

## Second Advance Estimate of 2017 Paddy Production using CRAFT

20 November 2017

The second advance estimate of 2017 paddy production was obtained on 20 November using CRAFT, the CCAFS Regional Agricultural Forecasting Toolbox (see Methods on page 2). According to CRAFT, the total paddy production in 2017 is forecasted to be 4,969,700 mt, a 4.9 percent decrease compared to the production level of 5,226,647 mt in 2016. However, the forecasted figure is a 2.7 percent increase compared to the average production level of the last five years. The forecast was made based on the Ministry of Agricultural Development (MoAD)'s preliminary estimate of paddy planted area received on 20 November 2017 and is based on a prediction uncertainty of  $\pm 7.5$  percent. See **Figure 1** for MoAD's data on paddy planted area (2012-2017) and paddy production (2012-2016) and the CRAFT paddy production forecast for 2017.

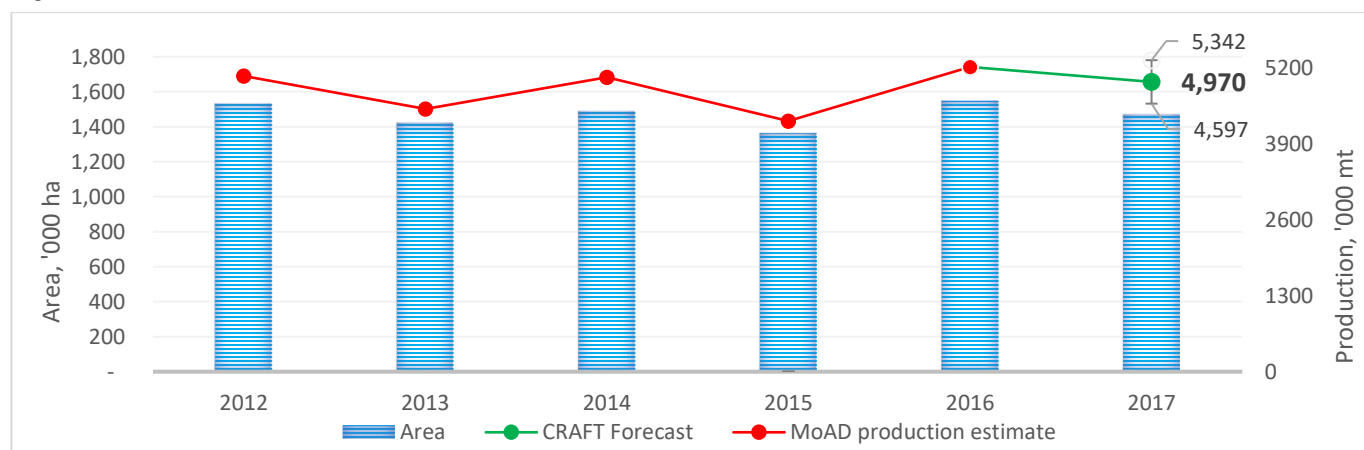


Figure 1: Paddy area, paddy production and CRAFT paddy production forecast, 2012-2017 (Source: MoAD; CRAFT)

The decline in paddy production this season is mainly attributed to poor monsoon rainfall during the transplanting period and a decline in paddy acreage due to large-scale flooding across the Terai on 11-13 August. MoAD's final national estimate (as of 20 November 2017) of paddy planted area in 2017 is 1,469,545 ha, which is 94.6 percent of last year's planted area of 1,552,469 ha. The Government of Nepal's Department of Hydrology and Meteorology (DHM) reported that the onset of monsoon in Nepal was 12 June, 2 days after the normal start date. Though the intensity and distribution of early monsoon rainfall (June-July) were reported to be poor, the monsoon strengthened in August and heavy rainfall caused devastating floods throughout the Terai. This led to a sharp decline in paddy planted area in the Terai region. In areas unaffected by the floods, however, paddy production is reported to be benefitting from the increase in rainfall.

**This is the final estimate for the season.**



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RESEARCH PROGRAM ON  
Climate Change,  
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World Food  
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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.

This report relies on information provided through different agencies, including the Department of Hydrology and Meteorology (DHM), Nepal Agriculture Research Council (NARC), Department of Agriculture, MoAD, WFP, the International Centre for Integrated Mountain Development (ICIMOD), International Water Management Institute (IWMI), and International Research Institute for Climate and Society at Columbia University. All contributors are gratefully acknowledged for their support.

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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### NeKSAP



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### CCAFS

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