ABSTRACT

The creation of Chiang Rai Province's open burning risk map aims to prepare open burning database from various spatial data in order to analyze open burning situation. In creating procedure, burning spatial data such as Fire Control Report and Hot spot Data were collected from Forest Fire Control Division, Regional Protected Area 15 and MODIS System installed on the satellite "Aqua" and "Terra" since the year 2007 to April 30, 2012 respectively.

The study results consist of three parts. The first part is a 10–layer database of geographic information about burned areas in Chiang Rai in Vector and Raster formats. The second is about open burning situation. This part shows that open burning occurred in 37 percent of Chiang Rai's total area, generally farmlands in national forest. These farmlands are mostly in the western part of the province with the altitude between 401–600 m and the slope of 12–35%. The distances from these areas to village and main road are not over 3 km and 2 km respectively. It was also found that open burning usually occurred in December to April of the following year with the peak in March. In addition, the correlation between burned area and PM_{10} level was significantly in accordance. The increased number of hotspot would increase the concentration of PM_{10} levels. Furthermore, open burning in nearby provinces as well as neighboring countries was obviously noticed in affecting Chiang Rai. Lastly, it can be concluded that 32.05% of Chiang Rai's total area was considered at high risk of open burning.