CHAPTER 1
INTRODUCTION

1. Historical Background

1.1 Agriculture plays an important role in Indian Economy. It provides gainful employment to a significantly large section of Indian society and provides raw material for a large number of industries in the country. Nearly 75 per cent of India’s population live in rural areas. Agriculture is the largest contributor to Net Domestic Product of the country. Thus, Agriculture has a key position in India’s economy both from the point of view of employment and its contribution to the national income.

1.2 Due to the predominant position of the Agriculture sector in the Indian economy, collection and maintenance of agricultural statistics assumes great importance, particularly, in respect of statistics relating to the agricultural holdings. Building up a data base is necessary for planning at micro and macro levels.

1.3 India is one of the few countries in the world which has developed a sound system of land records including village maps which date back to very early times. For enhancing the utility of these data, a system had to be developed so that the data contained in village records and registers could be presented in usable forms. The earlier objective of these records and registers was to get basic data for land revenue assessment. These data have now become essential tool for agricultural planning as they give detailed information about the status of land utilization, cropping pattern and irrigation status.

2. System of Collection of Agricultural Statistics in India

2.1 The collection of agricultural statistics in India dates back to third or fourth century B.C. In the bygone era, collection of these data was done mainly as a by-product of land revenue administration. Keeping in view the collection of land use statistics, the country can be divided broadly into three categories. In the first category are the States where the village revenue agency collects statistics relating to land holdings as a part of maintaining land records. This is done by village officials on the basis of actual inspection in the field at periodic intervals. Standard forms have been prescribed for this purpose. These data are then aggregated at the level of revenue inspector circle, Tehsil, District and State by the officers of Revenue/Agriculture Departments. A very large number of States and Union Territories fall in this category and geographical area covered in this category is more than 80 per cent.

2.2 The second category consists of States of West Bengal, Orissa and Kerala, where revenue agencies do not exist. The Centrally Sponsored Scheme entitled “Establishment of an Agency for Reporting of Agricultural Statistics (EARAS)” was taken up for implementation in these three States since 1975-76. A sample of 20% villages at random was taken in such a way that during a period of 5 years all the villages in the State are covered. Under the scheme information is collected regarding area under principal crops and land utilization. This is done by complete field to field enumeration of the sample villages.

2.3 The third category consists of States and Union Territories mostly in the North Eastern region (except Assam) that are neither surveyed for land records nor the requisite revenue agencies for collection of data exist. In these areas the Statistics of land record are collected on a sample basis on the basis of personal knowledge of Revenue Officer/Agricultural Officer.
3. Need for Data by Operational Holdings

3.1 For agricultural development, a knowledge of the detailed structure and characteristics of agricultural holdings is imperative for responsive and efficient planning and implementation of the programmes. It is essential to have information by operational holdings as distinct from ownership holdings. Information by ownership holding is no doubt useful to have an idea of the distribution of wealth but information by operational holdings is more important for planning and implementation of the programmes related to agricultural development. An operational holding is defined as “all land which 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 title, legal form, size or location”. It is the operational holding which is the fundamental unit of decision making in agriculture and consequently for development programmes aimed at improving the lot of the individual cultivators and also the production. Thus, the census of operational holdings, which is otherwise known as Agricultural Census, assumes importance for providing the basic data on the number, area, tenancy status, land utilization, cropping pattern and irrigation status, etc.

3.2 While the system of Agricultural Statistics that was in vogue in the country provided for aggregate at various geographical levels, data on structure of holding was not classified and tabulated. As early as 1830, the Famine Inquiry Committee stressed the need for adequate statistics of land holdings. Again, the Famine Inquiry Commission of 1945 tried to gauge the relationship between the land tenure systems and the efficiency of agricultural production. However, the Commission was handicapped in this regard due to non-availability of data and the commission made a number of recommendations for improvement of Agricultural Statistics. Due to various reasons, these recommendations were not given effect to.

4. Development of Agricultural Statistics in India

4.1 India’s self-sufficient villages constituted the hub of her rural economy which was based on agriculture. Land revenue was one of the main sources of income for the State. Collection of land revenue necessitated maintenance of records relating to cultivation. In the 16th century, Sher Shah initiated land settlement operations for assessment and collection of land revenue. This was later systematized during the reign of Akbar when Todar Mal re-organised the entire land revenue system. During the British period some drastic changes were made with a view to further improving the land revenue system and augmenting the revenue. These changes resulted in the development of two major types of land revenue systems. In Bengal and adjacent areas, permanent settlement was introduced, where land was settled with private landlords who enjoyed absolute rights of private property. In other parts of the country, different systems of settlement were introduced. Many changes were made in these systems during the course of the 19th century.

4.2 After independence, various land laws were introduced to bring the farmers and State into direct contact. The Zamindari system was abolished. Some laws giving protection to tenants were introduced.

4.3 The gradual evolution of the land systems in the country necessitated the maintenance of the village forms and registers giving details of the land held, the various conditions under which they are held. A system of revenue administration was established for the purpose. These forms and registers in vogue for the maintenance of land records in different States constituted the basis for the land utilization, crop and irrigation statistics. These land records and registers are prepared on complete enumeration basis in all the States except Kerala, Orissa, West Bengal, Meghalaya, Manipur, Tripura and some of the Union Territories.
4.4 Changes in the scope and coverage of Agricultural Census have been made from time to time, to meet the increasing requirement of data for planning and implementation of Agricultural Development Programmes. A number of new schemes were introduced for regular and timely collection of different type of data relating to agriculture i.e. production and procurement of foodgrains, import, export and pricing of Agriculture commodities.

4.5 The National Commission on Agriculture, after examining the various alternatives for collection of Agricultural Statistics concluded that the best method of collection of such statistics was by way of land records. In this process, the Patwari, who is primarily responsible for maintenance of land records was considered to be the most suitable person who undertakes the job of crop inspection. The Commission concluded that the basic structure for collection of Agricultural Statistics could be improved by enabling the Patwari to do his job better and other revenue officials at the village and Taluk/ Tehsil level to devote adequate attention to the collection of Agricultural Statistics.

4.6 Agricultural Statistics in India have, thus, grown with the evolution of the land record system in the country.

5. Need for Agricultural Census for Planning & Development

5.1 The Agricultural Statistics collected through various sources in the past related mostly to aggregate the area, production and land use at various territorial levels. However, vital information for various characteristics of different size classes of holding was not available. This proved to be a handicap in decision making in agriculture sector and consequently for designing and development programmes for improving the income and standard of living of the cultivators. Hence, the necessity of having a census of operational holdings providing data on their number, area, tenancy, irrigation status, size of holding, type of holdings and farming practices assumed special importance for planning and implementation of land reforms, etc. was felt. These pieces of information are also essential for preparing schemes for the welfare of small and marginal farmers. The census data is useful for policy decisions and for planning Agricultural production programmes such as for planning and execution of the high yielding variety programmes (HYVP) and programmes on multiple cropping, irrigation, fertilizer, agricultural credit, etc. It is also essential in formulating appropriate policies and programmes of use of agricultural machinery and implements.

6. World Agricultural Census

6.1 The First World Agricultural Census was conceived in 1924 by the International Institute of Agriculture (IIA), Rome, which persuaded the member countries to carry out the general Agricultural Census of comparable and uniform pattern. The first World Agricultural Census was conducted in 1930, by the Institute. It was decided that the Agricultural Census be conducted at the interval of 10 years. Another World Agricultural Census, therefore, was planned for 1940. Preperations were made but the second World War interfered with the full implementation of the programme.

6.2 In 1945, the Food and Agricultural Organisation of the United Nations, which took over the activities of IIA started preparation for the 1950 World Census of Agriculture. In this census emphasis was on methodology and operational aspects, to make them suitable for local circumstances. The 1950 programme also introduced the preparation of short list of essential census information which should be collected by all countries alongwith an extended list which contains items of secondary importance. Altogether 81 countries participated in this census. There were further changes in the programme for the 1960 World Census of Agriculture. Most of these were in the field of methodology. The main difference between the two censuses was the introduction and use of sampling methods.
Knowledge of sampling methods was not widespread in the 1950s but around 1960, sampling methods became more widely acceptable to the statisticians. This helped large countries to participate in the Agricultural Census. The use of sampling had other positive results. It was possible to have quality checks and also flexibility in adjusting the methodology to the local conditions.

6.3 The programmes for the 1970 World Census of Agriculture while retaining the structure of the previous censuses, introduced some additional feature. Among the major additions was, an entirely new section dealing with Association of Agricultural Holdings with other industries in the area of production, processing and marketing of agricultural produce. A new item namely, type of holding was introduced. It also elaborated on the use of sampling methods and contributed to the development of flexible census, methodology including their use in pretesting surveys, pilot censuses and surveys for checking the quality of data. For the first time the 1970 programme defined the place of census of Agriculture in the overall system of Agricultural Statistics in an explicit manner. It indicated that Agricultural Census offers an excellent base and framework for planning surveys to secure Agricultural Statistics. Their data can also be used as benchmark and contains supplementary information for improving the provisions of current Agricultural Statistics. About 111 countries participated in 1970’s World Agricultural Census.

6.4 The 1980 Census of Agriculture laid emphasis on a number of priority areas like Integrated System of Food and Agricultural Statistics, harmonization of concepts, definitions and classifications, basis for in-depth, specialized surveys and more extensive tabulation programmes. The 1980 programme made the following recommendations:

(i) The Census of Agriculture should be used as a base for the collection of current data by improved methods. It should be utilized for the development and improvement of an overall programme of Food and Agricultural Statistics using harmonized concepts, definitions and methods. A permanent full time, well trained and experienced data collection staff should be retained. More elaborate tabulations now feasible through computer application should be produced and each country should have greater flexibility and more freedom in adopting the programme. About 103 countries participated in 1980 World Agricultural Census.

6.5 The 1990 World Agricultural Census has been completed in most of the countries of the World. No major changes have been suggested in this programme.

6.6 According to the FAO, an Agricultural Census is a large scale, periodic and Govt. sponsored operation for the collection and derivation of quantitative information about the agriculture of different countries, using the agricultural holding as the statistical unit.

7. Organisation of Agricultural Census in India

7.1 In India, the Department of Agriculture & Co-operation is organizing Agricultural Census quinquennially since 1970-71, in collaboration with the States and Union Territories. For collection of basic data on the size and other characteristics of agricultural holdings, the Govt. of India decided to conduct Agricultural Census from the year 1970-71. In the previous two Agricultural Censuses, namely, 1950 and 1960, data required for the World Agricultural Census were collected through sample surveys carried out by the erstwhile Directorate of National Sample Survey (Now ‘National Sample Survey Organisation’) which gave estimates for the country as a whole and for the States. The principal objective of the survey was to provide estimates of number of holdings according to size classifications and the details regarding tenancy, livestock population, land utilization, etc, required under the FAO Programme. The programme aimed at obtaining the data for different countries so as to fill
up the lacunae in Agricultural Statistics and also to make them internationally comparable. At the instance of the Planning Commission, additional items which were of interest for plan co-ordination, namely, ownership holdings and land-lease were also covered in the survey of land holdings. The concept adopted were also slightly different from those recommended by the FAO.

7.2 In the 1970-71 Census, the methodology adopted was complete enumeration by which data available in the land records were re-tabulated which was in line with the method recommended by the FAO. In the non-land record States, where comprehensive land records were not maintained, the data were collected through sample surveys.

7.3 Due to fast changes in Indian Agriculture, the National Commission on Agriculture in their report of 1976 recommended that Agricultural Census be conducted on quinquennial basis. Accordingly, the second Agricultural Census was due to be conducted in 1975-76, but had to be postponed due to administrative reasons and this was conducted with 1976-77 as the reference year for data. In this Census, information on number and area of operational holdings was collected on complete enumeration basis in land record States and information on other items was collected on a sample basis. An Input Survey in a sample of 2% villages was also carried out for the first time, as a part of second Agricultural Census. In this survey, data relating to use of various inputs such as fertilizers, manures, besides livestock and Agricultural implements and machinery and Agricultural credit provided by various credit institutions to different categories of operational holdings were also collected.

7.4 The third Agricultural Census was carried out with the Agricultural year 1980-81 as the reference period. It was undertaken on a complete enumeration basis in all land record States except Himachal Pradesh, Punjab and Rajasthan where it was carried out on a sample basis due to administrative reasons. In the non-land record States, the Census was carried out on a sample basis as in the past. The data for the holdings of Scheduled Castes and Scheduled Tribes were also collected separately for the first time in this census. An Input survey was also conducted with the Agricultural year 1981-82 as reference period, with a sample of 7% of the villages.

7.5 The 4th Agricultural Census was conducted with the reference year 1985-86. The Census was also conducted partly on complete enumeration basis and partly on sample basis. The information on number and area of operational holdings was collected on complete enumeration basis while other characteristics were collected on a sample basis.

7.6 The next Agricultural Census which is 5th in the series was conducted with reference year 1990-91. As in the past, this census was also conducted partly on complete enumeration basis and partly on sample basis. The 4th Input survey was also conducted with reference year 1991-92 with a sample of 7% of the villages. No changes were introduced in this census and it was conducted on the lines of the 4th Agricultural Census. Separate data were also collected for Scheduled Castes and Scheduled Tribes holdings.

7.7 The gender-wise data on the number of operational holdings and area operated was introduced in the sixth Agricultural Census with reference year 1995-96. For the first time, the entire tabulation was done through computerisation using a uniform software designed for the country as a whole.

8. Organizational set up for Agricultural Census in India

Central Head quarters

8.1 The Department of Agriculture & Co-operation in the Ministry of Agriculture, Government of India is conducting Agricultural Census in India. The Agricultural Census Division in the Department of Agriculture & Co-operation is headed by an officer of the rank of Joint Secretary, who is designated
as the Agricultural Census Commissioner. He is assisted by a Director, two Joint Directors, one Deputy Director, one Research Officer, one Programmer and supporting technical staff on the technical side and an Under Secretary and a Section Officer and other supporting staff on the administrative side.

Organizational set up in the States

8.2 In the States and Union Territories, a Senior Officer, either the Revenue Secretary or Commissioner of Land Record/Reforms or Financial Commissioner, who will be overall incharge of the census operations is designated as State Agricultural Census Commissioner. A Senior Technical Officer either of the revenue or of Agricultural or Statistical Deptt. of the State along with other technical supporting staff assist the State Agricultural Census Commissioner for completing the work of Agricultural Census and Input Survey.

Financing Pattern

8.3 The entire expenditure on the salary and allowances of the headquarters staff at the centre and in the States/UTs, their travelling allowances and contingencies are borne by the Government of India. In addition, the honorarium to the primary and supervisory staff for field work of the Census and the cost of tabulation of census data are paid by the Government of India. Cost of printing schedules and instructions is also reimbursed to the State/UTs. The States & Union Territories on their part were required to meet the cost of accommodation.

Field Agency

8.4 The field work was carried out by Patwari/Talathis/Karnam/Village Accountants/Village Administrative Officers in the case of land record States and by Revenue Inspectors, Village level workers/Extension staff and others in the case of non-land record States.

Training of field and supervisory staff

8.5 Training is an important aspect for the successful conduct of any census or survey. In the Agricultural Census too, emphasis was laid on training of Census personnel. The Agricultural Census unit in the States organize training programmes for the Senior Technical Officers of the States in the presence of Central Officers as observers and they in turn take upon themselves the responsibility of arranging training programmes for the supervisory and field staff at district headquarters in the presence of State headquarter officials and sometimes Centres representative too. In a number of States, a three tier training programme consisting of training at State, district and sub-divisional or tehsil level is organized. The various concepts and definitions of the terms used in Agricultural Census and sampling procedure are discussed in detail, along with the necessity for accuracy and timely collection of data. A senior officer of the Agricultural Census Division in the Department of Agriculture and Cooperation is usually associated at the State level training programme organized for senior officers.

Supervision

8.6 Supervision of the fieldwork is also an important aspect of any Census or survey. The field work done by the Patwari/Talathis/Karnam/Village Accountants/Village Administrative Officers and others are supervised by the concerned departmental officers like Tehsildars and Revenue Inspectors under the overall charge of the District Census Officer, usually the District Collector/District Magistrate/Dy. Commissioner. Statistical supervision is also arranged by deploying staff from the State Statistical Agency.
**Tabulation**

8.7 The fieldwork involving the collection of data is the first phase of Agricultural Census work. The second phase consisted of summarization and consolidation of data at various level. The tabulation programme for Agricultural Census, 1990-91 comprised the following tables.

<table>
<thead>
<tr>
<th>Table Nos.</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. and area of operational holdings.</td>
</tr>
<tr>
<td>2a</td>
<td>No. and area of operational holdings by tenure and tenancy status.</td>
</tr>
<tr>
<td>2b</td>
<td>Leased-in area by terms of leasing.</td>
</tr>
<tr>
<td>3</td>
<td>Area under different land use.</td>
</tr>
<tr>
<td>4</td>
<td>No. and area of operational holdings by irrigation status.</td>
</tr>
<tr>
<td>5a</td>
<td>No. of operational holdings receiving irrigation and area irrigated by different sources.</td>
</tr>
<tr>
<td>5b</td>
<td>No. of wells and tubewells.</td>
</tr>
<tr>
<td>6</td>
<td>Irrigated and unirrigated area under different crops.</td>
</tr>
<tr>
<td>7</td>
<td>No. and area of operational holdings according to dispersal of operated area.</td>
</tr>
</tbody>
</table>

8.8 There were two options that were adopted by the States and Union Territories for tabulation and processing the data for generation of required output tables. The basic input on number of operational holdings & area operated were tabulated by the respective States/UTs individually through manual/mechanical method of tabulation. However, all States have switched over to EDP in this census for generating output on tables 2—7.

**Committee for Agricultural Census**

8.9 The Agricultural Census Division at the Centre was guided by a Steering Committee on Agricultural Census, under the chairmanship of the Additional Secretary of the Deptt. of Agriculture & Cooperation.

8.10 The Steering Committee comprises of Joint Secretary cum Agricultural Census Commissioner in the Deptt. of Agriculture and Cooperation and representatives from Planning Commission, Central Statistical Organisation, Indian Agricultural Statistics Research Institute, National Sample Survey Organisation and Economic and Statistical Adviser as members. The Director (Agril. Census) in the Deptt. of Agriculture & Cooperation acted as Member Secretary.

8.11 At the State level, the State level Coordination Committees were constituted to guide and coordinate the work of Agricultural Census in the respective States. At the district level, Committee headed by the District Agricultural Census Officer was constituted to implement the programme and arrange for inspections of census work. The officers from the Centre also visited States to inspect the field work.

9. **Organizational and Technical problems faced in the conduct of Agricultural Census, 1995-96**

9.1 The entire programme of the Agricultural Census including the compilation of draft All India report should have been completed by the end of 1999. However, this could not be achieved in the present census due to the following problems:

(a) The general elections of the Lok Sabha and some State Assemblies were also held and the entire administrative machinery of the country was engaged in conducting the general elections of Lok Sabha.
(b) The primary agency in various States had certain administrative problems in the conduct of Agricultural Census. In some States, the primary agency refused to take up the work of Agricultural Census at the initial stage. In some States due to major reshuffle of the primary revenue machinery, the work of Agricultural Census was delayed.

(c) Field work was started with delay in some of the States/UTs for want of settlement of honorarium level at their end, due to delay in the approval of EFC Memo of the Scheme.

(d) Some of the State Governments had later sought technical clarification for instance table-I may not be completed without the completion of schedule “H”. In this connection, it was clarified that table-I is the summary of the information compiled in schedule L-1 and L-2 i.e. information in table-I has to be provided for various size classes of holdings as the number and area of individual, joint and institutional holdings. This information has to be compiled from schedule L-1 and L-2 in case of land record States.