

Pattern and Trend of Open Burning Occurrence in Greater Mekong Sub-Region Countries: Case Study Thailand, Laos, and Myanmar

Authors : Nion Sirimongkonlertkun, Vivard Phonekeo

Abstract : This research focused on open burning occurrence in Greater Mekong Sub-Region countries that influences the increase of PM10 concentrations. Thailand, Myanmar, and Laos were chosen as a case study, and 2009, 2010, and 2012 were chosen as the year for case study. Hotspot detected by MODIS (Moderate Resolution Imaging Spectro radiometer) sensor on board of Terra/Aqua satellites and provided by Rapid Response System was used to represent open burning location in the region. Hotspot was selected through fire confidence with confidence levels of 80-100%. The spatial analysis by GIS was used as the main tool for analyzing and defining the location of open burning at study sites as hotspot with the pixel size of 1 km by 1 km. The total hotspot counts in the study period of four years (2007, 2009, 2010, and January-April 2012) at the regional level, including Thailand, Laos, and Myanmar were 255,177 hotspots or a very high yearly average of 63,795 hotspots. The highest amount was seen in Myanmar (50%), followed by Laos (36%), and Thailand (14%). For Thailand, the majority of burning or 64% occurred in the northern region with the density of 5 hotspots per 100 km². According to statistics of the 4 years, the increasing rate of hotspot from January to February was 10 times and from February to March was 4 times. After that period, the hotspot started to decline by 2 times from March to April. Therefore, in order to develop a policy which aims to lessen open burning conduction, the government should seriously focus on this problem during the peak period—February to March in every year when hotspot and open burning area is significantly increased.

Keywords : PM10, hotspot, greater mekong sub-region, open burning

Conference Title : ICEES 2015 : International Conference on Environmental and Earth Sciences

Conference Location : Venice, Italy

Conference Dates : April 13-14, 2015