INITIATIVE ON
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COLUMBIA UNIVERSITY

Fire Risk Information System for Managing Land and Forest Fire in Indonesia

Rizaldi Boer
Muhammad Ardiansyah
Akhmad Faqih
M. Siddik Thoha
Syamsoe Dwi Jadmiko
Shiv Someshwar
Johan Kief[7]

Land and forest fires are amongst the most frequent climate-related disasters in Indonesia. The magnitude and intensity of fires increase quite significantly in prolonged dry seasons. The fires cause serious impacts on livelihoods and habitat loss, along with significant carbon emissions. Local and regional economic losses due to the fires are enormous, especially during strong El Niño years. With a better understanding on the socio-economic and biophysical drivers of fires, we have developed an online Fire Risk System (FRS) that is capable of providing early warming information on level of fire risk ahead in the season. The FRS uses fire vulnerability information and 1-6 month lead-time monthly rainfall forecast to provide fire risk one to six months in advance. The rainfall forecast has spatial granularity of 1 x 1 Kilometers that are downscaled from rainfall forecasts of multiple Global Climate Models. The FRS provides information on areas that are subject to varying degrees of vulnerability (that can help to inform priority areas to be targeted for fire prevention activities) and the likelihood of fire activity up to grid level. The fire risk mapping capability of the FRS is on a monthly time scale, based on a dynamic risk matrix utilizing both vulnerability to fire information and the rainfall forecasts. With this information, FRS is helpful in planning and implementation of fire preventive actions in the short-term and also critical to development planning in the medium and long terms at district and provincial levels in order to reduce the risk of devastating land and forest fires in Indonesia.