



# Research Directions

Office of Research Services

## ***Predicting Climate Change Risks***

**Associate Professor Samsul Huda and colleagues, Robert Spooner-Hart and Christopher Derry from the Centre for Plant and Food Science and School of Natural Sciences, are exploring strategies to ensure continued food production through the management of crops that are at increased risk of disease due to climate change, with funding from Japan-based Asia Pacific Network for Global Change Research.**



'Climate change and global warming are current issues occupying the interests of communities, researchers and governments world-wide' says Associate Professor Huda. 'Farmers in the Asia-Pacific are particularly affected by climate-sensitive diseases in crops such as peanuts, mustard and canola, and risk substantial production and financial loss if they misjudge the effect of different weather conditions. This can result in precautionary over application of chemical disease control methods, or failure to recognise conditions that favour epidemics early enough to ensure effective treatment or prevention. This project aims to develop risk management strategies for the Asia-Pacific region for selected climate-sensitive diseases, in order to allow growers to predict disease incidence more accurately and make disease control decisions more effective.'

Working closely with food producers and scientists in Australia, Bangladesh, Cambodia, India and USA, and building on existing information, the research team will implement and test a predictive model of climate and disease behaviour. The model, based on a combination of medium-range (3-10 days) weather forecasting and historical studies of seasonal climate and crop disease trends, will be tested by applying the model's predictions to current food production areas, and communicating the predicted risks to local growers. Local producers can then use this information to take the most appropriate action to protect their crops. The impact the use of the model has on production and yield will then be measured.

This project combines international climate modelling expertise with local grower's knowledge, resulting in a region-specific crop disease management strategy that will improve economic and environmental outcomes for farmers and communities in the Asia-Pacific region. There will also be population health and food safety benefits due to more responsible pesticide usage as well as more sustainable agricultural production. In the longer term, such predictive risk management models may be extended to other regions and other fruit and vegetable crops in Australia and world-wide.

**Project Title:** Climate and Crop Disease Risk Management: An International Initiative in the Asia-Pacific Region

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