Concept Plan
For a
GIS-based Fire Monitoring & Prediction System

ASEAN Technical Workshop On Development Of The ASEAN Peatland Fire Prediction & Early Warning System

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Scope

1 •Introduction

2 •Concepts

3 •Implementation

4 •Conclusion

Introduction

- Importance of peatland management

  - ASMC recognises that sustainable management of peatlands is important to deal with the threat of peatland fires and transboundary haze pollution

- ASEAN Peatland Forests Project (APFP)

  - ASMC supports the APFP

  - Offered to provide in kind technical expertise in the area of interpreting satellite imageries and monitoring peatland/hotspots.

Introduction

- GIS and geospatial data growing in importance

  - Allow users to examine new types of information in new ways

- Leverage on GIS technology

 - Part of the effort to strengthen the early warning & monitoring capabilities of ASMC
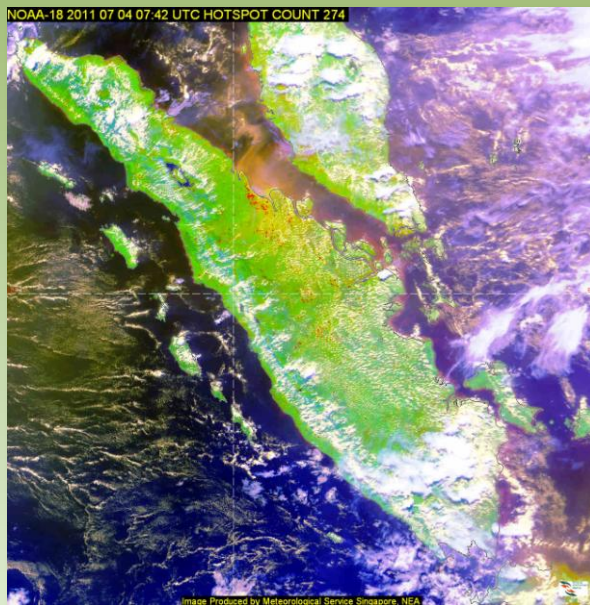
Concept

- Rationale to adopt a GIS-based approach to enhance our Fire Monitoring & Prediction System

    - Consolidate all useful data into a central repository

    - Analysis data are geospatial in nature

    - GIS "layering" feature allow for more insight into the situational analysis
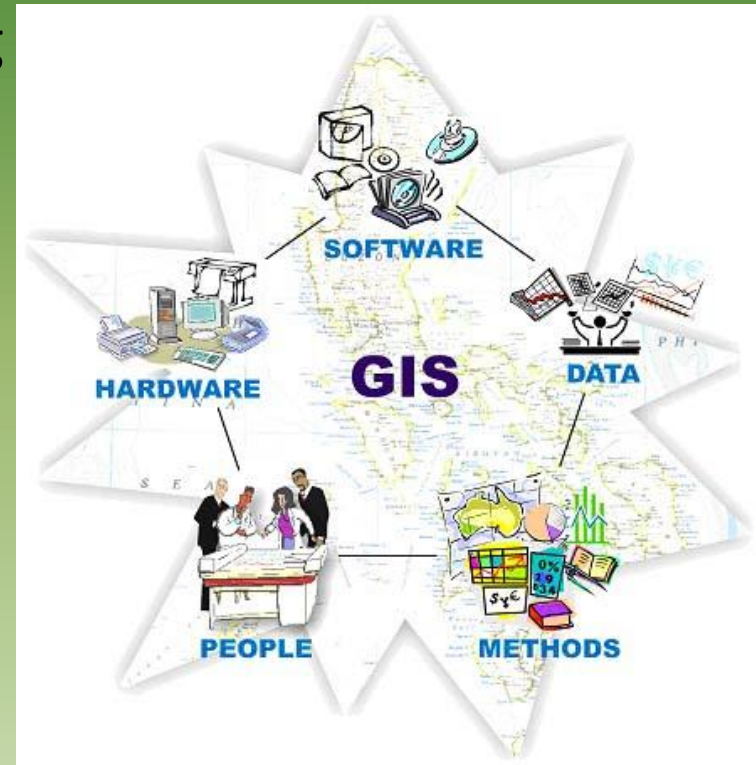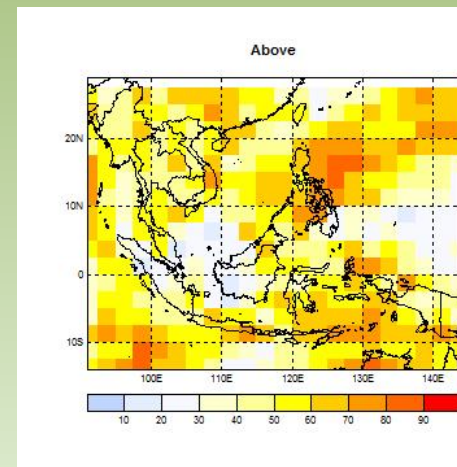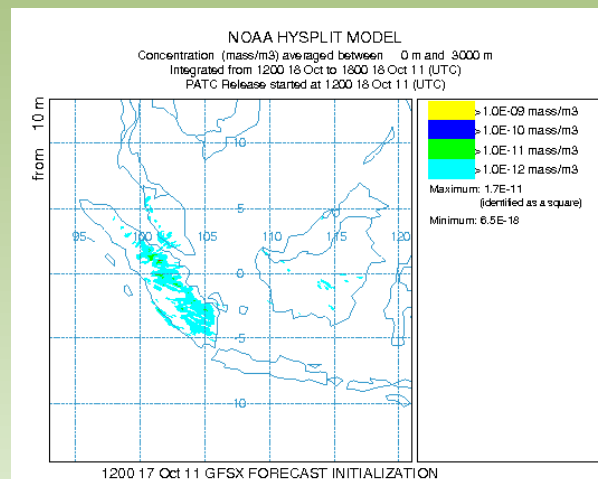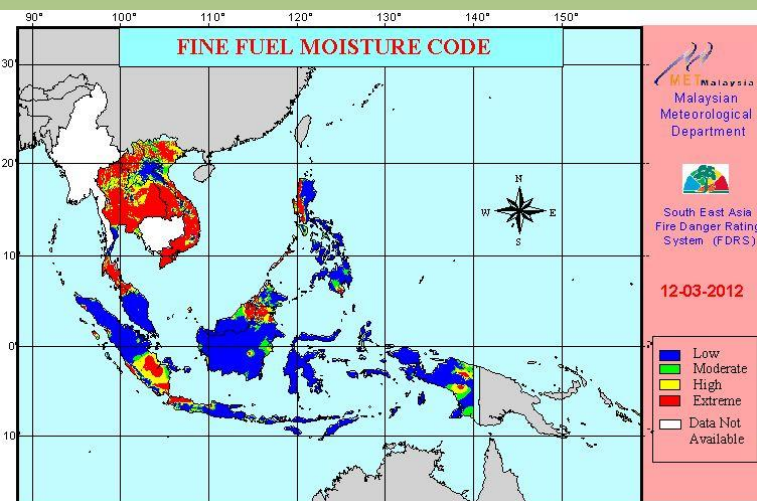
Concept

- Potential usage of a GIS based system

    - Observation data in GIS layers can be drawn into the framework to facilitate analysis

        - Example: overlaying of satellite imagery depicting smoke haze with air quality data on the ground

   - Able to infer the extent of the smoke haze
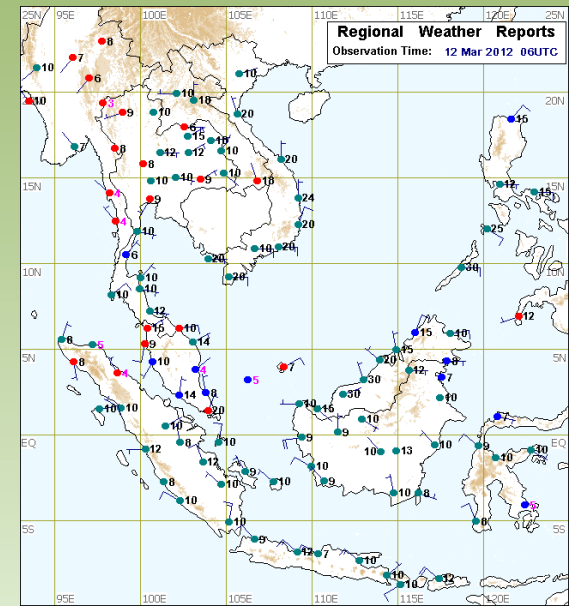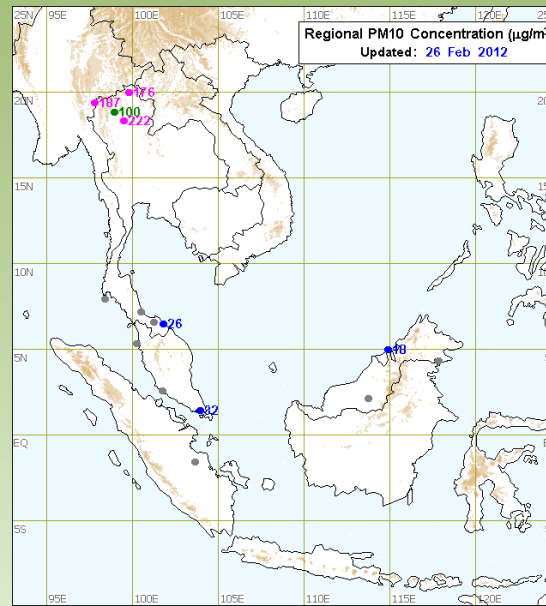
Concept

- Potential usage of a GIS based system

  - Forecast products can be overlaid to create a prognosis of the situation

    o Example: dispersion output indicate likely path the haze will take, other forecasts may indicate general dryness/wetness over the location

   → likely escalation/subduing of the situation

Concept

- Potential usage of a GIS based system

    - Statistical data can also be analysed coherently with current data to identify historical trends

        o Example: Are the hotspot counts observing a similar trend over the same location over the years?

Hotspot counts for Sumatra, Borneo and Peninsular Malaysia
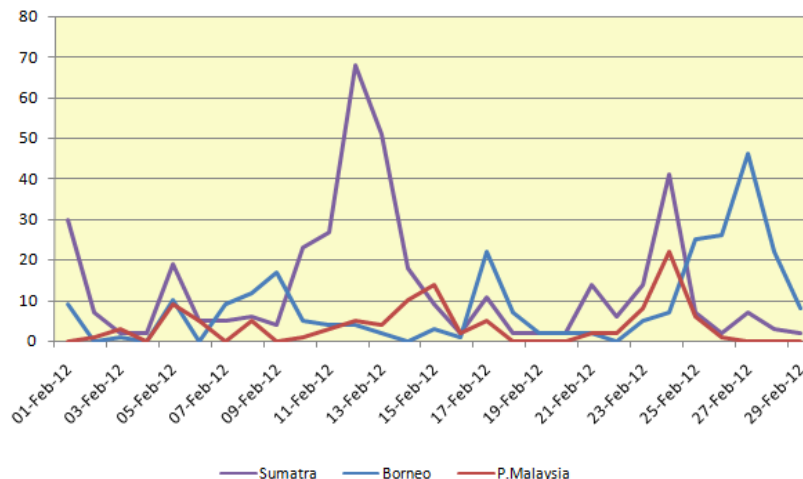
Cumulative Hotspot Counts for Thailand
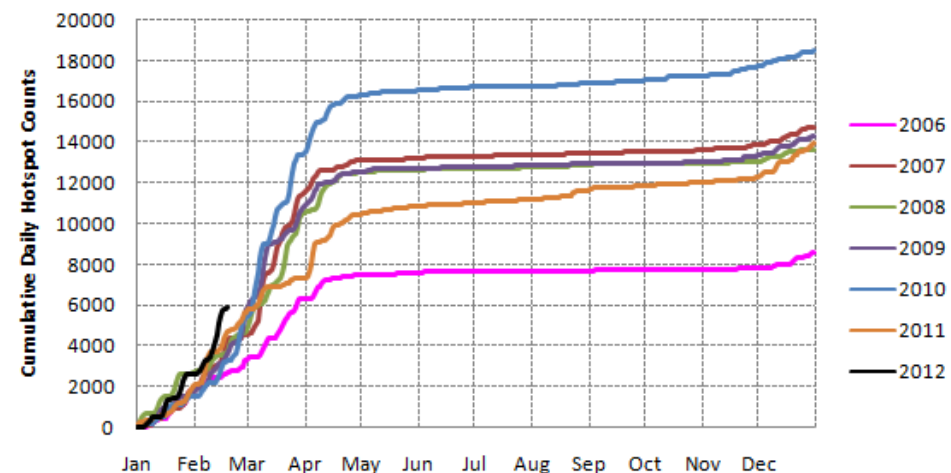
Implementation

- To move forward, need to take stock of
  - What is available and what is lacking
    - ASMC has information such as hotspot data, satellite imagery
    - Need to translate information to format suitable for GIS usage
      - Example: SHP files, GEOTIFF

- Require the following specifically for peatland fire analysis
  - Peatland distribution and depth database
    - Require geo-referenced peatland data of ASEAN region
  - Water table information
  - Land use database

Implementation

- Other considerations for the system

  o Ability to export suitable layers to the eventual APFP system

  o Hardware, software, capacity building etc

Conclusion

- ASMC is concurrently looking at leveraging GIS technologies for fire and haze monitoring

- Welcome any feedback/suggestions to the system

- Contribute and cooperate to make the APFP a success

Thank you