

OPERATIONAL GUIDELINES FOR INTEGRATED FOREST PROTECTION SCHEME (IFPS)

1. BACKGROUND:

Forests of India are endowed with rich fauna and flora. India is one of the 12 mega bio diversity countries of the world. National forest policy 1988 emphasizes environmental stability and maintenance of ecological balance. The productivity of forests is to be increased to meet essential national needs like fuel wood, fodder, minor forest produces and small timber for the rural and tribal populations. Special precautions should be taken during the fire season to prevent the incidence of forest fires and improved modern management practices should be adopted to deal with them.

The Coimbatore charter on Environment & Forests has resolved to protect and improve the forests of the country through creation of infrastructure such as forest roads, buildings, wireless equipments, vehicles, arms etc. Working plans for scientific management of forests, boundary demarcation for prevention of encroachments, control of pests and diseases, promotion of natural regeneration etc. will be undertaken on priority.

However, protection of forest resources. requires a strong infrastructure at the disposal of the state forest departments. The existing Infrastructure is grossly inadequate due to paucity of funds to deal with the task of forest protection. In various states notified forest areas are not clearly demarcated on the field and surveys have not been carried out. Due to the existence of habitations in and around forest areas, it becomes difficult to enforce law without proper demarcations. For the purpose of scientific and systematic management of sustainable forest. resources and eco management, a prescription in the form of working ,plan becomes necessary.

It has been .estimated that annual loss from forest fire varies from Rs. 300 crores to Rs. 570 crores. Besides there are many intangible losses such as loss of bio-diversity f ozone layer depletion, loss of habitat for wildlife, soil erosion etc. For effective control of forest fire and its management through modern devices and tools has become imperative. .

To meet the emergent requirements of the State Forest Departments, Integrated Forest Protection Scheme has been made operational during the 10th Five Year Plan.

2.INTORDUCTION TO THE SCHEME

Integrated Forest Protection Scheme has been formulated by the merger of the schemes of the 9th Five Year Plan 'Forest Fire Control and management' and 'Bridging of Infrastructure Gaps in the Forestry Sector in the North Eastern Region and Sikkim. The later scheme is now being extended to all the States and UTs during the 10th Five Year Plan. It is a 100% centrally sponsored scheme. The main components of the scheme are:

1. Infrastructure Development
 - i. Working Plan Preparation / Survey and Demarcation
 - ii. Strengthening of Infrastructure for Forest Protection Division

2. Forest Fire Control and Management

Both the components of the Scheme will be implemented in all the States and Union Territories.

3. OBJECTIVES OF THE SCHEME

3.1 Long Term Objectives:

- . To maintain environmental stability through preservation and where necessary, restoration of ecological balance that has been adversely affected by depletion of the forest cover of the country.
- . To preserve the natural, heritage of the country by protecting and conserving the remaining natural forests with the vast variety of flora and fauna which represent the remarkable biological diversity and genetic resources of the country through strengthening of the infrastructures of the Forest Department.
- . To improve the productivity of forests to meet essential national needs.
- . To ensure Scientific management of the forests by preparing and implementing good quality working plans.
- . To protect forest against forest fires by adopting improved and modern management practices and through the cooperation of the local communities on the principles of Joint Forest Management.

3.2 Short Term Objectives:

- . To carry out detailed field survey, demarcate the forest boundaries and notify the forest areas.
- . To carry out detailed field enumerations to assess the growing stock and bio diversity.
- . To make use of the latest technology of the satellite imageries. GPS (Global Positioning System), GIS etc. in the preparation of good quality working plans.
- . To prepare Working Plans aiming' at sustainable management of the forests and plantations.
- . To prepare fire danger rating system and devise forest fire forecasting system.
- . To prevent and control forest fires with- a view to protect and conserve the forests & wildlife and environment.
- . To monitor the impact of forest. fire prevention and control activities and use latest technology including the establishment of a network.
- . To involve the local people in protection of forests from fires on the principals of Joint Forest Management.
- . To develop and strengthen Forestry Infrastructure and capacity of the Forest Departments of the States and UTs for effective protection of the flora, fauna, biodiversity and the environment as a whole.

4. IMPLEMENTING AGENCIES:

The Central Sector Component of the Scheme will be implemented by the Forest Protection Division of the Ministry of Environment and Forests and Forest Survey of India Dehradun. The Ministry will also involve the Central Institutions like Indian Council of Forestry Research and Education Dehradun, Indian Institute of Forest Management Bhopal, National Centre for Medium Range Weather Forecasting and others wherever necessary.

The state Sector Component of the Scheme will be implemented by the Forest Departments of the concerned State Governments and UTs.

5. PROJECT FUNDING

5.1 Pattern of Funding:

The Scheme will be implemented as a central sponsored scheme with 100% central funding during the Xth five Year Plan.

5.2 Items of Funding:

Following are the broad items of expenditure which can be funded under various components of the scheme:

i. Central Sector Component

- . Preparation of forest fire danger rating system and forest fire forecasting system in collaboration with 'National Centre for medium Range Weather Forecasting' of Department of Science and Technology, Indian Institute of Forest Management, Forest Survey of India, Dehradun and Indian Council for Forest Research and Education, Dehradun.
- . Setting up of National Geoinformatic Centre for monitoring and evaluation studies on forest fires and imparting advanced training on the subject.
- . Compilation of data-base and analysis of statistics on fire damage .
- . Assistance to forest protection committees for forest fire prevention under JFM Programme, through JFM Cell and other related work of JFM Cell' including expenditure related to training and workshops etc.
- . Research, extension, publicity.
- . Evaluation Studies on the impact of the scheme and JFM Programme sanctioned by the Ministry.
- . Travelling expenditure and office expenditure. etc. of the staff associated with the Forest protection Division.
- . Any other item of expenditure considered essential from time to time with the approval of competent authority.

ii. State Sector Component:

a. Strengthening of Infrastructure for forest. protection

- . Construction of offices and residences of front line staff, transit camps, inspection huts, research, training and computer centres.
- . Construction and improvement of forest roads.
- . Development of Management Information System.
- . Procurement of IT related equipments.
- . Procurement of effective communication systems like wireless, cell phones, satellite phones etc.
- . Provision of Vehicles for movement and other equipments for effective monitoring and patrolling.
- . Technological up gradation and skill development . Publicity and extension (Joint Forest Management committees can be involved).
- . Any other items considered essential and as proposed in the scheme of the State 'or Central Government with the approval of competent authority.

(Details at Annexure - I)

b. Survey and Demarcation

- . Carrying out field survey of the forest areas.
- . Identification of eco-fragile and inaccessible areas
- . Recording of flora and fauna, soil condition, regeneration status etc.
- . Identification of actual areas for enumeration
- . Carrying out detailed field enumeration.
- . Organization and supervision of field work which includes camping arrangements for the field party.
- . Contingency expenditure for supply of forms, manuals etc.
- . Purchase of satellite imageries. . Equipments for data collection like global Positioning Systems and all types of survey and enumeration equipments.

- . Provision of equipments for maintaining database an(analysis like setting up of GIS workstations, computers scanners, printers etc.
- . Procurement of vehicles for field work.
- . Other expenses involved in the preparation of working plans.
- . Any other items considered essential and as proposed in the scheme of the State or the Central Government with the approval of competent authority.

(Details at Annexure - II) ,

c. Forest Fire Control and Management

- . Procurement of Hand tools, Fire tenders Tractor Trolley mounted with water tanker, Back pack pump consisting of pump, fire finders, water bottles, field dress etc.
- . Procurement of Communication Sets for fast communication
- . Procurement of vehicles for speedier mobility.
- . Construction of watch towers.
- . Establishment of fire control rooms.
- . Control burning and fire' lines.
- . Training and Demonstration
- . Research, Development, Extension Publicity
- . Expenditure related to fire control measures such as expenditure on fire crew and JFM Committees.
- . Assistance to States and UTs for strengthening of capacity building for infrastructure of JFM.
- . Any other items considered essential and as proposed in the scheme of the state or central government with the approval of competent authority.

(Details at Annexure - III)

5.3 Cost Norms:

The items under various components of the scheme will be sanctioned keeping in view the current market rate and prevalent wage rate in the concerned state. The cases of construction of buildings would be considered based on preliminary estimates and in accordance with the norms and instruction on the subject.

To ensure the different components get adequate funds/ it is proposed that while formulating the proposals/ the State Government should ensure that:

- a. The amount allocated for the Forest Fire Control and Management component should not be less than 25 % of the total project cost. This condition applies to the extent to which the States have forests prone to fires.
- b. The amount allocated for strengthening of infrastructure component for forest protection should not exceed 50 % of the total project cost. The amount allocated for buildings for office and residence of front-line staff (Le upto the level of Forest Rangers) should not exceed 40% of this 50% amount.
- c. The expenditure on vehicles will be limited to maximum of 10% of the total project cost.
- d. For Survey and Demarcation/ a minimum amount of 10% of the total project cost should be earmarked.

5.4 Release of Funds:

- . Funds will be released in two installments in a financial year.
- . The second installment will be released only after receipt of.
 - (a) Utilization certificate for the full amount released in previous year.
 - (b) Utilization certificate for more than 50% of the 1st installment.

- c. Certificate to the effect that atleast 70% of the 1st installment release has since been committed.

6. PROJECT PROPOSALS FROM THE STATES / UT's:

All the States and UTs will be requested to submit their plans under the Scheme to Ministry of Environment and Forest in the proforma as per Annexure - IV for the 10th Five Year Plan (2002-2007) and also financial year wise.

7. SCREENING OF PROPOSALS FOR RELEASE OF FUNDS:

7.1 Screening Committee

The proposals received from the various State Governments will be examined and put up to a committee under the Chairmanship of Addl. Director General of Forests, with Deputy Inspector General of Forests (Forest Protection Division) as the member secretary and Deputy Secretary (Finance), Deputy Secretary (Plan Co-ordination) and a representative from Civil Construction Unit as members.

7.2 Screening of Proposals

Based on the needs of the concerned State Governments and UT's, status of existing infrastructure, past performance and absorption capacity, the activities under various components will. be sanctioned and funds released.

8. ESTABLISHMENT COSTS (NUMBER OF POSTS):

No staff is to be provided specifically for the Scheme for running / maintenance of the assets or for any other purpose.

9. MAINTENANCE COSTS (Recurring Expenditure):

Under the Scheme the Ministry of Environment and Forests will sanction only the capital expenditure for raising infrastructure. The cost of maintenance of the infrastructure is to be borne by the concerned State Governments and UTs. The State Forest Department should ensure that communication

network, vehicles, buildings, etc are maintained through the State budget. A clear commitment to this effect should be indicated in the proposal.

10. MONITORING AND REVIEW:

- i. The Ministry will arrange for periodic monitoring and evaluation of the Scheme through its officials, State Forest Departments, Regional Centres of the Ministry and/or independent consultants/NGO's.
- ii. The State Forest Departments shall be responsible for regular monitoring and evaluation of, Integrated Forest Protection Scheme. A review and Monitoring Committee under the Chairmanship of PCCF shall be constituted for periodic review of the scheme. CCF (Development) / CF (HQ) will be the member Secretary/of the State Monitoring committee.. The CFs will be the members of the Committee. The member secretary shall convene meetings at least half yearly and review the progress of the scheme.
- iii. PCCF of the concerned State shall furnish a quarterly progress report of physical and financial target achieved in the enclosed format as per Annexure-V. To MoEF.

11. AMENDMENT IN GUIDELINES:

During the course of implementation of the scheme, if any change in guidelines is necessitated with the existing scope of the scheme, the same may be made with the approval of the Minister for Environment and Forests.

BROAD GUIDELINES FOR STRENGTHENING OF INFRASTRUCTURE FOR FOREST PROTECTION

The Forest Department has country's most valuable resources at its disposal and has the responsibility of protecting them. Protection of forest resources requires a strong infrastructure at the disposal of protecting agency. To build such an infrastructure the State Forest Departments can send proposals for the following types of capital expenditure:

(A) **Construction of Buildings:** The following type of constructions may be proposed:

1. Offices and residences of front line forest staff, like Forest Guards, Foresters, Deputy Rangers and Range officers, depending on the requirements of individual states.
2. Protection Offices and residences at headquarter.
3. Transit Camps and Inspection Huts for the field staff and visiting officials.
4. Buildings for housing GIS, MIS and Research and Training.

The cost of construction should be based on CPWD / PWD rates in the concerned state. The estimate should also be site specific. The buildings should use local materials, be environment friendly and in line with the local architecture.

(B) **Construction and Improvement of Forest Roads and Bridges**

Construction and improvement of forest roads and bridges for the purpose of patrolling and inspection of regeneration of forests can be considered under this component for the mobility of the staff. The proposal should be location specific.

(C) **Aerial Communication System:**

To develop / supplement the existing wireless network, the State Govts. may propose purchase of fixed wireless sets, hand held sets, vehicle mounted sets, satellite telephones, cell phones, repeater stations and other accessories for operationalizing the wireless communication.

States should propose the amount based on current market rate including taxes of reliable wireless sets. A one time License fee may also be proposed under the Scheme.

(D) **Patrolling equipments:**

The following patrolling equipments can be proposed for consideration.

- a) Light Motor Vehicles (motor-cycles and patrolling vans)
- b) Medium Motor Vehicles.

- d) Speed boats.
- e) Country boats.
- f) Large Sea boats.
- g) Night vision equipments, etc.

,/

(E) Management Information System:

For development of Management Information System, the following items may be proposed:

- a) Computers and
- b) laptops Accessories
- c) GIS workstations
- d) GIS / MIS Software
- e) Local Area network
- f) Wide Area network

(F) Arms and Ammunition:

Based on the requirement arms like rifle, pistol, etc and the ammunition thereof may be proposed.

(G) Technological Up gradation and Skill Development:

Funds may be sought for technological up gradation and skill development in the forestry sector. Funds required for equipments and training should be shown separately.

(H) Publicity and Extension:

Equipments like television, camera, projector, etc required for publicity of various programmes and activities of the Forest Dept. may be proposed under the head. JFM Committees may be involved in extension work.

(I) Research and Training:

Research on tissue culture, seed certification, silvicultural aspects, etc may be proposed under this head. Equipment requirements and training needs should be separately shown in the proposal.

Any other item deemed necessary for protection of forests and improving the productivity of forest land can be considered after due approval by the competent authority.

.....

**GUIDELINES FOR
SURVEY / DEMARCATION ENUMERATION / ASSESSMENT
OF NATURAL RESOURCES**

GENERAL

1. Assessment of natural resources is an essential and integral component of working plan exercise. On the basis of analysis, past performance is evaluated and future management finalized. In forest crops one has to identify multi-dimensional populations with various parameters and attributes. Forest data to be collected by working plan officer may cover:
 - Individual tree species stand or forest type through enumeration
 - Form and composition of crop according to age, quality, extent etc. and its distribution
 - Statistics of growth and yield through stump and stem analysis
 - Status / success of plantations
 - Forest soil types ..
 - Socio economic survey
 - Bamboo I
 - Different non-timber forest produce.

SAMPLING FOR ENUMERATIONS

2. The states and UTs have in general a Statistical Organization. Research units are there in almost all the states. A committee with Conservator Working plans as its chairman studies the various options and finalizes the actual method and procedure for sampling including its precision and intensity to meet the objects of working plan preparation fully within the time and budget support available to him. Working Plan Officer adheres to it. Enumerations are ordinarily done 10 cm. diameter breast height classes. Enumeration can be total or partial and further the part one can be random or systematic. There is considerable literature on the subject of forest sampling, which can be referred to for details. Past enumeration data can be used or pilot survey carried out for the calculation of population variance.

REGENERATION SURVEY

3. While carrying out enumeration, status of regeneration of main species at plot center of 5-10] cent plots may be recorded in the following categories
 - Woody plants of establishment. height or cover
 - Woody shoots less than establishment height
 - Non woody (Whippy)
 - Un established
 - Absent
4. It is sometimes necessary to prepare detailed stock maps of regeneration in order to present correct silvicultural treatment particularly for Irregular, Group Shelter Wood, Group Select and Selection Systems. Regeneration surveys can be combined with tree enumerations by sampling of 2-5 per cent samples.

PLANTATION SURVEY

5. Valuable forest resource has been created throughout the country under various schemes of forestation, social forestry, externally aided projects etc. An up to date and reliable knowledge of these man made forest plantations is necessary in respect of species, harvesting and corrective measures if required. In general a record of all plantations is maintained in plantation journals and information about success percent, mortality and growth recorded therein is just sufficient for five years or so. Survey of plantation is done at the time of revision of the working plan including total or partial enumeration so that a macro position of the status of plantations in the forest division emerges which can be used in different occasions.

FOREST SOIL SURVEY

6. It is important to know the soil type and depth in relation to micro level area within each compartment where forest is under stocked or blank due to edaphic reasons. This information is generally available in plantation journals & records of territorial D.F.O. State Soil Survey Organization! National Bureau of Soil Survey and Land Use Planning, Nagpur. The information available with these organizations combined with some field survey work is ideal for Working Plan Officer to take a managerial decision. In such cases where nothing is available, a sample soil survey is carried out only in limited specific areas and the sample is got analyzed in any laboratory available nearby.

SOCIO-ECONOMIC SURVEY

7. This is necessary to assess the dependence of villagers on the forests for their livelihood needs. This is also important in the context of preparation of the macro plans for Joint Forest Management. Since this is also a new but very important item, it has to be done with all seriousness and help of Sociologist Economists Socio-economists/Recognized Institutes may be taken.

SURVEY, OF NON-TIMBER FOREST PRODUCTS (EXCLUDING BAMBOO AND CANES)

8. The W.P.O. does the survey of N.T.F.P. through old records, local enquiry and assessment of quantity through sampling. Survey of medicinal plants is invariably done as much as possible. Summarized estimated quantities are recorded in the following format.

SL. No	Scientific name	Local name	Type of plant	Part used	Area where found (ha)	Quantity per ha.	Estimated harvest ! hector	remarks
1	2	3	4	5	6	7	8	9

BAMBOO/CANE SURVEY

9. Two stage-stratified sampling is done. In the first stage, sampling is carried out to estimate the number of clumps per unit whereas in the second stage sub-sampling is carried out to estimate the number of culms of various ages per clump. In the first stage, the classification is:
- (i) Thrifty- All healthy, un-congested, undamaged and in good condition
 - (ii) "Culturable - Not included in (i) or (iii)

(iii) Degraded -- Not capable of being rehabilitated and of attaining normal productivity.

./

- 10 Three further classes may be distinguished:
- (a) Un- established of seed origin following gregarious flowering
 - (b) Immature
 - (c) Sporadically or gregariously flowering

In the second stage (culms count) total number of culms, number of one (current) and hi (previous) year's culms and average height of young culms, dry weight of trimmed culms may also be recorded/estimated.

SURVEY OF WILD ANIMALS

- 11 This is a specialized job and Working Plan Officer is not expected to go into details. Advantage is taken of the figures of wild life census carried out by State Wild Life Preservation Organization. This will be vetted by the CWLW of the State.

DEMARCATION OF FOREST BOUNDARIES.

12. In various states notified forest areas are not clearly demarcated on the field. Due to the existence of habitations in and around forest areas it becomes difficult to enforce law without proper demarcation. It also become difficult to check encroachment and many times it lead to conflict and serious protection problems. For effective protection and also to avoid any undue harassment to forest dwellers it is necessary to get forest areas survey, notified and properly demarcated.

ACTIVITIES TO BE FUNDED:

13. Under this component funds may be proposed for the following activities.
- 1) Demarcation of boundary and fixation of boundary pillars.
 - 2) Field survey and enumeration.
 - 3) Equipments for survey.
 - 4) Camping equipments.
 - 5) Vehicles for working plan divisions.
 - 6) Purchase of satellite imageries.
 - 7) Construction of building for working plan officers and staff.
 - 8) Consultancy.
 - 9) Training etc.

WRITING OF WORKING PLANS

- 14 The working plans of the territorial divisions are to be written as per the working plan cod a applicable at the time of writing the plan. The procedure for approval should be as per procedure in vogue.

GUIDELINES FOR PREVENTION AND CONTROL OF FOREST FIRES "

Forest fires are a major cause of degradation of our forest resources. There are a number of tangible as well as intangible losses due to forest fires and they cause environmental threat to the affected area. Forest Survey of India data on forest fires attributes about 50% of the forest area as fire prone. It is estimated that about 3.73 million ha. of forest area is annually affected by forest fires. Very heavy, heavy and frequent forest fire damages are noticed over 0.87%, 0.14% and 5.16% of forest areas. Government of India has taken the issue of forest fires very seriously and a National master Plan has been prepared in this regard for taking preventive and control measures for the next 10 years. However, for effective control it is necessary for the state governments to take all the necessary measures to combat forest fires. State governments are requested to take action as suggested hereunder:

(A) General Measures

1. All the fire prone forest areas of the state should be clearly identified and a map of fire prone areas should be prepared.
2. Data base on forest fires should be compiled and analysis of statistics on fire damage should be done every year and reported to this ministry.
3. Fire Danger Rating System & Forest Fire Forecasting System should be prepared with the help of 'National Centre for Medium Range Weather Forecasting' of Department of Science & Technology, Lodi Road, New Delhi.
4. The services of ex-servicemen could be utilized and they can be appointed as Fire Warden in Divisions / Ranges on payment of honorarium.
5. The item of forest protection should be treated as a plan item so that it gets more attention and more allocation of budget.
6. Forest department field staff must make a realistic assessment of damages from forest fires and a professional approach should determine the assessment of damage. It is generally observed that field staff do not report the actual fire damage due to fear of action and this practice needs to be curbed.

(B) Specific measures

Following specific measures may be undertaken for prevention and control of forest fires:

1. All the preventive measures should be taken in advance before the fire season starts. Fire lines should be cleared in time. Fire watcher should be employed and other precautionary measures as per working plan should be taken.

2. A senior officer in PCCF Office may be appointed as Nodal Officer. During fire season he will keep upto date information on forest fires of the state and will liaise with various agencies including Government of India regarding various issues on the subject.
3. During the fire season, a crisis group of about five officers may also be constituted in the office of PCCF and territorial CCF / CCs to closely monitor the situation and coordinate various preventive measures and also arrange adequate enforcement in case of any eventuality. The crisis group should meet at least once in a month during fire season. Similarly crisis group should also be constituted at the circle level. At Division level a group under the Collector's chairmanship with DFO as Secretary with prominent local, social and political leaders and other officers of different departments be constituted for effective coordination and control. This crisis group would mobilize all the government and non government officials and other material resources for prevention and control of forest fires. .
4. Communication network should also be set up for quick flow of information and movement of the men and material to fire site.
5. The forest staff available in other wings should be specifically placed under the disposal of territorial division during fire season.
6. The concerned authorities of other departments may be apprised in advance and their cooperation may be sought' in dealing with any eventuality.
7. Special steps should be kept ready for use in case of any eventuality.
8. JFM Committees & Forest protection Committees should be actively involved in prevention and control of forest fires: Other people living in and around the forest areas and getting benefits from the forests should also be actively involved. .
9. The communities and government staff should be regularly trained for prevention and control of forest fires. .
10. Efforts should be made to create 'public awareness' against the ill effects of forest fires. A fire week could be celebrated to create mass awareness.

(c) Legal Measures

1. Provisions of Indian Forest Act, 1927 regarding Forest fires Le. Section 33 and 79 of IFA, 1927 should be strictly implemented.
2. A specific circular may be issued by the state governments ,regarding mobilization of human and material resources like man power, vehicles etc.in case of forest fires.
3. Other rules and regulations of the state governments in this regard should also be strictly implemented.
4. In order to make an impact at field level, the guidelines may be translated in local languages and circulated to the field staff

Proposed Work Programme
Integrated Forest Protection Scheme

Component : Forest Fire Control & Management

(Rs. in lakhs)

SN o	Items	Unit	Present Status	Furture Require ments	Proposal during Xth Plan	Unit Cost	Total Cost	No of Units					Cost Proposal Yearwise breakup						
								Year Wise Breakup					2002-03	2003-04	2004-05	2005-06	2006-07		
								2002-03	2003-04	2004-05	2005-06	2006-07							
1	Fireline Creation	Km																	
2	Fireline Maintenance	km																	
	a. By removing grass after monsoon																		
	b. Cleaning during summer																		
3	Watch tower	nos.																	
4	Firewatchers	Man d																	
5	Assistance to JFMC/s	LS																	
6	Construction of water storage structure	Nos.																	
7	Setting up of firefighting cells	LS																	
8	Firefighting equipments	LS																	
9	Fire mapping / Fire management Plan	nos																	
10	Training & awareness	LS																	
	Training of the staff and awareness campaign Camps will be organised																		
	Component Total																		

* For Fire lines the unit cost will be per km for ten meter width

