

**ASEAN TECHNICAL WORKSHOP ON  
DEVELOPMENT OF THE ASEAN  
PEATLAND FIRE PREDICTION AND EARLY  
WARNING SYSTEM**

20-21 March 2012

Sunway Putra Hotel, Kuala Lumpur, Malaysia

**Group 1 Report**

# Is there a need for enhancement of existing FDRS systems?

In general the systems used in Indonesia and Malaysia/Regional level are good and in the last 2 years have been improved such as through

- expanding the sites for data collection, inclusion of overlays of peat distribution and google maps (Malaysia);
- enhancement of data generation (AWS and satellite data) and addition of short and medium term forecasting (Indonesia)

# Further enhancements identified

## **Further fine tuning and calibration of the indices**

- e.g. - Use of Duff Moisture Code vs Drought Code for drained peatlands
- Possible different threshold for drought code in Mekong region

## **Improving meteorological data availability**

- e.g. Enhancing information submitted by countries to WMO database, adding new automatic weather stations

## **Inclusion of Additional data layers**

- e.g. fire prone areas, peatlands

## **Enhancing the prediction and early warning capability**

- Short term (1-7 days) medium term (1-2 months)

## **Enhancing use of the information in the system**

- Dissemination to local users and development of SOPs for action.

# Verification and calibration of the indices

- Information in the FDRS need to be cross-checked with information on the ground situation
- May need to consider sub-region differences and consider differences in major fuel types between e.g. southern and northern ASEAN.
- Analyses can be done for frequency of hotspots in areas with different FDRS danger levels.

# Improving meteorological data availability

- Two countries in the region (Cambodia and Myanmar) are not currently submitting data to WMO database and so MMD cannot access the data to prepare FDRS maps for these countries
- Countries can enhance the data availability by adding new automatic weather stations (AWS) or enhancing level of information submitted to WMO database.
- New stations can be established near fire prone peatlands (as has been done in Malaysia) with the new station next to Raja Musa PSF.
- Satellite data is being used by Indonesia to supplement data in areas without AWS.
- Malaysia is considering use of radar to expand rainfall data availability

# Inclusion of Additional data layers

- Four specific options for additional data layers to be included in FDRS maps were identified:
  - Peatlands
  - Fire prone areas
  - Geographic features (roads, rivers, towns etc.)
  - Land use
  - Other possible data could be Fuel type and ground water level/soil moisture
- The initial priority for inclusion were Peatlands, Fire prone areas and Geographic features
- Concerns on using an overlay with landuse map is that it may cause the image to be over-crowded and also that land use classification varies between countries
- Malaysia has already started overlay of peatland map and google earth (for geographic data), Indonesia is in the process of overlaying peatland distribution & fire prone area.
- MMD can help Thailand and Brunei if basic information is provided.

# Enhancing the prediction and early warning capability

- Indonesia has proposed to incorporate Short term (1-7 days) and medium term (1-2 months) forecasting into the FDRS system.
- Malaysia is experimenting with 2-3 day forecasting.
- Constraint with forecasting is the complex models and the large amount of data and long model run time.
- For regional level this could be simplified by use of simpler models for indicative (less accurate – but maybe adequate) predictions.
- This could be refined at country or site level through local weather prediction systems

# Enhancing use of the information in the system

- It is very important to enhance the use of the information in the system and use it for fire prevention and control purposes.
- There is experience in different countries in how to engage local users and communities.
- Information and alerts are given in a way that is easily understood by the respective target audiences.
- Indonesia (Ministry of Forestry) has experience in promoting the use of the system to plantation companies and local communities.
- The system should also be publicised better e.g. through workshops, training courses and mass media



## **2 . Do we need Regional or country system or both?**

Agreed that we need both

- country systems in large countries with significant areas of peatlands or fire prone areas (such as Indonesia and Malaysia) and
- regional systems to provide guidance for other countries with less significant fire problems or less capability to establish own system.

### **3. Do we need a standard system design or it can be varied?**

- All systems are based on the Canadian FDRS system.
- It was agreed that the use of the Canadian system should be maintained as it has enabled FDRS to operate for 10 years in the region.
- For the future it is important to obtain updated or open source versions of the software to enable enhancement of some of the features.

## 4. What is role of Hotspot data in relation to FDRS?

- Hotspot data can complement FDRS information – however once a fire becomes large enough to be detected as a hotspot it will be difficult (especially for peatlands) to control.
- It is useful to overlay hotspots on Fuel type (e.g. peatlands) and Fire prone areas – to enable special alerts to be given e.g. based on number of hotspots on peat.
- MODIS satellite appears more sensitive and efficient in detecting hotspots and minimising false alarms.
- It is suggested that ASMC in future monitors MODIS in parallel with NOAA.
- Ground truthing of hotspots remains an important issue as well as feedback on results to ASMC and hotspot monitoring agencies.

## 5. What opportunities from linkage with other Networks

- Several existing networks or mechanisms were identified which could be linked with FDRS activities in SE Asia including
  - Global Fire Monitoring Centre – based in Germany
  - Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) - Fire Mapping and Monitoring Theme
- And associated regional networks
  - SE Asia Regional GOFC-GOLD Network (SEARIN),
  - SEA Regional Wildfire Science Management Network ( regional network of the GFMC)
- The benefits of such linkages could include
  - input into the further development and refinement of the FDRS systems and access to data sets on land cover etc. for overlays.
  - enhance learning and exchange on outreach and development of early warning systems based on FDRS.

Thank you