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Climate forecast, early warning and response to peatland fires in Central Kalimantan, Indonesia.

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Peatland fires are an increasing problem in Southeast Asia, where 60% of tropical peatlands are found. In Indonesia's Central Kalimantan province, millions of hectares of forest have been logged, and peat swamps drained and converted for agriculture. Drained peatlands are at much greater risk of fire – especially when rainfall is below normal.

IRI is collaborating with CARE Indonesia as part of a larger effort funded by the government of the Netherlands to address peatland degradation. Working with researchers at Bogor Agriculture University in Indonesia, IRI has investigated links between climate anomalies, biophysical indicators, and fire hotspots. Project research has uncovered a close correlation between satellite rainfall data and fire hotspot activity. Rainfall anomalies during the dry season from June-October are particularly critical in determining fire activity. Vegetation greenness indices, on the other hand, do not appear to demonstrate a relationship. IRI has developed an online tool to enable stakeholders to view satellite rainfall indices over Central Kalimantan, which is in turn linked to fire activity. IRI also conducted research, in partnership with the Indonesian meteorological service (BMG), to better understand seasonal predictability. Rainfall forecasting products ranging from 3 to 6 months in advance are developed to forecast fire activity in Central Kalimantan.

A seasonal early warning has been created which enables decision-makers to take earlier action to help reduce impacts of potential fires. In order to assess possible types of early action, the current institutional and policy context for fire management in Central Kalimantan is being assessed. While weather-scale warning systems trigger immediate community-based fire-fighting measures, seasonal-scale early responses are currently absent. A seasonal fire early warning system, embedded within a structure of insurance and economic incentives to assist local communities in avoiding fires, is emerging as key to reduce peatland fire incidence.