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भारत सरकार द्वारा वित्त पोषित)

Evaluation of Agriculture Census Scheme

(Funded by Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Govt. of India)

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भारत सरकार
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(कृषि, सहकारिता एवं किसान कल्याण विभाग)
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Foreword

Considering the specific requirements of planners, policy makers, researchers and other users in the Agriculture Sector, the Department of Agriculture, Cooperation & Farmers Welfare, Government of India has been conducting agriculture censuses in the country on five yearly basis. Besides the national requirements, the Department also takes into account the requirement of data of the UN agencies and follows concepts and definitions in line with the international standards and guidelines of World Census of Agriculture of the Food and Agriculture Organisation (FAO) of the UN.

So far 10 agriculture censuses have been conducted in the country and the next agriculture census with reference year 2020-21 has become due. As part of the prescribed norms of the Government, each scheme including the agriculture census scheme is required to be evaluated for its further continuation. Accordingly, an evaluation study was entrusted to the Indian Agricultural Statistics Research Institution (IASRI) to examine the methodology, sampling design, estimation procedure, items and method of data collection, assessment of data quality and administrative set-up at the national and state level for implementation of the scheme and to make suggestions for improvement.

I am happy to note that IASRI has completed the evaluation study in time and I am sure that the recommendations made in the report will be helpful for improvement of agriculture census scheme. I am grateful to Dr. Rajender Parsad, Director, IASRI, Dr. Hukum Chandra, National Fellow and Principal Scientist, IASRI and his team for their efforts for timely completion of the study.

Dalip Singh

New Delhi
13.01.2021

(DALIP SINGH)

Preface

Agriculture plays a vital role in the Indian economy. More than two-third population of the country still lives in villages and about 70 percent rural households still depend on agriculture as main source of their livelihood. Farmers involved in cultivation, often referred as operational holders, generally have low level of income. Almost 85 percent of agricultural land holdings in the country (known as operational holdings) are small and marginal. Therefore, Government schemes or other development programme in agricultural sector are often focused on small and marginal operational holders. In the 1970-71, the Agricultural Census scheme was launched with aim to produce reliable data base on socio-economic aspects of operational holders in the country. Henceforth, the Agricultural Census in India is conducted in every five years. The Agricultural Census 2015-16 was the tenth Census conducted in the country.

The Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmers Welfare (MoA&FW), Government of India is the nodal agency for execution of Agricultural Census in collaboration with States /Union Territories (UTs). The Agricultural Census Division, DAC&FW provides all technical and administrative support to the various States/UTs for conduct of Agricultural Census. The Agricultural Census Division, DAC&FW has decided to have an independent evaluation of the Agricultural Census scheme (ACS) to assess suitability of the existing scheme towards development of Agriculture Statistics database for meeting the emerging demands on various aspects of agricultural holdings. Accordingly, a study entitled "Evaluation of Agricultural Census Scheme" was awarded to ICAR-Indian Agricultural Statistics Research Institute (ICAR-IASRI), New Delhi by the DAC&FW, MoA&FW, Govt of India. This report presents the findings and recommendations from this study.

The authors would like to extend their sincere thanks to the DAC&FW, MoA&FW, Government of India, for awarding this study and providing necessary funds for implementation of various activities under the evaluation study. The authors would like to acknowledge Sh. Rakesh Kumar Kamra, Additional Director General (ADG), Dr. Dalip Singh, Deputy Director General & Agricultural Census Commissioner, Mr. R.N. Soreithem, Deputy Director and other staffs of DAC&FW

for providing support in various aspects of the study. The authors express their sincere thanks to the Director, ICAR-IASRI for providing the necessary support and encouragement during the period of the study. The authors are also grateful to the experts Dr. A.K. Srivastava, former Joint Director, ICAR-IASRI, Prof. V. K. Gupta, former National Professor, ICAR-IASRI, Dr. U. C. Sud, former Director, ICAR-IASRI, Sh. Rajeev Lochan, former Director General, Ministry of Statistics & Programme Implementation, Govt of India and Dr. Vidya Dhar, former ADG, MoA&FW for their valuable inputs on various activities of the study. The authors are thankful to various State government officials for their cooperation during the field visits and also giving their inputs during the workshop. Assistance provided by Mr. Anil Yadav, Young Professional-II, Mrs. Alka Nayyar, Personnel Assistant, Mrs. Vandana Rawat, Office Assistant and Mr. Amit, MTS at the National Fellow Unit are gratefully acknowledged. Thanks to the Institute administrative, finance and accounts officials for extending their support. The authors place their sincere thanks to the administrative and finance staff in the Agricultural Census Division, MoA&FW, Government of India for the support provided during the conduct of the study.

New Delhi
13.01.2021

AUTHORS

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Executive Summary

The Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmers Welfare (MoA&FW), Government of India is implementing Agriculture Census Scheme (ACS) since 1970-71 at an interval of five years. The Agriculture Census 2015-16 is tenth in the series. In Agriculture Census, operational holding has been taken as statistical unit at micro-level for data collection as operational holding is the ultimate unit for taking agriculture-related decisions. Periodic Agriculture Censuses are the main source of information on basic characteristics of operational holdings such as land-use, cropping pattern, irrigation status, tenancy and dispersal of holdings etc. The Agriculture Census also provides basis for development of a comprehensive integrated national system of agricultural statistics. The census work is carried out in three phases. In Phase-I, data on primary characteristics like number of operational holdings and area operated by different size class, social groups, gender, types of holding, etc. is collected. This operation covers all villages in land record states and 20 percent of the villages in non-land record states. In Phase-II, holding schedule is canvassed in selected 20 per cent villages in each tehsil for collecting detailed data on tenancy particulars, land use, irrigation status and cropping pattern etc. The Phase-III of Agriculture Census is conducted to collect data on use of agricultural inputs like seeds, fertilizers, pesticides, agricultural credit etc. from 7% sample of villages (within a selected village 20 land holdings are selected, 4 each from marginal, small, semi-medium, medium and large category).

Agricultural sector in the country has realized tremendous changes including agricultural practices, use of technologies, Government policies and reforms, etc. Consequently, data requirements have also changed significantly. Therefore, Agricultural Census Division, DAC&FW decided to have an independent evaluation of the ACS to assess suitability of the existing scheme towards development of Agriculture Statistics database for meeting the emerging demands on various aspects of agricultural holdings. Accordingly, the study entitled "Evaluation of Agricultural Census Scheme" was awarded to ICAR-Indian Agricultural Statistics Research Institute (ICAR-IASRI), New Delhi with objectives

to examine methodology, including sampling design and estimation procedure, number and type of data items being collected, method of data collection and data quality assessment, review the adequacy of administrative set up in the Ministry and States, data processing arrangements and evaluate to what extent the objectives of the scheme have been met.

An inception workshop was organized at ICAR-IASRI, New Delhi on January 31, 2020. This workshop was attended by officials from the MoA&FW, representative from National Institute of Electronics & Information Technology (NIELIT), Experts in the area, Scientists from the Institute and project team members. The questionnaires developed for collection of information for this evaluation study were discussed and finalized in the workshop. A second workshop was organized on December 21, 2020 to discuss the findings and recommendations of this study. The workshop was attended by representatives from MoA&FW, experts in the subject area, representative from different state Governments, Scientists from the Institute. The findings and recommendations from this evaluation study are based on the review of Agriculture Census reports, schedules and guidelines by the project team, observations from the experts during the inception and final workshop, analysis of feedback and inputs from Agricultural Census Division of DAC&FW, State Headquarters, District level nodal officers and primary workers involved in the ACS as well as observations from the field visits in five states. The major observations and recommendations of this evaluation study are as follows:

Agriculture Census is an important source of information for National Agricultural Statistics System. It provides significant baseline data for several Schemes, Policies and Plans across the Ministries and Departments in the country, which otherwise is not possible. Hence, *Agriculture Census scheme needs further strengthening with regard to the timeliness and changing scenario of technological advances*.

Under Digital India Land Records Modernization Programme (DILRMP) of Department of Land Resources, most of the states have computerized their land records and remaining states are also progressing in the process of computerization of land records. *It is therefore recommended to explore the possibility of extraction of data from computerized land records for all those States/UTs where land records have been computerized using common platform and uniform methodology.* The current approach of paper-based collection and compilation of Agricultural Census data is a tedious and cumbersome work undertaken by primary workers. This also leads to various non-sampling errors. *It is recommended that the Agricultural Census Division should explore the possibility of using smartphones/tablets in collection of Agricultural Census data in all the three Phases.* This will eliminate transcription errors at data entry

stage as well as reduce the delay in processing of data. *It is also recommended that the existing approach of data collection using Paper and Pencil Interviewing (PAPI) method should be replaced with the Computer Assisted Personal Interviewing (CAPI)* method for data collection at the field level. Both primary workers and supervisors should be provided adequate training in use of tablets and software.

Agriculture Census and Cost of Cultivation Surveys are two programmes conducted by the MoA&FW, Govt. of India. However, the size of land holding classes defined in Agriculture Census and Cost of Cultivation Surveys are not similar. Consequently, results of the two surveys are not comparable. Therefore, *it is recommended that in the Cost of Cultivation Surveys also, the size classes of land holdings used for Agriculture Census should be adopted*.

The reference year for Agriculture Census is Agricultural Year and data for Phase-I & II of census programme is collected for a common reference year and for Phase-III, the reference year is one year after the Phase-I & II. Practically, it would be more advantageous to have different reference period for all the three phases of Agriculture Census to overcome the problem of recall lapse in data collection. Therefore, *it is recommended that DAC&FW should explore the possibility of different reference period for all the three phases of Agriculture Census*.

The existing sampling design for Agriculture Census is adequate. *In order to assess the adequacy of sample size, the standard errors and per cent coefficient of variations need to be examined*. The existing estimation procedure based on current sampling design used in ACS is correct. However, to produce more precise estimates with the same sample size, *it would be advisable to explore the possibility of using more efficient estimation methods that uses auxiliary variables*. To assess the precision of estimates, standard error at district, State and National level should be generated. To generate reliable estimates from smaller sample sizes at tehsil and other disaggregate levels, Small Area Estimation technique should be adopted. Data on several variables collected in the input survey can also be used for generating the estimates required for Sustainable Development Goal (SDG) indicators on agriculture. *It is suggested that the DAC&FW in collaboration with research Institutes either through some studies or other Institutional mechanism should explore the possibility of using input survey data from different rounds for producing reliable disaggregated estimates of different parameters including those for SDG indicators on agriculture sector using efficient survey estimation approach like Small Area Estimation technique.* The ICAR-IASRI, New Delhi which has the expertise in Small Area Estimation can be associated in such exercises.

At present in Agriculture Census, tenancy status of farmers is captured based on

entries in Khasra Register. The information in the register generally captures the owners as the cultivators due to legal and administrative issues concerning record of rights and absence of tenancy laws in land record states. A comparison of data on tenancy in the land record and non-land record states indicates significant under-estimation of number of tenants in the land record states. *It is therefore recommended that while reviewing the schedules for Phase-I, II & III, this item would be incorporated for data collection in Phase III.*

Honorarium to the primary workers involved in the field work of ACS is very meager and needs to be increased considerably. *It is suggested that the honorarium for the primary workers per village should be raised to at least Rs 10 per operational holding.* The much-needed increase in the quantum of honorarium will boost the morale of primary workers and bring considerable improvement in the quality of data collected by them. Government of India should also impress upon the State Government to streamline the procedure for disbursement of honorarium through direct credit in the bank account of the primary worker immediately after completion of field work.

The State Governments should make proper arrangement for translation of instruction manual in their regional languages. Proper mechanism should also be developed to ensure that sufficient number of schedules and instruction manuals are delivered to primary workers well in advance.

1 Introduction

The Agriculture Sector occupies key position in Indian economy embodying three thrust areas as (i) to promote inclusive growth, (ii) to enhance rural income, and (iii) to sustain food security. It accounts for nearly 13% of Gross domestic product (GDP) and supports half of the country's population as its principal source of income. Majority of the farmers, actually involved in cultivation (often referred as operational holder), have low level of income. Timely and reliable information on various parameters of Agriculture sector is vital for planning and policy formulation including upliftment of socio-economic status of the operational holders. The Agricultural Census scheme was launched with the aim to produce reliable data base on socio-economic aspects of operational holders in the country. The Agricultural Census forms part of a broader system of collection of Agricultural Statistics in the country. It is a large-scale statistical operation for collection and derivation of quantitative information about the structure of agricultural holdings in the country. An agricultural operational holding is the ultimate unit for taking decision for development of Agriculture at micro level. It is for this reason that an operational holding is taken as the statistical unit of data collection for describing the structure of agriculture. An operational Holding is defined as *"all land which is wholly or partly used for agriculture production and is operated as one technical unit by one person alone or with others without regard to title, legal form, size or location"*.

The Agricultural Census in India is conducted once in every five years with operational holder as the ultimate unit of sampling as opposed to the ownership holding. The tenth Agricultural Census in the series was conducted in the 2015-16. The reference period of the Agricultural Census is the agricultural year i.e. 1 July to 30 June. The reference period of the Agricultural Census 2015-16 was agricultural year 2015–16 (from 1st July 2015 to 30th June 2016) for Phase I and II and agricultural year 2016–17 (from 1st July 2016 to 30th June 2017) for Phase III. The actual fieldwork for data collection on various characteristics of agricultural operational holdings relating to the reference year started on 1 July, 2016. Agriculture Census in India forms part of World Agriculture Census programme

of Food and Agricultural Organization (FAO) of United Nations. The Agricultural Census 2015-16 was part of WCA 2020. Although, the WCA recommends the agriculture census to be carried out decennially but Agricultural Census in India is conducted Quinquennially with the view that short interval (time gap of 5 years) of Agricultural Census would help in effectively capture the dynamic situation of operational holders in the country.

1.1 Methodological Modality used in Agricultural Census

The Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmers Welfare (MoA&FW), Government of India is the central agency for execution of quinquennial Agricultural Census in the country using census-cum-sample survey approach in collaboration with States /Union Territories (UTs). The Agricultural Census Division under DAC&FW in the MoA&FW provides all technical and administrative support to the various States/UTs in the conduct of Agricultural Census. Through Agricultural Census it is endeavored to collect basic data on important aspects of agricultural economy for all the operational holdings in the country. Aggregation of data is done at various levels of administrative units. The field work of the Agricultural Census is largely carried out by the primary workers, called Patwaris, in the Department of Revenue. The main objectives of Agriculture Census in India are:

- To describe structure and characteristics of agriculture by providing statistical data on operational holdings, including land utilization, irrigation, irrigated and unirrigated area under different crops, use of agricultural machinery and implements, use of fertilizers, seeds, agricultural credit etc.
- To provide benchmark data for formulating new agricultural development programmes and for evaluating their progress.
- To provide basic frame of operational holdings for carrying out future agricultural surveys and,
- To lay a basis for developing an integrated programme for current agricultural statistics.

Periodic Agricultural Censuses are important as these are the main source of information on basic characteristics of operational holdings such as land use and cropping patterns, irrigation status and tenancy particulars. The information on these aspects is tabulated by different size classes and social groups including Scheduled Caste/Scheduled Tribe (SC/ST) at national, state, district and tehsil level to meet requirements of planners and policy makers and establish national

priorities for agriculture sector. The Agricultural Census also provides basis for development of a comprehensive integrated national system of agricultural statistics and has links with various components of the national statistical system.

The Agricultural Census in India is implemented in three distinct phases which are statistically linked together but focus on different aspects of agricultural statistics. For the purpose of conduct of Agricultural Census, the different States/UTs in India are broadly divided into two categories: (i) Land record (LR) and (ii) non-land record (NLR) states. In land record states where the revenue agency maintains the record of ownership of holdings and regular crop inspections are carried out, these records were the basis for conducting Phase I of the census operations. The basic unit for collecting data in Agricultural Census is the operational holding. The data for entire land operated by the actual cultivator is collected by pooling of all parcels of land of the operational holding located within a tehsil for land record states and within the state for non-land record states. In land record states, the data on operational holding is collected and compiled on complete enumeration basis through re-tabulation of information available in village land records. In non-land record states, the required data on operational holding are collected through sample surveys of households by adopting direct enquiry method. In non-land record states and UTs, a list of holdings with their area, social characteristics, types of holding and gender of the holders is prepared from 20 per cent of the villages selected under the scheme for the Establishment of an Agency for Reporting of Agricultural Statistics (EARAS) for the reference year of the Agricultural Census. Phase-wise details of data collected in Agriculture Census are detailed below:

In Phase-I of the Census, data on primary characteristics like number of operational holdings and area operated by different size class (marginal, small, semi-medium, medium and large), social groups (SC, ST, Others), gender (male/female), types of holding (individual, joint and institutional), etc. is collected.

In land record states for Phase-I of the Agricultural Census, the data on primary characteristics of operational holdings are collected and compiled on complete enumeration basis through re-tabulation of information available in the village land records. This operation covers all villages in land record states (complete enumeration of all agricultural holdings). Majority of the land area of the country falls under the category of Land Record States. All the parcels belonging to an operational holder in a tehsil are pooled in respect of Land Record States. The pooled parcels are shown at the village of residence of the operational holder. During Phase-I of Agriculture Census 2015-16, the computerized data of ownership holdings were directly extracted from computerized land records for the States of

Andhra Pradesh, Telangana, Gujarat, Jharkhand and Maharashtra. In these States, the ownership data was retrieved from the computerized land records and latter converted to operational holdings after verification by the field functionaries.

In the non-land record states where there is no system of maintenance of Land Record, a sample survey approach is adopted in Phase-I of Agricultural Census. A 20 percent sample of villages, in this category of States / UTs, are selected for compilation of data in Phase-I. These 20 percent villages are selected through simple random sampling method and all the operational holdings in the selected villages are enumerated following household enquiry approach. The sample villages are same as those selected for the scheme Establishment of an Agency for Reporting of Agricultural Statistics (EARAS) for the reference year of the Census. Unlike Land Record States, there is no outer limit for pooling the parcels of the operational holder.

The data is collected/compiled by the primary worker at the village level and is aggregated to generate statements at Tehsil, District, State and National level. The village-wise list of resident and non-resident operational holders is prepared in L-1 and L-2 schedules. Schedule L3 (village summary) is prepared after filling-up of Schedule L1 and Schedule L2 of a particular Census village for reconciling the village geographical area so that no part of operated area belonging to an operational holder within the village is left unaccounted.

The Phase-II and Phase-III of the Agricultural Census are based on a sample survey approach in both categories of States/UTs. In Phase-II, detailed data on agricultural characteristics of holdings are collected from selected villages. In particular, during Phase-II, holding schedule is canvassed in selected 20 per cent villages in each tehsil for collecting detailed data on tenancy particulars, land use, irrigation status and cropping pattern etc. In Land Record States these 20 percent villages selected in Phase-II are the same villages which are selected in Timely Reporting Scheme. The information relating to the above characteristics is compiled from the basic village land records, viz., Khatauni and Khasra in respect of all the resident cultivators. Resident cultivators of urban areas are also covered. In Non- land record States the data is collected using household enquiry approach. The estimates of agricultural characteristics of operational holdings are prepared at Tehsil/District/State/National levels. The reference year for data collection is the same as in Phase-I.

The Phase-III of Agricultural Census, (referred as Input Survey) is conducted as a following up surveys to the Agricultural Census (with reference year as the year next to that of the Agricultural Census) from 7% selected villages in each Tehsil

following household enquiry approach both in LR and NLR States/UTs and within a selected village 20 land holdings are selected, 4 each from marginal, small, semi-medium, medium and large category. The detailed data compiled under Phase-I (in Schedule L1) provide the sampling frame for the selection of the sample. Since there is a gap of one year between Phase-I and input survey, the available frame is updated before the selection of the sample. During input survey, institutional holdings and holdings operated by persons not residing in the village are excluded from the purview of the survey (i.e. the data under input survey is restricted only to the resident operational holder). Input survey collects data on pattern of input use (fertilizer, irrigation, seed, pest management etc.), agriculture credit, farm implements and machinery, size of the household, age and educational level of the holders, multiple cropping across various crops, States and size group of holders. The estimates for input characteristics are prepared at District, State and National level.

Sampling Design: In non-land record States a stratified two stage sampling design is adopted and a sample of 20 percent of villages is selected and complete enumeration of holdings in selected villages is carried out during Phase-I. During Phase-II in non-land record states/UTs, a stratified two stage sampling design is adopted; the community Development Block or some other similar homogeneous administrative unit should be taken as the stratum. The first stage unit within the stratum will be the village and the second stage unit will be the operational holding. In Non Land Record State three models of sampling were adopted for Agriculture Census 2015-16:-

(i) In Odisha, West Bengal and Kerala the sampling design and sample size at first stage and selection of sample holdings in the selected villages at second stage will be 20% and 25% respectively. In States, like, Arunachal Pradesh, Meghalaya, Sikkim and Manipur the same sampling design and sample size was adopted for filling Schedule-H.

(ii) In Goa, 50% villages were selected in each Block/Tehsil at first stage and no second stage sampling, i.e., all the holdings in selected villages were enumerated.

(iii) In Nagaland, Mizoram and Tripura, at first stage, 20% villages were selected and no second stage sampling resorted to, i.e., all the holdings in the selected villages are surveyed. In smaller UTs, like Lakshadweep and Daman & Diu no sampling is done and all holdings in all the villages are surveyed for Schedule-H.

Phase III, in all cases, a stratified two-stage sampling design according to which,

in the first stage, villages are selected (7 percent of villages in each tehsil) and in the second stage, four holdings from each of the five size classes (marginal, small, semi- medium, medium and large) are sampled in the selected villages.

1.2 Computerisation of Agriculture Census Data

The work of computerization of Agricultural Census data is taken up by the National Institute of Electronics & Information Technology (NIELIT). For computerization of Agricultural Census data, software has been developed by NIELIT which is provided to the State Agricultural Census Units. The responsibility of data entry, validation of data, analysis and generation of tables vests with the NIELIT under overall guidance of Dy. Director General and Census Commissioner.

2 Genesis and Methodology

2.1 Introduction

India participated in the World Programme for the Census of Agriculture (WCA) 1930, 1950 and 1960 through sample surveys carried out by (then) the Directorate of National Sample Surveys. The Agriculture Census 1970-71 is considered the first comprehensive agricultural census conducted in the country. It provides useful data on structure and characteristics of holdings. The Agricultural Census is carried out at an interval of five years. The present Agriculture Census 2015-16 is the tenth census with reference year 2015-16 conducted in the country. The Agricultural Census Division under DAC&FW in the MoA&FW, Govt of India has decided to have an independent evaluation of the Agricultural Census scheme (ACS) to assess suitability of the existing scheme towards development of Agriculture Statistics database to fulfill the emerging demands for information on various aspects of agricultural holdings. The DAC&FW requested the ICAR-IASRI, New Delhi to submit the proposal for study to conduct of evaluation of ACS. Accordingly, the Institute submitted the cost and technical proposal and subsequently the DAC&FW awarded this study to ICAR-IASRI, New Delhi. This chapter provides genesis of evaluation study and the methodology used for evaluation of the ACS.

2.2 Rationale of the Evaluation Study

The Agricultural Census in India, starting from 1970-71, is carried out at an interval of five years. Besides other important items, the scheme provides unit level data on structure and characteristics of agricultural holdings. Although a wealth of information is generated under the ACS and the data base generated is used for variety of purpose, but there are certain limitations and scope for improvement as well. For example, ACS sometimes reduce the utility of the results due to delay in the release of the Agricultural Census results. This mainly because the Agricultural Census work is largely record based, and involved lot of manual process.

The agriculture sector plays a critical role in the economy of the country. Therefore, availability of comprehensive, timely and reliable Agricultural Statistics at micro and macro levels are inevitable for development planning and policy making process. The ACS has played a key role in developing an exhaustive and reliable Agricultural Statistics database in the country in respect of different parameters of operational holdings in the country. However, over the years data requirement on characteristics of holdings and other information have also changed in the country. In view of emerging data demands and rapidly changing scenarios, the DAC&FW has decided to have an independent evaluation of the ACS to assess the suitability of the existing Scheme towards development of Agricultural Statistics database to fulfill the emerging demands for information on various aspects of agriculture holdings in the country. Therefore, the DAC&FW awarded this study to ICAR-Indian Agricultural Statistics Research Institute, New Delhi with the following objectives:

- To critically examine the methodology including sampling design and estimation procedure being followed in the Agricultural Census scheme.
- To critically examine the numbers/types of items being collected in the scheme.
- To examine the arrangement of data collection and to make an assessment of data quality.
- To examine the adequacy of administrative set-up in Department of Agriculture, Cooperation & Farmers Welfare and the States/UTs for collection of data.
- To examine arrangements of data processing with special reference to volume, technology used and time taken.
- To assess necessary restructuring to be carried out on the performance of the scheme based on output/outcome indicators.

2.3 Methodology used for Evaluation Study

A memorandum of understanding (MoU) was signed between ICAR-IASRI, New Delhi and the Agricultural Census Division, DAC&FW in the MoA&FW, Govt of India for the conduct of study on evaluation of ACS. The date of start of this evaluation study was 01 January 2020. The study was expected to be completed by 30 June 2020. However, due to the COVID-19 pandemic, activities of the study have also been disrupted as the response from the States/UTs and districts could not be obtained timely. Further, planned field visits could not be undertaken. As a

result, the study was extended until 31 December 2020. The Institute constituted a project team of scientific and technical personal to undertaken this study. The project team members collected and reviewed the relevant literature including the Agricultural Census manuals and schedules. Subsequently, questionnaires were developed by the project team for collection of information on ACS for this evaluation study. In particular, five different questionnaires were developed for collecting information:

(i) DAC&FW, Ministry of Agriculture and Farmer's Welfare, Govt of India (To be filled-up by official of ACS),

(ii) State Headquarter (To be filled-up by the Nodal Officer of the State),

(iii) District Level Officer (To be filled-up by the Nodal Officer of the District),

(iv) Primary Worker at Village Level (To be filled-up by Primary Worker), and

(v) National Institute of Electronics & Information Technology (NIELIT) (To be filled-up by official of NIELIT).

The questionnaires used in this evaluation study are given in Annexure-I.

An inception workshop on "Evaluation of Agriculture Census Scheme" was organised at ICAR-IASRI, New Delhi on January 31, 2020. The workshop was attended by project team members, representative from Ministry of Agriculture and Farmer's Welfare and Experts in the area. List of participants who attended this workshop are given in Annexure-II. The questionnaires developed by the Institute for collection of information for this evaluation study were presented, discussed and finalised with inputs from the experts and other participants of the workshop.

Subsequently, questionnaires were sent to DAC&FW, National Institute of Electronics & Information Technology, 36 States/UTs and selected districts from the 36 States/UTs. During the workshop, it was also decided to undertake field visits in both Land Record and Non-Land Record States/UTs to have discussion with the primary workers, the concerned officials and to check the data quality. The field visits were undertaken in three Land Record and one Non-Land Record States. In Land Record states field visits were made in Uttar Pradesh, Madhya Pradesh and Rajasthan whereas in Non-Land Record States visit was undertaken in West Bengal.

Under this study, a workshop was organized on December 21, 2020 to discuss the major observations and findings. Representative from Ministry of Agriculture and Farmer's Welfare, experts in the subject area, representative from different states,

scientists from the ICAR-IASRI, New Delhi including the project team members attended this workshop and made deliberation on observations and findings of this study. List of participants who attended this workshop on December 21, 2020 is given in Annexure-II.

The observations and recommendations of this evaluation study are based on the review of Agricultural Census reports, schedules and technical guidelines, feedback and inputs from several stakeholders including Agricultural Census Division of DAC&FW, State Headquarters of Agricultural Census, District level nodal officers, primary workers involved in ACS data collection, National Institute of Electronics & Information Technology, experts and deliberations in the workshops organized under evaluation of ACS.

3 Summarization of Feedback and Field Visits

3.1 Introduction

For evaluation study of Agriculture Census Scheme (ACS), five different feedback proforma (questionnaire) were developed to collect the views of officials involved in the ACS work from the Agricultural Census Division, DAC&FW, MoA&FW, Government of India, States/UTs and NIELIT. In addition, field visits were undertaken in different states to collect the information from the primary workers and other officials involved in the ACS work. This chapter provides details on summary of feedback received from the officials and information gathered from field visits.

3.2 Feedback Proforma (Questionnaire)

For the purpose of evaluation of ACS, different questionnaires were developed to get feedback from the officials involved in ACS at different levels including Agricultural Census Division of DAC&FW, State Head Quarters, District level nodal officers, primary workers involved in ACS and NIELIT. The developed questionnaires were first discussed in the workshop organized at ICAR-IASRI, New Delhi on 31 January 2020 and then finalized by incorporating the suggestions received during the workshop. These questionnaires include:

(i) Questionnaire for Collection of Information on ACS from Headquarter (To be filled-up by official of ACS, DAC&FW, MoA&FW, Govt of India),

(ii) Questionnaire for Collection of Information on ACS from State Headquarter (To be filled-up by the Nodal Officer of the State),

(iii) Questionnaire for Collection of Information on ACS from District Level Officer (To be filled-up by the nodal officer of the district), and

(iv) Questionnaire for Collection of Information on ACS from Primary Worker at Village Level (To be filled-up by Primary Worker).

(v) Questionnaire for Collection of Information on ACS from NIELIT (To be filled-up by official of NIELIT).

The first questionnaire was developed with intention to get feedback from the Agricultural Census Division of DAC&FW, MoA&FW, Govt of India. In particular, feedback were taken on several aspects such as whether or not funds were released in time, are there any items on which information need to be collected, are there any items in the census schedule which need to be deleted, whether changes are required on feedback, how improvement can be made in the organization and conduct of census work, feedback on State-wise/UT-wise data quality, adequacy of communication facilities, whether or not software used in census work need to be updated, adequacy of infrastructural and staff position.

The questionnaire for the State Headquarter was primarily designed to get feedback on timely release of Agriculture Census related funds, addition/deletion of items covered in the various schedules, how accurately information is collected on items which are not available in records, quality of training imparted, whether work of the current/earlier census completed in time, whether or not supervision work was carried out as specified, reasons for collecting data on certain items which are already covered in other census/surveys, timely completion of scrutiny and analysis of data, whether or not report preparation completed in time and if collected data sent in time and adequacy of staff for census work.

The third questionnaire was developed for the district level officials to get feedback on addition/deletion required in some items, whether or not training provided, timely completion of allotted work as per specified targets, steps put in place to ensure data quality, proper data scrutiny and analysis, difficulty experienced in understanding concepts & definitions, timely release of funds (like in earlier questionnaires), adequate staff and infrastructural facilities at the district level.

The fourth questionnaire for primary worker was intended to get feedback on quality of training provided, difficulty faced in data collection work, whether assigned work completed in time and sent to the district level officials, finally suggestions were invited for smooth and timely completion of field work.

The fifth questionnaire was designed to get feedback from NIELIT related to software development. The feedback was taken on whether funds were received in time for their activities, difficulty noticed or reported by State on the use of software, any problem faced or noticed in data entry software or in data processing for Phase-II and III, coordination with DAC&FW, training and other suggestions etc.

These questionnaires were sent by email to concerned nodal officer get the feedback, except fourth questionnaire for primary worker which was completed during the field visits in the selected states. Summary of feedback received from various level, viz. DAC&FW, States/UTs (Headquarter), selected districts from different States/ UTs, primary workers and NIELIT are presented below.

3.3 Analysis of Feedback

3.3.1 DAC&FW

The existing methodology used in the Agriculture Census Scheme serving the purpose reasonably well. However, to keep pace with emerging national demand of Agriculture Census data, the DAC&FW is in opinion that data on following additional items can also be explored and collected in Agriculture Census:

(i) Availability of storage facility within Tehsil /district (in Phase-III),

(ii) Availability of Market/Mandi facility within Tehsil /district (in Phase-III)

(iii) Number of trees in the operational holdings (in Phase-III),

(iv) Farm employment structure,

(v) Female participation in farm activities, and

(vi) Detailed land use data.

To maintain data quality and timeliness, it was also advised to review data items in Phase-I, II and III as well as other aspects. The following suggestions for improving data quality and timeliness of Agriculture Census work are also made:

(i) Providing proper training to the officers of States/UTs,

(ii) Regular monitoring of field work and scrutiny of data,

(iii) Third party inspection through specialized agency for improving the quality of data,

(iv) Strengthening the nucleus units in States/UTs and Central Headquarter,

(v) Digitization at data collection stage through introduction of technology by using tablets/smartphones,

(vi) Utilization of extracted data from computerized land records in land record States,

(vii) Separate reference year for all the three Phases,

State-wise Comments on Quality of Agriculture Census Data

S. No.	State	Training imparted to trainers (Y/N)	Timely release of funds (Y/N)	Data collection on Time (Y/N)			Supervision carried out (Y/N)			Data quality satisfactory (Y/N)		
				Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Andhra Pradesh	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2.	Arunachal Pradesh	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3.	Assam	Y	Y	Y	N	N	Y	N	N	Y	N	N
4.	A & Nicobar (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5.	Bihar	Y	Y	Y	N	N	Y	N	N	Y	N	N
6.	Chhattisgarh	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
7.	Chandigarh (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8.	Delhi (NCT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9.	D& N Haveli (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10.	Daman & Diu (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11.	Goa	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
12.	Gujarat	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y
13.	Haryana	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
14.	Himachal Pradesh	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
15.	J & K	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
16.	Jharkhand	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
17.	Karnataka	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
18.	Kerala	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
19.	Lakshadweep (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
20.	Madhya Pradesh	Y	Y	Y	Y	N	Y	N	N	Y	N	N
21.	Maharashtra	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
22.	Manipur	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
23.	Meghalaya	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
24.	Mizoram	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
25.	Nagaland	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
26.	Orissa	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
27.	Punjab	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
28.	Puducherry (UT)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
29.	Rajasthan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
30.	Sikkim	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
31.	Tamil Nadu	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
32.	Telangana	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
33.	Tripura	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
34.	Uttar Pradesh	Y	Y	Y	Y	N	Y	Y	N	Y	Y	N
35.	Uttarakhand	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
36.	West Bengal	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N

S. No.	State	Data Entry completed timely (Y/N)			Data Processed timely (Y/N)		
		Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey
1	2	14	15	16	17	18	19
1.	Andhra Pradesh	Y	Y	Y	Y	Y	Y
2.	Arunachal Pradesh	Y	Y	Y	Y	Y	Y
3.	Assam	N	Y	Y	Y	Y	Y
4.	A & Nicobar (UT)	Y	Y	Y	Y	Y	Y
5.	Bihar	N	Y	Y	Y	Y	Y
6.	Chhattisgarh	Y	Y	Y	Y	Y	Y
7.	Chandigarh (UT)	Y	Y	Y	Y	Y	Y
8.	Delhi (NCT)	Y	Y	Y	Y	Y	Y
9.	D & N Haveli (UT)	Y	Y	Y	Y	Y	Y
10.	Daman & Diu (UT)	Y	Y	Y	Y	Y	Y
11.	Goa	Y	Y	Y	Y	Y	Y
12.	Gujarat	Y	Y	Y	Y	Y	Y
13.	Haryana	Y	Y	Y	Y	Y	Y
14.	Himachal Pradesh	N	Y	Y	Y	Y	Y
15.	J & K	Y	Y	Y	Y	Y	Y
16.	Jharkhand	N	Y	Y	Y	Y	Y
17.	Karnataka	Y	Y	Y	Y	Y	Y
18.	Kerala	Y	Y	Y	Y	Y	Y
19.	Lakshadweep (UT)	Y	Y	Y	Y	Y	Y
20.	Madhya Pradesh	N	Y	Y	Y	Y	Y
21.	Maharashtra	N	Y	Y	Y	Y	Y
22.	Manipur	Y	Y	Y	Y	Y	Y
23.	Meghalaya	Y	Y	Y	Y	Y	Y
24.	Mizoram	Y	Y	Y	Y	Y	Y
25.	Nagaland	Y	Y	Y	Y	Y	Y
26.	Orissa	Y	Y	Y	Y	Y	Y
27.	Punjab	Y	Y	Y	Y	Y	Y
28.	Puducherry (UT)	Y	Y	Y	Y	Y	Y
29.	Rajasthan	Y	Y	Y	Y	Y	Y
30.	Sikkim	Y	Y	Y	Y	Y	Y
31.	Tamil Nadu	Y	Y	Y	Y	Y	Y
32.	Telangana	Y	Y	Y	Y	Y	Y
33.	Tripura	Y	Y	Y	Y	Y	Y
34.	Uttar Pradesh	Y	Y	Y	Y	Y	Y
35.	Uttarakhand	Y	Y	Y	Y	Y	Y
36.	West Bengal	Y	Y	Y	Y	Y	Y

(viii) Development of user-friendly software/apps with in-built validation checks for data collection, scrutiny and processing of data,

(ix) Increase in honorarium of primary workers, and

(x) Computerization of land records of all States/UTs and regular updation.

3.3.2 States/UTs

The questionnaire for the State Headquarter was sent to in-charge of the Agriculture Census Scheme of 36 States/UTs of the country for their feedback. The feedback about the Agriculture Census Scheme were received from all the States/UTs except Bihar. In Agricultural Census 2015-16, the status of Jammu & Kashmir was as a state (not UT) so feedback has been reported accordingly. The feedback received from 35 States/UTs of the country on the various aspects of the Agricultural Census are summarized below:

Funds for Agricultural Census Scheme

Except four States/UTs (11.43%) namely Arunachal Pradesh, Jammu & Kashmir, Andhra Pradesh, Nagaland, 88.57 % States/UTs (31 out of 35) expressed that funds for Agriculture Census Scheme is sufficient. About 71.43% States/UTs (25 out of 35) indicated that funds for the conduct of Agriculture Census Scheme was received in time. The States/UTs where funds were not received in time include (10 out of 35) Karnataka, Nagaland, Punjab, Andhra Pradesh, Jammu & Kashmir, Gujarat, Lakshadweep, Delhi, Chandigarh and Arunachal Pradesh. In most of these States/UTs the delay in receiving the funds has not affected Agriculture Census work but staffs were not paid salaries in time.

Items in Agricultural Census Scheme (Addition and Deletion)

In the survey, about 25.71% (9 of 35) States/UTs viz. Kerala, Manipur, Goa, Gujarat, Tamil Nadu, West Bengal, Lakshadweep, Delhi, and Uttarakhand have suggested additional items on which data should be collected in Agriculture Census. The following additional items are suggested by different states/UTs:

i. Details of source of irrigation in Phase-II (Kerala & West Bengal),

ii. Purpose of production for food grains/vegetables, i.e. whether produced for self-consumption or commercial use/sale (Goa),

iii. Land records & credit policy data (Gujarat),

iv. Clarity in joint holding (Tamil Nadu),

v. Number of trees and production of major crops (Lakshadweep),

vi. In Block-B of Annexure-VII (Schedule 2.4), there must be a row at serial number 4 for 'others' source code of credit (Delhi)

vii. L-1 Schedule is prepared according to Khatauni, Khasra & crop register. Therefore, holder wise and Khasra number wise data should be captured (Uttarakhand).

Majority of states (94.29%) have not suggested deletion of items from the present list of items in the agricultural census and few states have not commented.

Computerization of Land Records

The land records in 16 States/UTs namely Andaman & Nicobar, Andhra Pradesh, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Sikkim, Tamil Nadu, Telangana, Tripura, West Bengal, Dadra & Nagar Haveli and Lakshadweep have been computerized. Further, more than 90% of records have been computerized in 7 states namely Haryana, Delhi, Puducherry, Punjab, Rajasthan, UP and West Bengal. Khasara and Khatauni both have been computerized in the states /UTs of Andaman & Nicobar, Andhra Pradesh, Gujarat, Jharkhand, Madhya Pradesh, Tamil Nadu and Telangana.

Data Quality

About 94.29% (33 out of 35) states/UTs are satisfied with the data quality of Agriculture Census Scheme. Two states namely Goa and Telangana have cited some apprehension. The state of Goa stated that land records data has not been updated so it cannot be used for census purpose. Telangana described that there is no crop booking by VROs since 2016-17 due to which the information of tenants of land holdings, land use and cropping pattern are not available. During the year 2019-20, the crop enumeration has been entrusted to Agriculture Department for the both seasons.

Website of Agriculture Census

The states were requested to provide feedback on website of Agriculture Census. All states/UTs have reported that Agriculture Census website is user friendly. Punjab particularly indicated that website often shows server error whenever online data option is searched. Some of the suggestions provided by state for improvement of website include: (i) Tehsil level tables should also be displayed (Punjab); (ii) Agriculture Census data need to be linked with land record so, live census data

can be available on real time bases (Gujarat); and (iii) data dissemination should be done at further disaggregation level such as development block, Nyay Panchayat, parliament/legislative assembly, division and other category (e.g. hill-plains regions) level (Uttarakhand).

Training for Districts Level Officers

In most of the states, except Goa, Lakshadweep and Chandigarh, the trainings for the districts level officers were imparted well in time by the state level officers for Phase-I, II and III of Agriculture Census. The district level officers subsequently imparted trainings to the primary workers for Phase-I, II and III. In Goa, district level trainings were not imparted because trainings to primary workers were imparted at taluka level by the State level officers well in time. Similarly, the state level officers also work as District level officers in case of Lakshadweep and Chandigarh, so the state level officers also work as District level officers. *Overall, the trainings were imparted well in time in all the states/UTs.* Some States/UTs have highlighted the following issues/problems in imparting the training Phase-I, II and III:

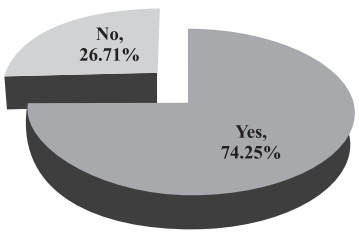
(i) Difficulty in understanding Concepts and Definitions (Meghalaya, Mizoram, Nagaland, Jammu & Kashmir, Tamil Nadu, Arunachal Pradesh),

(ii) Manual was not prepared in detail (Jammu & Kashmir), and

(iii) Staff shortage (Uttar Pradesh).

Timeliness in Agriculture Census Work

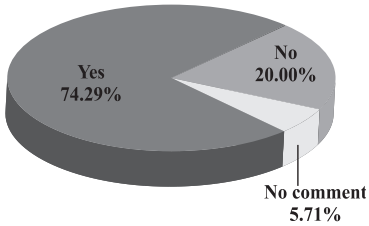
Phase-I: In majority (74.26%) of states/UTs (26 out of 35) revealed that Phase-1 work of Agriculture Census was completed well in time. However, work in 9 states was not completed in time due to following reasons: Land records were not updated (Jammu & Kashmir/ land record states), priority to other work (Karnataka, Punjab, Rajasthan, Maharashtra, Jammu & Kashmir, Gujarat, Tamil Nadu), the revenue officials were engaged in election work (Puducherry), boycott of field work of Agriculture Census by Patwari (Maharashtra), and Phase I work was conducted after monsoon season due to bad weather (Lakshadweep).



Whether Phase I work was completed in time?

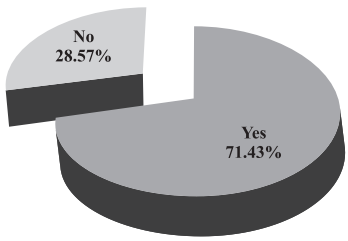
Phase-II: In 26 out of 35 states/UTs (74.29%) data collection work for Phase-II was completed in time, however in few states/UTs (e.g. Karnataka, Punjab, Rajasthan, Maharashtra, Gujarat, Tamil Nadu, Himachal Pradesh) work could not

be completed in time. The delay was due to several reasons such as priority to other work (Karnataka, Punjab, Rajasthan, Jammu & Kashmir, Gujarat, Tamil Nadu), boycott of field work of Agriculture Census, Phase-II (Maharashtra) and late receiving of data (Gujarat).



Whether data collection work for Phase-II was completed in time?

Phase-III (Input Survey): The input survey (Phase-III) data collection work was completed in time, in 25 out of 35 states/UTs (71.43%). In few states/UTs work was not completed in time. Main reasons for this delay include: Priority to other work (Karnataka, Punjab, Rajasthan, Jammu & Kashmir, Gujarat, Himachal Pradesh, Sikkim), in Maharashtra due to boycott of field work of Agriculture Census by primary workers, data collection work for Phase-I & II which in turn delayed the data collection work of Phase III also. *Overall, work load and multiple engagement of primary workers/field staffs are the major cause for delay in the Phase-I, II and III activities of Agriculture Census*.

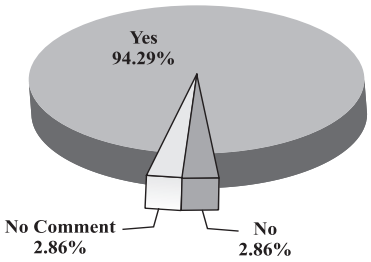


Whether input survey work was completed in time?

Supervision by State level Officials

In Phase-I, supervision work was undertaken by the State level official in 94.29% (33 out of 35) states/UTs. In Uttarakhand, although no direct supervision was done at field level by state HQ Staff, but whole work was supervised through Agriculture statistics officer (Additional Statistics officer and Assistant statistics Officer posted at district and sub district level). Main observations reported on the types of irregularities include delay in completing the Agriculture Census work, which was due to multiple engagement of primary workers/field functionaries (i.e. work was not done in time) in several states/UTs (Karnataka, Manipur, Meghalaya, Punjab, Rajasthan, Maharashtra, Jammu & Kashmir, Gujarat, Tamil Nadu, Lakshadweep, Himachal Pradesh), and incorrect reporting of operated area in few states/UTs (Kerala, Manipur, Nagaland). Other irregularities noticed were incorrect reporting by the enumerators in current fallow and fallow land due to misunderstanding of concepts and definitions (Mizoram), wrongly filled operational holder information (Rajasthan), error in data reporting and error in codes (Sikkim), incorrect reporting of operated area and holding category (Andhra Pradesh), errors like operational area in different unit (Gujarat), operated area incorrectly reported due to a conceptual misunderstanding which was later rectified (Goa), compiled T-1 based on the available computerized land records data, duplication

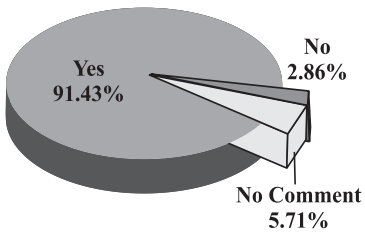
records (Telangana), network issue at district level (Uttar Pradesh). *The misunderstanding of concepts and definitions by field staffs seems to be major reason for the observed irregularities.*



Whether supervision work (in Phase-I) was undertaken by State level?

Some of the states/UTs have also reported that supervision was not undertaken due to following reasons: Funds were not received in time (Jammu & Kashmir, Arunachal Pradesh), shortage of supervisory staff (Jammu & Kashmir, Arunachal Pradesh, Madhya Pradesh), priority to other work (Jammu & Kashmir) and unspecified reasons (Maharashtra, Goa, Telangana, Puducherry, Delhi, Dadra & Nagar Haveli, Daman & Diu).

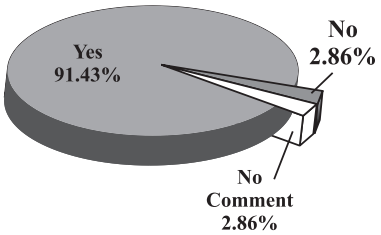
The supervision of Phase-II work of Agriculture Census by the state level official was undertaken in 91.43% (32 out of 35) states/UTs. In Uttarakhand, although no direct supervision was done at field level by state HQ Staff, but whole work was supervised through Agriculture Statistics Officer (Additional Statistics Officer and Assistant Statistics Officer posted at district and sub district level). Madhya Pradesh could not undertake the supervision of Phase-II work of Agriculture Census. Jammu & Kashmir could not undertake supervision because funds were not received in time, shortage of supervisory staff and priority to other work. Main irregularities observed during the supervision were as follows: Agriculture Census work was not completed in time (Manipur, Punjab, Rajasthan, Maharashtra, Jammu & Kashmir, Gujarat, Tamil Nadu), required number of schedules were not filled up (Manipur, Gujarat), schedule were not filled up properly (Karnataka, Kerala, Manipur, Meghalaya, Nagaland, Maharashtra, Andhra Pradesh, Gujarat, Delhi, Andaman & Nicobar Island), mostly error in codes (Sikkim), operated area incorrectly reported due to conceptual mistake which was later rectified (Goa), data inconsistency observed at manual scrutiny stage (Telangana).



Whether supervision work (in Phase-III) was undertaken at nodal office level?

In Phase-III (Input Survey) of Agriculture Census, supervision was undertaken in 94.29% (33 out of 35) states/UTs. Uttarakhand and Chandigarh, supervision could not be done due to similar reasons as mentioned for Phase-I and II. The observed irregularities are noted as: work was not done in time (Karnataka, Manipur, Punjab, Rajasthan, Jammu & Kashmir, Gujarat, Tamil Nadu, Arunachal Pradesh

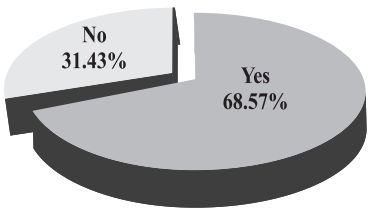
and Himachal Pradesh), required number of schedules were not filled up (Manipur, Gujarat and Delhi), observations incorrectly reported (Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Andhra Pradesh, Gujarat and Uttar Pradesh), schedules not filled up properly (Mizoram) and error in codes (Sikkim).



Whether supervision work (in Phase-III) was undertaken at nodal office level?

Data Entry Software

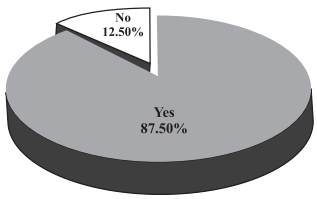
The data entry was done by the state in 68.57% (24 out of 35) states/UTs. In Punjab, Sikkim, Jammu & Kashmir, Chhattisgarh, Chhattisgarh, Himachal Pradesh data entry was done by the state only for Phase-I. (i) Data entry in respect of states of Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Jharkhand, West Bengal, Arunachal Pradesh, Madhya Pradesh was undertaken by NIELIT, Kolkata. (ii) NIELIT, Chandigarh (Punjab), (iii) Through outsource agency selected by e-Tendering (Karnataka, Uttarakhand), and (iv) NIELIT (Chandigarh, Andaman & Nicobar Island, Uttar Pradesh). In Maharashtra, state has developed own software with the help of NIC Pune. Data entry was done by field level staff of Revenue Department, Maharashtra for Phase-I. In Haryana it was done by Hartron Haryana.



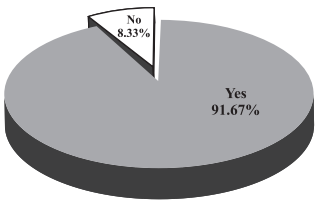
Whether data entry done by state?

Phase-I

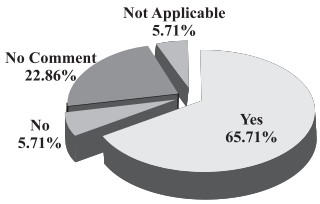
In 24 states/UTs where data entry was done by the state, 21 states/UTs (except Karnataka, Uttarakhand and Madhya Pradesh) have received the data entry software well in time. Karnataka mentioned that data entry software was received late. Maharashtra and Kerala developed own software. Telangana and Puducherry also developed in house software. In total 23 states/UTs have imparted the training on use of software but no difficulty has been reported. Further, out of 24 where data



Whether the data entry software received in time?



Whether the software in user friendly?

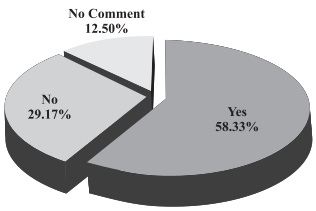


Whether any training was imparted on use of software?

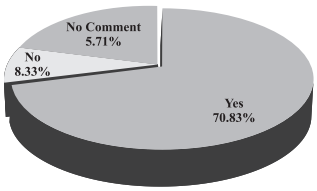
entry was done by the state, 22 states/UTs (except Punjab and Madhya Pradesh) reported that the software is user friendly. Punjab informed that generation of Tehsil and district wise tables was not easy. Gujarat reported issues related to data entry, i.e. software hangs due to low internet speed, this leads to less data entry.

Phase-II

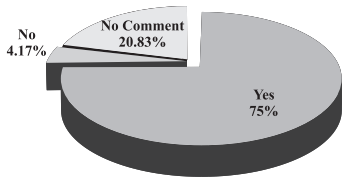
In 14 out of 24 states/UTs where data entry done by the state, the data entry software was received well in time for Phase-II. The data entry software was not received in time in Uttarakhand, Puducherry, Haryana, Andhra Pradesh, Odisha, Rajasthan and Manipur. Telangana and Kerala have in house software developed by respective state DES. Jharkhand and Manipur done by NIELIT, Kolkata. Andhra Pradesh proposed few modifications in the software developed by NIELIT, Kolkata, so there was delay in receiving modified software. In 17 states/UT the training was imparted on use of software data entry of Phase II. Total 18 states/UTs reported that the software is user friendly. Minor difficulties were encountered but resolved after discussion with NIELIT, Kolkata (Goa). Uttar Pradesh reported issues related to data entry, i.e. very huge data.



Whether the data entry software received in time?



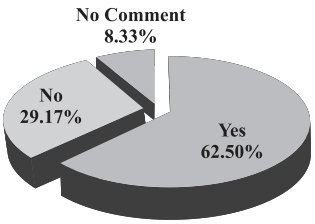
Whether any training was imparted on use of software?



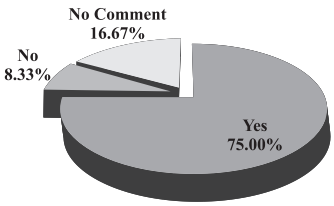
Whether any software is user friendly?

Phase-III

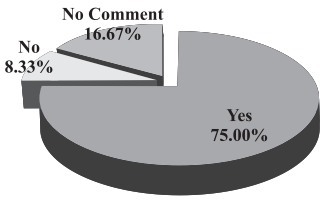
In 15 states/UTs data entry software was received in time. States/UTs namely Manipur, Rajasthan, Odisha, Andhra Pradesh, Haryana, Puducherry and Madhya Pradesh reported late receiving of data entry software for Phase-III. In Manipur,



Whether the data entry software received in time?



Whether any training was imparted on use of software?



Whether any software is user friendly?

Sikkim and Jharkhand data entry was done by NIELIT, Kolkata. Andhra Pradesh mention the state has proposed certain modifications in the software developed by NIELIT, Kolkata, hence there is delay in receiving modified software from GOI. In 18 states/UTs the training for Phase-III was imparted on use of software and no difficulty reported. Assam data entry is given to NIELIT, Kolkata. Arunachal Pradesh done manually. According to 18 states/UTs the software is user friendly (except Arunachal Pradesh, Madhya Pradesh). Goa face minor difficulties encountered were resolved after discussion with NIELIT, Kolkata.

Staff

Position at State Headquarter

State	Number of posts			Reasons for not filling	Additional posts needed, if sanctioned post not adequate (Indicate number)
	Sanctioned	Filled-in	Vacant		
2	3	4	5	6	7
Karnataka	11	10	1(Group D)		
Kerala	10	8	1(ASO), 1(LDC)	Non-availability of ranked list from PSC, Promotion delayed due to lockdown	
Manipur	6	0	6 (Economic Analyst 1, Inspector 1, UDC 1, LDC 1, Driver 1, Peon 1)	Ban on filling the vacant posts	
Meghalaya	10	8	1-Asst. Director,1-Jr. Statistical Asstt.	Will fill up during next Census 2020-21	2- Inspector of Census
Mizoram	5	5		2 (Data Entry Operators)	
Nagaland	6	6	0		2 Technical Posts.
Punjab	8	6	Joint Director Agriculture (Census), 1-Driver	Shortage of Staff	
Rajasthan	11	10	1- Junior Assistant	Write to State Govt. To fill up the post	
Sikkim	9	10	1-LDC, 1-Steno., 1-Driver		A post of Account Clerk may be required for account related work.
Maharashtra	13	7	Deputy Commissioner, Senior Statistical Assistant, Agriculture	Transfer Retirement Retirement	Senior Statistical Assistant/ Agriculture Statistical Supervisor (Group C)

			(Group B Jr.), Statistical Supervisor (Group C), Stenographer (Higher Grade Group C), 1- Clerk, 1-Driver	Retirement Transfer	
Odisha	12	7	2- Jr. Statistical Asst., 1-Driver, 2-Peon	Due to non-recruitment staff	Requirement of 2 no. Of A.S.O's
Jharkhand	8	4	1-Joint Director, 1-Steno, 1-Peon, 1-Accountant	Yet to be not required Waiting for joining	
Andhra Pradesh	7	6	1-Stenographer	No recruitment	One Statistical Officer post is required for effective monitoring and improvement of data quality by suppressing the sanctioned Stenographer post
Jammu & Kashmir	10	5	1-Statistical Assistant, 2-Junior Assistant, 2-Orderly		
Goa	5	5	Nil		
Haryana	10	3	1-Joint Director (Demand in process), 1-Assistant Research Officer, 1-Dy. Supdt.(Demand in process), 1-Stenographer (Demand in process), 1-Clerk 1-Peon, 1-Driver		
Gujarat	6	4	1-Head Clerk Class-III 1-Senior Clerk Class-III		
Assam	10	7	1-Sr. Statistical Assistant, 1-Junior Assistant, 1-Peon	under process	
Tamil Nadu	10	9	1-Office Assistant	Due to retirement	1-Deputy Director 1-Senior Statistical Assistant 1-Data Entry Operator
Telangana	8	8	0		
Tripura	7	0	1-Joint Director, 1-ASO/Sr. Statistical Assistant, 1-UDC 1-LDC 1-Stenographer 1-Driver 1-Peon		One Accountant may be engaged to deal the financial matters

Puducherry (UT)	4	1	1-Statistical Officer (Statistical Officer) 1-LDC, Peon (The General Administration Department has been addressed to fill up the posts)		
West Bengal	9	3	1-Deputy Director of Agriculture, 1-Accountant, 1-Upper Division Assistant, 1-UDC 1-Officer on Special Duty & Assistant Secretary, 1-Peon	Men is not in position	1. Evaluation Officer – 3 No. 2. Statistical Supervisor- 2No. 3. Computer-2 No. In District the following post are required:- 1. Computer-17 No. Reason for new Posts:- Agriculture Census 2020-21 will commenced in the state. To supervise the work at district level the posts as mentioned is required at state HQ
Lakshadweep (UT)	4	3	1-Multi Skilled Employee	Administrative Reason	
Delhi (NCT)	6	6			
Uttarakhand	8	5	1-Steno, 1-Peon Outsource employee		1 Programmer/ Assistant Programmer, 1 Data Entry Operator
Chandigarh (UT)	4	3	1-Statistical Assistant	Administrative reason (RRs to be framed)	
A & Nicobar (UT)	4	4			
Arunachal Pradesh	7	7			
D & N Haveli and Daman and Diu (UT)	2	2	0	Nil	(1) Asstt. Director (2) Statistical Assistant (3) Statistical investigator
Madhya Pradesh	*	*	*	*	
Chhattisgarh	8	1	7		Computer Statistic posted against this post
Uttar Pradesh	*	*	*	*	
Himachal Pradesh	4	4	0		

*Information not provided.

Infrastructure

Office Space: 25 out 35 states/UTs have reported adequate office space. Few states/ UTs including Punjab, Goa, Telangana, Puducherry, Lakshadweep, Andaman & Nicobar, Arunachal Pradesh and Madhya Pradesh raised some issues. Goa

informed that Agriculture Census Cell operates in DES Goa premises using the State Government setup. Punjab needs a store room, Sikkim needs repair work, Lakshadweep need one office room cum store room, and Madhya Pradesh need separate office.

Furniture: In 21 states/UTs furniture is adequate. Some states/UTs have additional need of tables, chairs, Almirah etc.

Computer: Except 10 states/UTs, most of the states mention additional need of UPS, computer, laptops, printer and internet connectivity etc.

Telephone: In 19 states/UTs telephone is adequate. Some states needs new connection, mobile set etc.

Fax: In 9 states/UTs fax machine is adequate. West Bengal needs scan printer for all district officers and 1 (one) for HQ instead of fax.

Vehicle: In 4 states/UTs vehicle is adequate. In Puducherry hiring of vehicle is allowed. However, they require one vehicle and creation of one post of driver grade-III. The States /UTs of Meghalaya, Nagaland, Andhra Pradesh, J&K, Assam, Punjab, Tripura, and Delhi each need a vehicle. Tamil Nadu needs a car for Additional Director (Agriculture census) for field visit and effective monitoring and supervision of Agriculture census work. Telangana requires additional Vehicle during the census period. Tripura needs two more vehicles for field work. West Bengal reported that in order to run the scheme the permission for hiring vehicle for all the district offices is required. Lakshadweep needs a Four-Wheeler, Uttarakhand needs vehicle for Primary worker/ supervisors/ Agriculture Statistics Officers. Madhya Pradesh also needs a vehicle for head of office.

High Level Coordination Committee (HLCC) Meeting related to Agriculture Census

In 23 out of 35 states/UTs (65.71%) reported that the HLCC meeting related to Agriculture Census was held regularly. State-wise details for schedule and implementation of meetings are as follows.

- Regularly (Haryana, Tamil Nadu),
- Annually (Assam, Jammu & Kashmir),
- Twice in a year (Meghalaya, Nagaland, Puducherry),
- Twice during the Agriculture Census period, before commencing field activities of Phase I & II and Phase III (Kerala),

- Once before commencement of Phase-I, II and III (Maharashtra),
- To complete the census work in time (Manipur),
- As per programme (Jharkhand),
- As a when feels necessity (Tripura),
- Preliminary meeting was done (Lakshadweep),
- Formal meeting HLCC not conducted regularly (Uttarakhand),
- HLCC not constituted (Chandigarh),
- Once in five year (during preparatory work of Census) (Andaman & Nicobar)
- Not regularly (Himachal Pradesh),
- Appraised the status of census on Quarterly basis to the Agriculture Census Commissioner of A.P. state (Andhra Pradesh),
- State level coordination committee (SLCC) meetings conducted as per need during Agriculture Census tenure (Goa),
- SLCC meeting for Agriculture Census 2015-16 was held on 08.02.2018 under the chairmanship of Additional Chief Secretary, Revenue Department and Agri. Census Commissioner with all line department (Gujarat),
- A state level monitoring committee (SLMC) meeting was conducted before and after conduction of survey (West Bengal).

Other suggestions from States/UTs related to ACS

Mizoram state requires a special guidance on Sampling Methodology from the Ministry for the operation of the next Agriculture Census. Also, State/District Agriculture Officials of Mizoram need training so as to bring about clarity on the concepts and definitions of the terminologies used in the Agriculture Census Schedules. Tamil Nadu has requested the formation of a District level Monitoring Committee for Agriculture Census. Lakshadweep desires to conduct both training and field work related to Agriculture Census after monsoon (May to September). During this period the south west monsoon is very severe leading to violent weather conditions and turbulence of the sea due to which physical connectivity between islands get very difficult.

3.3.3 Districts

The district level questionnaires were sent to the in-charges of the Agriculture Census Scheme of respective State Headquarter for feedback from district level

nodal officer. The questionnaire was sent to 65 districts selected from 36 States/ UTs. Subsequently, feedback have been received from 51 districts selected from 35 States/UTs (excluding Bihar). Complete list of selected districts from different states/UTs is given in Annexure IV. The analysis and observations on feedback received from districts on the various aspects of the Agricultural Census Scheme are summarized below.

Training for Primary Workers

The observations and feedback from district level nodal officers indicate that 90.20% (46 out of 51) districts have imparted trainings to primary workers well in time for Phase I, II and III of Agriculture Census. Dhule district of Maharashtra conducted training but Phase I-II trainings were not conducted in scheduled time. About 28.3% districts (13/46) notified the difficulties in understanding concepts and definition by the primary workers. These districts are Chikkaballapur and Yadgiri (Karnataka), South Garo Hills (Meghalaya), Champhai (Mizoram), Phek (Nagaland), Banswara and Pratapgarh (Rajasthan), East (Sikkim), Anantapuramu (Andhra Pradesh), Bhavnagar and Navsari (Gujarat), Pakur (Jharkhand), and Sultanpur Pradesh(Uttar). In Navsari district of Gujarat manual was not well prepared whereas Andaman & Nicobar suggested that time period of the work may be increased.

There were about 9 to 2% districts (5-6 out of 51) where training was not organized in time during Phase I, II and III of Agriculture Census. Reasons for not organizing training in time include: (i) the primary workers were already trained reported by 6 of the 51 districts, (ii) funds was not received in time in 5 of the 51 districts [e.g. Phek (Nagaland), Nayagarh (Odisha), Mandla and Narsingpur (Madhya Pradesh, and Ahmedabad (Gujarat)], (iii) some local reason in few districts like in Talathi Union of Maharashtra boycott Agriculture census and in Lakshadweep Phase-1 training was imparted after monsoon season due to bad weather condition, (iv) Shortage of trainers, and (v) Trainers busy in other work. It has also been observed from the data that all the primary workers were present in training session in 88.23% (45/51) districts.

Timeliness in Agriculture Census Work

Phase-I work of Agriculture Census was completed well in time has been reported by 58.82% (30 out of 51) districts. Moreover, in several districts work was not completed in time due to various reasons such as primary worker given other priority work (31.37%), records not updated in land record states (3.92%) and insufficient number of primary workers (3.92%). Lakshadweep conducted Phase

I work after monsoon season due to bad weather condition. Puducherry primary workers were busy with election works whereas in Haveri district of Karnataka they were busy with other works. About 64.70% (33/51) in Phase-II and 66.66% (34/51) districts in Phase-III stated that data collection work was completed in time whereas districts where data collection work of Agriculture Census for Phase II and III was delayed have reported the similar reasons as in case of Phase-I.

Supervision of Agriculture Census Work by District Level Officer

The supervision work was undertaken by the district level officer in 90.19 (46/ 51), 90.19 and 88.23% (45/51) districts in Phase-I, II and III respectively. The districts where supervision work was undertaken, have observed and reported different types of irregularities. In Phase-I, irregularities observed were work not done in time (33.33%), missing survey numbers (3.92%) and T-1 not prepared properly (13.72%). In case of Phase II and III, observed irregularities observed include work was not done in time (27.45%), schedule was not filled-up properly and area of operational holding given in Phase II is different from Phase I etc. Some districts have not done supervision work due to non-availability of sufficient funds for undertaking the tour, shortage of supervisory staff, and supervisors busy in other work etc.

3.3.4 Field Visits and Primary Workers

Under this evaluation study, field visits were to be undertaken in five states including three Land Record and two Non-Land Record States. The states include Rajasthan, Uttar Pradesh, Madhya Pradesh, West Bengal and Assam. During the field visits, feedback from the concerned officials as well as the primary workers involved in the ACS, to assess the data quality and to get an idea of the problems faced in the conduct of the AC in general and field work of the census in particular, were collected. Assam participated in the meeting and provided feedback via virtual mode. Salient points from the field visits in different states are summarized as below.

RAJASTHAN

The field visit in the state of Rajasthan was undertaken in the month of October 2020. The project team first visited Jaipur and had a meeting with Shri Shyam Singh Meena, Director (Agriculture Census), Rajasthan, Shri Giri Raj Sharma, and Shri Batti Lal Meena, Assistant Director, Agricultural Census, Revenue Department, Government of Rajasthan. A detailed discussion was held with the officials about the agricultural census scheme in the state. The Director (Agriculture Census) discoursed that data entry work was delegated to a private agency using data entry

software provided by NIELET. The state has computerized about 81% of Khatauni register. The staff strength available to them is adequate. However they requested one post for the person with knowledge of computers otherwise they have to contact NIELET for even some small query related to computers. In the discussion, they also highlighted that they require proper training for the conduct of next census since it is to be conducted through use of Tablets/smartphones. The project team along with Mrs. Deepali Sharma, Statistical Officer, Agriculture Census, Rajasthan and Mr. Deepchand Agrawal, Assistant Statistical Officer, Agriculture Census, Rajasthan along with primary worker visited in two tehsils, namely Dudu and Mozamabad. The discussion was held with the Patwaris and Revenue officers of these Tehsils. The L-1 and L-2 schedules were also examined. While discussing with the primary workers it was pointed out that the honorarium for the conduct of Agricultural Census was inadequate and not received in time. They requested either to increase the honorarium amount at least by double or allow to recruit an assistant under them who can help with work of agriculture census scheme. They mentioned that the phase-wise work of agriculture census gets delayed because of their priority to other works. They also mentioned that most of the time the actual operational holders (tenant) does not know their khasra number of agricultural land cultivated by them and hence faced difficulty in recording the operated area. Therefore, it is suggested that in Khasra/Girdawari register, there should be a column to record the name of the actual tenants.

UTTAR PRADESH

Field visits were made by project team in Uttar Pradesh in the month of October and November 2020. The first visit was made to Ambedkar Nagar district of Uttar Pradesh on 29 October 2020. During this visit, a meeting was held at Collectorate Office, Aalapur Tehsil, Ambedkar Nagar, Uttar Pradesh. This meeting was attended by Shri Deva Nand Tiwari, Naib Tehsildar, Aalapur Tehsil and primary workers (Revenue Inspectors and Patwaris) involved in ACS. In the second visit, a meeting was held in the Board of Revenue, Government of Uttar Pradesh, Lucknow under the chairmanship of Sh. Bhishm Lal Verma, Deputy Land Reforms Commissioner, Board of Revenue, Government of Uttar Pradesh, Lucknow on November 05, 2020. Sh. Devesh Srivastava, Additional Statistical Officer also attended this meeting. The agricultural census data is collected with the help of State Govt. staff, in particular, by the Revenue Department of Uttar Pradesh. During this meeting a detailed discussion about the ACS activities were undertaken. In this discussion, the main focus was on difficulties/problems faced in the whole process of ACS, their solutions so as to suggest improvement in the conduct of ACS work and whether any deletion or addition required in the schedules which are being used

for data collection. The land record computerization is in process. The major points raised during this meeting were shortage of staff at state head quarter as well as lower level, lack of infrastructure at district-level such as non-availability of computers. Subsequently, a field visit was undertaken to Pratapgarh district of Uttar Pradesh to interact with primary workers involved in the agricultural census data collection work. A questionnaire developed by the project team was also circulated to Revenue inspectors and Patwaries to provide their feedback. On 7 November 2020, an interaction meeting was also organized at Kunda Tehsil of Pratapgarh district in Uttar Pradesh. This meeting was attended by Mr. R J Yadav, Tehsildar, Kunda and about 40 Revenue inspectors and Patwaris. The filled-in schedule for some villages were also observed. The work done by the primary workers was satisfactory. During the discussion with primary workers, several points emerged from this meeting such as (i) Sheet/proforma required for agricultural census work are generally not provided timely and also not in sufficient number, (ii) Honorarium should be increased according to quantum work in Agricultural census activities. A minimum honorarium, for example Rs. 500 should be fixed for a village for a certain number of holdings (may be 30 to 40) and further minimum Rs. 10.0 per holding for additional 20 holding per day etc., (iii) Phase-wise training should be provided locally, and (iv) There is problem in reporting the area of holders in other villages. The area of farmers residing in other districts and living in other tehsils should be made available on the prescribed form to the Patwaris of the concerned revenue village at the scheduled time. During the field visits, feedback of primary workers were also taken in the questionnaire developed by the project team. In total 19 primary workers, 10 from Pratapgarh and 9 Ambedkar Nagar districts filled up the questionnaires.

MADHYA PRADESH

A field visit was made to Huzur Tehsil of Rewa District, Madhya Pradesh. First a briefing meeting was held with the Smt. Farheen Khan, Deputy Collector, Shri R. P. Tripathi, Tehsildar Huzur, and Mr. Govind Soni, Superintendent of Land Records to discuss about the purpose of this visit and overall feedback about the ACS. Subsequently, interaction meeting was held with the primary workers (patwaris)/revenue inspectors involved in the ACS work. Some major points and suggestion from this field visit/meeting are as follows. It was suggested that the work of agriculture census scheme should now be move to online mode. Tehsildar of Huzur Tehsil was of the opinion that the primary workers (patwari) involved in agriculture census scheme should be given honorarium equivalent to at least one-month salary. During the discussion, with the primary workers it was pointed out

that there is need of proper training to be organized on time for the data collection. Few of the primary workers also mentioned that they had faced difficulty during the Phase I work as they did not receive agricultural computation forms and manuals on time. They also had difficulty in understanding the concepts and definitions, one of the possible way to solve this may be by providing them with the instruction manual in the regional language. The patwaris could not complete their phase wise work on time mainly because the records are not updated and priority to other work while few of them said that operational holder not cooperative and lack of fund are the major reasons. Some of them also mentioned that they did not receive honorarium in time and also the amount of honorarium needs to be increased.

WEST BENGAL

The field visit in the state of West Bengal under the project evaluation of ACS was made during November 25-27, 2020 for collecting of information from the primary workers i.e. revenue officials. During this visit a meeting was held with Shri. Bidhayak Mukherjee, Additional Director of Agriculture (Evaluation) and Joint ACC (Technical), Government of West Bengal regarding details of work done under the agricultural census scheme and field visit. It was informed that data entry work was delegated to a private agency using data entry software provided by NIELET. They further informed that the staff strength available to them is not adequate and also there was lack of equipments like Computers and peripherals for conduct of the work whereas the fund provided to them was sufficient. The field visits were undertaken in two districts namely Darjeeling and Jalpaiguri. Two tehsils namely Siliguri and Jalpaiguri in two respective districts were visited. During the field visits the project team was accompanied by the Agricultural Evaluation officers namely Sh. Asit Baran Roy and Sh. Mrinal Kanti Majumdar of the respective tehsils. In Siliguri tehsil visits were made in 4 blocks where as in Japaiguri in 2 blocks. Detail meetings were organized with the Revenue inspectors working under this project at the Block Land and Revenue Office (BLRO) of each block and data on the primary worker questionnaire were collected. They highlighted that training was not provided in time along with unavailability of training manual. Majority of them has also highlighted that they have not faced any difficulties in work during all three phases and data collection work was completed in time. Most of them highlighted that they have not received the honorarium in time and also the honorarium is not sufficient. Majority of them have also emphasized that there is a shortage of manpower and transport facilities for conduct of the field

works and they were under pressure with other priority works. During this visit, primary workers were also provided the feedback proforma developed under the study and they were asked to give their feedback.

ASSAM

The project team held a virtual meeting on December 15, 2020 with the state officials and field staffs (Revenue Inspectors, i.e. Lot Mondols) involved in Agriculture Census work. Due to COVID restriction in the state physical visit could not take place. Sh. Puranjan Das, Deputy Director, Directorate of Economics and Statistics, Guwahati, Assam and the lot mondols of Kamrup revenue circle of Nagaon District of Assam participated in the meeting. During the meeting, issues related to agriculture census scheme were discussed. The lot mondols of 5 villages namely Putimari, Kekuribari, Bundura Gaon, Niz Kampur Darangi Gaon, 1 No. Kachuwa provided the feedback. Majority of them have highlighted that training was provided in time and they have not faced any difficulties in work during all three phases and data collection work was completed in time. Most of them have highlighted that more manpower should be engaged for smooth implementation and as well as introduce modern technology for agriculture census.

Feedback from Primary Workers

The analysis of feedback received from 60 primary workers from 5 states are summarized as follows. About 78.3% primary workers reported that the training related to collection of Agriculture Census data has been organized timely. Generally, it has been organized one time in the beginning of Agriculture Census work (i.e. Phase-I). Primary workers (about 68.4%) also informed that training manual was provided timely. The difficulty faced during the Phase I work, if any, has been reported by 16.7% of primary workers. The main difficulty was 'understanding the concepts and definitions' as 'instructions manual was not provided in regional language'. The Phase-I work of Agriculture Census was completed in time has been reported by 75.9% the primary workers. In most of the states the work of Phase-I was completed on time. However due to priority to other activities, work was not completed on time as in Rajasthan (only 25%). Often work was completed on time but not submitted due to preoccupation with other work. The difficulty faced during the Phase II and III work of Agriculture Census has stated by 37.9% and 36.2% of primary workers respectively. About 75.9 % primary workers agreed that timeline was informed and known for different activities (for data collection and reporting etc) for each phase of Agriculture Census. The primary workers informed that about 81.8, 77.4 and 69.6% of the filled in schedules of Agriculture

Census were sent to district/block headquarter in time for Phase I, II and III respectively.

The primary workers from all the state (except Assam) stated that the honorarium for ACS work is inadequate and even not received in time. Keeping in view the quantum of work involved in the ACS, the honorarium amount must be increased. It should be paid directly to bank account of the primary worker engaged in the agriculture census immediately after the completion of ACS work. The facilities like Transport, funds etc. should also be improved. Transport facility to reach every nook and corner and to collect good quality of data is required. Vacant posts of Patwari should be filled or increase the number of primary workers to reduce workload/ for smooth implementation of ACS. An online app should be developed so that work can be completed in less time and minimum efforts.

The training should be done Phase-wise and locally. Training should be imparted on schedule time and also manuals should be provided. Indeed, training programme with master trainer should be arranged along with language friendly manual book. This should be taken seriously otherwise it may affect data quality as well as timeliness. Further, sometime due to the long process of Agricultural Census work, different patwari work at different times, this lead to record related problems.

3.3.5 NIELIT

The NIELIT was involved in software development under Agriculture Census Scheme. The feedback from NIELIT indicates that funds were received in time for data entry software, none of the states/UTs noticed or reported any difficulty on the use of this software, no problem was faced or noticed in data entry software or data processing for Phase-II and III. The NIELIT has provided two suggestion. (i) Digitize the paper-based schedules so that data collection can be done using smartphones/Tablets that will save time, (ii) Provide adequate training to the primary workers on Tablets based data collection software.

4 Findings and Conclusions

The study entitled Evaluation of Agriculture Census Scheme was awarded to ICAR-IASRI, New Delhi. The evaluation study started on 01 January 2020 for the period of six months, i.e. upto 30 June 2020. The COVID pandemic in March 2020 affected the activities of this study. The field visits could not be undertaken and the response from the States/UTs and districts could not be obtained timely. Due to this unforeseen situation, DAC&FW, MoA&FW, Government of India extended this study until 31st December 2020. Under this evaluation study, two workshops were also organized. A one day inception workshop was organized at ICAR-IASRI, New Delhi on January 31, 2020. This workshop was aimed to discuss the approach to be adopted in this evaluation study. The questionnaires developed for obtaining information for this evaluation study were presented, discussed and finalized. Second workshop was organized on December 21, 2020 to discuss major observations and recommendations from this study. In particular, observations on technical aspects of the census, the administrative arrangements, manpower and infrastructure, the field work of the census as well as data processing in the ACS were discussed in detail.

Major Observations and Recommendations

Based on the review of Agriculture Census reports, Schedules and guidelines by the project team, observations from the experts during the inception and final workshop, analysis of feedback and inputs (filled up schedules) including Agricultural Census Division of DAC&FW, State Head Quarters of Agricultural Census, District level nodal officers and primary workers received from different officials involved in the ACS and observations from the field visits, the major observations and recommendations from this evaluation study are as follows:

Undoubtably, Agriculture Census in India is an important source of information for National Agricultural Statistics System. Agricultural Census data are used as baseline information for formulation of programme/policies by various State/UT

Governments, Departments of Central Ministries such as Ministry of Statistics and Programme Implementation, Ministry of Rural Development, DAC&FW etc., Research Organizations/ Individual Researchers, International Organizations such as FAO of United Nations and individual researches from abroad, and Various Other Organisations such as Fertilizer Association of India. Several major government schemes and policies such as PM-KISAN Scheme and Loan Waiver Scheme of various State Govts also used Agriculture Census data. In addition to this, in the scenario of doubling farmer's income database of farmer is required. Agriculture Census data may also be used to supervise the institutional credit penetration among the farmers. The user list of Agriculture Census data is quite long. Thus, Agriculture Census scheme is an important activity of Government of India and providing significant baseline data for several Schemes, Policies and Plans across of the Ministries and Departments in the country, which otherwise is not possible. It is important to note that such data and information cannot be avoided. Hence, ***Agriculture Census scheme must need further strengthening with regard to the timeliness and changing scenario of technological advances.***

Some suggestion for improvement in the existing agriculture census scheme are listed below.

Extraction of Data from Computerized Land Records in Land Record States

The Phase-I of the Agricultural Census is carried out following a complete enumeration approach in those States/UTs where there is a system of maintenance of comprehensive land records (Land Record States). Majority of the land area of the country falls under this category of States. All the parcels belonging to an operational holder in a tehsil are pooled in respect of these States. The pooled parcels are shown at the village of residence of the operational holder. This appears to be a huge workload on primary workers and a time consuming activity. At present, 16 States/UTs have computerized their land records and remaining States/UTs are also progressing in the process of computerization of land records. Extraction of data electronically will substantially reduce workload on the primary workers. Extracted data from computerized land records should be made available to the primary workers for confirmation and recording/ updating of additional items not available in the land records. This will improve efficiency in data collection and processing. Therefore, ***it is recommended to explore the possibility of extraction of data from computerized land records for all those States /UTs where land records have been computerized using common platform and uniform methodology.***

Digitization of Collection and Compilation of Agricultural Census Data

The current approach of collection and compilation of Agricultural Census data (i.e. paper-based data collection) is a tedious and cumbersome work undertaken by primary workers. This also leads to various non-sampling errors. ***It is recommended that the Agricultural Census Division should explore the possibility of using smartphones/tablets in collection of Agricultural Census data in all the three Phases.***

This will also eliminate transcription errors at data entry stage as well as reduce the delay in processing of data. In Phase-I, the data extracted from computerized land records in Land Record States may be supplied to primary workers who will update the data including missing information and submit updated data to the supervisor at Tehsil level (electronic transmission). The officers at Tehsil level would check/verify the quality of data and generate village level Table (T-1), make comparison with data available at Tehsil level and approve village level T-1 if found correct. In case of discrepancies the data will be sent back to Primary Worker for rectification/correction. After finalization of T-1 for all villages in a Tehsil, Tehsil level Table would be generated and submitted at District Headquarter. District officials would aggregate data of all tehsils and compile district level estimates. The same process (i.e. sum of all Tehsils / Districts in a State) would be undertaken at State Headquarter to compile State level data for submission to DAC&FW for incorporation in the national level database. Similarly, for Phase-II & III, primary worker will collect village level data on operational holdings directly in the tablets and transmit the same to his/her supervisor for scrutiny/verification. After approval of supervisor, the data will be transmitted to the authorized data processing agency in the State/UT.

It is also recommended that the existing approach of data collection using Paper and Pencil Interviewing (PAPI) method should be replaced with the Computer Assisted Personal Interviewing (CAPI) method for data collection at the field level. For this purpose, user friendly software/Apps should be developed for data collection through tablets/smartphones. The developed software/Apps should have certain validation checks for consistency of data. A user friendly software for extraction of data from land records at village level and digitization of manual schedules for Phase I, II & III data in the tablets should also be developed. Both primary workers and supervisors should be provided adequate training in use of tablets and software.

Land Holding Classes

Both, Agriculture Census and Cost of Cultivation Surveys are conducted by the MoA&FW, Govt of India. However, it has been observed that the size of land holding classes defined in Agriculture Census and Cost of Cultivation Surveys are not similar. Consequently, results of the two surveys are not comparable. Therefore, ***it is recommended that in the Cost of Cultivation Surveys also, the size classes of land holdings used for Agriculture Census should be adopted.***

Reference Year for Agriculture Census

The reference year for Agriculture Census is Agricultural Year and data for Phase-I & II of census programme is collected for a common reference year and for Phase-III, the reference year is one year after the Phase-I & II. For Agriculture Census 2015-16, although as per instruction Phase-I data was to be collected during July-September 2016, operationally data collection time taken by the primary workers varied from 4-9 months. Similarly, data collection for Phase-II which was expected to be completed by June 2017, the actual time taken by the State varied from 6-12 months i.e., almost a gap of one and half years from the reference period. In land record states, the impact of delayed data collection may not be much for Phase I & II but in non-land record states and for input survey, problem of recall lapse adversely impacts the quality of data. Feedback and discussion at various levels reveal that similar issues have been noticed in past Agriculture Censuses as well. Practically, it seems advantageous to have different reference period for all three phases of Agriculture Census to overcome the problem of recall lapse in data collection. Like input survey which has a reference period independent of Phase-I and II, Agriculture Census can be conducted with separate reference periods for Phase-I, II and III in the form of an integrated Census and Follow-up Survey. Therefore, ***it is recommended that DAC&FW should explore the possibility of different reference period for all three phases of Agriculture Census.***

Collection of Data on Tenant Operational Holders in Phase-III

Tenant farming is an agricultural production system in which land owners contribute their land and often a measure of operating capital and management, while tenant farmers contribute their labour along with varying amounts of capital and management at times. At present tenancy status of farmers is captured in Agriculture Census based on entries in Khasra Register. The information in the register generally captures the owners as the cultivators due to legal and administrative issues concerning record of rights and absence of tenancy laws in land record states. A comparison of data on tenancy in the land record and non-

land record states indicates significant under-estimation of number of tenants in the land record states. To overcome this, it is suggested that to collect the information on tenant farmers on a sample basis from the actual cultivators rather than from land records. An Input Survey being a direct enquiry method for data collection is more suitable for this item. ***It is therefore recommended that while reviewing the schedules for Phase-I, II & III, this item would be incorporated for data collection in Phase III.*** It is also suggested that ownership records may be collected with gender so that gender-wise ownership data can be generated.

Sampling Design and Survey Estimation Method

At present, the estimates of Area are obtained by pooling operational holdings and using multiplier of area at District level. Number of holdings are not estimated but maintained at Phase-I & II level as the reference year for both the phases is same. In case, reference years of Phase-I & II are changed, number and area of operational holdings based on Phase II need to be estimated afresh.

The existing sampling design for Agriculture Census is adequate. In Phase II & III of Agriculture Census, sample survey approach is used with samples of 20 percent and 7 percent villages selected in each tehsil for Phase II & III respectively. In higher size classes of land holdings the sample size of holdings would be comparably low. ***In order to assess the adequacy of sample size, the standard errors and per cent coefficient of variations need to be examined.***

The existing estimation procedure based on current sampling design used in ACS is correct. However, to produce more precise estimates with the same sample size, ***it would be advisable to explore the possibility of using more efficient estimation methods that uses auxiliary variables.*** To assess the precision of estimates, standard error at district, State and National level should be generated. To generate reliable estimates from smaller sample sizes at tehsil and other disaggregate levels, Small Area Estimation technique should be adopted. The Small Area Estimation technique has potential to resolve the sample size problem and produce reliable estimate from existing data using auxiliary information from different secondary sources. Data on several variables collected in the input survey can also be used for generating the estimates required for Sustainable Development Goal (SDG) indicators on agriculture. ***It is suggested that the DAC&FW in collaboration with research Institutes either through some studies or other Institutional mechanism should explore the possibility of using input survey data from different rounds for producing reliable disaggregated estimates of different parameters including those for SDG indicators on agriculture sector using efficient survey estimation approach***

like Small Area Estimation technique. The ICAR-IASRI, New Delhi which has the expertise in Small Area Estimation can be associated in such exercises.

Honorarium of Primary Workers

Honorarium of primary workers involved in the field work of ACS is very meager and needs to be increased considerably. Further, even the existing honorarium is often not paid in time which adversely affects the morale of the primary workers. It is suggested that honorarium paid should be commensurate with the quantum work involved in Agricultural Census. For instance, at present the honorarium per village (for Phase -I) is only Rs 1000 which works out only around Rs 3 per operational holdings. On the other hands, the honorarium paid for similar work in Economics Census and Population Census per village are significantly higher. In order to maintain some parity, the honorarium for the primary workers per village should be raised to at least Rs 10 per operational holding. The much-needed increase in the quantum of honorarium will boost the morale of primary workers and bring considerable improvement in the quality data collected by them. Further, the Government of India should impress upon the State Government to streamline the procedure for disbursement of honorarium through direct credit in the bank account of the primary worker immediately after completion of field work.

Data Dissemination Format

The agricultural census should be made available to stakeholders in Machine Readable Formats, possibly through Web Services/Application Programming Interfaces (APIs). This provision should be kept in mind while developing the software for data collection and reporting itself. Once the data availability is through open APIs, it should also be shared on Open Government Data Platform.

Schedules and Instruction Manuals

The State Governments should make proper arrangement for translation of instruction manual in their regional languages. Proper mechanism should also be developed to ensure that sufficient number of schedules and instruction manuals are delivered to primary workers well in advance.

ANNEXURE

I

Questionnaires

ICAR-INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE
LIBRARY AVENUE, NEW DELHI-110012
Evaluation of Agriculture Census Scheme (EACS)
Questionnaire for Collection of Information on Agriculture Census Scheme (ACS) from Headquarter
(To be filled-up by official of ACS)

A. Identification Particulars

S. No.	Particulars	Information
1	2	3
1.	Name of the respondent	
2.	Designation of the respondent	
3.	Headquarter's address	

B. Information related to Agriculture Census

S. No.	Particulars	Information
1	2	3
1.	Please comment on existing methodology for carrying out Agriculture census whether is it statistically sound or need any revision?	
2.	Please comment on existing sampling design for carrying out Agriculture census whether sample size is sufficient or need any revision?	
3.	Please comment on existing estimation procedure for carrying out Agriculture census whether is it statistically sound or need any revision?	
4.	Do you think any changes are required in the concepts and definitions being used in agricultural census scheme?	Yes / No
5.	If yes, list	i) ii)
6.	In your opinion, are there any items in census on which information is not required?	Yes / No
7.	If yes, list	i) ii)
8.	In your opinion, are there any additional items on which data should be collected in census?	Yes / No
9.	If yes, list	i) ii)
10.	Was any workshop/meeting relating to census work organized for the nodal officers of the States/other stakeholders?	

11.	Do you ever compare the agricultural census results with respect to similar items on which data are collected in other census/surveys?	Yes / No
12.	If yes, are the results in agreement?	Yes / No
13.	Who are the users of input survey results?	i) ii)
14.	Is there any need to conduct input survey when similar data are collected in greater detail in the cost of cultivation scheme?	Yes / No
15.	Are the data available on complete enumeration basis on different items recommended in WCA 2020, to be covered in agricultural census? For example, items are:	Yes / No
	1. Identification and location of agricultural holding	
	2. Legal status of agricultural holder	
	3. Sex of agricultural holder	
	4. Age of agricultural holder	
	5. Household size	
	6. Main purpose of the production of the holding	
	7. Area of holding according to land use types	
	8. Total area of the holding	
	9. Land tenure types of the holding	
	10. Presence of irrigation of the holding	
	11. Types of temporary crops on the holding	
	12. Types of permanent crops on the holding and whether in compact plantation	
	13. Number of animals on the holding for each livestock type	
	14. Presence of aquaculture on the holding	
	15. Presence of forest and other wooded land on the holding	
	16. Other economic production activities of the holding's enterprises	
16.	In your opinion is there a scope of reduction in census sample so that quality of data can be improved?	Yes / No
17.	Are there any surveys in which agricultural census data is used as sampling frame?	Yes / No
18.	Who are the users of agricultural census data? 1. List of major stakeholders 2. Give list of major government policies and scheme where agricultural census data has been used	
19.	In your opinion, what steps are needed for improving data quality and timeliness of census work?	

C. State-wise Comments on Quality of Agriculture Census Data

S. No.	State	Training imparted to trainers (Y/N)	Timely release of funds (Y/N)	Data collection on Time (Y/N)			Supervision carried out (Y/N)			Data quality satisfactory (Y/N)		
				Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Andhra Pradesh											
2.	Arunachal Pradesh											
3.	Assam											
4.	A & Nicobar (UT)											

5.	Bihar											
6.	Chhattisgarh											
7.	Chandigarh (UT)											
8.	Delhi (NCT)											
9.	D & N Haveli (UT)											
10.	Daman & Diu (UT)											
11.	Goa											
12.	Gujarat											
13.	Haryana											
14.	Himachal Pradesh											
15.	J & K											
16.	Jharkhand											
17.	Karnataka											
18.	Kerala											
19.	Lakshadweep (UT)											
20.	Madhya Pradesh											
21.	Maharashtra											
22.	Manipur											
23.	Meghalaya											
24.	Mizoram											
25.	Nagaland											
26.	Orissa											
27.	Punjab											
28.	Puducherry (UT)											
29.	Rajasthan											
30.	Sikkim											
31.	Tamil Nadu											
32.	Telangana											
33.	Tripura											
34.	Uttar Pradesh											
35.	Uttarakhand											
36.	West Bengal											

S. No.	State	Data Entry completed timely (Y/N)			Data Processed timely (Y/N)		
		Phase-I	Sch. H	Input survey	Phase-I	Sch. H	Input survey
1	2	14	15	16	17	18	19
1.	Andhra Pradesh						
2.	Arunachal Pradesh						
3.	Assam						
4.	A & Nicobar (UT)						
5.	Bihar						
6.	Chhattisgarh						

7.	Chandigarh (UT)						
8.	Delhi (NCT)						
9.	D & N Haveli (UT)						
10.	Daman & Diu (UT)						
11.	Goa						
12.	Gujarat						
13.	Haryana						
14.	Himachal Pradesh						
15.	J & K						
16.	Jharkhand						
17.	Karnataka						
18.	Kerala						
19.	Lakshadweep (UT)						
20.	Madhya Pradesh						
21.	Maharashtra						
22.	Manipur						
23.	Meghalaya						
24.	Mizoram						
25.	Nagaland						
26.	Orissa						
27.	Punjab						
28.	Puducherry (UT)						
29.	Rajasthan						
30.	Sikkim						
31.	Tamil Nadu						
32.	Telangana						
33.	Tripura						
34.	Uttar Pradesh						
35.	Uttarakhand						
36.	West Bengal						

D. Data Processing and Preparation of Report

S. No.	Particulars	Information
1	2	3
1.	Whether the infrastructure for data processing is adequate?	Yes / No
2.	If not, what are the shortfalls?	a) Office space b) Computer c) Data processing software d) Staff e) Any other (specify)
3.	Whether the agency hired for data processing is providing satisfactory services in terms of? a) Handling the voluminous data b) Technology used for data processing c) Completing the work in time	 Yes / No Yes / No Yes / No

4.	Are there any problems with the existing software?	Yes / No
5.	If yes, is there any updation needed in the existing software?	Yes / No
6.	Whether the software prepared was same for all the states?	Yes / No
7.	If not, give reasons	
8.	Whether software prepared was provided well in time to all the states?	Yes / No
9.	If not, give reasons	
10.	Whether the report was prepared in time?	Yes / No
11.	If not, give reasons for delay	a) Delay in compilation b) Delay in preparation of draft report c) Delay in approval of draft report d) Any other (specify)
12.	Whether computerisation has been done in all the three phases of data collection and processing Phase-I Phase-II Phase-III	 Yes / No Yes / No Yes / No

E. Staff Position at Headquarter

S. No.	Name of post	Number of posts			Reasons for not filling	Additional posts needed, if Sanctioned posts not adequate (Indicate number)
		Sanctioned	Filled-in	Vacant		
1	2	3	4	5	6	7

Note: Reasons (a) Shortage of funds (b) Ban on filling the vacant post (c) Any other (Specify)

F. Infrastructure

S. No.	Items	Adequate or Inadequate	Additions needed, if inadequate
1	2	3	4
1.	Office space		
2.	Furniture		
3.	Computer		
4.	Telephone		
5.	Fax		
6.	Vehicle		

G. Agriculture Census Website

S. No.	Particulars	Information
1	2	3
1.	Who is maintaining the Agriculture Census website (https://agcensus.nic.in/)	
2.	Whether website is updated regularly?	
	If yes, what is frequently	Yes/No
3.	Number of hits (average per month)	
4.	Any issue noticed based on user query or request related to the website	
5.	Are you satisfied with the current design of the website?	
	If No, any suggestion or plan for updating	Yes/No

H. Whether the Objectives of the Agriculture Census Scheme have been met and suggested improvements in the scheme, if any

S. No.	Objective	Met or Not	Suggest improvements, if any
1	2	3	4
1.	To describe structure and characteristics of agriculture by providing statistical data on operational holdings, including land utilization irrigation, source of irrigation, irrigated and un-irrigated area under different crops, live-stock, agriculture machinery and implements, use of fertilizer, seed, agricultural credit		
2.	To provide benchmark data needed for formulating new agricultural development programmes and for evaluating their progress		
3.	To provide basic frame of operational holdings for carrying out future agricultural surveys		
4.	To lay a basis for developing an integrated programme for current agricultural statistics		

I. Any other suggestion or point related to Agriculture Census Scheme which has not been covered above.

Name

Designation

Signature with Date

ICAR-INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE

LIBRARY AVENUE, NEW DELHI-110012

Evaluation of Agriculture Census Scheme (EACS)

Questionnaire for Collection of Information on Agriculture Census Scheme (ACS) from State Headquarter

(To be filled-up by the Nodal Officer of the State)

A. Identification Particulars

S. No.	Particulars	Information
1	2	3
1.	Name of the State	
2.	Name of the Nodal Officer	
3.	Designation of the Nodal Officer	
4.	Office Address	
5.	Contact Number	Telephone :
		Mobile :
		Email :

B. Information related to Agriculture Census

S. No.	Particulars	Information
1	2	3
1.	Whether the funds for ACS is sufficient?	Yes / No
2.	Are the funds for the conduct of ACS received in time?	Yes / No
3.	If not, has this affected the census work?	Yes / No
4.	In your opinion, are there any additional items on which data should be collected in census?	Yes / No
5.	If yes, list the items	i) ii)
6.	In your opinion, are there any items in the census on which data should not be collected?	Yes / No
7.	If yes, list the items	i) ii)
8.	Are the land records computerized in the State?	Yes / No
9.	If yes, tick the appropriate	i) Both Khasra and Khatauni registers ii) Only Khasra register iii) Only Khatauni register

10.	Overall data quality	Satisfactory or not
11.	If not, Explain shortcomings in the data	
12.	Whether website of Agriculture Census is user friendly? If No, list the problem faced.	Yes /No
13.	Any suggestion related to improvement of Agriculture Census website	

C. Information related to Planning and Execution of Agriculture Census Scheme

Phase-I		
S. No.	**Particulars**	**Information**
1	**2**	**3**
1.	Whether training for districts level officers who will impart the training to the primary worker for Phase-I was imparted by the State level officers well in time?	Yes / No
2.	If yes, was there any difficulty?	a) Difficulty in Understanding Concepts and definitions b) Manual was not prepared in detail c) Any other (Specify)
3.	If not, give reasons	a) Not required because district level officers were already trained b) Funds were not received well in time c) Shortage of staff at State level for imparting the training d) Shortage of time due to preoccupation with other work e) Any other (Specify)
4.	Whether Phase-I work was completed in time?	Yes / No
5.	If not, give reasons	a) Records not updated (land record states) b) Priority to other work c) Any other (specify)
6.	Whether supervision work was undertaken by the State level staff?	Yes / No
7.	If yes, what types of irregularities were observed?	a) Work was not done in time b) Operated area incorrectly reported c) Any other (Specify)
8.	If supervision not undertaken, give reasons	a) Funds were not received in time b) Shortage of supervisory staff c) Priority to other work d) Any other (Specify)

Phase-II		
S. No.	**Particulars**	**Information**
1	**2**	**3**
1.	Whether training for district level officers who in turn will impart the training to the primary workers for Phase-II (Schedule H) was provided by the State level officers well in time?	Yes / No

2.	If yes, was there any difficulty in understanding concepts and definitions, explain?	a) Difficulty in Understanding Concepts and definitions b) Manual was not prepared in detail c) Any other (Specify)
3.	If not, give reasons	a) Details covered in the training organized for Phase I (re-tabulation) b) Not required because district level officers were already trained c) Funds were not received well in time d) Shortage of staff at State level for imparting the training e) Shortage of time due to preoccupation with other work f) Any other (Specify)
4.	Whether data collection work for Phase II was completed in time?	Yes / No
5.	If not, give reasons	a) Priority to other work b) Any other (Specify)
6.	Whether supervision work was undertaken by State level staff?	Yes / No
7.	If yes, what types of irregularities were observed?	a) Work was not completed in time b) Required number of schedules were not filled up c) Schedule not filled up properly d) Any other (Specify)
8.	If not, give reasons	a) Funds were not received in time b) Shortage of supervisory staff c) Priority to other work d) Any other (Specify)

Phase-III		
S. No.	**Particulars**	**Information**
1	**2**	**3**
1.	Whether training for districts level officers who in turn will impart the training to the primary workers for input survey was conducted by the State level officers well in time?	Yes / No
2.	If yes, was there any difficulty	a) Difficulty in Understanding Concepts and definitions b) Manual was not prepared in detail c) Any other (Specify)
3.	If not, give reasons	a) Not required because district level officers were already trained b) Funds were not received well in time c) Shortage of staff at State level for imparting the training d) Shortage of time due to preoccupation with other work e) Any other (Specify)
4.	Whether input survey work was completed in time?	Yes / No
5.	If not, give reasons	a) Priority to other work b) Any other (specify)
6.	Whether supervision work was undertaken at nodal office level?	Yes / No

7.	If yes, what types of irregularities were observed?	a) Work was not done in time b) Required number of schedules were not filled up c) Observations incorrectly reported d) Any other
8.	If not, give reasons	a) Funds were not received in time b) Shortage of supervisory staff c) Priority to other work d) Any other (Specify)

D. Data Entry Software

S. No.	Particulars	Information
1	2	3
	Whether data entry was done by the state	Yes / No
	If No, which agency did it	
	If yes, answer following	
	Phase-I	
1.	Whether the data entry software was received in time?	Yes / No
	If no, give reasons	
2.	Whether any training was imparted on use of software	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
3.	Whether the software is user friendly	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
4.	Issues related to data entry, if any list them	i) ii)
	Phase-II	
1.	Whether the data entry software was received in time?	Yes / No
	If no, give reasons	
2.	Whether any training was imparted on use of software	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
3.	Whether the software is user friendly	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
4.	Issues related to data entry, if any list them	i) ii)
	Phase-III	
1.	Whether the data entry software was received in time?	Yes / No
	If no, give reasons	
2.	Whether any training was imparted on use of software	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
3.	Whether the software is user friendly	Yes / No
	If yes, was there any difficulty	
	If not, give reasons	
4.	Issues related to data entry, if any list them	i) ii)

E. Staff Position at State Headquarter

S. No.	Name of post	Number of posts			Reasons for not filling	Additional posts needed, if sanctioned post not adequate (Indicate number)
		Sanctioned	Filled-in	Vacant		
1	2	3	4	5	6	7

Note: Reasons (a) Shortage of funds (b) Ban on filling the vacant posts (c) Any other (Specify)

F. Infrastructure

S. No.	Items	Adequate or Inadequate	Additional need if inadequate
1	2	3	4
1.	Office space		
2.	Furniture		
3.	Computer		
4.	Telephone		
5.	Fax		
6.	Vehicle		

G. Whether HLCC meeting related to Agriculture Census held regularly? If yes, how frequently?

H. Any other suggestion or point related to Agriculture Census Scheme which has not been covered above.

Name

Designation

Signature with Date

ICAR-INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE
LIBRARY AVENUE, NEW DELHI-110012
Evaluation of Agriculture Census Scheme (EACS)
Questionnaire for Collection of Information on Agriculture Census Scheme (ACS) from District Level Officer
(To be filled-up by the Nodal Officer of the District)

A. Identification Particulars

S. No.	Particulars	Information
1	2	3
1.	Name of the State	
2.	Name of the District	
3.	Name of the Nodal Officer	
4.	Designation of the Nodal Officer	
5.	Office Address	
6.	Contact Number	Telephone:
		Mobile :
		Email :

B. Information related to Planning and Execution of Agriculture Census Scheme

Phase-I		
S. No.	Particulars	Information
1	2	3
1.	Whether training for Phase I was imparted to primary workers well in time?	Yes / No
2.	If yes, was there any difficulty?	a) Difficulty in understanding Concepts and definitions by the primary workers b) Manual was not well prepared c) Any other (Specify)
3.	If training not organized in time, give reasons	a) Primary workers were already trained b) Funds was not received in time c) Any other (Specify)
4.	Whether all the primary workers were present in the training session?	Yes / No
5.	Whether Phase-I work was completed in time?	Yes / No
6.	If not, give reasons	a) Primary worker given other priority work b) Records not updated (land record states) c) Insufficient number of primary workers d) Any other (specify)

7.	Whether supervision work was undertaken by the district level officer?	Yes / No
8.	If yes, what types of irregularities were observed?	a) Work was not done in time b) Missing of surveys numbers c) T-1 not prepared properly d) Any other (specify)
9.	If supervision work not undertaken, give reasons	a) Sufficient funds were available for undertaking the tour b) Shortage of supervisory staff c) Supervisors busy in other work d) Supervision not required e) Any other (specify)

Phase-II		
S. No.	**Particulars**	**Information**
1	**2**	**3**
1.	Whether refresher training for Phase-II (Schedule H) was imparted to primary workers well in time?	Yes / No
2.	If yes, was there any difficulty?	a) Difficulty in understanding concepts and definitions by the primary workers b) Manual was not well prepared c) Any other (Specify)
3.	If refresher training for Phase-II not organized, give reasons	a) Primary workers already trained b) Instruction manual was given to the primary workers c) Shortage of trainers d) Funds not received in time e) Any other (specify)
4.	Whether data collection work for Phase II was completed in time?	Yes / No
5.	If not, give reasons	a) Primary workers engaged in other work b) Operational holders not cooperative c) Any other (Specify)
6.	Whether supervision work was undertaken by district level officers?	Yes / No
7.	If yes, what types of irregularities were observed?	a) Work was not done in time b) Schedule was not filled-up properly c) Any other (Specify)
8.	If supervision work was not undertaken, give reasons	a) Funds were not received for undertaking the tour b) Shortage of supervisory staff c) Supervisors busy in other work d) Any other (Specify)

Phase-III		
S. No.	**Particulars**	**Information**
1	**2**	**3**
1.	Whether training for input survey was imparted to the primary workers well in time?	Yes / No

2.	If yes, was there any difficulty?	a) Difficulty in understanding concepts and definitions by the primary workers b) Manual was not well prepared c) Any other (Specify)
3.	If training for input survey not organized, give reasons	a) Primary workers were already trained b) Funds were not received in time c) Shortage of trainers d) Trainers busy in other work e) Any other (Specify)
4.	Whether input survey work was completed in time?	Yes / No
5.	If not, give reasons	a) Priority to other work b) Operational holder not cooperative c) Any other (specify)
6.	Whether supervision work was undertaken by district level officer?	Yes / No
7.	If not, give reasons	a) Funds were not received for undertaking the tour b) Shortage of supervisory staff c) Supervisors busy in other work d) Any other (Specify)
8.	If yes, what types of irregularities were observed?	a) Work was not done in time b) Schedules were not filled-up properly c) Any other (Specify)

C. Scrutiny of Data

S. No.	Particulars	Information
1	2	3
1.	Whether filled in schedules were received from the primary workers in time?	Yes / No
2.	If not, give reasons	i) ii)
3.	Whether scrutiny of data was done in time?	Yes / No
4.	If not, give reasons	i) ii)

D. Whether HLCC meeting related to Agriculture Census held regularly? If yes, how frequently?

E. Any other suggestion or point related to Agriculture Census Scheme which has not been covered above.

Name

Designation

Signature with Date

ICAR-INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE

LIBRARY AVENUE, NEW DELHI-110012

Evaluation of Agriculture Census Scheme (EACS)

Questionnaire for Collection of Information on Agriculture Census Scheme (ACS) from Primary Worker at Village Level

(To be filled-up by Primary Worker)

A. Identification Particulars

S. No.	Particulars	Information
1	2	3
1.	Name of the State	
2.	Name of the District	
3.	Name of the Block	
4.	Name of the Village	
5.	Name of the Primary Worker	
6.	Designation of the Primary Worker	
7.	Contact number	Telephone:
		Mobile :

B. Information related to Agriculture Census

S. No.	Particulars	Information
1	2	3
1.	Whether training was organized on time to primary workers for data collection?	Yes / No
2.	If yes, was it organized phase wise or only one time in the beginning?	Phase-I / Phase-II / Phase-III / One time
3.	Whether training manual was provided timely	Yes / No
4.	Was there any difficulty faced during the Phase I work?	Yes / No
5.	If yes, specify	a) Understanding the concepts and definitions b) Instructions manual was not well prepared c) Instruction manual was not provided in the regional language d) Any other (specify)
6.	Whether Phase-I work was completed in time?	Yes / No
7.	If not, give reasons	a) Records not updated (land record states) b) Priority to other work c) Any other (specify)
8.	Whether any difficulty faced in data collection during Phase-II?	Yes / No

9.	If yes, specify	a) Records not updated (land record states) b) Operational holder not cooperative c) Priority to other work d) Lack of facilities like Transport, funds e) Any other (specify)		
10.	Whether any difficulty faced in data collection during Phase-III (Input survey)?	Yes / No		
11.	If yes, specify	a) Operational holder not cooperative b) Priority to other work c) Lack of facilities like Transport, funds d) Any other (Specify)		
12.	Whether timeline was informed/ known for different activities (for data collection and reporting etc) for each phases?	Yes / No		
13.	Whether filled in schedules were sent to district/block headquarter in time?	Phase -I (Yes / No) Phase -II (Yes / No) Phase- III (Yes / No)		
14.	If not, tick or specify the reason of delay at the appropriate place			
	Reasons	Phase -I	Phase -II	Phase- III
	a) Work not completed in time			
	b) Work completed but not submitted due to preoccupation with other work			
	c) Any other (specify)			
15.	Are there any items in the census on which information is not available in the Khasra register? (only land record states)	Yes / No		
16.	If yes, how this information is authentically collected?			
17.	Was there any item on which data collection was difficult?	Yes / No		
18.	If yes, give details			
19.	Whether honorarium for ACS work received in time	Yes / No		
20.	Whether honorarium for ACS work is adequate If no, what would be suggested amount?	Yes / No		
21.	Suggestions for improvement of Agriculture Census work			

Name

Designation

Signature with Date

ICAR-INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE
LIBRARY AVENUE, NEW DELHI-110012

Evaluation of Agriculture Census Scheme (EACS)

Questionnaire for Collection of Information on Agriculture Census Scheme (ACS) from National Institute of Electronics & Information Technology (NIELIT)

(To be filled-up by official of NIELIT)

A. Identification Particulars

S. No.	Particulars	Information
1	2	3
1.	Name of the respondent	
2.	Designation of the respondent	
3.	Address	

B. Information related to Data Entry Software for Agriculture Census

S. No.	Particulars	Information
1	2	3
1.	Whether funds were received in time? If no, what was the reasons?	Yes / No
2.	Any difficulty noticed or reported by State on the use of software? If Yes, please list	Yes / No
3.	Any problem faced or noticed in data entry software for phase-II? If Yes, please list	Yes / No
4.	Any problem faced or noticed in data entry software for phase-III? If Yes, please list	Yes / No
5.	Any problem faced or noticed in data processing for phase-II? If Yes, please list	Yes / No
6.	Any problem faced or noticed in data processing for phase-III? If Yes, please list	Yes / No
7.	Have you received required input from the ACS in development of software and follow up feedback	Yes / No
8.	Training provided to State	Yes / No
9.	Suggestions for improvement, if any	i) ii)

Name

Designation

Signature with Date

II List of Workshop Participants

List of participants attended an inception workshop on "Evaluation of Agriculture Census Scheme" at ICAR-IASRI, New Delhi on January 31, 2020

1.	Shri. Rakesh Kumar Kamra, Additional Director General, DAC&FW, Ministry of Agriculture and Farmer's Welfare (MoA&FW), Govt of India
2.	Dr. Dalip Singh, DDG (DAC&FW), MoA&FW, Govt of India
3.	Dr. Vidya Dhar, Former Additional Director General, DAC&FW, MoA&FW, Govt of India
4.	Dr. A. K. Srivastava, Former Joint Director, ICAR-IASRI, New Delhi
5.	Dr. U. C. Sud, Former Director, ICAR-IASRI, New Delhi
6.	Dr. Tauqueer Ahmad, Head, Division of Sample Surveys, ICAR-IASRI, New Delhi
7.	Dr. Hukum Chandra, National Fellow & Project Investigator, ICAR-IASRI, New Delhi
8.	Dr. Kaustav Aditya, Scientist, ICAR-IASRI, New Delhi
9.	Dr. Vandita Kumari, Scientist, ICAR-IASRI, New Delhi
10.	Dr. Pradip Basak, Scientist, ICAR-IASRI, New Delhi
11.	Dr. A. K. Mogha, Chief Technical Officer, ICAR-IASRI, New Delhi
12.	Shri U .C. Bandooni, Chief Technical Officer, ICAR-IASRI, New Delhi
13.	Sh. Manoj Kumar, Senior Technical Officer, ICAR-IASRI, New Delhi
14.	Smt. Hema Meena, Technical Assistant, ICAR-IASRI, New Delhi
15.	Mr. A. K. Ojha, Advisor (NIELIT)
16.	Mr. R.N. Soreithem, Dy Director, DAC&FW, MoA&FW, Govt of India
17.	Mr. Tusar Bordoloi, SSO, DAC&FW, MoA&FW, Govt of India
18.	Mr. Gurvinder Singh, DPM, DAC&FW, MoA&FW, Govt of India

List of participants attended workshop on "Evaluation of Agriculture Census Scheme" at ICAR-IASRI, New Delhi on December 21, 2020

1.	Dr. Dalip Singh, DDG (DAC&FW), MoA&FW, Govt of India
2.	Dr. Vidya Dhar, Former Additional Director General, DAC&FW, MoA&FW, Govt of India
3.	Sh. Rajeev Lochan, Former Director General, MoS&PI, Govt. of India
4.	Sh. P. R.Meshram, Adviser, DES, MoA&FW, Govt. of India
5.	Prof. V. K. Gupta, Former National Professor, ICAR-IASRI, New Delhi
6.	Dr. A. K. Srivastava, Former Joint Director, ICAR-IASRI, New Delhi
7.	Dr. Rajender Parsad, Director, ICAR-IASRI, New Delhi
8.	Dr. Tauqueer Ahmad, Head, Division of Sample Surveys, ICAR-IASRI, New Delhi
9.	Dr. Hukum Chandra, National Fellow & Project Investigator, ICAR-IASRI, New Delhi
10.	Dr. Prachi Mishra Sahoo, Principal Scientist, ICAR-IASRI, New Delhi
11.	Dr. Kaustav Aditya, Scientist & Co-Principal Investigator, ICAR-IASRI, New Delhi
12.	Dr. Vandita Kumari, Scientist & Co-Principal Investigator, ICAR-IASRI, New Delhi
13.	Dr. Ankur Biswas, Scientist, ICAR-IASRI, New Delhi
14.	Dr. Raju Kumar, Scientist, ICAR-IASRI, New Delhi
15.	Shri. Deepak Singh, Scientist, ICAR-IASRI, New Delhi
16.	Shri. Rahul Banerjee, Scientist, ICAR-IASRI, New Delhi
17.	Dr. Bharti, Scientist, ICAR-IASRI, New Delhi
18.	Mr. R.N. Soreithem, Deputy Director, DAC&FW, MoA&FW, Govt of India
19.	Mr. G. R. Sharma, Government of Rajasthan
20.	Dr. Ajay Kr. Sharma, Government of Uttarakhand
21.	Mr. Maheshbhai B. Patel, Government of Gujarat
22.	Director, DES, Government of Telangana

III

List of States /UTs

Zone-wise Distribution of States /UTs of ACS

Zone	Land Record State	Non-Land Record State
East	01) Bihar	01) West Bengal
	02) Jharkhand	02) Orissa
North East	03) Assam	03) Arunachal Pradesh
		04) Manipur
		05) Meghalaya
		06) Mizoram
		07) Nagaland
		08) Tripura
		09) Sikkim
West	04) Rajasthan	10) Goa
	05) Gujarat	11) Daman & Diu (UT)
	06) Maharashtra	
	07) Dadar & N. Haveli (UT)	
North	08) J & K	
	09) Himachal Pradesh	
	10) Punjab	
	11) Uttarakhand	
	12) Haryana	
	13) Delhi (NCT)	
	14) Uttar Pradesh	
	15) Chandigarh (UT)	
South	16) Andhra Pradesh	12) Kerala
	17) Karnataka	13) Puducherry (UT)
	18) Tamil Nadu	14) A & N (UT)
	19) Telengana	15) Lakshadweep (UT)
Central	20) Madhya Pradesh	
	21) Chhattisgarh	

Selected States For Evaluation of ACS

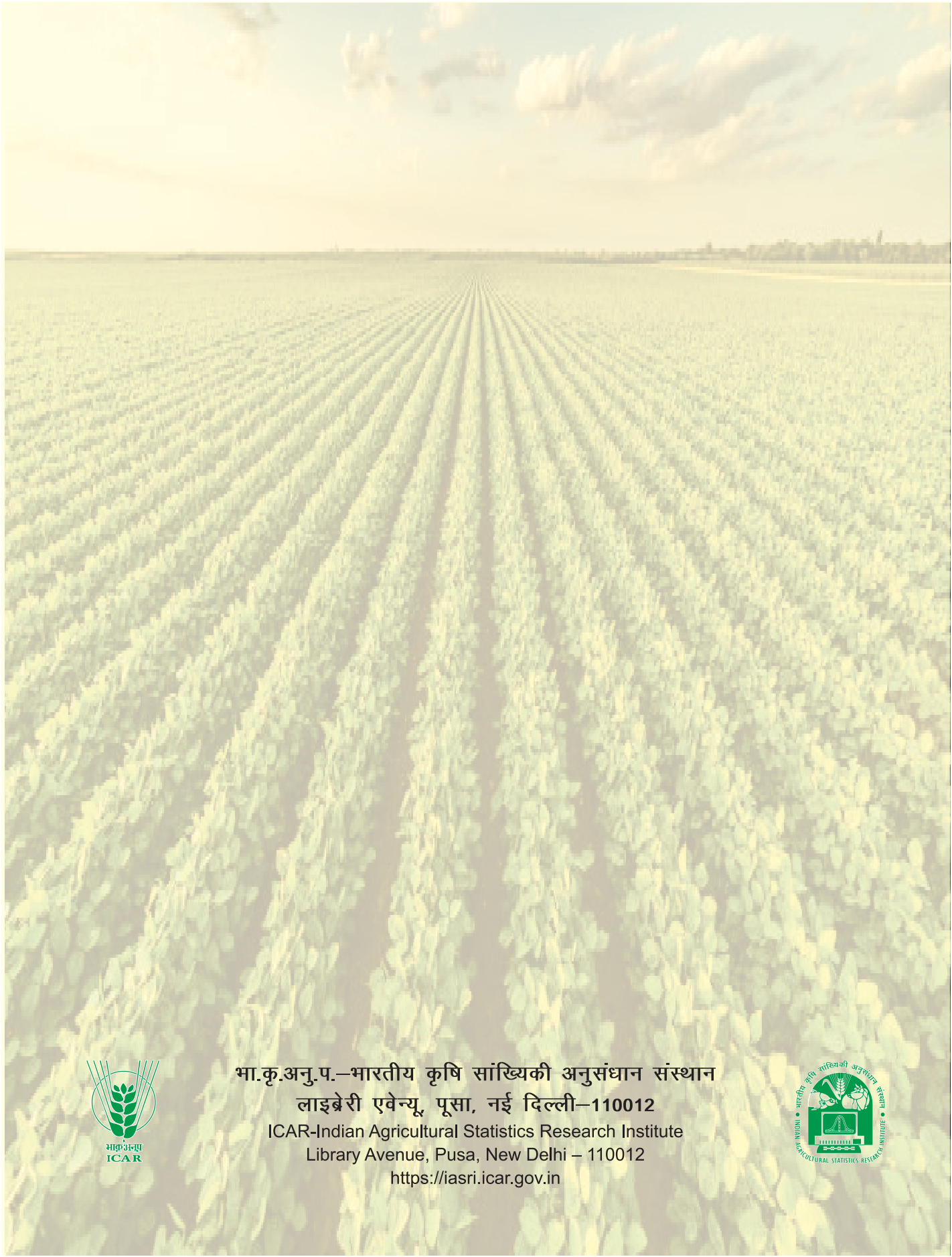
Zone	LR State	NLR District
East		West Bengal
North east		Assam
West	Rajasthan	
North	Uttar Pradesh	
South		
Central	Madhya Pradesh	

IV

List of Districts

Selection of Districts For Evaluation of ACS

S No	States/UTs	No. of Districts		District Names (Code)
		Selected	Survey Completed	
1	Andhra Pradesh	1	1	Anantapur (12)
2	Arunachal Pradesh	2	0	Tirap (2), Tawang (20)
3	Assam	3	2	Barpeta (5), Golaghat (18)
4	Chhatisgarh	3	0	
5	Goa	NA	NA	
6	Gujarat	3	3	Ahmadabad (07), Bhavnagar (14), Navsari (24)
7	Haryana	2	2	Bhiwani (17), Palwal (21)
8	Himachal Pradesh	1	1	Solan (10)
9	Jammu & Kashmir	2	1	Jammu (02),
10	Jharkhand	2	2	Giridih (04), Pakur (08)
11	Karnataka	3	3	Haveri (11), Chichballapura (29), Yadgir (30)
12	Kerala	1	1	Pathanamthitta (12)
13	Madhya Pradesh	5	5	Jabalpur (21), Katni (23), Mandla (26), Narsingpur (29), Neemuch (30)
14	Maharashtra	3	2	Dhule (02), Jalgaon (03)
15	Manipur	1	1	Ukhrul (9)
16	Meghalaya	1	1	South Garo Hills (6)
17	Mizoram	1	1	Champhai (4)
18	Nagaland	1	1	Phek (2)
19	Odisha	3	3	Nawarangpur (22), Nayagarh (23), Nuapada (24)
20	Punjab	2	2	Kapurthala (09), Fazilka (21)
21	Rajasthan	3	3	Banswara (03), Jaisalmer (18), Pratapgarh (33)
22	Sikkim	1	1	East (2)
23	Tamil Nadu	3	3	Kancheepuram (02), Tuticorin (27), Tirunelveli(28)
24	Telengana	1	1	Karimnagar (6)
25	Tripura	NA	NA	
26	Uttar Pradesh	8	2	Ambedkar Nagar (48), Sultanpur (49),
27	Uttarakhand	1	1	Pithoragarh (12)
28	West Bengal	2	2	Bankura (15), Purulia (16)
29	Andaman & Nicobar Islands	1	1	North & Middle Andaman (3)
30	Chandigarh (UT)	1	1	Chandigarh (1)
31	Dadra & Nagar Haveli (UT)	1	1	Dadra & Nagar Haveli (1)
32	Daman & Diu (UT)	1	1	Daman (2)
33	Delhi (NCT)	NA	NA	
34	Lakshadweep (UT)	1	1	Amini (2)
35	Puducherry (UT)	1	1	Karaikal (4)
	Total	**65**	**51**	



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