

Frost monitoring and forecasting using MODIS Land Surface Temperature data and a Numerical Weather Prediction model forecasts for Eastern Africa

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Frost is a major challenge across Eastern Africa, severely impacting agricultural farms. Frost damages have wide ranging economic implications on tea and coffee farms, which represent a major economic sector. Early monitoring and forecasting will enable farmers to take preventive actions to minimize the losses. Although clearly important, timely information on when to protect crops from freezing is relatively limited. MODIS Land Surface Temperature (LST) data, derived from NASA's Terra and Aqua satellites, and 72-hr weather forecasts from the Kenya Meteorological Service's operational Weather Research Forecast model are enabling the Regional Center for Mapping of Resources for Development (RCMRD) and the Tea Research Foundation of Kenya to provide timely information to farmers in the region. This presentation will highlight an ongoing collaboration among the Kenya Meteorological Service, RCMRD, and the Tea Research Foundation of Kenya to identify frost events and provide farmers with potential frost forecasts in Eastern Africa.