

**estimation of crop areas and yields
in agricultural statistics**

**statistics division
economic and social development department**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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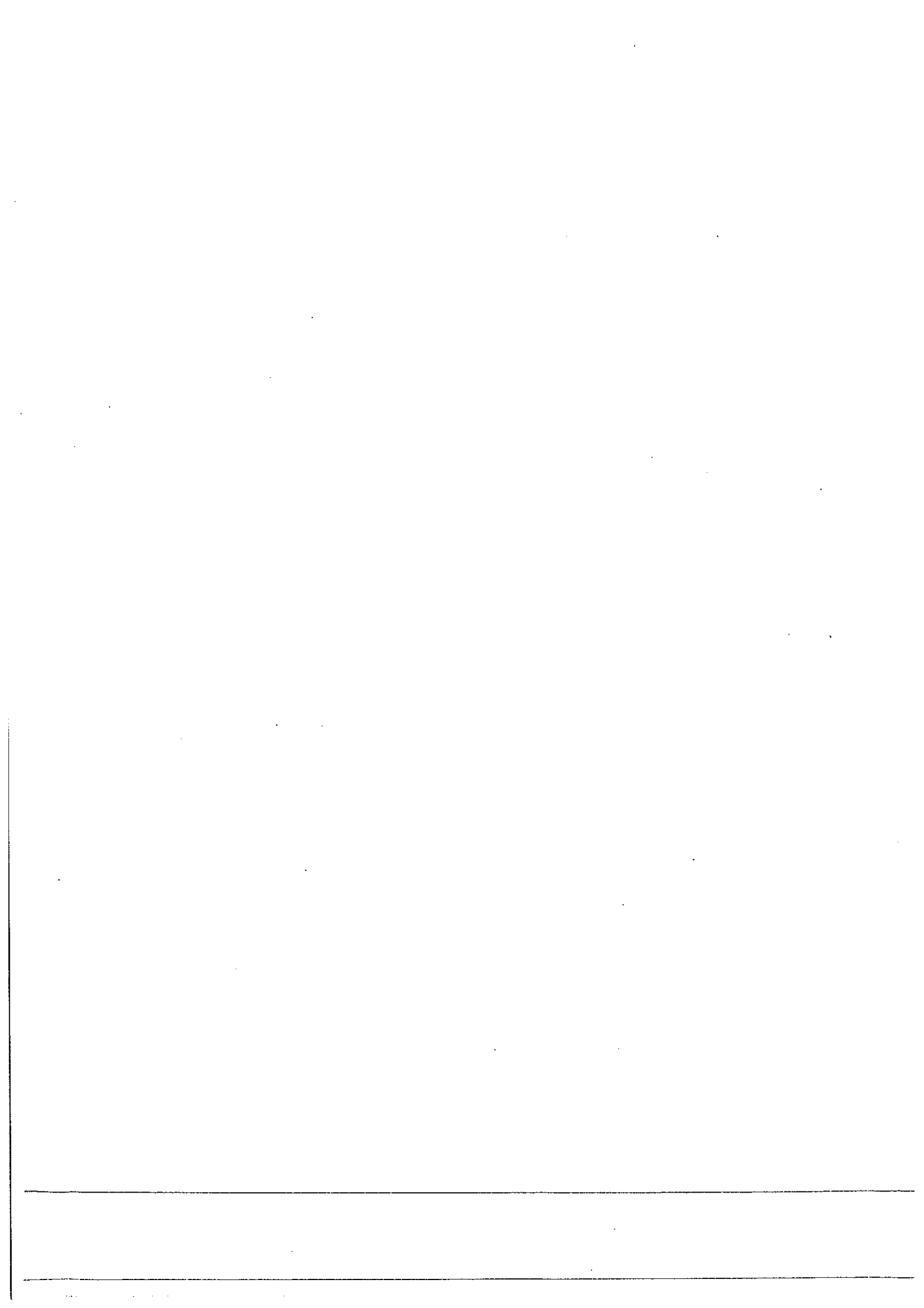
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P R E F A C E

As determinants of crop production, statistics on crop areas and yields have been amongst the most important components of the international statistical activities of the Food and Agriculture Organization of the United Nations (FAO) since its inception. The compilation of national data on areas under crops and their expected yields presented a number of serious difficulties. Many developing countries had no data at all. In other countries, available data were often limited to a small number of basic cash crops with only vague information on other crops. In most cases, the quality of the data was questionable and their scope and coverage were severely limited. On questions such as gross and net areas planted, areas damaged, areas harvested, biological yield, harvested yield and economic data, etc., there was little information and its lack was strongly felt in a period of fast-growing interest in development planning and programmes.

One of the more widely used methods of collecting the data was, and continued to be, that of eye estimation of both the areas under different crops and the expected yield per unit area, a method which could result in somewhat reliable results, provided the investigators were highly experienced and a number of other criteria were observed. Data on areas under crops collected by interviewing a sample of holders were, in many countries, of doubtful accuracy unless the area data were based on cadastral maps and the farmers were able and willing to provide accurate information, which was often not the case, especially in developing countries.

Under these conditions FAO undertook systematic promotional work aimed at the establishment and the improvement of national crop area and yield statistics, especially for the more important crops. Both aims called for increased application of probability sampling techniques combined with objective measurement, especially in developing countries. Crop area and yield measurement in conjunction with appropriate probability sampling techniques is the best way of securing accurate data. However, objective measurement, even on a comparatively small sample, is a rather costly and time-consuming technique requiring highly qualified field staff, and hence it can be justified only in the case of the more important crops.

FAO programmes to promote the development of crop area and yield statistics took various forms. Seminars, training centres and international and regional meetings of experts were held to explain and discuss the problems associated with the uses of sampling methods and objective techniques of measurement in the collection of crop area and yield statistics. Technical assistance experts in agricultural statistics assigned to countries almost invariably had statistics of crop area and yield as a priority item on their programme of work. As part of these promotional efforts, the FAO published and widely circulated a number of publications and documents on the subject, especially the following:

1. "Estimation of crop yields", by V.G. Panse, published in 1954 and reprinted in 1964.
2. "Estimation of areas in agricultural statistics", edited by S.S. Zarkovich, and published in 1965.

These two publications have been extensively used and demand has their updating and extension of their scope by inter alia, including the methodology and incorporating the experience gathered by technical experts. This provisional manual has been prepared to meet the demand for an update on the subject. Dr. J.B. Simaika, previously FAO Regional Statistician, served as a FAO consultant for this purpose. Comments on this publication and preparing a revised manual will be greatly appreciated and should be addressed to the Statistics Division, FAO, 00100 Rome, Italy.



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