

Overview of fire danger rating system in the ASEAN region under the umbrella of the ASEAN Agreement on Transboundary Haze Pollution and the development of ASEAN Peatland Fire Prediction and Monitoring System

RELEVANT DECISIONS OF VARIOUS ASEAN MEETINGS ON REGIONAL FIRE DANGER RATING SYSTEM

Meeting	Relevant Decision
10th MSC, 29 Jul 2010, Kuching, Malaysia	Agreed to encourage and support the further development and refinement of the FDRS and urged all relevant agencies in ASEAN Member States (AMS) and ASMC to collaborate on this effort. The FDRS will be a useful complement to the weather and hotspot monitoring being done by ASMC
6th TWG Mekong, 20-21 Sep 2010, Nay Pyi Taw, Myanmar	supported the further development and refinement of the FDRS, and noted that Indonesia, Malaysia and the ASMC are working together to develop the proposal for this activity
COP-6, 13 Oct 2010, Brunei Darussalam	<ul style="list-style-type: none">• recognised that the FDRS will be a useful complement to the weather and hotspot monitoring being done by ASMC.• agreed that the relevant agencies in AMS and ASMC collaborate in the further development and refinement of the FDRS to improve its effectiveness.• acknowledged that Malaysia will develop a proposal to further refine the FDRS

RELEVANT DECISIONS OF VARIOUS ASEAN MEETINGS ON REGIONAL FIRE DANGER RATING SYSTEM

Meeting	Relevant Decision
11th MSC, 17 Feb 2011, Singapore	<ul style="list-style-type: none">noted the progress of the refinement of FDRS in Malaysia, and that preparations to test the FDRS in the peatland pilot sites in Selangor, Malaysia are ongoing, under the framework of the ASEAN Peatland Forests Project.
1st MSC Mekong, 25 Feb 2011, Krabi, Thailand	<ul style="list-style-type: none">noted that Malaysia requested ASEAN Member States (AMS) to provide relevant meteorological data and peatland data in order to refine FDRS to cover ASEAN region
12th MSC, 23 Sep 2011, Bangkok, Thailand	<ul style="list-style-type: none">encouraged countries to provide the requested relevant data to Malaysia, for further development of the ASEAN-wide FDRS.

RELEVANT DECISIONS OF VARIOUS ASEAN MEETINGS ON REGIONAL FIRE DANGER RATING SYSTEM

Meeting	Relevant Decision
COP-7, 18 Oct 2011, Phnom Penh, Cambodia	<ul style="list-style-type: none">• noted the progress of the refinement of FDRS by Malaysia, including the ongoing testing of the FDRS in the peatland pilot site in Selangor, Malaysia under the framework of the APFP.• requested AMS to provide the relevant meteorological data to Malaysia, for the further development of the FDRS for the ASEAN region.
2nd MSC Mekong, 29 Feb 2012, Hanoi, Viet Nam	<ul style="list-style-type: none">• agreed to continue to participate in the refinement and development of an ASEAN-wide Fire Danger Rating System based on relevant national early warning systems.

The Singapore workshop (February 2008) identified: (funded by AADCP)

Biophysical Factors of peatland fires identified were:

- Peat drying determines fuel availability
- There is a link of drainage/water level with fires - Groundwater level needs to be sufficiently low so that the surface layer of peat can dry
- Peat seems to catch fire from woody material burning
- People generally do not deliberately burn peat but burn dead biomass that then sets fire to peat
- Low (or no) rainfall periods needs to be long enough for the surface layer of peat and large woody fuels to dry

The Singapore workshop (February 2008) identified: (funded by AADCP)

- Peatlands can burn when rain is **low for 10 days**
- **Peatlands can burn when rain is below 100 mm per month**
(occurs in January, February, May, June, July and August depending on location)
- Above **average temperatures increase drying of fuels**
- Intense wind events facilitates rapid fire spread
- Forest canopy cover is a factor by shading peat and fuels

Follow up tasks identified from Singapore Workshop

TASK 1 - Testing and refinement of the SE FDRS for peat fuels.

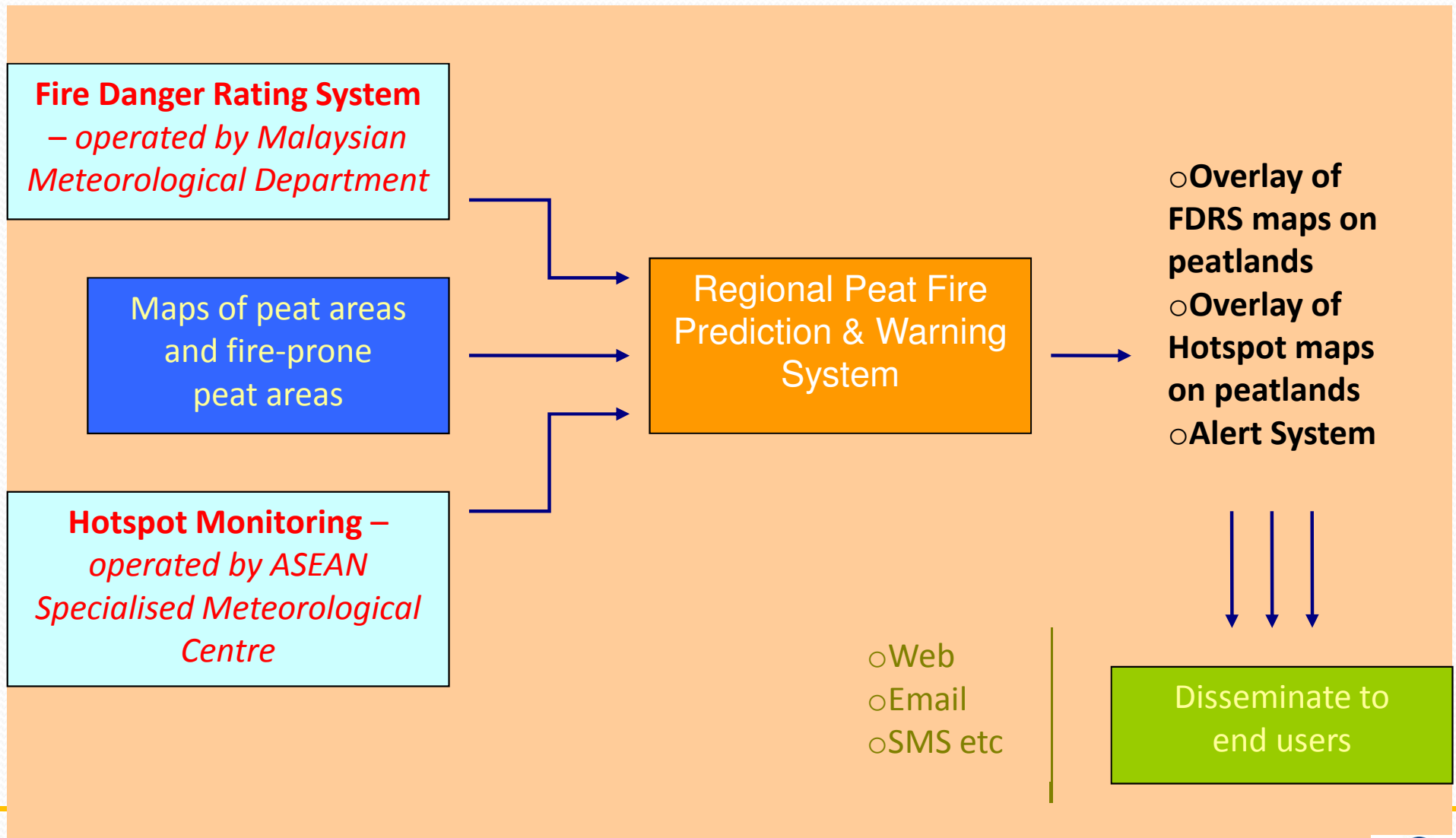
- collect and review data on peatland extent and depth
- collect and review **existing data on peatland fire location, fire history and hotspot data**
- collect and review **water level data for peatlands** and role of water control devices for managing water levels in peatland areas.
- Test further the use of the **Duff Moisture Code and the Drought Code for peatland areas**
- Enhance **effective use of fire danger rating for operational purposes** such as development of SOPs and alert levels for usage

Follow up tasks identified from Singapore Workshop

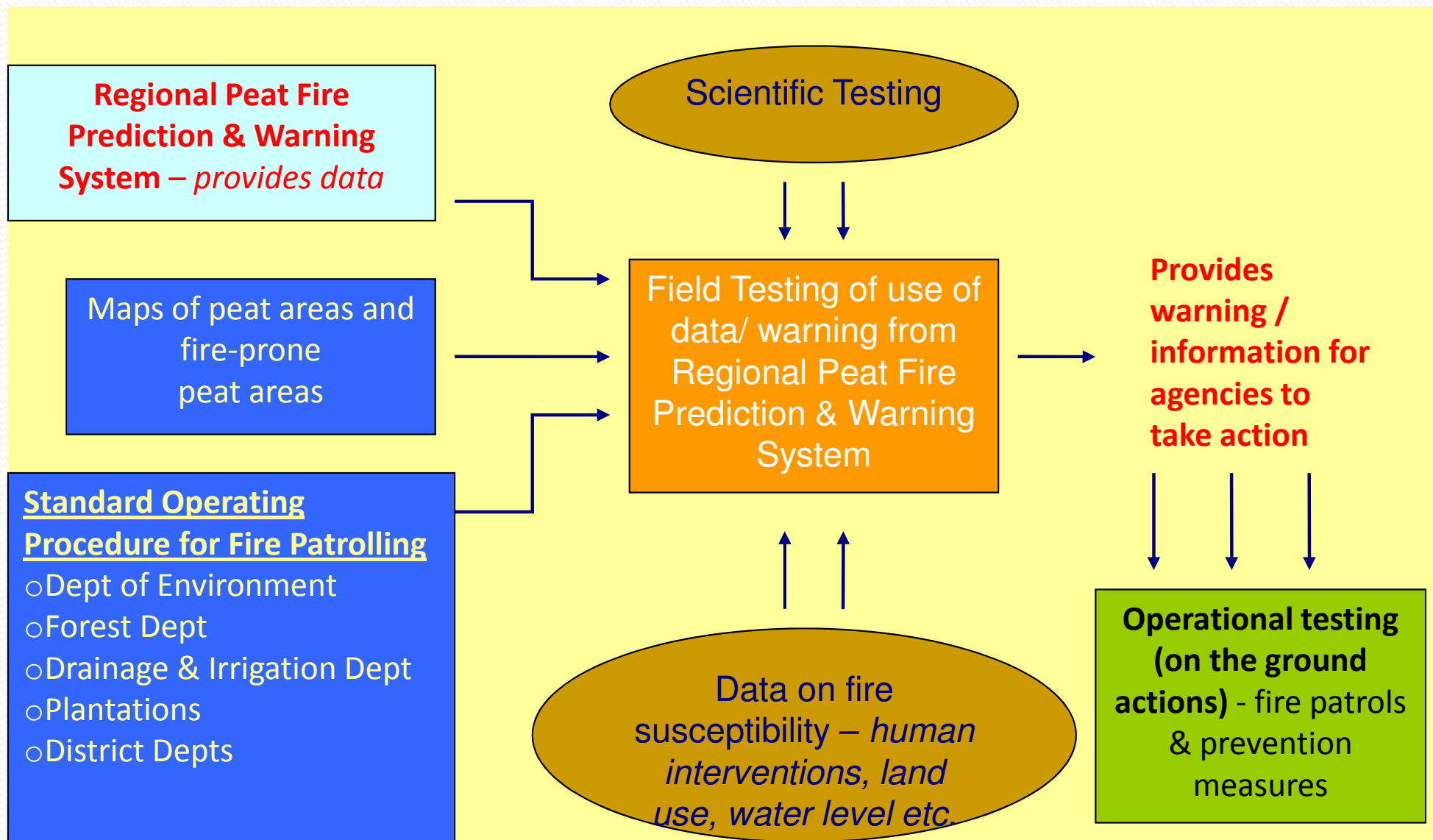
TASK 2 – Identify key indicators of human actions that contribute to peatland fires.

- Obtain **information on the Agricultural crop and land preparation cycles**
- Analyse the **human factors** in fire danger in peatlands in combination with land use, land cover and hotspots to identify trends and indicators.
- Develop methods of **communicating FDR to key target audiences**

Development of the ASEAN Peatland Fire Prediction & Warning System (Southern ASEAN Region)



The ASEAN Peatland Fire Prediction and Warning System – Field Testing in pilot sites/countries



Proposed actions from KL Workshop (July 2011)

(under ASEAN Peatland Forests Project - funded by IFAD-GEF)

FDRS system

- Undertake comparison between FDRS done by MMD based on ground stations versus FDRS by LAPAN using satellite data
- Undertake comparison by FDRS + hotspots (ongoing MMD + LAPAN + Japan)
- Capacity building – training for users
- Set target date to update software (e.g. 3-5 years)
- Increase the availability of data for prediction of fires through both automatic and manual weather stations in fire prone peatlands and remotely-sensed data sources.

Proposed actions from KL Workshop (July 2011)

(under ASEAN Peatland Forests Project - funded by IFAD-GEF)

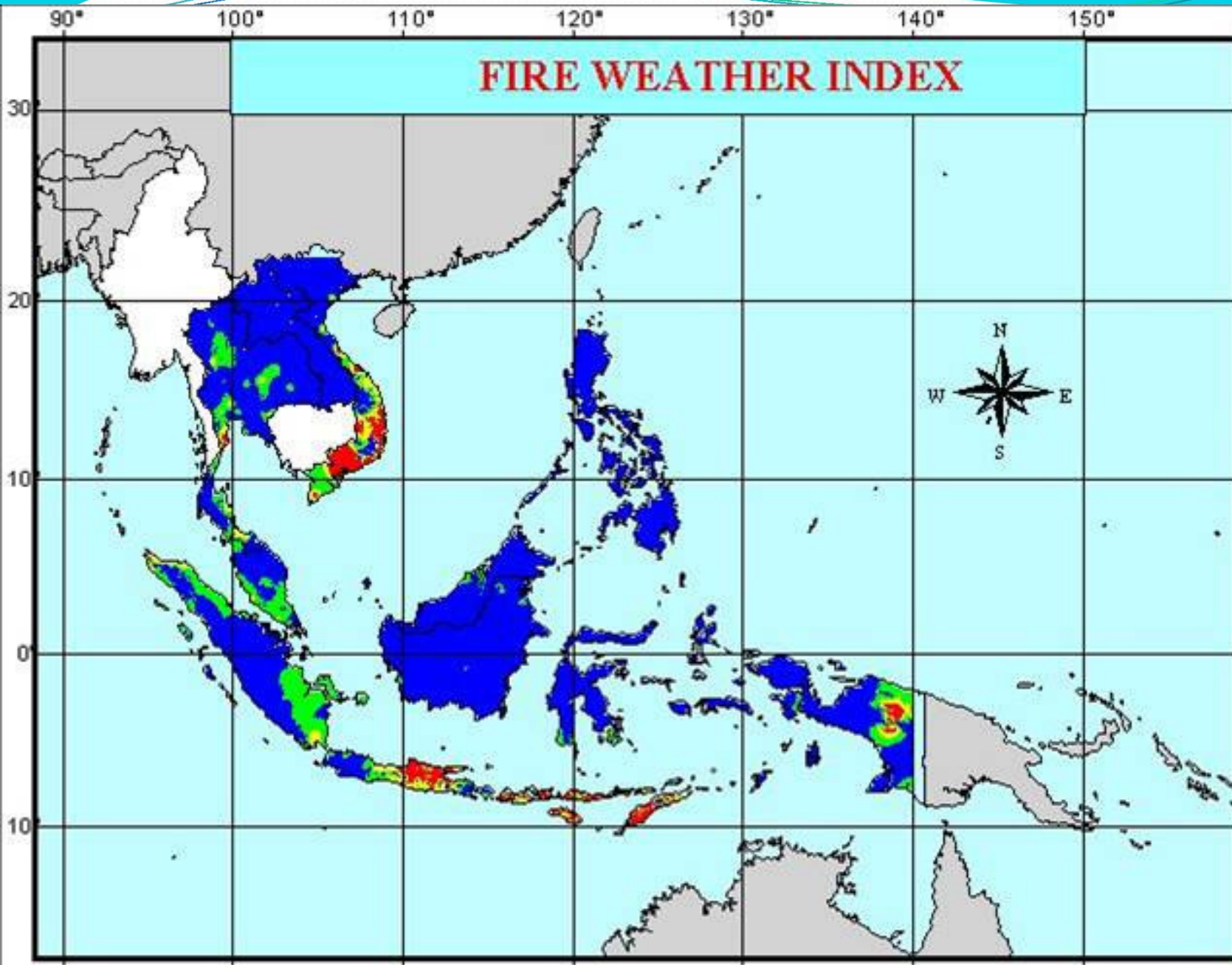
Fire prevention through FDRS

- Develop susceptibility and risk maps and fire prevention plans for all fire prone peatlands.
- Set up an effective outreach programme to disseminate fire danger alerts to fire prone peatlands/ground level through web, SMS and media.
- Establish, enhance or disseminate Standard Operating Procedures (SOPs) for peatland fire prevention to guide the work of government, private sector and communities.
- Engagement of local communities and private sector in fire prevention

Immediate Needs

- Establishment of task force to develop the system involving key agencies in the region
- Refinement of the FDRS code for peatland fire monitoring
- Map for regional peatland fire prediction and monitoring which overlay peatland distribution with hotspot and FDRS
- Examine and integrate the drainage, land use, land cover, water table and other aspect of fire susceptibility and risk into the FDRS map

FIRE WEATHER INDEX




**Malaysian
Meteorological
Department**



**South East Asia
Fire Danger Rating
System (FDRS)**

23-07-2010

- | | |
|---|--------------------|
|  | Low |
|  | Moderate |
|  | High |
|  | Extreme |
|  | Data Not Available |