



INDIA – Agriculture Census 2015/2016 – Metadata review

1. Historical outline

India participated in the World Programme for the Census of Agriculture (WCA) 1930, 1950 and 1960 through sample surveys carried out by the Directorate of National Sample Surveys in 1929/1930, 1954, and 1960/1961, respectively. The 1970/1971 Census is considered the first comprehensive agricultural census (AC) to be conducted in the country. Quinquennial ACs were successively undertaken in 1976/1977, 1980/1981, 1985/1986, 1990/1991, 1995/1996, 2000/2001¹, 2005/2006 and 2010/2011. The tenth census in the series is the 2015/2016 AC, to which the metadata review and data presented here refer.

2. Legal basis and organization

Legal framework

In AC, data collection is done through re-tabulation of administrative land records and household enquiry approach without invoking Statistical Act.

Institutional framework and international collaboration

In India, the ACs are conducted every five years and are coordinated by the Agriculture Census Division, Department of Agriculture, Cooperation & Farmers' Welfare under the Ministry of Agriculture & Farmers' Welfare, Government of India. The AC requires a high degree of coordination,² technical expertise, statistical control and supervision over the states. The governments of States and Union Territories (UTs) are responsible for undertaking statistical operations in their respective administrations, and the central Government acts as a coordinating agency. The Steering Committee, consisting of various stakeholders and domain experts, provides guidance on technical and administrative issues relating to the implementation of the Agriculture Census Scheme.

Census staff

The total number of census staff involved in the 2015/2016 AC was about 143500 enumerators (primary workers) and supervisors from 36 States/UTs.

3. Reference date and period

Reference day: Not applicable.

Reference periods used in the AC:

- Phase I and Phase II: agricultural year 2015–2016 (from 1 July 2015 to 30 June 2016);
- Phase III: agricultural year 2016–2017 (from 1 July 2016 to 30 June 2017).

4. Enumeration period

Data collection for the 2015/2016 AC was carried out according to the three phases of the census:

- Phase I: July – September 2016 (listing and community – village survey);
- Phase II: April – June 2017 (sample surveys on the agricultural characteristics of holdings); and
- Phase III: July – September 2017 (sample surveys on parcels and input use).

5. Scope of the census and definition of the statistical unit

The **census scope** covered agricultural activities (crop and land utilization).

¹ A livestock census was conducted in 2003.

² All large-scale statistical operations, such as the AC, are central activities that envisaged substantial involvement of state agencies in data collection.

The **statistical unit** was the operational holding, defined as an entity comprising all land that is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others, without regard to the title, legal form, size or location. A technical unit was defined as the unit that is under the same management and has the same means of production, such as labour force, machinery, animals, credit, etc. The operated area includes both cultivated and uncultivated area, provided that a part of it is put to agricultural production during the reference period.

Community-level data

Village level summary data on geographical area was collected.

6. Census coverage

Geographic coverage

The census covered the entire country.

Cut-off threshold and other exclusions

No exclusions.

7. Methodology

Methodological modality for conducting the census

The modular approach was used for data collection. The states in the country were grouped into two categories: land record (LR) state and non-land record (NLR) state.³ In LR 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.⁴ The census was conducted in three phases.⁵

Relation to other censuses

No relationship with other censuses.

Frames

The sampling frame for Phase II consisted of the operational holdings identified in Phase I, while the sampling frame for Phase III were 20 percent of the holdings selected in Phase II (see also below).

Complete or/and sample enumeration methods

In Phase I, all holdings in LR states (covering 91 percent of total land area of the country) were completely listed, while in NLR states/UTs, listing was conducted only on sample villages (20 percent villages). In Phase II, all holdings in the sample villages in LR states (20 percent villages) were enumerated. In all states, sample surveys were carried out in Phase III (see also below).

Sample design

Phase I in NLR states/UTs and Phase II in all states: a two-stage sampling scheme was applied; a sample of 20 percent of villages (first-stage sample) and complete enumeration of households in selected villages of LR states, and 25 percent of households in NLR states were done.

Phase III, in all cases, a two-stage sampling design according to which, in the first stage, villages were selected (7 percent of villages in each *tehsil*) and in the second stage, four operational holdings from each of the five size classes (marginal, small, semi-medium, medium and large) were sampled in the

³ Punjab, although it is a LR state, followed the procedure for data collection envisaged in cases of states without land record.

⁴ In non-land record states and UTs, a list of landholding households was prepared in 20 percent of villages, are same as those selected under the scheme for the Establishment of an Agency for Reporting of Agricultural Statistics (EARAS) for the reference year of the AC.

⁵ Phase I: complete enumeration of all agricultural holdings in LR states and in all households of the sample villages (20 percent) of NLR states and UTs generating a short list of characteristics: number and area according to gender, social group of holders, types of holdings, size of holdings etc.

Phase II: collection of detailed data on agricultural characteristics (land use, irrigation status, tenancy particulars, cropping pattern, etc.) by means of a sample survey on 20 percent of the villages in each tehsil or block.

Phase III (input survey): this relates to the collection of data on input use pattern by means of a sample survey on 7 percent of villages from each tehsil.

selected villages. The 7 percent villages within each *tehsil* were selected from the all list of villages in LR states and 20 percent of villages selected for Phase I in NLR states.

Data collection methods

The method used was Face-to-face interviews using paper questionnaires (the PAPI method).

Questionnaire(s) and items covered

The census used three questionnaires, one for each of the three phases of the census:

- In Phase-I of the AC, data were collected on primary characteristics like number of operational holdings and area operated by different size class (marginal, small, semi-medium, medium and large), social groups (scheduled castes, scheduled tribes and Others), gender (male/female), types of holding (individual, joint and institutional)⁶
- Phase-II, holding schedule was canvassed in selected 20 percent villages in each *tehsil*⁷ for collecting detailed data on tenancy particulars, land use, irrigation status, cropping pattern and dispersal of holdings, etc. The estimates of agricultural characteristics of operational holdings were prepared at *tehsil*, district, state and national levels.
- The Phase-III of the AC (referred as Input Survey) was conducted as a follow up survey to the AC to collect data on input use pattern of operational holdings in the country.

The 2015/2016 AC covered 10 out of the 23 essential items recommended in the WCA 2020.⁸

8. Use of technology

Census results were disseminated and are accessible online.

9. Data processing

In-house software was developed for data entry and processing of census data. Data entry, data validation and error correction, the generation of trial tables, and the generation of final tables and their examination by States or UTs took place according to the three phases of the census.

10. Quality assurance

All filled-in questionnaires were manually scrutinized by the statistical staff before they were submitted for data entry. The data entry and processing software included checks of census data for inconsistencies and mismatch.

11. Data and metadata archiving

Data are archived at District and *Tehsil* levels and are available in public domain.

12. Data reconciliation

There was no reconciliation process of 2015/2016 AC data.

13. Dissemination of census results and microdata

After completion of validation of database, final output tables were generated, and the census results were released in the form of reports. All India Reports on Phases I and II of the AC, and on the Input Survey (Phase III of the AC), as well as the schedules and the Manual of Instructions were prepared and disseminated. For wider dissemination of the information to users, All India Reports and other census results have been posted on the Department's website (<http://agcensus.nic.in>).

⁶ This operation covered all villages in LR states and 20 percent of the villages in NLR States. The data was collected/compiled by the primary worker at the village level and was aggregated to generate statements at tehsil, district, state and national level.

⁷ *Tehsil* is an administrative division (sub-district).

⁸ The following essential items were not covered by the AC: (i) 0107 Main purpose of production of the holding; (ii) 0108 Other economic activities of the household; (iii) 0406 Area of productive and non-productive permanent crops in compact plantations (for each permanent crop type); (iv) 0407 Number of permanent crop trees in scattered plantings (for each tree crop); (v) 0501 Type of livestock system; (vi) 0502 Number of animals; (vii) 0503 Number of female breeding animals; (viii) 0601 Use of agricultural pesticides; (ix) 0801 Household size by sex and age groups; (x) 0901 Whether working on the holding is the main activity; (xi) 0902 Working time on the holding; (xii) 0903 Number and working time of employees on the holding by sex; and (xiii) 1201 Presence of aquaculture on the holding.

14. Data sources

Department of Agriculture, Cooperation & Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare. *All India Report on number and area of operational holdings, Agriculture Census 2015-16 and Input Survey 2016-17* (also available at <http://agcensus.nic.in>)

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