

# First Advance Estimate of 2016/17 Wheat Production in Nepal using the CCAFS Regional Agricultural Forecasting Toolbox (CRAFT)

15 March 2017

The first advance estimate of 2016/17 wheat production was obtained on 15 March using CRAFT, the CCAFS Regional Agricultural Forecasting Toolbox (see Methods on page 2). According to CRAFT, the preliminary total wheat production for the 2016/17 season is estimated to be 1,782,000 mt, a 2.6 percent increase compared to the production level of 1,736,849 mt in 2015/16 and a 4 percent decrease compared to the average wheat production of the last five years (2011/12 to 2015/16). The forecast was made with a prediction uncertainty of  $\pm 11.5$  percent. **Figure 1** shows the Ministry of Agricultural Development's statistics on wheat crop area and production for 2011/12 to 2015/16 and the latest wheat production forecast using CRAFT. The forecast was made assuming the area under wheat plantation was the same as the 2015/16 season.

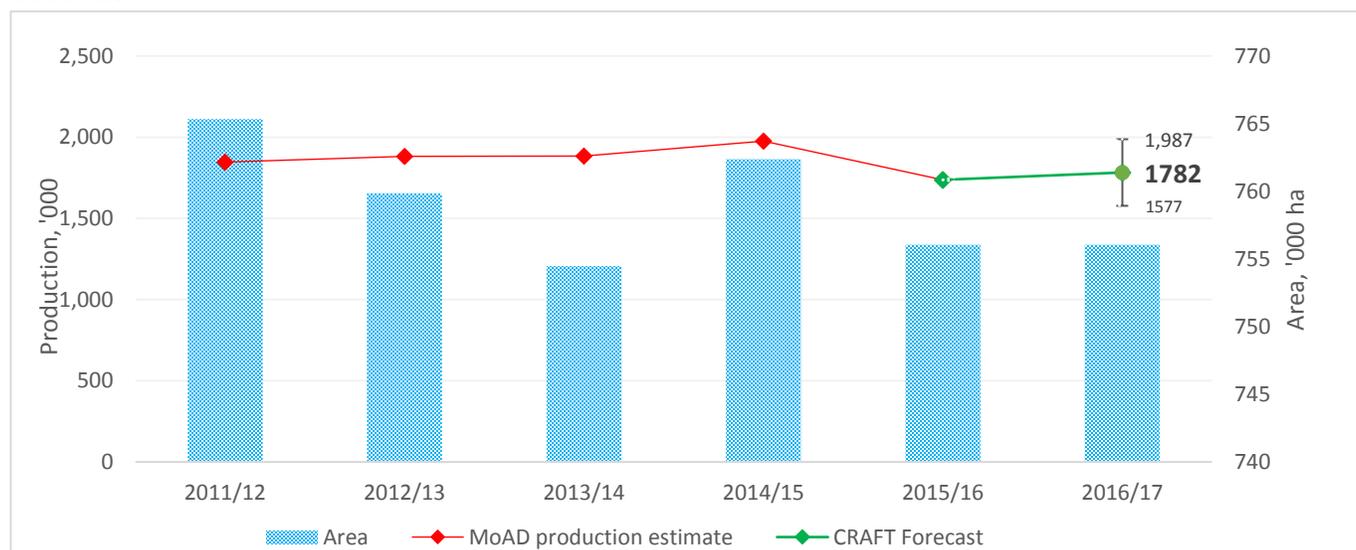


Figure 1: Wheat planted area, production and CRAFT production forecast, 2011/12-2016/17 (Source: MoAD; CRAFT)

As per the South Asian Climate Outlook Forum (SASCOF) prediction of below-normal rainfall in most parts of the country, and the Department of Hydrology and Meteorology's winter rainfall data for Nov-2016 to Feb-2017 showing just 26 percent of the normal (30-year average) level, a water deficit is likely to have a negative impact on wheat growth and is thus likely to impact the production this season as well. However, without any significant disruptions in the supply of fertilizers and other inputs this season, overall crop management practices were assumed to be favorable for wheat production, suggesting an increase in production compared to the drought-affected 2015/16 season.

**This is the first advance estimate for the season and will be revised with updated crop planted area and climate data as the season progresses.**



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Nepal Food Security Monitoring System



RESEARCH PROGRAM ON  
Climate Change,  
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Food Security



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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, 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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