science and atmospheric sciences research of the last two decades potentially provide sufficient knowledge for fire management decision support and development of policies affecting the occurrence and consequences of human-caused fires. However, in many countries or localities, the requisite knowledge is either lacking or is not readily accessible for developing adequate measures in fire policies and management.

In response to the strategic goals of the UN Convention on Combat of Desertification (CCD), Convention on Biological Diversity (CBD), and the UN Framework Convention on Climate Change (UNFCCC), the Ramsar Convention on Wetlands the UN Forum on Forests (UNFF), the Millennium Declaration of the UN General Assembly, and the objectives of the work of the Global Fire Monitoring Center (GFMC) and the World Conservation Union (IUCN), the UN-ISDR Inter-Agency Task Force for Disaster Reduction in 2001 of the United Nations International Strategy for Disaster Reduction (UNISDR) established a Working Group on Wildland Fire (WG-4). This Working Group was coordinated by the GFMC.

One of the priority fields addressed by the Working Group on Wildland Fire was the establishment of, and operational procedures for, a global network of regional- to national-level focal points and network structures for early warning of wildland fire, fire monitoring and impact assessment, aimed at enhancing existing global fire monitoring capabilities and facilitation of a global fire management working program or network.

At the second meeting of WG-4 (3-4 December 2001) it was decided to give priority to the establishment of a "Global Network of Regional Wildland Fire Networks", which finally was entitled "Global Wildland Fire Network". At the same time the WG-4 transitioned to the newly formed UNISDR Wildland Fire Advisory Group (WFAG). GFMC is serving as Secretariat of both the GWFN and WFAG.

These decisions were endorsed by the International Wildland Fire Summit (Sydney, October 2003), which elaborated a "Strategy for Future Development of International Cooperation in Wildland Fire Management", in which the following statement was included:

"The Regional Wildland Fire Networks will be consolidated, developed and promoted through active networking in information sharing, capacity building, preparation of bilateral and multilateral agreements, etc. This process will be facilitated through regional wildland fire conferences and summits in cooperation with the International Liaison Committee and the UNISDR Working Group on Wildland Fire".

At the first meeting of WFAG / GWFN in December 2004 it was recommended to instrumentalize the networks as effective platforms for dialogue and communication to achieve a level of mutual cooperation and synergy within regions, between regions, as well as between UN agencies and programmes including the secretariats of the "Rio Conventions" (UNCCD, UNCBD, and UNFCCC), and to support the Regional Wildland Fire Networks.

The Regional South Asia Wildland Fire Network was established in line with several declarations made in international conferences/ summit *inter alia* the Declaration of the 10th SAARC Summit Colombo 1998 on Environment and the decisions made in the meetings of UNISDR WG-4, WFAG and GWFN since 2002. The foundation of the regional network intended to bring together both the technical members of the fire community and the authorities concerned with policy and national practices in wildland fire management to realize their common interests of fire risk management and disaster reduction at global scale.

The foundation meeting was funded by GFMC, cosponsored by the International Centre for Integrated Mountain Development (ICIMOD) and assisted by the Nepal GIS Society (NEGISS), Agro-Farm Foresters Association Nepal (AFFAN) and the Center for Biological Conservation Nepal. It was held in the premises of the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu, Nepal, 2-3 April 2007.

It brought together international and regional wildland fire scientists, professionals and managers to discuss global, regional as well as national level issues and concerns of wildland fire paradigms and build a common consensus for sustainable wildland fire management in the South Asia region by providing a regional platform within the GWFN, called Regional South Asia Wildland Fire Network. The report of the Foundation Meeting of the Regional South Asia Wildland Fire Network can be accessed on the Regional Website.¹

¹ http://www.fire.uni-freiburg.de/GlobalNetworks/South_Asia/Meetings_activities/Southasia_meeting_foundation.html



The participants of the foundation meeting recommended to governments, international organizations, non-government organizations and civil society the following action plan for cooperation at bilateral and multilateral levels on wildland fire research and management in South Asia, among other:

- Stress on national focus and technical resource development for wildland fire management programmes
- Stress on national policy development and institutional set up for dealing with all wildland fire issues
- Stress on strategy formulation, fire management plan development and programme implementation
- Conduct assessment and research on wildland fire
- Stress on development and improvement of national legal frameworks, resource generation and allocation and law enforcement
- Stress on strategy formulation, fire management plan development and programme implementation
- Give emphasis on improvement of community-based fire management and institutional and technological capabilities at all levels
- Enhance cooperation amongst the countries for sharing technology and data

2.2 Round Table for the Development of a National Strategy for Wildland Fire Management in Nepal

After the foundation of the Regional South Asia Wildland Fire Network under the UNISDR Global Wildland Fire Network the **3-level Wildland Fire Management Project for Nepal** was approved and funded by the German Foreign Office, Task Force for Humanitarian Assistance, and was implemented by the GFMC in close collaboration with the Department of Forests (Ministry of Forests and Soil Conservation, Nepal), the United Nations Development Programme (UNDP) Nepal and the International Centre for Mountain Development (ICIMOD). The main components of the project were:

- Community Forest Fire Management Planning: Development of a model
- District Forest Fire Management Planning: Development of a model
- National Round Table meeting for the development of a National Strategy for Wildland Fire Management in Nepal

The main objective of the meeting was to find out the direction by bringing together fire communities to discuss on global, regional as well as national level issues and concerns of wildland fire paradigms and build a national strategy for sustainable wildland fire management in the country.

The National Round Table was held in Kathmandu, Nepal, 16 December 2007. It brought together 52 participants including national fire scientists, professionals, policy makers and expatriate experts, representing government organizations, international / regional non-government organizations, local

non-government organizations and civil society from all over the country, and the Embassy of the Federal Republic of Germany and other international organizations.



The participants recommended, among others, the following road map:

- To formulate and improve legal, institutional and policy frameworks, build sustainable fire management capabilities;
- To conduct national fire assessment and research on wildland fire outbreaks, suppression, ecology and management;
- To develop fire management plans and human resources at all levels;
- To give emphasis to community-level fire management planning approaches and institutional and technological capabilities at all levels;
- To enhance cooperation among countries within the region and at inter-regional levels, aimed at sharing technology, expertise and data in fire management;
- To support wildland fire management activities by national agencies and international donors aimed at fostering international cooperation in fire management, including collecting and disseminating fire information, arranging and enhancing international policy dialogue, and support of projects;
- To create an enabling environment from all possible donors including national, international, bi-lateral, multi-lateral and private foundations for financial, technical and other resource support for sustainable fire management in the country;
- To seek support from all possible donors including national, international, bi-lateral, multi-lateral and private foundations for financial, technical and other resource support to accomplish the above tasks.

The report of the Round Table can be accessed at the GFMC system.²

3. Objective of the ITTO Project

The proposed project is to meet the rationale and requirements to be sponsored in accordance with the International Tropical Timber Council (ITTC) decision ITTC (XXXIII)/27 of 9 November 2002 and to request the services of a forest fire expert to assist Nepal by:

- Evaluating the country's forest fire situation
- Evaluating the current fire management capabilities
- Identifying pragmatic options / proposals that would be incorporated in the development of a national fire management policy, a strategy and action for implementation, including transboundary cooperation with neighbor countries, and
- Developing a project proposal for their implementation

² http://www.fire.uni-freiburg.de/GlobalNetworks/South_Asia/Meetings_activities/Round-table_Nepal.html

Based on the authorization by the Ministry of Forests and Soil Conservation of Nepal, transmitted to ITTO on 10 December 2008, GFMC and ITTO agreed to prepare, organize and implement an ITTO Mission over a period of 6 months to assist the Government of Nepal to undertake a review of the current status of forest fires and fire management in Nepal and to develop a Fire Management Strategy for Nepal, with emphasis on cooperation with neighboring countries (both ITTO member and non-member countries) and community participation in fire management.

In order to implement the mission a consultative round table meeting was scheduled for March 2009 in which all stakeholders concerned including national fire scientists, professionals, academicians, administrators, policy makers, and international institutions and NGOs / Community Forest User Groups (CFUGs) members, media etc. attended.

4. The Round Table Meeting “Development of a Policy, a Strategy and Building Capacities in Local, National and Transboundary Forest Fire Management for Nepal”

The consultative multi-stakeholders Round Table meeting was held in Kathmandu on 11 March 2009. Participants included national fire scientists, academicians, professionals, policy makers and expatriate expert, representing government organizations, international / regional non-government organizations, local non-government organizations and civil society from all over the country and other international organizations. The participants presented the state of the fire situation and fire management capabilities and discussed for international cooperation in fire science, fire management and fire management training in the country. Five thematic papers were presented by the fire scientists and recommended enhancing international cooperation; creating an enabling environment and stressing proactive actions for wildland fire management.



Opening of the multi-stakeholders Round Table meeting – Lighting the *Panas* by Uday R. Sharma, Secretary, Ministry of Forests and Soil Conservation, and Sundar P. Sharma, coordinator of the Regional South Asia Wildland Fire Network.

The participants proposed the elements determining wildland fire management strategy for Nepal, and recommended implementation of priority elements of the Forest Fire Management Strategy for Nepal, with emphasis on regional cooperation as follows:

1. Assessment of the national fire situation and fire management capabilities:

- Fire is used by the rural population as a traditional tool for clearing and managing agricultural and pasture lands. It is also used to facilitate the gathering of non-timber forest products, hunting and herding. Uncontrolled fires are common in the country, with a long and intense dry season. Many of these fires have the potential to cause major damages;
- Consequences of uncontrolled fires in country, *inter alia*, lead serious degradation of forests, ecological changes, as well as deterioration of social and economical conditions in some land-use systems and regional climate (e.g., the *Asian Brown Cloud*) and natural vegetation types;
- Nepal has diverse ecosystems, socio-economic and cultural settings and vegetation types resulting from a wide range of land-use systems and climatic conditions, consequently having diverse fire regimes and vulnerabilities;
- Fire management can be an essential part in ecosystem management (not all fires are destructive);

- There is a lack of existing local and national capability in fire research and management, including monitoring, early warning and ecological and socio-economic impact assessment, and facilitating international cooperation in fire management;
- There is increasing interest in Community-Based Fire Management (CBFiM) and the need for institutional and technological capability development at all levels;
- Sustainable management and protection of vegetation cover, which provides goods and services including non-timber forest products and recreation, maintain biological diversity, mitigates the consequences of climate change, conserves watersheds, improves air quality and helps to reduce poverty through livelihood support to rural populations;
- Implementation of the plans, which are prepared with support from the Foreign Office, Federal Republic of Germany, Office for Humanitarian Assistance, implemented by the Global Fire Monitoring Center (GFMC), is crucial to test for a replication in other parts of the country under similar fire regimes.

2. Conclusions and Strategic Recommendations:

- There is a lack of legal, institutional and policy frameworks dealing with wildland fire management building sustainable fire management capabilities;
- There is a lack of fire management plans and human resources at all levels;
- There is a need to conduct national fire assessment and research on wildland fire outbreaks, suppression, ecology and management;
- There is a lack of fire management guidelines at all levels;
- Education and awareness are vital to minimize the adverse impacts of wildfires at all levels including incorporation of wildland fire management courses in disaster management curricula at school and college level education specially in natural resource management courses;
- There is an acute need of an enabling environment from all possible donors including national, international, bi-lateral, multi-lateral and private foundations for financial, technical and other resource support for forest fire management in the country;
- There should be an emphasis on multi-stakeholders and community-based fire management (CBFiM) approaches and institutional and technological capabilities at all levels;
- There should be an enhancement of cooperation among countries within the region and at inter-regional levels, aimed at sharing technology, expertise and data in fire management to deal with transboundary wildfires and haze pollution;
- The country should encourage the endorsement and use of international instruments (e.g. Hyogo Framework for Action, Kyoto Protocol 2005, United Nations Framework Convention on Climate Change (UNFCCC), the ITTO Action Plan, Bali Action Plan and Reducing Emissions from Deforestation and Degradation in Developing Countries (REDD), the objective of work of UNISDR- Wildland Fire Advisory Group / Global Wildland Fire Network and Global Fire Monitoring Center, the SAARC Declarations on Environment and Natural Disasters, the Millennium Declaration, Implementation of the World Summit on Sustainable Development, the Yokohama Strategy, Fire Management Guidelines (ITTO, FAO) etc.; and
- There is a recognition of the UNISDR Global Wildland Fire Network, the Regional South Asia Wildland Fire Network and its National Chapter and the Secretariat of the Global Wildland Fire Network (Global Fire Monitoring Center) at fostering international cooperation in fire management, including collecting and disseminating fire information, arranging and enhancing international policy dialogue, and support of projects.

It was felt by all participants of the national consultation that the timeframe and the limited resources of the pre-project would not allow to develop a comprehensive national fire management strategy. Instead, the conclusions and recommendations would be addressed in the follow-up project to be developed by the Government of Nepal. Experience gained within the project would be used to develop a consolidated national fire management policy and an implementation strategy based on realistic and implementable approaches.

5. The way ahead

Altogether the community of foresters and fire managers in Nepal underscored the need for

- Strengthening local communities coping with wildfires and aiding them in addressing the consequences of climate change and fires and the effects on their livelihoods
- Emphasizing the improvement of community-level fire management planning approaches and institutional and technological capabilities at all levels
- Assisting countries in fire management planning, enhancing institutional and technological capabilities and developing synergies through coordinated and collective action both within the region and internationally
- Promoting education and awareness-raising programs on wildfire prevention; and
- Establishing Regional Fire Management Center aiming at enhancing existing regional capability in fire management, including monitoring, early warning and impact assessment, and facilitating international cooperation in wildland fire management

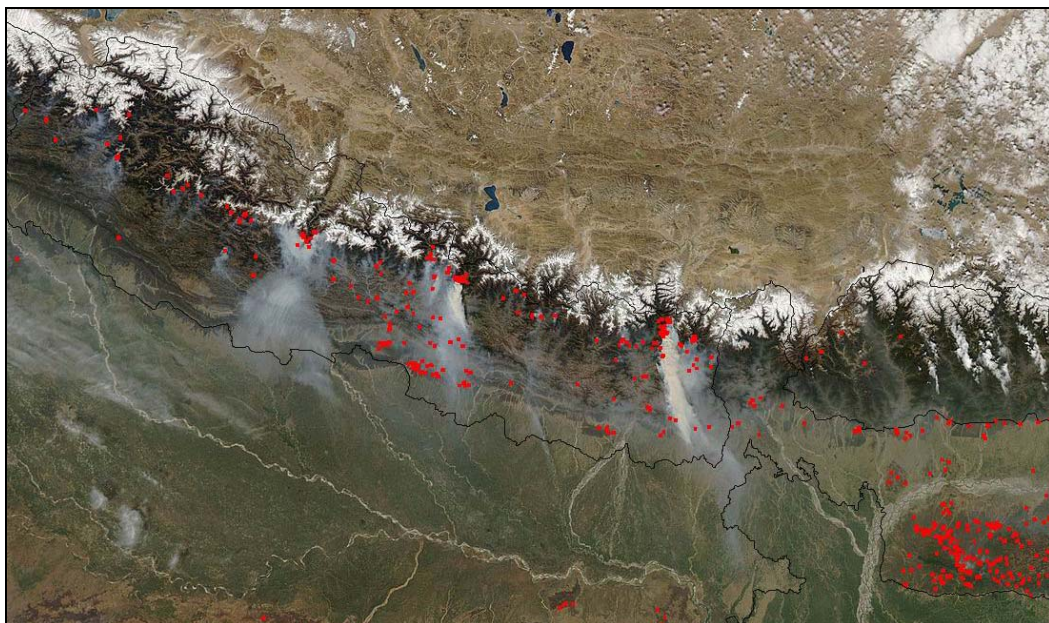
Based on these earlier recommendations the stakeholders involved or potentially to be involved in fire management in Nepal are now fully aware and ready to develop a national fire management policy, a strategy and appropriate action to implement the strategy.

IFFN contribution by

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Postscript

On 12 March 2009, the day after the Round Table meeting, the MODIS instrument on NASA's satellite Terra depicted the active fires burning in the high altitudes and lowlands of Nepal and neighboring India:



Active vegetation fires (red dots) in Nepal and neighbouring India depicted by the MODIS instrument of NASA's satellite Terra depicted on 12 March 2009 (Courtesy: MODIS Rapid Response System).