FIRE HOTSPOT VALIDATION OVER PRONE AREAS OF INDONESIA IN 2012: AN ISSUE OF PEAT FIRES

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Abstract: This study was conducted as a series of validation and review activities performed by Indonesian National Institute of Aeronautics and Space (LAPAN) to fire hotspots within forest/land fire management in Indonesia. Fire hotspot that has long been used as an indicator of fire in the region has a great interest level when it is also used in making decision for national and regional policy. In fact, advances in remote sensing technologies is rapidly increasing that continuously bring new data or sensor which is diverse and requiring an understanding of the validity of each data source. Thus, a better understanding of the advantages and the weakness of each data source is essential. In this activity has acquired an idea of the accuracy of the hotspot obtained from the ASEAN Specialized Meteorological Centre (ASMC) derived from NOAA-AVHRR satellites. The fire fighting locations of the Ministry of Forestry from January to September 2012 were used as a reference to examine the validation hotspot. Sumatra, Kalimantan and Sulawesi were chosen as study site which is prone to fires in Indonesia. Of 453 points location acquired accuracy value of 42.8%, with 8.8% commission errors and omission error is quite large at 52.4%. Most of the fires occurred in small areas that are less than 10 ha. There is an interesting finding on the peat area where fires occur. Characteristics of peat which has a high organic matter as a fine fuel particularly during dry season, could give an impact on the length duration of fire following with thick haze. Most of the hotspots were not detected during fire occurrence in this area (53.4% of total fires in peat or approximately 21% of the total incidence of fire). It can be caused the higher value of omission error. Our preliminary results suggest a specific study for peat area, including the determination of the threshold temperature at this location.

Keyword: Hotspot, Fire, ASMC, NOAA-AVHRR, Remote Sensing