

# Second Advance Estimate of 2015/16 Wheat Production in Nepal using the CCAFS Regional Agricultural Forecasting Toolbox (CRAFT)

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The second advance estimate of 2015/16 wheat production in Nepal was obtained using the CCAFS Regional Agricultural Forecasting Toolbox (CRAFT). According to CRAFT, the 2015/16 wheat production forecast is 1,718,120 mt, a 13 percent decrease compared to the production level of 1,975,607 mt in the 2014/15 season (see Figure 1). Furthermore, the forecasted figure is a 8 percent decrease from the average production over the last five years.

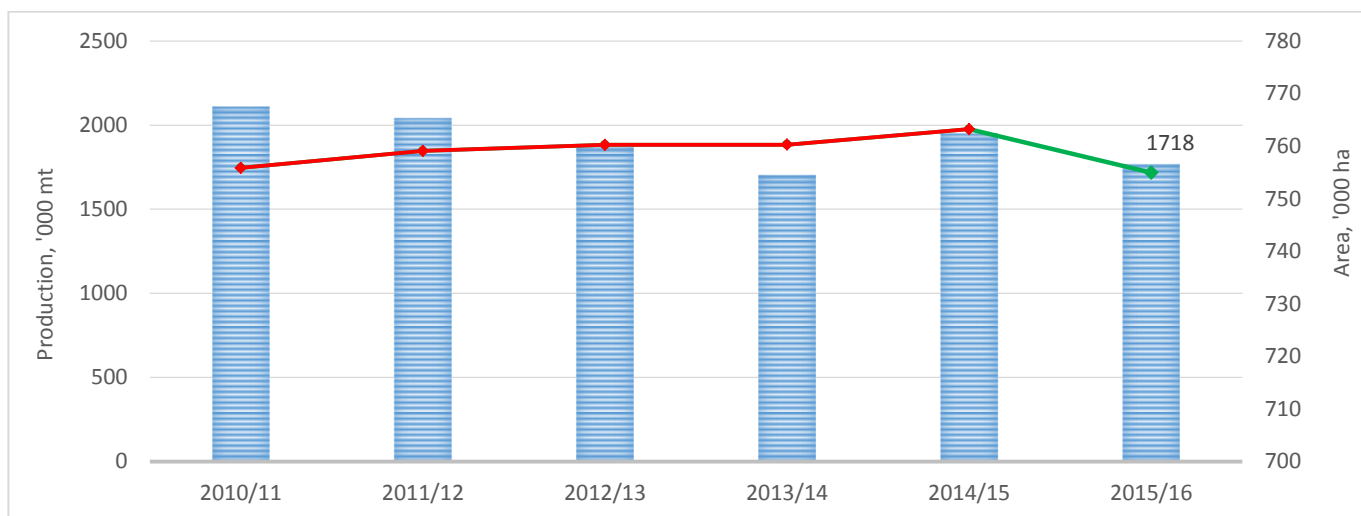


Figure 1: Wheat area and production trend in Nepal with 2015/16 forecast based on CRAFT

The significant drop in production is attributed to an estimated 0.8 percent decrease in wheat grown area nationwide as compared to the 2014/15 season coupled with poor climatic conditions. Wheat grown area decreased because of two main reasons: a severe shortage of fuel for irrigation and land preparation and limited availability and use of fertilizers, both of which were caused by the political crisis in the Terai and restricted cross-border trade with India from September 2015 to February 2016. In addition, according to the Government of Nepal's Department of Hydrology and Meteorology (DHM) data, cumulative rainfall during this winter season (November 2015 to February 2016) was 33 percent of the 30-year average for this period. Because of inadequate soil moisture due to delayed and poor rains and limited irrigation due to the shortage of fuel, it was assumed in the CRAFT model run that the irrigated area decreased by 25 percent and wheat plantation was late by 10 days.

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



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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.

## Method

CRAFT incorporates a crop simulation model (DSSAT), 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. The tool helps to provide advance information to farmers, extension agents and policy makers allowing them to manage within-season climate risks to agriculture. The model has been used in Nepal for a pilot study and is being currently used in Bangladesh, Sri Lanka and India as well.

## Acknowledgements

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