



# Wildland fires: Part IV Regional focus

Sundar P Sharma explains what can be done to improve forest fire management in South Asia

**THE SOUTH ASIAN REGION IS** characterised by diverse ecosystems and socio-economic and cultural settings resulting from a wide range of land-use systems and climatic conditions. Consequently, these ecosystems have diverse fire regimes and vulnerabilities.

## DESTRUCTION

All over the region fire is used by the rural population as a traditional tool for clearing and managing agricultural and pastoral lands. Fire is also used to facilitate the gathering of, and increase in, productivity of Non-Timber Forest Products (NTFPs) and for hunting. Uncontrolled fires escaping from these land-use fires are common in the region, with a long and intense dry season. Many of these fires have the potential to cause major damage. Among the consequences of uncontrolled fires in South Asia are serious degradation of forests and ecological changes, as well as the deterioration of social and economic conditions in some land-use systems and natural vegetation types. However, in some ecosystems fire can be an essential part in ecosystem dynamics and in the shaping of landscape patterns. Thus, not all of the fires are considered to be destructive.

Within the region the capabilities in fire

research and management are limited, including fire monitoring, early warning and ecological and socio-economic impact assessment. Until recently there was no regional co-operation in fire management.

Fires in high altitude ecosystems are a major driver for destruction of pristine biodiversity, including the habitats of many rare species. They are also affecting cultural heritage sites and land-use systems that provide the basis for livelihoods to a population of around 150 million people living in the mountain region. Most importantly, the secondary consequences of wildfires include the destruction of soil-protecting vegetation cover, affecting water regimes for a population of 1.4 billion.

Fires occurring in the highlands of Tibet, Sikkim, Bhutan and the northern part of Nepal at altitudes from 2,700 to 3,800m above sea level often cross national borders, especially during the dry winter fire season (November to January). Observations indicate that the occurrence of wildfires is increasing as a consequence of regional warming and extended dry spells. The southern slopes of the mountains are primarily affected, since they are generally warmer and drier compared to northern slopes and are therefore exposed to high human pressure.



Moreover, firefighting operations are more difficult owing to steep mountain landscapes, scarce water sources, poor communication and a lack of infrastructure. In this rough terrain firefighting is often dangerous and hampered by falling rocks from the burnt sites. Fires in the coniferous and broadleaved forests occur mainly in the late dry season from December to June. The main causes of fire are human induced (deliberate and negligent) and fuelled by the dry winter weather, generally prevailing windy conditions and steep topography. Limited (trained) manpower for fire management is another problem in the high mountains. The following examples are reports from the region published by the website of the Global Fire Monitoring Centre (GFMC – www.gfmc.org).

■ **Tibet:** In January 2006, forest fires in Tingri County near Xigaze, at the foot of Mount Qomolangma (Mount Everest), burned for more than three days and severely affected the primary forests in a natural reserve around the highest mountain on Earth. In March 2008, a major forest fire burned in the south-eastern part of Tibet. It affected a total of 208 hectares (ha) and completely destroyed 68 ha of forest. A total of 23,000 people fought the fire, which burned for a week.

■ **Sikkim:** In January 2005, several wildfires

raged in the west, south and north districts of Sikkim. Fires were observed at altitudes ranging from 1,700 to 2,400m. Forest personnel, fire brigades, Sikkim police, the India Reserve Battalion and local people were involved in containing the flames. In January 2006, fires threatened to wipe out the natural bamboo habitat of endangered red pandas in the Barsey Rhododendron Sanctuary, West Sikkim. The Sanctuary also provides the habitat for the Himalayan black bear, leopard cat, barking deer and goat antelopes. Some areas which are important for tourism and religious reasons, eg the Guru Padmashambhava's idol at Sandruptse, are frequently threatened by the fires. Several fires reportedly crossed over from Nepalese territory.

■ **Nepal:** Several hundred ha of state-owned forest in Chhintapu, in eastern Nepal's Ilam District, were destroyed by fires that raged for more than four days in January 2006. The area is rich in biodiversity and herbal plants and provides habitat for endangered animals. In April 2008, fires burned for more than a week in the Laligurans and Chaukhedhunga community forests of Tharmare, threatening the structures and residents of Thinban village. Other forests, like the broadleaved Sal forests in the Terai of Nepal, show a remarkable adaption to fire – a forest type in which the use of prescribed fire for fuel reduction was first tested in April 2008.

■ **Bhutan:** After the most severe year of fires

Federal Republic of Germany and Office for Humanitarian Assistance. A pilot activity entitled *Three-Level Wildland Fire Management Project for Nepal* has been implemented by the GFMC partnering with the Regional Network, the Department of Forests, Government of Nepal, the International Centre for Mountain Development (ICIMOD) and the United Nations Development Programme (UNDP).

## SUPPORT

At the local level, participatory training for 24 representatives from a local community has been conducted and a community forest fire management plan for the Chaukitole community forest developed. A District Forest Fire Management Plan has been prepared for Makawanpur District. At national level, a 'round table' for the development of a national fire management strategy for Nepal was conducted in December 2007, within the frame of the project.

Considering the trend of climate change and increasing human pressure on the ecosystems of South Asia, governments of the region are challenged to develop national and regional strategies for fire management incorporating all stakeholders concerned. Strategic approaches should be targeted to stabilise the livelihood of the local communities and conservation of Himalayan ecosystems. Under a framework of internationally accepted fire management

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in 1993, major forest fires were recorded in Trashigang District in 2006, affecting about 2,500 acres of forests. Similarly, in 2006–2007 fires affected Wangdue district. In a single fire about 37,269.69 acres were scarred. In 2007, major forest fire outbreaks occurred along the Tsirang-Wangdue national highway damaging 5,000 ha of pine forest and other vegetation. Personnel from the Royal Bhutan Army, Royal Bhutan Police, Royal Body Guards, volunteers and forestry officials are usually involved in battling the fires.

There is an increasing interest in Community-Based Fire Management (CBFIM) in the region. So the Network is proactively being oriented towards promoting its concepts.

In Nepal, collaborative action to implement CBFIM has been initiated by the GFMC, with financial support from the Foreign Office,

standards, regional capacity building in wildland fire management needs to be supported.

The starting points should be:

- Strengthening local communities coping with wildfires and aiding them in addressing the consequences of climate change and fires and the effects on their livelihoods;
- Emphasising the improvement of participatory/community-based fire management approaches and institutional and technological capabilities at all levels;
- Assisting countries in fire management planning, enhancing institutional and technological capabilities and developing synergies through co-ordinated and collective action both within the region and internationally; and
- Promoting education and awareness-raising programmes on wildfire prevention. CRJ

## ABOUT THE REGIONAL SOUTH ASIA WILDLAND FIRE NETWORK

*The Regional South Asia Wildland Fire Network (RSAWFN) has been set up under the umbrella of the Global Wildland Fire Network (GWFN), under the auspices, and as an outreach programme, of the UN International Strategy for Disaster Reduction (UNISDR). It is the youngest member among 13 regional networks. The foundation of the RSAWFN was held in the premises of, and co-sponsored by, the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu, Nepal, April 2007, facilitated and funded by the Global Fire Monitoring Center (GFMC). The overall objectives of the regional network, in which countries of mainland South Asia are participating, are in line with the Declaration of the Tenth South Asian Association for Regional Co-operation (SAARC) Summit on Environment (Colombo 1998), and the decisions by the UNISDR Wildland Fire Advisory Group / Global Wildland Fire Network. Representatives from Bangladesh, Bhutan, India, Nepal, and Sri Lanka attended and contributed to the meeting. The network is currently chaired by Nepal.*



Community members practise fire suppression

D Kraus (GFMC)

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