



PROCEEDINGS OF  
CONSULTATION WORKSHOP  
**NATIONAL PROGRAMME ON  
FOREST FIRE MANAGEMENT**

**Indian Institute of Forest Management, Bhopal  
07<sup>th</sup> January 2023**



**NATIONAL DISASTER MANAGEMENT AUTHORITY**  
Government of India  
NDMA Bhawan, A-1, Safdarjung Enclave,  
New Delhi -110 029

## PROGRAMME SCHEDULE

09.30 AM – 10.00 AM	<b>REGISTRATION</b>		
<b>INAUGURAL SESSION</b>			
10.00 AM – 10.45 AM	10.00 AM	Lighting of lamp by dignitaries	
	10.00 -10.10 AM	<b>Opening Remarks</b> - Sh. Kunal Satyarthi, Joint Secretary, NDMA	
	10.10- 10.20 AM	<b>Welcome Address</b> - Dr. K Ravichandran, Director IIFM Bhopal	
	10.20- 10.30 AM	<b>Presidential address</b> – Sh. Ramesh Kumar Gupta, PCCF & HoFF, MP	
	10.30 - 10.40 AM	<b>Inaugural address</b> , Sh. J. N. Kansotiya, ACS Forest Dept., MP	
	10.40 - 10.45 AM	<b>Vote of Thanks</b> – Dr. Ajit Kumar Shrivastava, Nodal Officer (Forest Fire), MP	
10. 45 AM – 11.00 AM	<b>Tea Break</b>		
<b>SESSION I</b>			
11.00 AM – 01.15 PM	<p><b>Best Practices in Forest Fire Management: Innovation, Community Involvement and Livelihood</b></p> <ul style="list-style-type: none"> <li>• Local level innovations carried out by states in forest fire management</li> <li>• Problems faced by field staff in fire management</li> <li>• Inputs for improving existing fire management scenario</li> <li>• Financial requirements for states to manage forest fire</li> <li>• Scope of community participation in fire management and addressing livelihood issues</li> </ul>		
	11.00 - 11.20 AM	Best Practices in Forest Fire Management - Chhattisgarh	Sh. O P Yadav, Nodal Officer (Forest Fire), Chhattisgarh
	11.20- 11.40 AM	Best Practices in Forest Fire Management - Maharashtra	Dr. Parveen Chauhan, Nodal Officer (Forest Fire), Maharashtra

	11.40- 12.00 PM	Best Practices in Forest Fire Management- Telangana	Sh. Vinay Kumar, Nodal Officer (Forest Fire), Telangana
	12.00 - 12.20 PM	Best Practices in Forest Fire Management- MP	Dr. Ankur Awadhiya, DCF (IT), MP
	12.20- 1.00 PM	Experience sharing by Officials from Madhya Pradesh	
	01.00 - 01.15 PM	Discussion, Q & A and Summing up of the Open House Discussion	Project Drafting Committee
01.15 PM – 02.00 PM		<b>Lunch</b>	

## SESSION II

02.00 PM – 03.00 PM	<b>Forest Fire Management: Early Warning, Response and Research &amp; Training</b>	
	<ul style="list-style-type: none"> <li>• Proposals for incorporating in the project</li> <li>• Role of institutions in forest fire management</li> <li>• Early alert for forest fire</li> <li>• Response limitations faced by NDRF</li> <li>• Training for NDRF personnel regarding forest fire</li> </ul>	
	Presentations from stakeholders (10 minutes each)	<ul style="list-style-type: none"> <li>• IIFM</li> <li>• TFRI</li> <li>• FSI</li> <li>• NDRF</li> <li>• SDMA, MP</li> <li>• National Fire Service College, Nagpur</li> </ul>
03.00 PM – 03.30 PM	Discussion and Q&A	
03.30 PM – 04.00 PM	<b>Concluding Session</b>	Project Drafting Committee, Madhya Pradesh Forest Department and IIFM, Bhopal

## **Proceedings of the Consultation Workshop National Programme on Forest Fire Management**

The Consultation Workshop was started by the opening remarks of **Sh. Kunal Satyarthi**, Joint Secretary, Policy and Plan Division, NDMA. He explained the backdrop of the workshop and emphasised the importance of having a nationwide program on Forest Fire Management. The workshop is aimed at collecting inputs and realizing the ground truth in Central Indian states where maximum area of forest is burnt every year. The forests of Central India are highly prone to forest fire and any management initiatives should be incomplete without addressing the Central Indian scenario.

He added that forest fire management is a multi-departmental issue. As it is considered a National Disaster as per the National Disaster Management Plan (2019) more departments and organizations such as NDRF, SDRF, Fire Service, IIFM, TFRI, FSI etc. will all be involved in the preparedness, mitigation as well as response of forest fire. He opined that SDRF should train their staff in forest fire fighting in line with the NDRF as they are forming 3 battalions exclusively for forest fire response.

Since most of the forest fires in India are ground fires aerial fire fighting has its own limitations and is not cost efficient. He explained the reason why Ministry of Home Affairs and Ministry of Environment, Forests and Climate Change are coming forward with this National Project on forest fire management and Central India, especially Madhya Pradesh which is a leader in the burnt area every year can play a lead role in making it a success over a long period of time that too in a sustainable way.

**Dr. K Ravichandran**, Director, IIFM, Bhopal welcomed the chief guest and other dignitaries to the workshop. He also welcomed all the participants from stakeholder organizations and other states. He congratulated the NDMA for taking initiative for drafting National project on forest fire management. He expressed his concern about land use change which in turn is fuelling the forest fire. Since trees sequester more carbon, forest fire play an important role in climate change also. So there is a need of robust mechanism to combat forest fire. He added that stakeholders should come forward for more workshops like this and trainings on the fire related issues and make it a regular knowledge appraisal process.

**Sh. Ramesh Kumar Gupta**, PCCF & HoFF, Madhya Pradesh delivered the presidential address and expressed his gratitude for conducting the workshop in Madhya Pradesh. He said Madhya Pradesh is the state having largest area burnt by forest fire every year. Joint Forest

Management Committees and 1500 forest dwelling villages in the state are playing a major role in tackling forest fire. He also added that fire is good servant and a bad master. He complimented the idea to consider forest fire as a disaster and mentioned countries like USA, Australia have all made this move. The alert systems by FRI and funding from CAMPA should be enhanced in accordance with the escalation in forest fire incidences.

**Sh. J. N. Kansotiya**, Additional Chief Secretary, Forest Department, Madhya Pradesh inaugurated the workshop and said that this is very important subject and fire is experienced more in months of April- June. Burnings for *Mahua* flower collection is one of the major reasons of forest fire in the state. He added that there is a need of proper study on forest fire on its origin. There should be use of technology and resources. He added that awareness, community participation, discussions with forest department, training modules, equipment and budget at district level should be there. Sensitization and coordination with students can be done to prevent local fire.

**Dr. Ajit Kumar Shrivastava, Nodal Officer (Forest Fire), MP** discussed about budget provided by MoEFCC for fire management. He shared some techniques that are being used in fire management like fire ball and fire extinguisher vehicles. He also added that portals of FSI like Agni portal and studies of TFRI in forest fire are very important in the development of this field.

The inaugural session was followed by the presentations of the participating stakeholders.

**1. Best Practices in Forest Fire Management –Chhattisgarh, Shri O P Yadav, Nodal Officer (Forest Fire) Chhattisgarh.**

He shared basic information of forests in Chhattisgarh. It is the 3<sup>rd</sup> largest state in terms of forest and 80 percent of villagers of Chhattisgarh live within 5 km from forest boundaries. Most of the forest fire happens between mid-February and mid-June. He also shared that Chhattisgarh is very sensitive for fire given the human interactions near to forest area. Since 2017, after the introduction of SNPP in fire detection by FSI, there is an increase in the number of incidences. Bijapur, Sukuma and Narayanpur are the most fire prone districts. They also have high number of registrations for the forest fire alert system. Chhattisgarh also have a state monitoring committee for supervising and reviewing the forest fire management activities. He said that 6 lakh people are engaged in Mahua flower collection and 14 lakh families involve in collection of Tendu leaves. The major limitations faced by the forest department are shortage of manpower and lack of enough funds. Some areas facing left wing extremism are hard to manage in a forest fire

perspective. There is requirement of front-line staff. As of now only one watcher is available per forest beat. Employing more forest watchers along with fighting equipment, terrain, accessibility and lack of vehicles.

During the discussion Shri Kunal Satyarthi enquired about the solution to the Mahua and Tendu leaf issue. The suggestion was to create more awareness among the community and to promote the collection of food grade Mahua flower which is superior to the one collected by burning forest floor.

Dr. Ajit Kumar Shrivastava opined that the use of drones can be used as an innovation to monitor the Mahua and Tendu leaf collection.

Shri Ramesh Kumar Gupta added that there are new techniques in place for Tendu leaf collection without burning and these needs to be established in every region.

## **2. Best Practices in Forest Fire Management – Maharashtra Shri Akshay Ghajbiye IFS**

He said that there are many reasons for forest fire but forest fire and tendu leaves collection has very direct correlation with each other. He talked about technological approaches and humanistic management. Extensive use of GIS and remote sensing in management of forest fire is helping now for better understanding and management. He also talked about the importance of fire line maintenance. He said that their team is working to monitor forest fire and have state level command control room at head office. The Tendu contractors are held responsible by contract if any fire occurs in the area allotted to them. Their labourers are also made available for fire-fighting if any in that region. At district level all foresters are registered in FSI alert system. They are also working on prevention strategies and pre-fire works with instruments and have also created fire cells at divisional level. 6m, 12m, and 30m fire lines are maintained with respect to the fire proneness of the area. They are focussing on awareness to villagers for reducing fire with incentive distribution system like “ANGAR MUKT JANGAL SPARDHA” by which people are made to participate in forest fire prevention and those successful communities will be provided cash price.

Lack of funds and logistics are the main drawbacks in the forest fire management in the state.

During the discussion Shri Kunal Satyarthi enquired about the cost involved in Mahua collection and the incentives given for the community. Shri Akshay Ghajbiye replied that incentive scheme gives a maximum of fifty thousand rupees for the winning community.

Dr. P K Mathur opined that the lack of removal activities in Tiger Reserves and other protected areas are causing accumulation of fuel load and will cause severe fires in the future.

Shri Ramesh Kumar Gupta said that JFMCs are also stakeholders in forest fire management and they should also be part of workshops like this in the future.

Dr. Ajit Kumar Shrivastava mentioned about the importance of having a national level awareness campaign in line with the Smoky bear campaign of the United States.

### **3. Best Practices in Forest Fire Management Telangana (Sh. Vinay Kumar, Nodal Officer Telangana)**

He talked about fire vulnerability and land use after fire incidences. Firefighting strategies like detection and alert. He also focused on 11 districts for alert concerning toward and fire preparedness for 2023. He requested that necessary actions should be made to allow forest vehicles to travel beyond administrative boundaries. The lack of permission for forest vehicles in crossing the national highway is a hinderance in many cases of forest fire management.

### **4. Best Practices in Forest Fire Management- Madhya Pradesh (Dr. Ankur Awadhiya DCF)**

Here also major reason is identified to be Tendu collection. Burning of agricultural field in the month of March to April also causes forest fires. They have identified the peak weeks using previous data and weather parameters which helps in better management of resources for preparedness. He also added that heatwave (55°C temperature) is responsible for flash of litter which accumulates the fuel load. He explained the Burn Severity Index developed by them for measuring fire induced by manmade. He said that their team are working on funds for equipment and forest fire alerts are being provided on near real time basis through WhatsApp group of all officials. They have developed forest fire map for every district that are available in the website. JFMCs are also engaged in fire management activities. Distributing Mahua collection maps and training and awareness are being promoted.

Dr P K Mathur commented that many states are not now depending entirely on the alerts provided by the FSI which is a good initiative.

Dr. Ajit Kumar Shrivastava opined that MoEF& CC should make interventions to make laws that prevents leasing of forest fire prone areas for tendu leaf collection.

Shri Shivanand S Talwar, AIG (Forests), MoEF& CC responded that this issue can be flagged to the Ministry of Tribal Affairs.

5. **Dr. Yogesh Dubey, IIFM** made a presentation about the role of IIFM in capacity building and modules of forest management.

6. **Dr. Amitabh Panday** have shared a diagnostic study of forest fire in Odisha that was conducted in tribal based three villages. He showed that NTFPs are not available because of fire and health of people, water quality and soil quality are affected by fire. Sifting cultivation also affects forest. He said that 55 percent participants are engaged with management of forest fire. There is also a focus on post fire treatment and soil conservation.

7. **Shri Dheeraj Gupta, Scientist D, TFRI Jabalpur** talked about early warning system on forest fire. He said that their team has been working on Graphical user Interface for forest fire prediction. And also developed a model (input/output....) and measured hazard level for 21 years. They have counted forest fire for every grid of area. He said that economic losses due to forest fire. He also included in his study like assessment of flora and fauna and carbon estimation.

8. **Shri Ashutosh Singh, Deputy Ranger, FSI Central Regional Centre, Nagpur** shared FSI work on real time fire monitoring system. He also explained about the Van Agni Geo Portal that provide forest fire data of the country over the years. They also send email alerts to SDMA for large forest fire detection. They also send SMS alerts to registered users. He talked about fire danger rating system and pre fire alerts.

9. **Shri Rajesh Panwar, Deputy Director, National Fire Service College, Nagpur** made a presentation on the training need analysis. He said that organisation should provide information on training and skill development to all responders. He focused on forest fire fighting requirements. He put forwarded ideas such as forest fire bunkers and water supply from identified water resources for use at time of fire, and also use of solar pump. He opined that there should be clear strategies and techniques in dealing with different types of fire. Bulldozers and tractors also useful in many parts of Central India. He said that fire extinguishing foam and fire blocking gel can be experimentally used. He also added that fire extinguishing powder ball can affect agriculture and soil so instead of that water balloon can be used.

#### **The following suggestions came up after the discussions**

1. Each and every DFO must try to understand the reason behind fire so that management can be more site specific.



2. District administration should be involving in forest fire management and it should not be the sole responsibility of the forest department.
3. Controlled burning in protected areas should be made possible otherwise accumulating fuel load may cause severe fire in the future.
4. Involvement of local community representatives must be ensure in future workshops like this.
5. A National level awareness campaign for forest fire management in line with the “Smokey Bear” campaign of the Unites states may be adopted.
6. Available fund can be structured with respect to the proneness to forest fire.
7. NDRF getting world’s best equipment in near future will be key in forest fire management.
8. There is need to be an understanding on how to prepare citizens to participate in fire management. Priority should be given for large fires. Inclusion of private organisations should also be considered.

The closing remarks of the session was made by Dr. P. K. Mathur. He suggested that the formulation of a structured system for forest fire management in the country is a necessity considering the climate change scenario. The management of forest fires should be developed in a way that it must be self-sustainable even after the time period of the national programme. He thanked all the participants on behalf of the Project Drafting Committee.

The meeting ended by 5 PM

## List of participants

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Department/Organization</b>
1	Shri Ramesh Kumar Gupta	PCCF & HoFF	Forest Department, MP
2	Dr. Ajit Kumar Shrivastava	APCCF & Nodal Officer (Forest Fire)	Forest Department, MP
3	Shri Kunal Satyarthi	Joint Secretary (PP Division)	NDMA
4	Dr. P K Mathur	Lead Consultant	UNDP-NDMA
5	Dr. D K Sharma	Lead Consultant	NDMA
6	Shri O.P. Yadav	APCCF & Nodal Officer (Forest Fire)	Forest Department, Chhattisgarh
7	Shri Akshay Ghajbhiye IFS	DFO	Forest Department, Maharashtra
8	Shri Vinay Kumar	APCCF & Nodal Officer (Forest Fire)	Forest Department, Telangana
9	Dr. K. Ravichandran, IFS	Director	Indian Institute of Forest Management
10	Shri Shivanand S Talwar	AIG (Forests)	MoEFCC
11	Dr. Ankur Awadhiya,	DCF (IT)	Forest Department, MP
12	Shri Dheeraj Gupta,	Scientist. D	Tropical Forest Research Institute
13	Shri Santosh Bahadur Singh	Commandant	5th Bn NDRF, Pune
14	Shri Ashutosh Singh	Deputy Ranger	Forest Survey of India, Regional office (Central)
15	Shri Rajesh Panwar	Deputy Director	NFSC, Nagpur
16	Shri Gaurav Rajput	Secretary (Home) and Coordinator	MP SDMA
17	Shri Nikhil S	Consultant Grade II (Forest Fire)	NDMA

18	Shri Ronald Debbarma	Consultant	MoEFCC
19	Smt. Bhavna Sharma	Technical Assistant	MoEFCC
20	Shri Abhay Patil	Managing Director	Forest Development Corporation, MP
21	Shri Sudeep Singh	Regional Chief General Manager	Forest Development Corporation, MP
22	Shri J S Chauhan	Chief Wildlife Warden	Forest Department, MP
23	Dr. Atul Srivastava	APCCF	Working Plan, MP
24	Shri Sunil Agarwal	APCCF	CAMPA, Forest Department, MP
25	Dr. U K Subuddhi	Chief Conservator of Forest	Development, Forest Department, MP
26	Shri L Krishnamoorthy	Field Director	Satpura National Park, MP
27	Shri Prafulneeraj Gulabrao Phuljhele	Forest Conservator	Betul, MP
28	Shri Rajesh Kumar Khare	Forest Conservator	Bhopal, MP
29	Shri Devanshu Sekhar	Divisional Forest officer	Khandwa division, MP
30	Shri Vijay Kumar	Divisional Forest officer	Adbullaganj division, MP
31	Shri Alok Patak	Divisional Forest officer	Bhopal division, MP