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FAO STATISTICAL DEVELOPMENT SERIES 10

Multiple frame agricultural surveys

Volume 2
Agricultural survey programmes based on area frame or dual frame (area and list) sample designs

Food and Agriculture Organization of the United Nations

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1998

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M-77
ISBN 92-5-104074-5

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FOREWORD

One of the major tasks of FAO is to improve national systems for the collection of agricultural statistics. For this purpose, it is particularly important to promote the application of the most appropriate statistical methods and practices for current national agricultural surveys and censuses.

The Statistics Division of FAO published, over the years, two main books in the field: *Sampling methods and censuses*, Zarkovich (1965), and *Sampling methods for agricultural surveys,* Kish (1989). The FAO Statistics Division's contributions to the methodological work on agricultural surveys and censuses are also reflected in P.V. and B.V Sukhatme's *Sampling theory of surveys with applications* (1970).

This is the second volume of a two-volume book on *Multiple frame agricultural surveys*. It was prepared as a contribution to the study of statistical methods and practical procedures necessary for planning and conducting agricultural survey programmes. It is an introduction to area and multiple frame probability sampling methods and their application, with a special view to meeting the requirements and constraints faced by developing countries.

Area and multiple frame designs (that usually consist of a dual - *area* and *holding* - frame) provide, in a large range of countries, the statistical foundation of a variety of national agricultural surveys: general purpose periodic agricultural production and livestock surveys; objective crop yield surveys; cost of production surveys; chemical use (fertilizers and pesticides) surveys; land use surveys; labour force surveys; environmental surveys; and social and economic surveys of the agricultural sector.

The first volume of this book, published in 1996, provides a general classification of alternative agricultural survey designs with an indication of their respective advantages and limitations. It examines several aspects which have to be considered to establish and conduct a periodic agricultural survey programme based on dual frame sampling methods, i.e. the probability selection and estimation methods, the survey organization, the equipment and materials needed, the data collection, the summarization and processing procedures, as well as the preliminary analysis of the survey results. The volume also includes a detailed description of a category of survey designs considered especially useful for developing countries.

This second volume presents the survey methodologies of area and multiple frame agricultural survey programmes currently used in a large range of countries. It thus provides actual examples of the application of the survey methods presented in the first volume. The purpose is to allow the reader to make the necessary comparisons and to facilitate the application of the most appropriate statistical methods and practices.

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Director
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ACKNOWLEDGEMENTS

The FAO two-volume publication *Multiple Frame Agricultural Surveys* was written by Alvaro González-Villalobos, Senior Statistician, jointly with Montie A. Wallace, FAO consultant.

The agricultural survey methodological descriptions presented in this volume were prepared by the authors on the basis of publications and their knowledge of the survey designs involved. Some survey methodological descriptions were based mainly on national case studies prepared at FAO's request by the following experts: William H. Wigton, Zamir Beliu, and Altin Gjika (Albania), Osvaldo Stepancich (Argentina), Gil Silva, Mirane M. Carrilho and Elvira N. Pitaluga (Brazil), Jacqueline E. Mayda and Nanjamma S. Chinnappa (Canada), Robert Arcaraz and Jean-Claude Porchier (France), Gilberto Gálvez Cálix and Roberto Guevara Salinas (Honduras), Aldo Giovacchini, Paolo Ragni and Fabrizio Balli (Italy), Seghir Bouzaffour (Morocco), Michael A. Steiner and Ray Garibay (Nicaragua), Sharif Ahmad Khan (Pakistan), and Luis Ambrosio Flores and Francisco Javier Gallego Pinilla (Spain).

FAO wishes to acknowledge, as consultants and external reviewers, Mirane M. Carrilho for her contribution to chapter 11 and the general review of the final version of this volume; and Elisabetta Carfagna for her work on the agricultural survey methodological descriptions of the European countries.

FAO also wishes to thank other distinguished statisticians: Leslie Kish, R. Paul Moore, Larry A. Sivers, George A. Hanuschak, Robert C. Hale, Paul W. Blackwood, John Kovar, Mahamoud S.M. Nazif, Mostafa K. Nosseir, Josephine S. Wallace, Clarence Dunkerley and Hassan El Sheikh Elbashir for their support.

The editing and the preparation of the Index of Technical Terms was done by Laura Viaggio; Gianna Marciani-Politi, Annie Vilcocq and Susan Behravesh provided secretarial support for the publication of this volume.

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