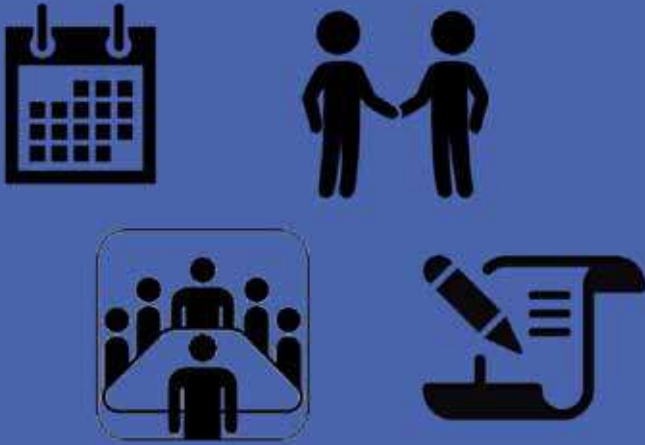


KEY POINTS OF THE GUIDELINES

PREVENTION



PREPAREDNESS



ASEAN GUIDELINES ON

PEATLAND

FIRE MANAGEMENT



one vision
one identity
one community

RESPONSE

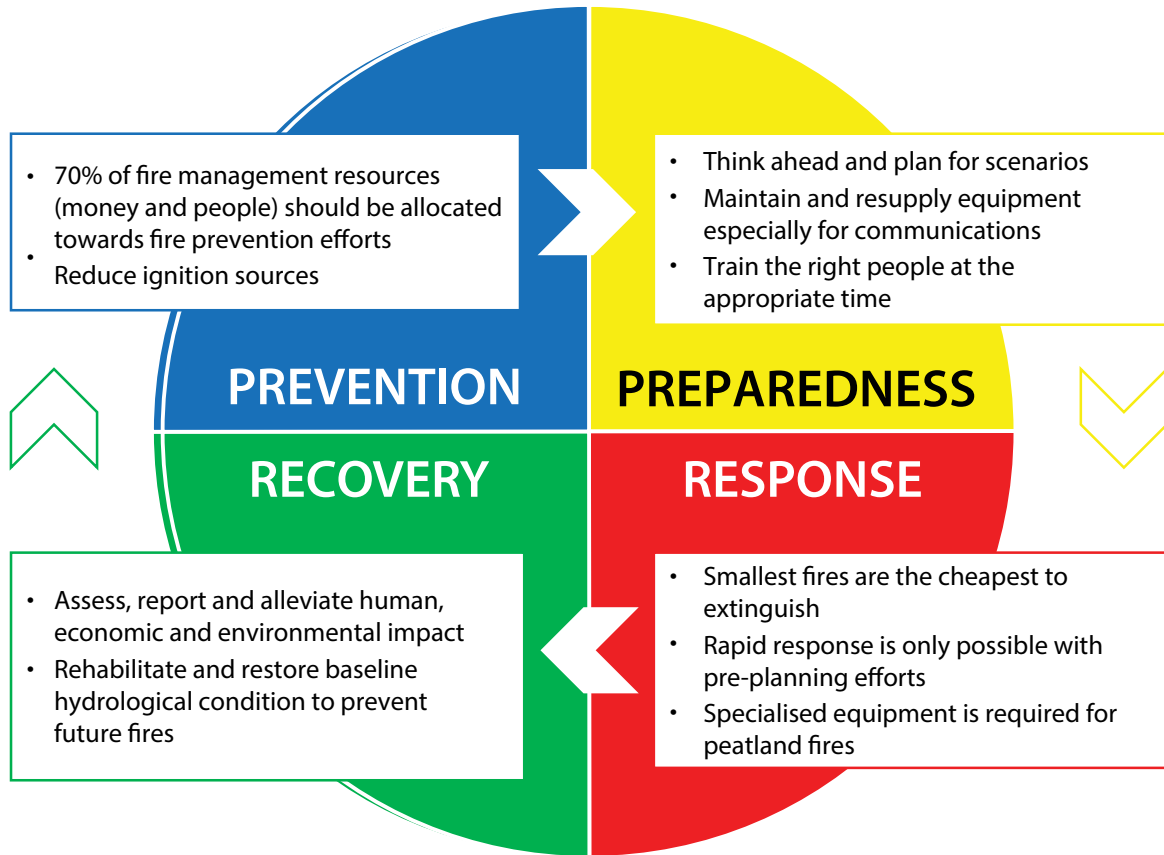


RECOVERY



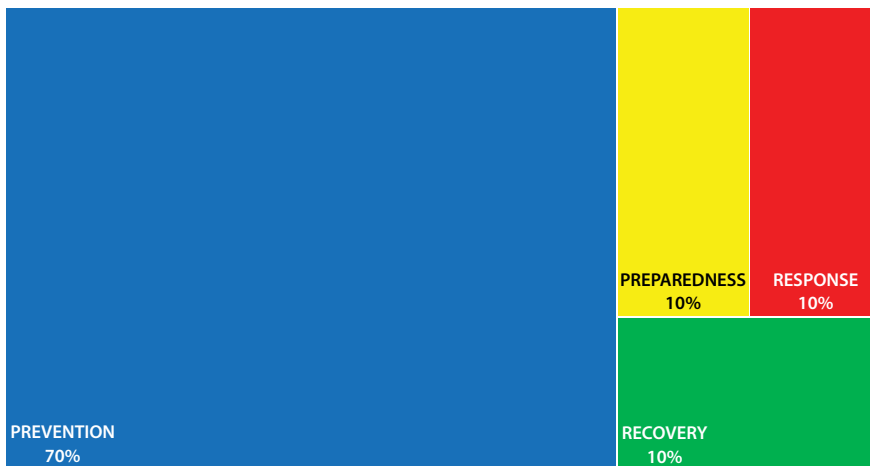
WHAT IS INTEGRATED FIRE MANAGEMENT?

Integrated fire management (IFM) aims to address problems posed by unwanted fires within the context of the natural and socio-economic systems. It combines the components of fire management: Prevention, Preparedness, Response, and Recovery (PPRR). It guides all stakeholders to implement appropriate actions at time and scale to prepare for and manage fire situations.



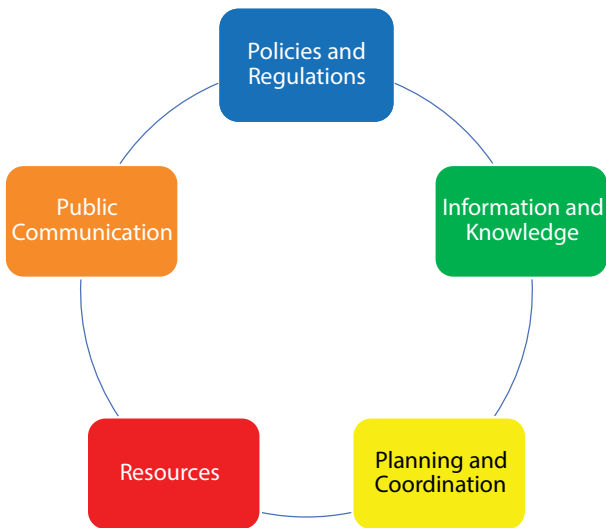
INTEGRATED FIRE MANAGEMENT (IFM) CYCLE

Currently, resources allocated for prevention is not sufficient. IFM recommends allocating 70% of resources for fire prevention and splitting the remaining for preparedness, response, and recovery. Hydrological management is the most crucial aspect of ensuring the sustainability of peatland ecosystems and preventing fires. In their undisturbed state, peatlands rarely burn.



STRUCTURE

The guideline focuses on five interrelated thematic areas: 1) Policies and regulations; 2) Information and knowledge; 3) Planning and coordination; 4) Resources; and 5) Public communications. Specifically for fire prevention, an additional thematic area is the measures to prevent peatland fires.



balanced approach that recognises that peatland drainage for commercial agriculture is not a sustainable practice. Proper land-use zoning should aim to minimise the use of peatland for development. Hydrological management regimes should be established to maintain appropriate water levels and reduce peatland vulnerability to subsidence. Finally, peatlands need to be recognised as an integral part of the lowland landscape and coastal protection system.

PEATLAND FIRE PREVENTION MEASURES

It is critical to prevent fires through enhanced land and water management and the promotion of land management and development approaches that minimise fire risk. The most critical approach in this regard is water management. In addition, encouraging the adoption of agroforestry systems rather than annual crops could also prevent peatland fires and enhancing household income, while reducing fire risk.

INFORMATION AND KNOWLEDGE

Understanding the landscape is the key to informed decisions on planning and allocation of resources. Therefore, information on terrain, road access, vegetation, soils, fire history, infrastructure, demographics, socio-economic status and land ownership must be collected and updated. A report should be made to capture the cause, behaviour and impact after fire incidents. The data should be analysed to provide context for better management and oversight in the future.

PREVENTION

POLICIES AND REGULATIONS

The introduction of national policies and regulations for peatlands' protection and sustainable use is the first crucial step towards peatland fire management. They need to have a

- Clearly defined land tenure
- Include management of peatland as a hydrological unit under spatial law
- Need for adequate regulation enforcement, auditing of compliance, and fines for noncompliance

- Educate people in the use and improper use of fire, the dangers to health from smoke haze; create awareness via broadcast media and correctly targeted programmes
- Provide information on alternative land management techniques and equipment without the use of fire



- Measures to prevent fires through enhanced land and water management, and the promotion of land management and development approaches that minimise fire risk.
- The most important approach in this regard is water management
- Peatland fires can also be prevented by encouraging the adoption of agroforestry systems rather than annual crops

- Landscape fire history, behaviour & knowledge of fire use
- Communities – demographics, number of communities, size, socio-economic situation.
- Landscape mapping, topography, vegetation, roads, rivers, water points and more

- Proactive management of peatland hydrology via canal blocking, canal closure & changing land use away from cropping systems that need drainage
- Develop and deliver training – e.g. in sustainable agriculture practices, fire plan development, construction of fire breaks, alternative mechanisms for land management without fire
- Appoint teams of Fire Prevention Officers, who work in the field and are coordinated in activities across the landscape by the inter-agency task force

- Develop an Integrated Fire Management (IFM) Plan that has embedded Community-based Fire Management planning, and coordinate activities amongst stakeholders
- Establish inter-agency task force (government, private company and community) and appoint lead people to coordinate inter-agency prevention efforts
- Set up a pre-defined Incident Command System to develop suitable response efforts

PLANNING AND COORDINATION

Considerable effort is required to instil cooperation and coordination amongst all relevant stakeholders. Frequent and coordinated patrols of high-risk areas corresponding with the Fire Danger Rating System (FDRS) should be conducted.

RESOURCES

Firefighting supplies, including equipment and consumables, need to be appropriate for the terrain and constantly maintained and restocked once used. Training courses for peatland fire management is essential and requires considerable attention to various details such as the materials, timing of training, and human resource management, i.e. who is being trained and for what purpose.

PUBLIC COMMUNICATIONS

The communications team in the fire management organisation must be aware of the needs of the public and provide sufficient information without causing community alarm. In addition, they also need to filter and transfer the information to the relevant authorities to manage emergency circumstances.

and loss due to fire damage. A faster response to a fire in its early stages results in a lower cost of stopping the fire. Therefore, it is recommended to allocate substantial resources to suppress fires when it is still small.

INFORMATION AND KNOWLEDGE

Maps of high fire risk areas and locations of fire-fighters and firefighting resources can be created and distributed to relevant stakeholders. Moreover, ASEAN is capable of predicting fire risk via the FDRS. FDRS acts as an early warning system to prepare for the coming fire season, and ASEAN has access to daily hotspot information.

PLANNING AND COORDINATION

The activity includes ensuring that key personnel is on standby and resources should be prepared for immediate deployment when needed. Simulation and exercise are conducted to ensure that the personnel are on top of the standard operating procedures and that the equipment is operationally ready. Frequent patrols should be conducted in accordance with the FDRS.

RESOURCES

Peat soils require additional resources, especially for specialised equipment. Explore various arrangements to procure the equipment. Joint training session is another way to share resources and must be intensified before the onset of the fire season.

PREPAREDNESS

POLICIES AND REGULATIONS

Better preparedness is essential to ensure the most suitable response to reduce the cost of suppression

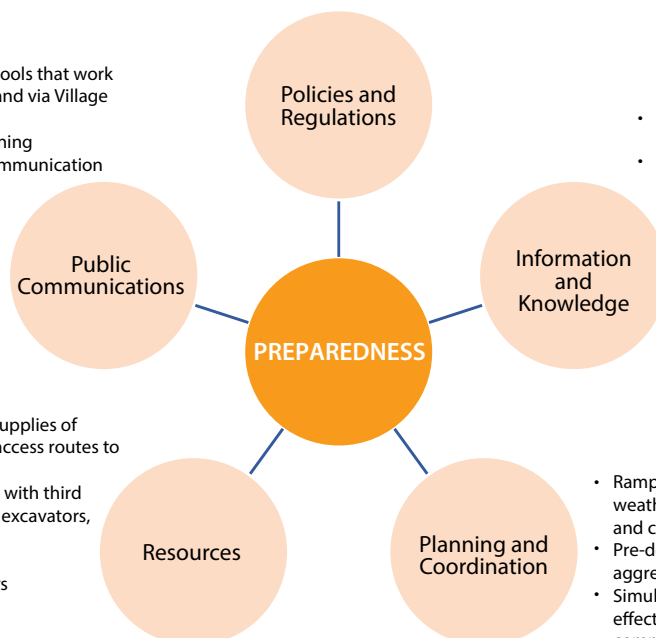
- Develop pre-allocated funds and ensure accessibility before a fire emergency
- Introduce concept of allocating more resources (funds) to aggressively conduct "initial attack" on a fire

- Develop a range of communication tools that work via website, text, smart phone apps and via Village Networks
- Daily reporting of FDRS for early warning
- Establish hotlines and specialised communication mechanisms to report fire incidents

- Weather, climate, fire danger rating and hotspot data used to predict and prepare for coming issues
- Map high fire risk areas and location of nearest fire-fighting resources (government, private company or community)

- Ensure sufficient and serviceable supplies of fire-fighting equipment and plan access routes to water supply for fire-fighting
- Pre-establish contract agreements with third parties on required resources (e.g. excavators, tractors)
- Hire temporary fire-fighters
- Intensify training for all fire-fighters

- Ramp up preparatory activities once FDRS indicates dry weather conditions, such as activating more frequent and coordinated patrols
- Pre-define trigger levels to allocate more resources to aggressively attack fires at the initial stage
- Simulation exercises – to test all equipment, improve effectiveness of fire-fighters, develop better communications and coordination for fire management responses and better SOPs



PUBLIC COMMUNICATION

Continuous public education on the dangers of using fires can help create social norms to reduce fire incident. Daily weather reports and media releases should include FDRS information on weather conditions and outlook. Installing FDRS boards and informing the communities on their use of the boards is also essential. Mechanisms and tools to receive information and feedback from the public should be made available.



RESPONSE

POLICIES AND REGULATIONS

Policies and regulations on suppression response often focus on performance indicators. For example, once a fire is detected, guidelines on the expected period in which a fire of a certain size should be suppressed can be used as a "Performance Indicator". Some form of reward or recognition can be given if performance indicators are achieved by any fire suppression team or community group. These teams/groups can then be invited to conduct training and share best practices to improve capability and capacity across the country.

INFORMATION AND KNOWLEDGE

Fire situation reports (SitReps) are essential for decision-making and needs analysis. A SitRep should be prepared each day for a fire and sent to the headquarters to update on resource needs and expected outcomes. In addition, fire agencies need to keep abreast with the weather situation and forecast, FDRS and hotspot information.

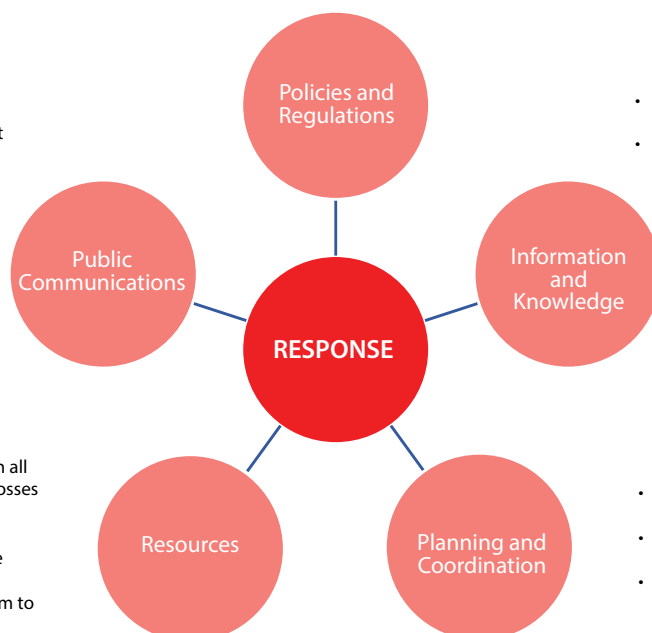
PLANNING AND COORDINATION

An Initial Response Plan must be activated quickly once a fire incident is verified, using the suppression mobilisation plan developed in the Preparedness stage. ASEAN countries could adopt the Incident Command System for managing emergency fire teams so that both a mobilisation plan and standard fire management team can all be in place rapidly.

- Establish management performance indicators – e.g. respond to fires within set time period; reduce number of fires starts/ per district; reduce PSI reading for the season

Public communications via broadcast media – e.g. information update on fires, danger areas to be avoided, public health messages and advisories

Use the rapid initial attack method on all fires to reduce the overall costs and losses
Use appropriate and specialised equipment
Ensure basic fire-fighting supplies are available
Implement Incident Command System to manage fires



- Daily situation reports (SitReps)
- Fire science information – e.g. daily weather reports; Fire Danger Rating, hydrology; expected fire behavior

- Activation of "Initial Response Plan" and using the Incident Command System
- Rapid development of "Main Suppression" Plans, i.e. landscape approach and use of dykes to flooding of fires
- Additional support and coordination of resources ready to be deployed from cooperative agencies and adjacent districts or provinces

RESOURCES

Resources should be made available for basic hand tools, specialised equipment and people who will operate them.

PUBLIC COMMUNICATIONS

Keeping the public informed on the ground situation and air quality is vital for the public to avoid the fire areas and determine what is best for their safety.

RECOVERY

POLICIES AND REGULATIONS

Policies and regulations should be developed to support the ecological recovery of burnt sites as this will help to reduce future fire risk. In addition, it is crucial that attention is given to the careful management of social welfare since peatland fires are usually driven by social change and economic demand.

INFORMATION AND KNOWLEDGE

The Incident Commander and fire suppression managers should deliver a report on the damages and losses caused by the fires before concluding their work. The information would allow the government to gain a greater insight into the ground situation, make better-informed decisions on supporting the post-fire recovery efforts, and guide amendments in the country's fire policy where required. Burned areas can be plotted by

comparing satellite or drone imagery before and after the fire incident to determine vegetation loss and soil exposure. Investigation on the origin of fires is essential to identify the sources and perpetrators of the fires.

PLANNING AND COORDINATION

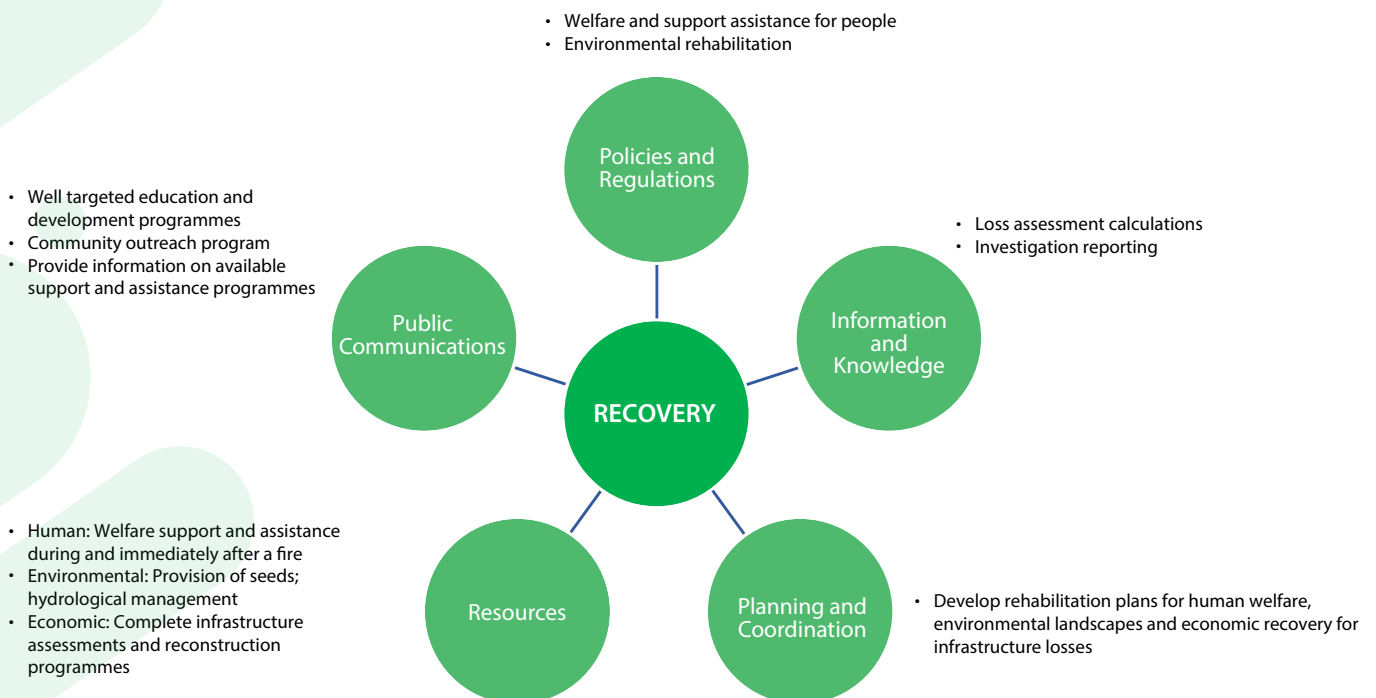
Based on the data collected, an interdisciplinary team should be engaged by the government to assess the damage and losses and recommend timely and cost-effective treatments to enable affected areas to recover. These areas should then be prioritised according to specific criteria set out by internal policies.

RESOURCES

Resources can be allocated for rehabilitation of the affected areas, research to determine optimal planting methods that could be replicated. If applicable, humanitarian and social groups should also be considered to set up centres to deliver aid and support to affected communities.

PUBLIC COMMUNICATIONS

Public engagement and education of the public on the importance of the continued protection and rehabilitation of the damaged peatlands is necessary to ensure a continued sense of ownership and empowerment to protect the remaining landscape. This effort can be supported by providing information on various environmental and social support assistance programmes.







Full version
publication