

2019

*Fire Risks and Assessment of Forest Innovative Strategies for Fire Prevention*



DDMA UTTARKASHI

*02 May 2019, Workshop report*

# District Disaster Management Authority- Uttarkashi

## Training programme

on

### *"Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention"* *held during May 02, 2019*

While wildfires are already a preoccupation in the Mediterranean, in the light of the scientific world's diagnosis of new climatic scenarios, managers are faced with a general trend of increased burnt areas and a rise in the frequency, intensity and severity of fires (a wildfire is any uncontrolled fire in combustible vegetation that occurs in the countryside or a wilderness area. Other names such as brush fire, bushfire, forest fire, grass fire, hill fire, peat fire, vegetation fire, veldfire and wildland fire may be used to describe the same phenomenon depending on the type of vegetation being burned). Significant prevention efforts have been focused on training, investigation, awareness raising and structural prevention. As a consequence of social economic processes (rural abandonment, aging of rural populations, changing management of production system, etc.), the vegetation structure has already changed drastically increasing the risk of a traditional fire use (traditional fire is the use of fire by rural communities for land and resource management purposes based on traditional know-how).

#### **Introduction: -**

#### **Forests and Forest Fires**

Forests and forest ecosystems are of key importance for the social, economic and environmental viability and development of the European continent. Forests play significant roles in rural and urban communities by providing goods and services. They constitute an important economic factor and at the same time supply complex, dynamic, highly valuable natural ecosystems that also facilitate and protect biodiversity. Forest fires are an integral part of life for some types of forests in Uttarakhand (particularly mountain region), but fires can also be deemed as a threat because of their increased reoccurrence frequency. Major social and economic changes in land use have affected the wildland/rural interface and resulted in

increased amounts of biomass and a higher exposure to man-induced fire. Population movements from rural to urban areas, abandonment of traditional land uses in rural environments, reduced use of forests for raw material production, increased recreational use of forested areas, continuous growth of the forest/urban interface, inadequate public information and awareness, insufficient policies and inadequate forest management are some of the key factors leading to the increased forest fire risks. These factors have contributed to increased numbers of forest fires in Uttarakhand during the past decades. More than 50,000 forest fires larger than one hectare erupt each year in the most affected areas, with an annual average of 500,000 hectares of burnt forests in the Uttarkashi district. In the UKI, large fires ( $\geq 50$  hectares) account for 75% of the total burnt area, representing 2.6% of the total number of fires. Man-induced forest fires represent about 95% of the overall number. Catastrophic fires in UK, which resulted in the burning of millions of hectares, have also shaken European citizens in recent years. The consequences are well known. Forest fires have social, economic and environmental impacts, ranging from the combustion period up to decades after, especially the large fires. Fires affect human life and health, human property and wellbeing, cultural and natural heritage, employment, recreation, economic and social infrastructures and activities, air quality and the balance of greenhouse gases. They can further have negative effects on habitats, tree, plant, animal and microbial communities and populations, as well as on biodiversity in general.

### **Forest Fires and Climate Change**

The climate change currently affecting our globe will most likely exacerbate the current risks of forest fires. In particular, the climate of Northern UK and the Mediterranean basin is projected to warm at a rate exceeding the global average. Precipitations are projected to decrease, while temperature variability, the number of dry spells and droughts and the intensity of heat waves are all projected to increase. Consequently, the length and severity of the fire season, the extreme conditions in many areas, the extension of areas of risk and the probability of large fires will increase. As a result, climate change will have an added impact upon the growth conditions and evolution of Uttarakhand forests and may, as a consequence, enhance desertification. Fires will therefore remain the most serious threat to Uttarkashi forests and at the same time continue to play an important role in other parts of Uttarkashi.

### **Forest Fire Prevention**

Contrary to other natural hazards (earthquakes, storms etc.), forest fires are predictable. This, in principle, should leave modern societies with a degree of freedom, and an advantage for implementing efficient preventive strategies and measures. However, this opportunity has not yet been properly utilized. With finite financial resources and increased areas subject to forest fires, the prudent response cannot be limited to promotion of more funding and equipment to fire management. It should be recognized that fire prevention is not only preferable but also a cost-effective way to manage forest fires when compared to fire fighting and suppression. Even regions with well-prepared fire brigade departments, sophisticated ground and aerial equipment and a substantial number of fire fighters have been unable to inhibit disastrous large-scale forest fires in recent years. Even in those Background 8 situations, fires have caused severe ecological damage, which has had a tremendous impact on livelihoods, infrastructure and tourism. They have also had a dramatic toll on human lives. In response to the risks of forest fire, it is therefore better to have integrated strategies and policies for forest fire prevention while acknowledging trade-offs between environmental, social, and economic elements. Despite recent advancements in forest fire prevention for various reasons, prevention still constitutes a small fraction of budgets and receives little public attention. Financial support is weak and fragmented and there is a lack of effective instruments and exchange of best practices within and across regions. Regarding forest protection in the pan-European region, there is no common legal framework on forest fire prevention. There is therefore considerable room for improvement and innovation in comprehensive fire prevention programmes and activities. Fire prevention must be viewed as an indispensable part of sustainable forest management. This is also in line with the European Commission's and Member States' common vision «Forests for society: long-term multifunctional forestry fulfilling present and future societal needs and supporting forest-related livelihoods» as stated in the Commission Communication on the DDMA Forest Action Plan. Emphasizing that Preventing Fire Is Better Than Healing, the aim of the workshop was to identify innovative strategies for fire prevention of Uttarkashi relevance.

### **Assessment of Forest Fire Risks and Innovative Strategies for Fire Prevention**

The workshop was held in Uttarkashi, 2 May 2019 and was followed by a meeting of the Fire disaster Expert Group on Forest Fires. During the workshop it became obvious that forest fire prevention requires more attention. There is a great need to promote forest fire prevention policies and measures across the Uttarkashi region and an urgent need to place forest fire prevention on the policy agenda. To achieve this, vigorous and sustained actions at different levels are necessary.

At the first half, Session 1 was devoted to reviewing the current situation at national, state and district levels. Session 1 addressed causes of major fires and selected best practices/approaches to forest fire prevention. Each session included a plenary discussion of identified gaps and lessons learnt. Session 1 was devoted to presentations on innovative strategies and policy instruments for forest fire prevention. Participants were split into three working groups, focusing on different aspects of forest fire prevention. In the afternoon, a field trip was arranged to the area where the big fire of Rhodes took place in August 2018. Participants had the opportunity to discuss in situ the causes of this fire, failure of fire prevention measures, the damages that resulted and the costs and strategies used in its suppression.

The Session 2 included a plenary discussion about innovative strategies and possible new policy instruments on forest fire prevention. Finally, Session 2 involved a summary of the elements covered, a final discussion on conclusions and recommendations and the closure of the workshop.

### **Session 1: A review of current situation. Identifying major gap**

The session was chaired by Mr. Sandeep Kumar (Indian Forest Service) and presented an overview on the situation concerning strategies and instruments for forest fires prevention. It aimed at identifying the major gaps and challenges that exist at different levels: global, European Union and national (where most of the practical activities are carried out).

The next session was opened by Mr. V. K. Singh (DFO) who presented the main developments on forest fire prevention at international level. He underlined the cost-efficiency when compared to suppression and the importance of having prevention plans and involving local communities. Some positive trends have been identified, for example the growing acknowledgment of the importance of prevention, the wise management of fire as a possible land planning tool and the continued revision of legal frameworks. However, it was noted that there is a lack of complete, reliable and comparable information on forest fires at global level, even as basic statistics. Mr. Singh underlined the challenges in preparing, updating and implementing prevention plans, and in raising political awareness on their importance even if fires are not occurring.

Mr. Hemant K. Varma (Chief Executive Officer, DDMA/ADM) continued with a his experience and comprehensive review of the past and current State activities and instruments dedicated to and related to forest fires: The first Community Forest Action Programme; the specific «Forest fire» regulation that supported bottom-up prevention actions; Forest Focus and Life Regulation. Currently, there are also other

instruments that can be targeted to facilitate forest fire prevention. These include Rural Development Regulation, Regional policies (National projects, Solidarity Fund, Cohesion Policy) and civil protection measures and projects, as well as Forest research programmes. The CEO also conducts some specific activities related to forest fire prevention.

## **Session 2: Building on past experience**

Session 2, chaired by Mr. V. K. Singh (DFO), opened with a keynote presentation on the causes of large forest fires in the Uttarkashi region. Next followed presentations of five successful bottom-up examples of fire prevention in different European regions. Based on these presentations, workshop participants discussed and identified lessons that could be drawn from the experiences.

Mr. Amit Singh (Assistant Commandant) 35<sup>th</sup> ITBP, also share his past experience and strategic role of fire disaster and mitigation technique. ITBP play very important role, contribute and coordinate during all type of disaster as they have a good amount of human resource. Mr. Amit Singh presented an example of regional fire management by public authorities in the Department of forest in Uttarakhand. In this region, forest fire prevention takes place in a context of under-managed, semi-natural Mediterranean forest of low productivity, high fuel loads and an extensive urban wildland interface. The strategy focuses on minimizing the number of fires and strengthened initial attacks. Legal obligations are in place to manage forest understory in wildland urban interfaces that are defined and mapped.

Mr. Devendra Patwal (DMO), highlighted the strong impact and seriousness of large fires in the Mediterranean region. Large fires have serious ecological, economic and social impacts, and are also important in relation to civil protection.

The presentation of Mr. Sandeep Kumar (Indian Forest Service) showed an example of fire management plan set in a village recently affected by a large fire, namely the Silyan village in Uttarkashi. Although efforts were made to bring the fire under control shortly after it was detected, the fire went out of control because of failures in fire prevention. A comprehensive plan was developed in the aftermath of this incident. This included new access roads, fire brakes, training of volunteers and a fuel management programme for wildland rural interface. Technical and financial support was given by the government and the plan was built around the active involvement of the local community. A key issue that came out of this case was the need to keep the local population motivated concerning forest protection, because people tend to forget about former fires as time passes.

At the close of the day of the workshop, participants expressed their impressions, ideas, and raised their questions to the presenters in a plenary session.

Several comments and suggestions were made that stressed the importance of active management in the bottom-up approach, the need to put resources into active management of the landscape and to consider how the market could be utilised for promoting forest management. Other attendees pointed out the need for higher social and political recognition of sustainable forest management as a provider of valuable environmental services and of renewable raw materials such as cork and wood. The public recognition of the contributions made by sustainable forest management fall well below those of other sustainable practices such as, for example, organic agriculture.

### **Field trip**

Field trip participants visited an area burnt during the big forest fire on Mahidanda ITBP area, which burned more than 3,000 hectares in 2018. A key lesson learned was that the final cost of one days of intensive fire suppression efforts involving 200 firemen, could have facilitated many decades of forest fire prevention for the entire district. Before returning to the ITBP area, the participants visited Varunavat area, a picturesque mountain.

### **Conclusions and recommendations**

The final plenary, discussed by Mr. Shardul Gusain, (D.C. DDMA) concluded the discussion on innovative strategies and possible new policy instruments for forest fire prevention. The proposals and conclusions of the working groups were presented, participants discussed alternative strategies and possible new actions within a broader context and Mr. Gusain gave a brief review of the workshop and the work that had been done. The final conclusions and recommendations were prepared with the active contribution of the workshop participants. At the conclusion of the event, all the participants were invited to contribute their personal brief message of priority with regard to the overall output of the workshop & a thank note to all the participants.

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### ANNEX 2: Training/mock-drill Photos-



Sustainable reduction in Disaster Risk (SRDR)  
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