

# CLIMATE RISK MANAGEMENT IN INDONESIA AND THE PHILIPPINES

Countries in Southeast Asia experience a highly variable climate, which strongly affects livelihoods. Hydro-climatic hazards can severely impact agricultural production, food security, water availability, health and other areas critical to livelihoods and development. At the same time, there is growing concern that humaninduced climate change may increase risks to communities and societies. Pressure is mounting on decision makers to manage water and other resources proactively to ensure food security, sustain rural livelihoods, and meet growing urban needs.

Through its Asia and Pacific Regional Program, IRI is collaborating with national and local government agencies, universities, research institutes and humanitarian organizations in South and Southeast Asia to develop practical methods and tools for managing climate risks. IRI undertakes these efforts using a demonstration approach with a strong emphasis on building national and local capacities. Since 2003, IRI has been working in Indonesia and the Philippines to demonstrate climate risk management with regard to water resources management, agricultural planning, food security and fire management.



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# Agricultural planning: Indramayu, Indonesia

A critical rice-growing district in densely populated West Java, Indramayu accounts for 27% of Java's paddy production every year. Farmers often experience droughts and floods which cause significant losses in paddy production. IRI is working with the Office of the Bupati (elected district head) to understand wateruse decision-making processes. It is also collaborating with Indonesia's Ministry of Agriculture, its meteorological service (BMG), and Bogor Agriculture University to develop and test climate information for agricultural planning.

# Planning for food security: Nusa Tenggara Timur, Indonesia

The province of Nusa Tenggara Timur is among the poorest in Indonesia, with over 35% of the population living below the national poverty line. Food insecurity is a persistent problem, but is particularly severe in low rainfall years, linked with the El Niño cycle. IRI is working with key government agencies and CARE Indonesia to develop strategies for using climate information to enable earlier action to help prevent food-security crises.





# **IRI IN INDONESIA AND THE PHILIPPINES**





Central Kalimantan, Indonesia

# Early warning and response to peatland fires: Central Kalimantan, Indonesia

Fires in Central Kalimantan's peatlands have become an increasing problem in the region. In 1997-98, fires resulted in major regional haze and smoke problems, causing thousands of hospitalizations, \$5-\$10 billion in economic losses and, according to research published in *Nature* (2002), an estimated 13-40% of annual global carbon emissions from fossil fuels. As part of the Dutch-government funded Central Kalimantan Peatlands Project, IRI is collaborating with CARE Indonesia and Bogor Agriculture University to investigate links between climate indicators and fire hotspots. IRI is developing a tool to provide early information about the risk of fires in the upcoming season, and assessing opportunities to use this early warning, in combination with appropriate policy actions, to help reduce fire impacts.

### Managing competing water uses: Angat Reservoir, Philippines

Angat is a multi-purpose reservoir that provides 97% of water supply for metro Manila, irrigates about 30,000 hectares of rice, supplies hydropower to the Luzon grid and helps control floods. In partnership with the National Water Resources Board, the meteorological service (PAGASA) and key stakeholders, IRI has developed a reservoir model that uses seasonal climate forecasts to enable early warning for high and low-flow periods. Models for water delivery insurance are also being explored.



Map of IRI's project locations in Southeast Asia

### Urban impacts of a changing climate: Metro Manila, Philippines

Metro Manila, like many urban areas in Southeast Asia, is experiencing rapid growth, which is placing increased demands on resources such as water, food and electricity. IRI is collaborating with urban stakeholders to map changes in vulnerability to climate variability and near term climate change. In partnership with researchers from the University of the Philippines Los Baños, IRI held a workshop with key urban leaders to identify priorities for addressing climate risks in metro Manila.

### ABOUT THE IRI

The IRI works on the development and implementation of strategies to manage climate related risks and opportunities. Building on a multidisciplinary core of expertise, IRI partners with research institutions and local stakeholders to best understand needs, risks and possibilities. The IRI supports sustainable development by bringing the best science to bear on managing climate risks in sectors such as agriculture, food security, water resources, and health. By providing practical advancements that enable better management of climate related risks and opportunities in the present, we are creating solutions that will increase adaptability to long term climate change. IRI is a member of the Earth Institute at Columbia University.

Photos: E. Conrad/IRI; S. Someshwar/IRI