First Advance Estimate of 2016 Paddy Production in Nepal using the CCAFS Regional Agricultural Forecasting Toolbox (CRAFT)

28 October 2016

The first advance estimate of 2016 paddy production was obtained on 7 October using CRAFT, the CCAFS Regional Agricultural Forecasting Toolbox (see Methods on page 2). According to CRAFT, the total paddy production in 2016 is forecasted to be 4,738,913 mt, a 10 percent increase compared to the production level of 4,299,078 mt in 2015. The forecast was made with a prediction uncertainty of ±7.5 percent. Furthermore, the forecasted figure is a 3.8 percent increase compared to the average level of paddy production of the last five years. See **Figure 1** for the Ministry of Agricultural Development's statistics on paddy planted area (2011-2016), paddy production (2011-2015) and the latest CRAFT paddy production forecast for 2016.

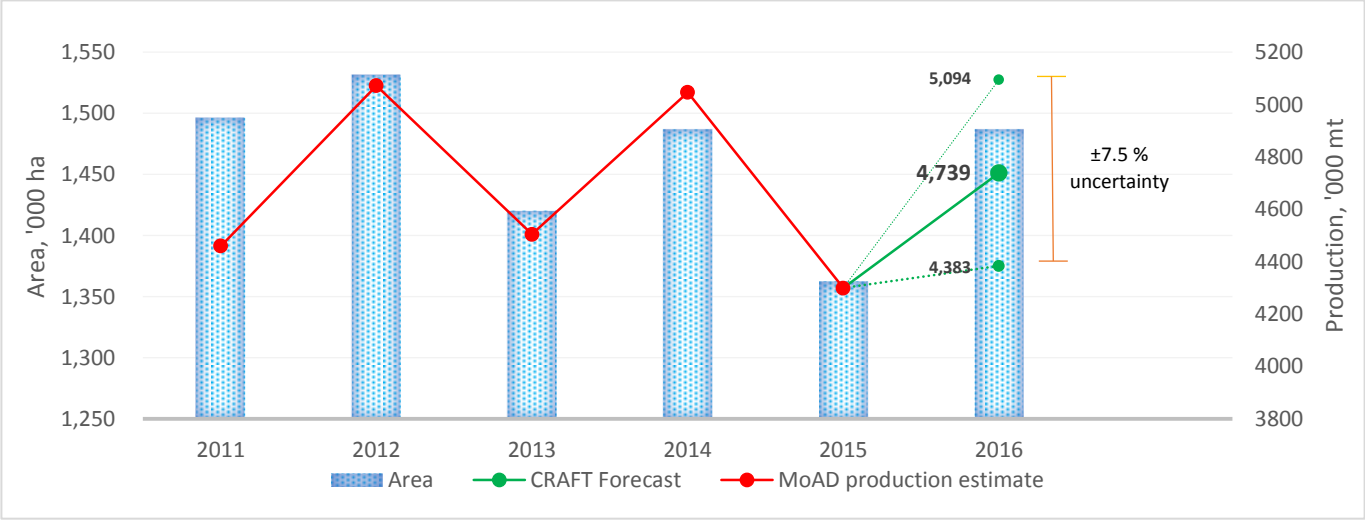

Figure 1: Paddy planted area, paddy production and CRAFT paddy production forecast, 2011-2016 (Source: MoAD; CRAFT)

The increase in production can be attributed to timely and adequate monsoon rainfall during the growing season, with total rainfall during the growing period nearing the 30-year average. The Government of Nepal's Department of Hydrology and Meteorology reported that the average rainfall in Nepal was 'normal to below normal' in June and July, 'below normal' in August, and 'above normal' in September. In addition, the increased supply and availability of inputs (following the end of disruptions to cross-border trade with India in early 2016) and the gradual recovery and resumption of livelihoods after the 2015 earthquake have been crucial factors behind the increase in the paddy planted area and the increase in paddy production.

For this advance estimate more comprehensive data on rice varietal distribution at the district level was incorporated in CRAFT to enhance the accuracy of the paddy production forecast.

This is a preliminary estimate. It will be revised with updated data as the season progresses.

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CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

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Background

Under the research theme on Climate Risk Management, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) developed a crop yield forecasting tool customized for the South Asia Region known as the CCAFS Regional Agriculture Forecasting Toolbox (CRAFT). CCAFS is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT), which conducts research to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security.

Methods

CRAFT incorporates a crop simulation model (DSSAT), a weather and seasonal forecast module (CPT) and a GIS mapping module (Map Win GIS). The tool provides the support for spatial input data, spatial crop simulations, integration of seasonal climate forecasts, spatial aggregation, probabilistic analysis of forecast uncertainty, and calibration of model predictions from historical agricultural statistics, analysis and visualization.

Acknowledgements

This publication is a joint product of the Ministry of Agricultural Development (MoAD), World Food Programme (WFP), and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) as part of the Nepal Food Security Monitoring System (NeKSAP). The objective of this collaboration is to strengthen early warning for better food security planning in Nepal in light of the present and anticipated changing climatic conditions. CRAFT provides advance information to stakeholders to better manage within-season climate risks to agriculture. In addition to its use in Nepal, CRAFT is also being used in Bangladesh, Sri Lanka and India.

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NeKSAP collects, analyzes and presents information on household food security, agriculture, and markets from across Nepal. NeKSAP is implemented by MoAD with strategic guidance from the National Planning Commission (NPC). WFP provides technical assistance for NeKSAP with funding from UK aid from the UK government.

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