

# Making Objective Crop Forecasts

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**ABSTRACT:** This paper describes methods used to forecast crop yields in India.

India has a century old history of organizing crop statistics. The estimates of crop production are based on complete enumeration of area and the yield obtained through scientifically designed crop cutting experiments. The final estimates under the system are available much later after the crop season is over. The Government, however, requires estimates of crop production much in advance for taking various policy decisions relating to pricing, marketing, export/import, distribution, etc. The Directorate of Economics and Statistics (DES) in the Ministry of Agriculture has, therefore, devised a system of framing periodic advance estimates with respect to all principal crops.

The first official forecast of area and production of kharif crops is prepared sometime in the middle of September when southwest monsoon season is about to be over and kharif crops are at advanced stages. This is also the time when the National Conference on Agriculture for Rabi Campaign is organized and States bring their assessment of the kharif crops. Besides, the preliminary reports about area coverage and production supplied by State Agricultural Statistics Authorities (SASA) and Market Intelligence Units (MIU) of the DES are also utilized. The forecast is also aligned with the model-based estimates of food grains by DES and that of rice by the Indian Meteorological department (IMD). The weekly meetings of the multi-disciplinary crop and weather watch group in the Ministry of Agriculture also help in assessing the crop prospects.

The second assessment of the kharif crop forecast is prepared sometime in the month of January by making use of area estimates under the Timely Reporting Scheme (TRS) on a 20 percent sample basis and yield estimates of 10 percent supervised crop cuts under the Improvement of Crop Statistics (ICS) Scheme. The remote sensing data, revised forecast of rice crop by IMD and updated information received from SASAs and MIUs are also used. As by this time, the sowing of rabi crops are, by and large, completed, and the indications about coverage under rabi crops are available. The DES, therefore, also prepares preliminary estimates of rabi crops. Thus, the crop estimates are prepared for the entire agricultural year covering kharif, rabi and summer crops. This assessment is used for giving the information in Economic Survey, as well as in the Annual Report of the Department of Agriculture and Cooperation.

The third advance estimate is prepared towards the middle of April when the National Conference on Agriculture for Kharif Campaign is convened and the States come up with their assessments. By this time the TRS estimates and the remote sensing data on rabi crops are also available. Further, MIU reports as well as the yield forecast of wheat made by IMD are used to validate the estimates. These estimates thus indicate almost the final state of kharif crops and relatively much firmer estimates for rabi crops, except those for summer crops.

A National Workshop of SASAs for Improvement of Agricultural Statistics is organized in early June. Since most of the rabi crops get harvested by the end of May, the SASAs are in position to supply final estimates of both kharif and rabi seasons as well as likely assessment of summer crops. Thus, by

taking into consideration the figures supplied by SASAs, the provisional final estimates are brought out by the middle of June.

Ultimately, the final estimates are released in November/December when most of the States have received data from districts. The final and the pre-final advance estimates are generally very close. However, occasionally the differences between them are glaring, as happened during 1995-96.

It is, therefore, imperative that fora like the present one are used to discuss this universal issue and to exchange our experiences with regard to methodological parameters and their efficiencies. It would be quite appropriate if a few delegates explain the systems used in their countries. This will help us to evolve a certain standard methodology that could be adopted by various countries.