



7th International Wildland Fire Conference

Regional Statement of the South Asia – An Input Paper to the Conference Statement

30 October 2019

Fire Situation in South Asia Region

In the South Asia region almost all fires are human-induced some of which are linked with livelihoods of the people. Wildfires, among other natural disasters, have been emerging as a significant threat during the last decade, adversely impacting socio-economy and environment in the region.

In general, forest fires are more common in countries in south Asia region during the hot dry and windy summer seasons. These fires are often associated with agricultural burning. Observations indicate that the occurrence of wildfires is increasing as a consequence of regional warming and increasingly extended dry spells. Increasing trend of wildfires in the recent past in the southern stretch of the Hindu Kush-Himalayan region are not only contributing to regional but also to the overall global problem, posing a higher risk to the communities if looked at from the point of view of the fragile Himalayan ecology. Wildfires in high altitude Hindu Kush-Himalayas ecosystems are a major driver for destruction of pristine biodiversity, including the habitats of many rare species. During the long and intense dry seasons occurring annually in the region, wildfires are a regular phenomenon, many of them having a potential to cause major damages; e.g., serious degradation of forests, changes of ecosystem properties, and deterioration of social and economic conditions in some land-use systems and natural vegetation types.

These wildfires not only contribute to regional and global challenges such as smoke as pollution, but also threaten local communities, economies, and cultures. This recent and increasing trend of wildfires in the region is particularly devastating for the fragile Himalayan ecology. Ecosystems and communities are in general very vulnerable to wildfires, not to mention secondary disasters like landslides and flash floods, which often follow disastrous wildfires.

The Hindu Kush-Himalayan region and the adjoining lowlands e.g. Bhutan, India and Nepal are highly affected by excessive fire use, climate change, forest destruction and degradation and regional air pollution.

During the recent past, the South Asia region has experienced a number of increasing incidence of unprecedented large and disastrous wildfires affecting forests and other natural vegetation, and an increasing vulnerability to communities and secondary effects of fire; e.g. accelerating sediment-related disasters (e.g. soil erosion, landslides, floods etc.) and impacts of fire and smoke pollution on human health and security. Particularly, the forests of the Hindu Kush-Himalaya region are more vulnerable to wildfire due to increasing human interventions in the fragile mountain ecosystems. In addition, wildfire incident management is extremely difficult due to steep mountain landscapes that are difficult to access, scarce water sources, poor communication and a lack of infrastructure. This is further aggravated by the lack of national capability and resources to assist in fire response in remote local communities and in large fire situations. With the consequences of climate change, notably the dwindling mountain ice and snow cover and thus decreasing water supply, the overall development is entering a vicious circle in the region, resulting in serious threats to human lives and property, to the destruction and degradation of valuable forest ecosystems and natural and cultural heritage sites year. The inter-mix of wildland (vegetation) fire emissions, including agricultural burnings, with industrial emissions generate the 'Asian Brown Cloud', a major regional environmental pollution phenomenon.

Most of the countries lack fire management capability, including early detection, monitoring, early warning, response, impact assessment, and agreements for cross-border cooperation in fire management. Moreover, trans-boundary fires and smoke pollution are evident and call for enhanced international cooperation in sharing of technological and financial resources for capacity building in wildland fire management.

In many instances, wildfire prevention and mitigating activities are only indicative in implementation level. Fire-fighting is entirely ground-based with limited availability of advanced technologies such as aerial



firefighting assets. The key stakeholders, for instance government organizations, regional organizations / institutions are often working in isolation and need to create synergies for collective actions aiming at increasing resilience of communities and nations to wildfire disasters and climate change adaptation.

Specific landscape fire problems of the region

Diverse landscapes and difficult terrain in the countries in South Asia poses a great threat in responding wildfires. Moreover, it is aggravated by lacking weak management capability and resources (technological, human and financial). The year 2016 witnessed another wildfire disaster year in South Asia. Much of the high altitude Himalayan region and the adjoining lowlands have been in the grip of a long and intense dry season, which was more extreme than regular annual dry season revealing the overall underlying moisture deficit in the region and the vulnerability of South Asia with regards to climate variability and the role of wildfire occurring during the droughts, many of them having a potential to cause major damages, e.g., fatalities of and injuries to humans and loss of properties, serious degradation of forests, changes of ecosystem properties, and deterioration of social and economic conditions in some land-use systems and natural vegetation types. The increase of climate extremes meanwhile is clearly attributed to the consequences of regional and global climate change.

Gaps / shortcomings in landscape fire science, management and policies

Almost all countries in the region have weak institutional, legal, policy and financial frameworks dealing with wildfires. Moreover, to retain the trained and dedicated human resources in the field of wildland fire management is another challenge.

There are big gaps in awareness levels and fire management capabilities in countries throughout the south Asia region.

There is lacking a strong and self-sustained mechanism in sharing knowledge, skills and technologies among countries in the region.

Recent developments

The “Regional Consultative Workshop on Cross-Boundary Cooperation in Fire Management in South Asia” was convened by Department of Forests (DoF) / Ministry of Forest and Soil Conservation (MFSC) / Government of Nepal, National Institute of Forest Science (NIFoS), Republic of Korea, Asia Pacific Association of Forestry Research Institutions (APAFRI), Global Fire Monitoring Center (GFMC), Germany, Nepal Forest Fire Management Chapter (NFMC), Hariyo Ban Program, WWF Nepal, UNISDR-Pan-Asia Wildland Fire Network, UNISDR-Regional South Asia Wildland Fire Network (RSAWFN). Additional support was provided by the Global Fire Monitoring Center (GFMC) and the facilitation support by the UNISDR-Regional South Asia Wildland Fire Network and the Nepal Forest Fire Management Chapter (NFMC). The consultation was hosted by Nepal and successfully held in Lalitpur, Nepal, 2-4 October 2016. Seventy-one participants from nine countries (Bhutan, Bangladesh, Germany, India, Nepal, Republic of Korea, Sri-Lanka, Thailand and United States of America) attended and contributed to the meeting.

Asia Forest Fire Management Training was held in the Republic of Korea, 15 to 22 October 2017. The National Institute of Forest Science (NIFoS), a chair of the UNISDR Pan-Asia Wildland Fire Network, hosted Forest Fire Management for Training of Trainers targeting ASEAN member countries jointly with ASEAN-Korea Forest Cooperation in 2015. To further contribute to enhanced fire management capabilities of Asian countries, the NIFoS in collaboration with Asia Pacific Association of Forestry Research Institutions (APAFRI), UNISDR-Pan-Asia Wildland Fire Network, Global Fire Monitoring Center (GFMC), hosted the training to foster specialists who are capable of managing forest fires in their countries, and to share information on local forest fire issues among participants. 8 participants from South Asia region (Bhutan, India, Nepal and Sri-Lanka, 2 participants from each country) participated to the programme among seventeen trainees from Asia and three international trainers participated in the programme.

A ‘Nepal Forest and Wildfire Management Project’ was implemented by the Thompson River University of Kamloops, British Columbia (www.tru.ca) supported by the International Development Research Centre



of Ottawa (www.idrc.ca) in a bilateral collaboration to improve forest and wildfire management in Nepal during 2015-2017. 2 mission visited Nepal to find the fact and share the experiences in 2015 and 2016 and 4 participants from Nepal visited Canada to strengthen the management capability of wildland fire management in Nepal in 2017.

Capacity building development is important for the Asian Forest Cooperation Organization (AFoCO) since it effectively improves the organizational performance and relevance especially in a rapidly changing environment due to frequent incidences of natural disasters in recent years. In this regards, a 'Short Term Training Course on Forest Fire Management' by the AFoCO Regional Education & Training Center (RETC) was conducted in Republic of Union of Myanmar (22-26 October 2018), with Nepal serving consistently with a resource person.

Department of Forests and Soil Conservation (DoFSC), Government of Nepal has established 'Forest Fire Detection and Monitoring System' in collaboration with the International Centre for Integrated Mountain Development (ICIMOD) to enhance existing national capability in fire management, including early detection, monitoring, early warning and fire response system in 2019.

EuroFire Competency Standards and Training Materials has been translated and adapted in Nepalese language in 2019.

The forest fire volunteer program began in Bhutan in 2008. The members, mostly from Thimphu, included civil servants, students, the business community, and graduates. With support from the National Adaptation Programme for Action, the first forest fire management community groups were formed in 2015. To date, 20 community forest fire management groups have been established across the country. They received basic firefighting equipment and hands-on training in firefighting skills, personal safety, and basic forest fire behavior. Each group has been involved in planning and implementing community fire management plans for a more effective establishment of fire management at the grassroots level. The Royal Government has long recognized the need for integration of community and volunteer services in effective prevention and control of forest fires in Bhutan. The current mechanism for community-led planning and for volunteers in the prevention and suppression of wildfires will be scaled up in the 12th Five-Year Plan by the Department of Forests and Park Services, Royal Government of Bhutan. It is expected that all 205 administrative blocks in all 20 districts will be covered under block- and district-level fire management plans. The volunteer groups and communities will be the key implementers of these plans.

Proposals for solutions / action to be taken

- Capacity building with respect to forest fire control and management by way of training with appropriate firefighting tools and equipment and workshops of different stakeholders including local community groups.
- Strengthening and development of institutional arrangement in countries.
- Support financial base to resource constraint countries.
- Development of knowledge management network for real-time data and knowledge sharing on best practices for sustainable management of wildland or forest fires.
- Implementation of pilot projects specifically for forest fire management in selected fire-prone areas.
- Development of appropriate modern early warning capability for wildland or forest fire danger in India.
- Development of forest fire expert systems at the landscape level. The expert system is needed to understand the uncertainties and to develop scenarios for the development of strategies.
- Research and development for estimating the ecological losses due to forest fire and to understand linkages between cause and effects of fire.



Conclusions

In assessing the fire situation in South Asia in general and Bhutan, Nepal and India in particular, the following points need to be considered:

- Fire is used by the rural population as a traditional tool for clearing and managing agricultural and pastoral lands. It is also used in gathering non-timber forest products (NTFPs) and in hunting and herding. Uncontrolled and potentially catastrophic fires are therefore common during the dry season.
- Uncontrolled fires in countries in South Asia lead to serious degradation of forests and other vegetation types as well as deterioration of social and economic conditions in some land use systems, along with regional pollution (for example, the so-called Asian Brown Cloud—a severe regional pollution phenomenon generated by the accumulating effects of agricultural burning and industrial pollution).
- Fire management can be an essential part of ecosystem management (not all fires are destructive). Hazard reduction activities such as prescribed burning, fuel removal, and fireline construction are also carried out to prevent fires from destroying important land management zones, assets, and infrastructure.
- Sustainable management and protection of vegetation cover provide goods and services, including non-timber forest products and recreation. They also maintain biological diversity, mitigate the consequences of climate change, conserve watersheds, improve air quality, and help to reduce poverty through livelihood support for rural populations.
- The Hindu Kush Himalayan region in south Asia has diverse ecosystems, socioeconomic and cultural settings, and vegetation types resulting from a wide range of land use systems and climatic conditions. The result is diverse fire regimes and vulnerabilities.
- There is a lack of local, national, and regional capability in fire research and management, including firefighting, monitoring, early warning, and ecological and socioeconomic impact assessment.
- The facilitation of international cooperation in fire management in countries in South Asia is also lacking.
- The increasing threats to ecosystems, economies and people in South Asia require targeted response by development fire management policies and local to national fire management capabilities.
- As the UNISDR Regional South Asia Wildland Fire Network is playing an increasing role in providing an informal but efficient platform for policy dialogue and communication, information sharing and technology transfer through project implementation in the region, the Network should be formally recognized as a key partner and be supported by the United Nations and other donors including international cooperation agencies working in developing countries.
- It should also be noted that it is important to encourage the key stakeholders for cooperation and collaboration, for instance government organizations, international/regional organizations/ institutions (e.g. UNISDR-IWPM, GFMC, the National Institute of Forest Science (NIFoS), FAO, ITTO, National Institute of Forest Science, Korea (NIFS), ICIMOD, AFoCO, APAFRI, etc.) in the Asian region to get involved in and support the UNISDR- South Asia and Pan Asia Wildland Fire Networks. The International Wildfire Preparedness Mechanism (IWPM) offers an international for sharing expertise in fire management.
- Altogether the problems of forest fires in the region are complex and should not be addressed on a sectoral level. In order to overcome the limited capacity in fire management there is a need to strengthen human and technical resources of agencies and local communities that deal with fire prevention and response. In addition, transboundary cooperation in fire management is needed to share the best appropriate knowledge in advanced approaches in fire management. For this reason a mechanism of exchange of expertise in fire management between countries globally has been set up in the frame of the International Wildfire Preparedness Mechanism ([IWPM](#)).

Recommendations

To fill the gaps and solve the problems, it is recommended to:

- Enhance existing national / regional capability in fire management, including early detection, monitoring, early warning, fire response and impact assessment;



- Enhance cooperation among countries within the region and at inter-regional levels, aimed at sharing technology, expertise and data exchange in fire management; the activation of the International Wildfire Preparedness Mechanism (IWPM) may offer an appropriate opportunity;
- Integrate fire as a component of land use and forest management tool by giving emphasis on:
 - Improvement of participatory / community-based fire management approaches and institutional and technological capabilities at all levels;
 - Building capacity to 'wise-use-of-fires' for habitat management and biodiversity conservation;
 - Promoting education and awareness-raising programmes on wildland fires;
 - Developing policies, strategies and action plans aimed at building capacities in local, national and trans-boundary forest fire management.
- Create an enabling environment from all possible donors including national, international, bilateral, multi-lateral and private foundations for financial, technical and other resource support and motivation to people for wildland fire management;
- Encourage collective international efforts to address impacts of vegetation fires that are of transboundary nature and currently affecting at an unacceptable level common global assets such as atmosphere and climate, natural and cultural heritage, and human health and security.
- Apply the principles of Integrated Fire Management (IFM), based on the traditional knowledge and expertise and advanced fire science, contributes to sustainable forest management, ecosystem stability and productivity, maintenance and increase of terrestrial carbon stocks, and reduction of unnecessary emissions of pollutants that affect human health and contribute to climate change.
- Give emphasis on to implement IFM to capacity building, investments and outreach work at national levels. Since traditional and advanced knowledge of IFM principles is available for all vegetation types, the systematic application of IFM, notably community-based fire management approaches, could be promoted by exchange of expertise between countries.
- Establish a Regional South Asia Fire Management Resource Center in Nepal, which will serve as a regional center of excellence for capacity building and facilitator of cross-boundary cooperation in fire management, operating as a decentralized regional center of the GFMC and the Global Wildland Fire Network;
- Support to develop national programmes and / or national forest fire management chapters for capacity building including training in fire management should be supported by countries, local development partners and international organizations.
- Enhance international cooperation and collaboration in fire management, emphasizing community-led approaches that incorporate scientific tools for fire detection and monitoring;
- Translate and adapt/ improve EuroFire Competency Standards and Training Materials for use in Bhutanese, Hindi, Nepal and other languages in countries in South Asia;
- Translate 'Fire Management Glossaries' and 'FAO's Fire Management: Volunteer Guidelines' into local languages to support common understandings;
- Develop additional fire management programs/ projects and the search for international support for their implementation; and
- Promote wildland fire management involving local community-led and participatory approaches at the forest user group level, incorporating field-level forestry and security personnel as a model strategy for countries in South Asia.