THE ASEAN FIRE ALERT TOOL,
A SMARTPHONE APPLICATION FOR HOTSPOT AND FIRE RISK ALERTS

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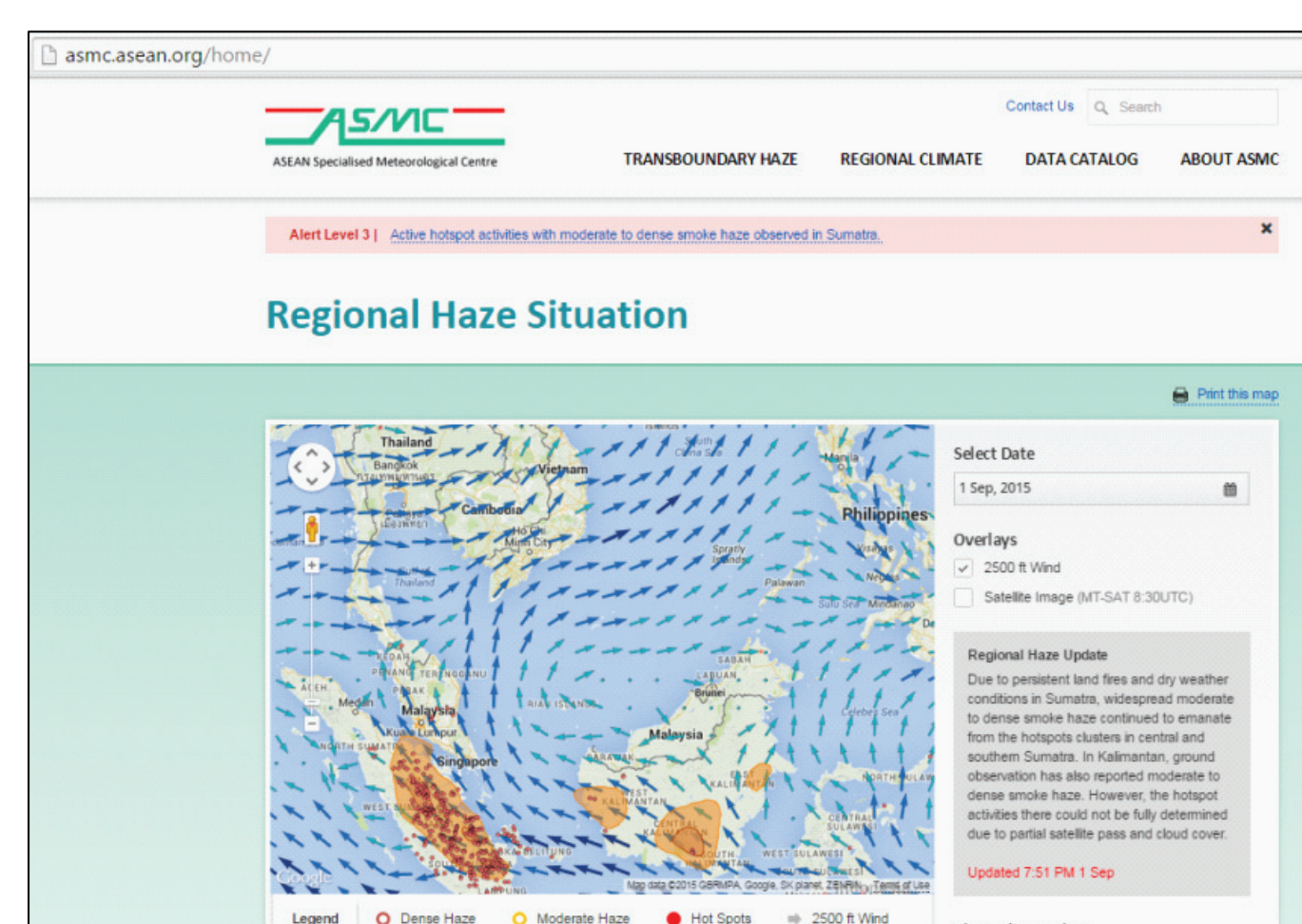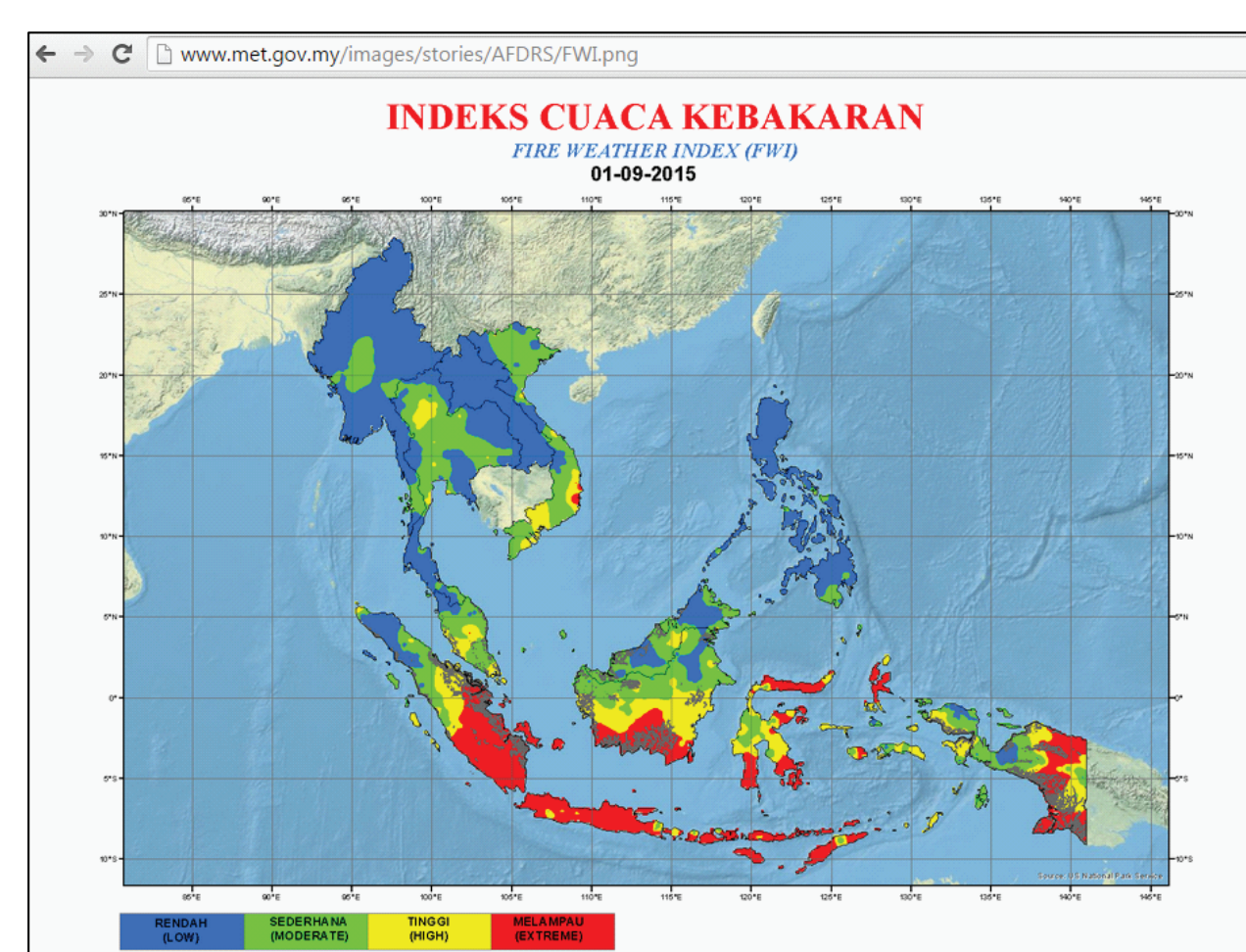
INTRODUCTION:

Burning peatlands is a serious issue in Southeast Asia, especially when it causes prolonged haze that envelopes the region, causing much damage to public health and economies. One of the challenges is to know the exact location of the hotspots. Fires may occur in remote places with very few inhabitants and poor communication coverage. Land owners and managers cannot be everywhere at the same time. Due to the extent of land that they manage, it may take a long time before the land manager knows that his land is burning. Fires can be prevented by increased patrols and management action in high risk period. FDRS uses near real time data from more than 500 locations in ASEAN to predict fire risk.

However, satellites are able to detect hotspots which can be shown on a map. Using satellite data collated by the ASEAN Specialised Meteorological Centre (ASMC) and Fire Danger Rating System (FDRS) maps from Malaysian Meteorological Department, combined with online databases and mapping technologies, the land managers can be notified of hotspot locations and fire danger risks.

A smartphone application – the ASEAN Fire Alert Tool was developed to send notifications to alert the land managers when a hotspot occurs on their land and inform the land managers fire risk level of the land. They are then able to verify ground conditions and take necessary action.

The application allows users to determine their land boundaries and select Registration Points for monitoring changes of FDRS and Fire Weather Index (FWI).
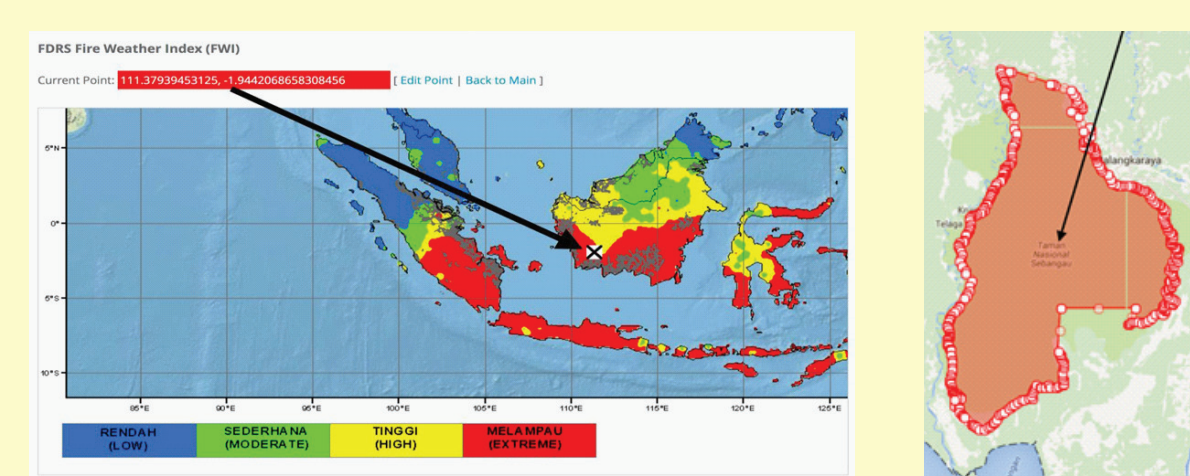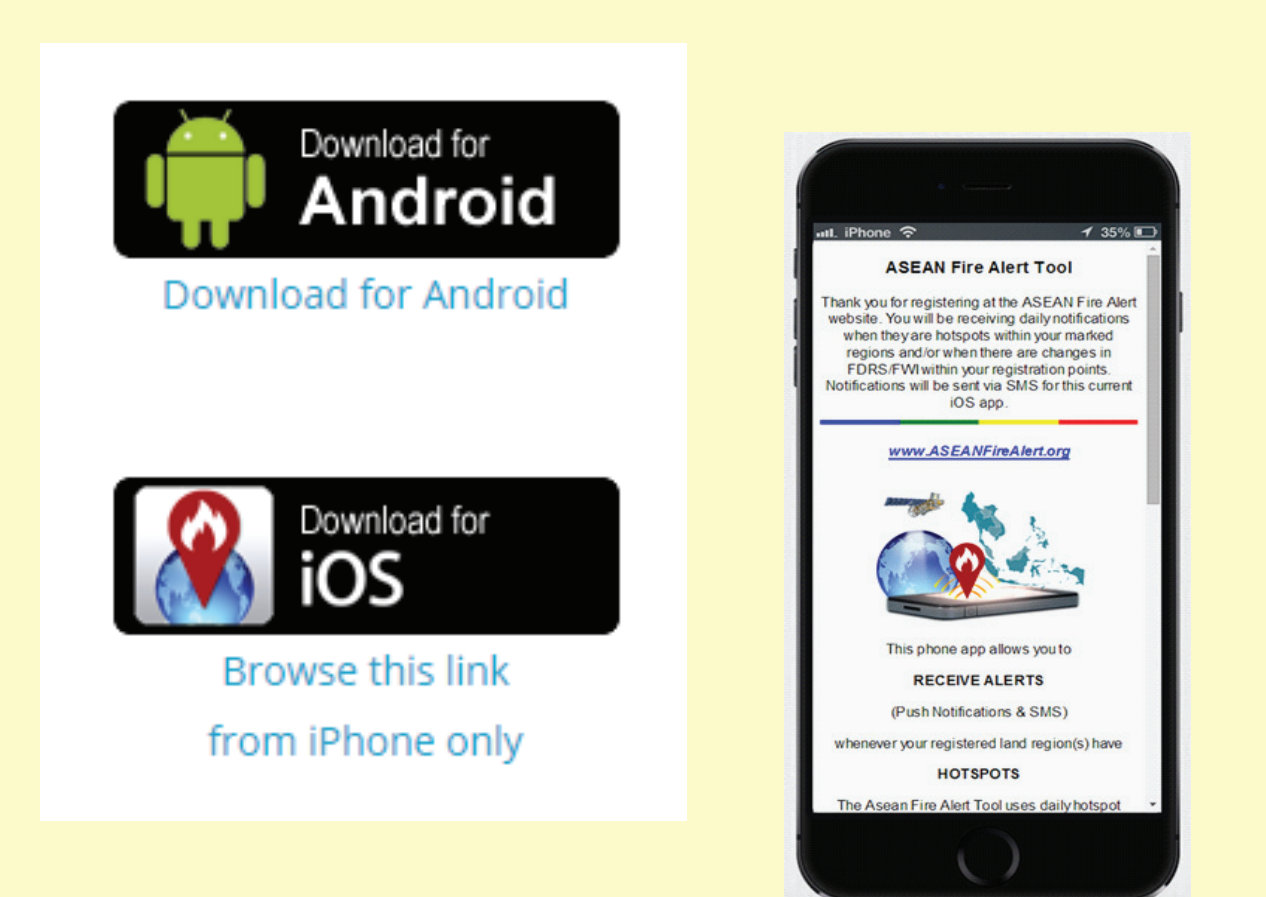

METHODS:

STEP 1: SIGN UP
Go to www.aseanfirealert.org and sign up. You will be given a Verification Code. Write this down as it will be use for your phone app later.

Scan and register
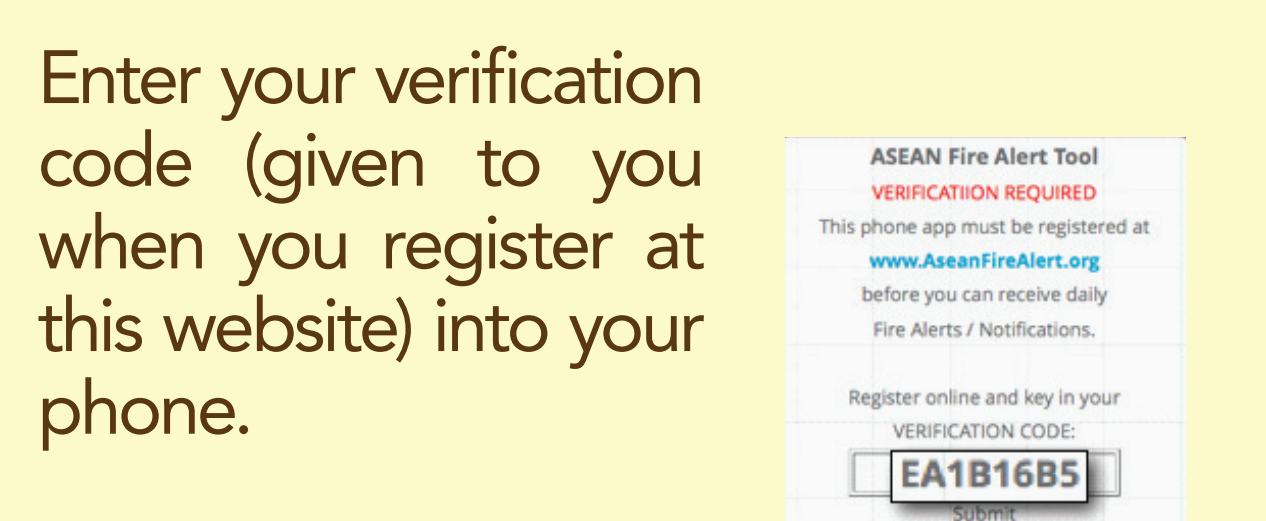
Plot your land parcels and nominate FWI points you wish to monitor.

STEP 2: INSTALL APP

STEP 3: VERIFY APP
Enter your verification code (given to you when you register at this website) into your phone.
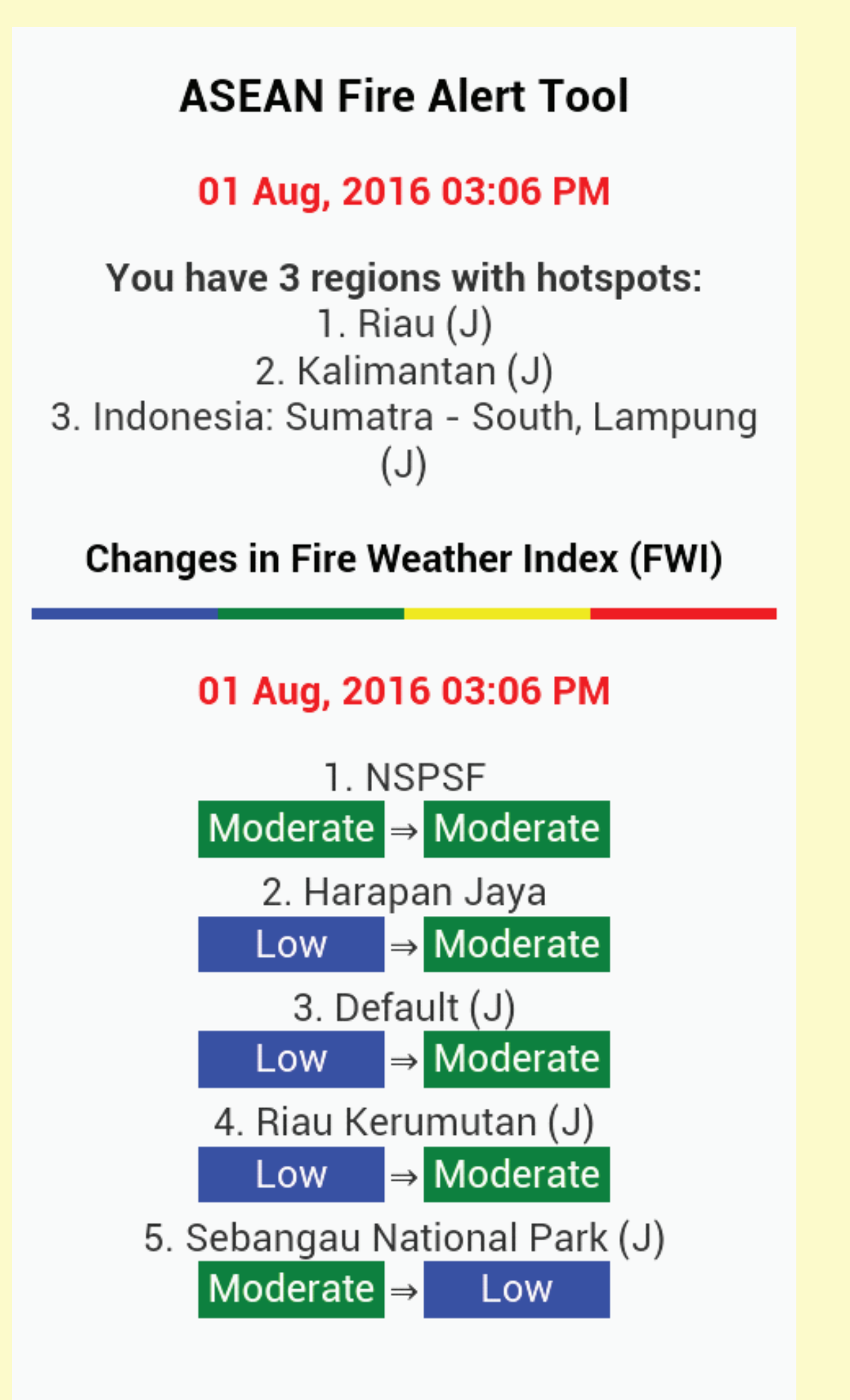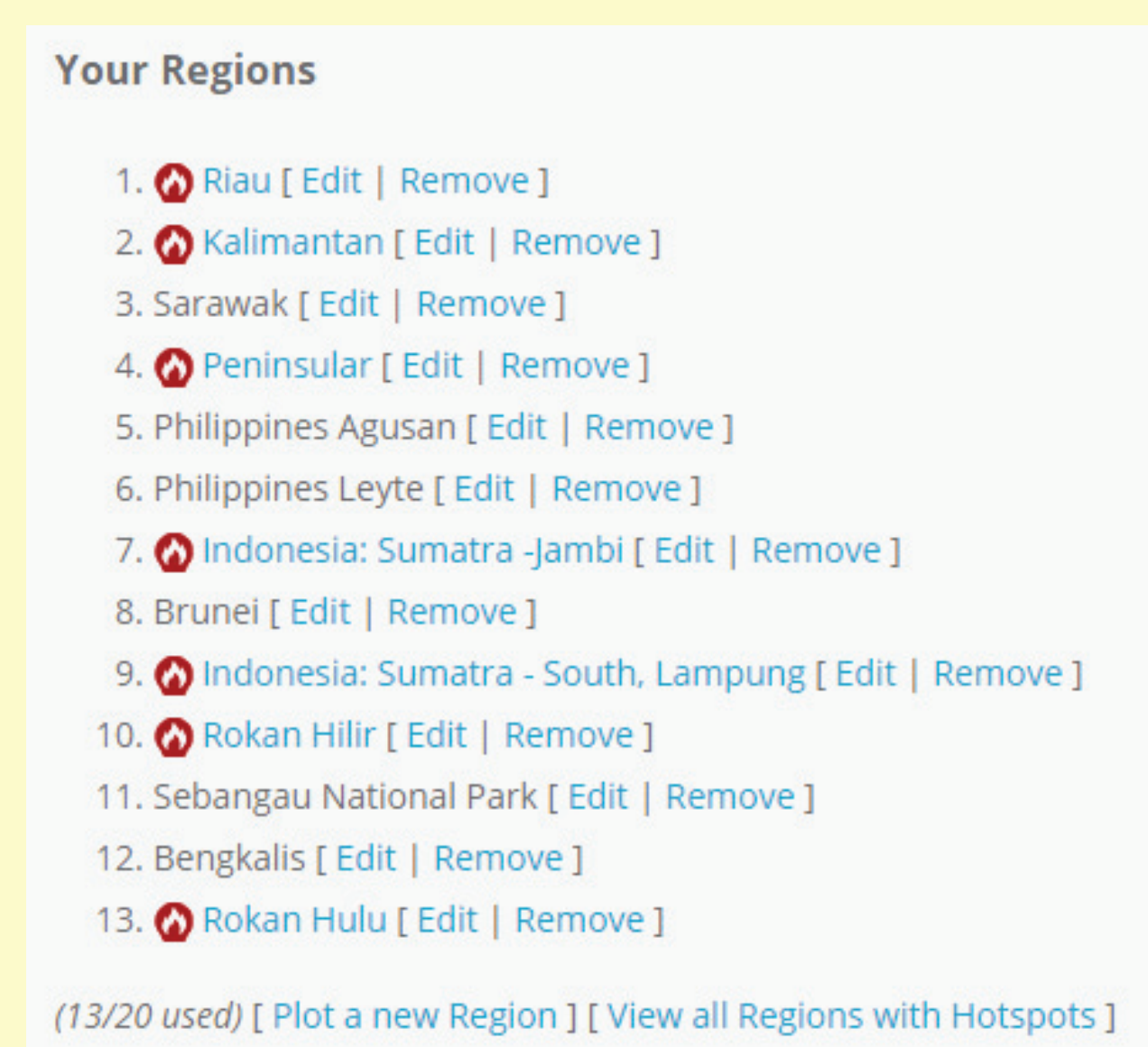

STEP 4: ALERT MESSAGE
Once verified, you will be able to receive Push Notifications to your phone from this website. Each day, whenever there are hotspots within your defined land parcels / regions, or changes in FDRS / FWI on your registered monitoring points, you will receive a Push Notification (alert message) on your phone.

Your Regions

1. Riau [Edit | Remove]
2. Kalimantan [Edit | Remove]
3. Sarawak [Edit | Remove]
4. Peninsular [Edit | Remove]
5. Philippines Agusan [Edit | Remove]
6. Philippines Leyte [Edit | Remove]
7. Indonesia: Sumatra -Jambi [Edit | Remove]
8. Brunei [Edit | Remove]
9. Indonesia: Sumatra - South, Lampung [Edit | Remove]
10. Rokan Hilir [Edit | Remove]
11. Sebangau National Park [Edit | Remove]
12. Bengkalis [Edit | Remove]
13. Rokan Hulu [Edit | Remove]

(13/20 used) [Plot a new Region | View all Regions with Hotspots]

ASEAN Fire Alert Tool

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You have 3 regions with hotspots:
1. Riau (J)
2. Kalimantan (J)
3. Indonesia: Sumatra - South, Lampung

Changes in Fire Weather Index (FWI)

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1. NSPSF
Moderate ⇒ Moderate
2. Harapan Jaya
Low ⇒ Moderate
3. Default (J)
Low ⇒ Moderate
4. Riau Kerumutan (J)
Low ⇒ Moderate
5. Sebangau National Park (J)
Moderate ⇒ Low

SECONDARY USERS:
The land managers and the owners could sign up the website as a secondary user. The secondary user can nominate (via handphone number/s) one or more other primary users to receive joint alerts.

DISCUSSION:
Preliminary surveys have come back with positive feedback such as the following:

- Early warning of wildland fire danger on a global basis provide international agencies, governments and local communities with an opportunity to mitigate fire damage by assessing threat likelihood and enabling implementation of appropriate fire prevention, detection, preparedness, and fire response plans before wildfire problems begin.

- A robust operational early warning framework with an applied system that will provide the foundation with which to build resource-sharing agreements between nations during times of extreme fire danger.

- Development of local expertise and capacity building in wildland fire management for system sustainability through technology transfer and training.

SUMMARY:
It is highly recommended that land managers should download and use this application to manage fires on their lands. Several key tools such as hotspot and FDRS maps have been developed over the years to provide fire managers and land owners with useful information on hotspots and fire danger rating across the region. The smartphone application simply takes those information sources and puts it in a useful alert system.

REFERENCES:

Lee J.S.H., Jaafar, Z., Tan, A.K.J., Carrasco, L.R., Ewing, J.J., Bickford, D.P., Webb, E.L. and Koh, L.P. 2015. *Toward clearer skies: Challenges in regulating transboundary haze in Southeast Asia. Environmental Science and Policy* (www.elsevier.com/locate/envsci)

Malaysian Meteorological Department, 2013. *Refinement on Fire Danger Rating System (FDRS) to Reduce Peat Fires in Malaysia.* Presentation and ASEAN Technical Workshop on Development of the ASEAN Peatland Fire Prediction and Early Warning System

Malaysian Meteorological Department, 2015. *Standard Operating Procedure Operational Wave Numerical Forecast Model JMA MRI-III-MMD (NAVGEM)*

Tacconi, L., Jotzo, F. and Grafton R.Q. 2007. *Local causes, regional co-operation and global financing for environmental problems: the case of Southeast Asian Haze Pollution.* Int Environ Agreements. Springer Science+Business Media B.V. 2007

WEBSITES:
www.aseanfirealert.org
asmc.asean.org/asmc-about
www.asb.cgiar.org/Publications%202015/PBs/ASB_PB51.pdf
www.bmkg.go.id
www.met.gov.my
www.met.gov.my/web/metmalaysia/publications/meteorologicalnewsletter/document/155211/apc2015.pdf

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