

Census of Agriculture - 1982

The importance of food and agricultural statistics in carrying out ~~natural~~ ^{natural} programmes is beyond doubt. Decennial Agricultural Census is particularly important, as they are the main source of basic quantitative information on structure and other characteristics of agriculture that is needed in development planning, socio-economic policy formulation and establishment of natural priorities. Agricultural Census also provide the basis for development of a comprehensive, integrated ~~natural~~ ^{natural} system of food and agricultural statistics in a country.

The next Census of Agriculture in ~~Pakistan~~ ^{Sri Lanka} will be conducted in July 1982. Already the views of the users has been obtained and the reasonable requests for additional information has been accommodated where-ever possible, bearing in mind the usual tendency of over loading the Census Schedules.

The Census working committee at the very outset took a major decision to collect information on the structure of agriculture on a complete enumeration basis and the details on a sample basis. The following information will be collected on a complete ~~circuit count~~ ^{circuit count}.

- (a) Information on Agricultural Operators
- (b) Information on Operational holdings
- (c) Area under principal crops
- (d) Livestock and Poultry
- (e) Agricultural implements and Machinery.

Sample Census will collect the following information.

- (a) Agricultural employment
- (b) Land tenure
- (c) Land utilization
- (d) Irrigation and
- (e) Fertilizer use.

7 July 1981

Tripartite Review Meeting

on

SRL/78/024 - Development of Integrated
National Statistical System

SRL/78/P03 - Assistance to 1981 Census

Agenda

1. Project Activities and Outputs.
2. Prospects of Achieving Project Objectives.
3. Utilization of Project Results.
4. Project Design.
5. Conclusion, Decision and/or Recommendation.
6. Others.

Programme of Work for year June 1981 to May 1982

Agricultural Census

Major part of the time during the year would be devoted to the Planning of 1982 Agricultural Census. Some preliminary work relating to the following items :

1. Preparation of an outline of the scope and content of the census
2. Obtaining comments and suggestions
3. Drawing up a tentative list of items to be included in the programme
4. Constitution of working committee
5. Drawing up of a tentative list of tables to be generated out of the census data
6. Survey plan - sampling

was done before the Expert's arrival in the country on 9 June 1981.

On reviewing the preliminary work done so far the following work programme has been drawn up for the remaining part of the year.

<u>S. No.</u>	<u>Item</u>	<u>Tentative time schedule</u>
1.	Drafting of questionnaire Ac-1, Ac-2 and Ac-3 and estate schedule after discussions with the concerned officials.	June 1981
2.	Pretesting of census questionnaires in selected districts of the country. Field visits for pretesting.	July 1981
3.	Preparation of a note on the experiences of pretesting. Redrafting questionnaires after discussions with concerned officers. Preliminary action for preparation of census frame.	August 1981

<u>S. No.</u>	<u>Item</u>	<u>Tentative time schedule</u>
4.	Drafting of instructions. Training of the field staff for the pilot census	August - September 1981
5.	Pilot census to be carried out in about 250 villages and some urban blocks spread over all the districts of the country	September - October 1981
6.	Preparation of a note listing out the problems on the basis of experiences of the pilot census. Finalising the questionnaires and instructions. Drawing up of tabulation plan. Reviewing the survey plan. Preparation of Computer programmes using the pilot census data and revision of lists of villages, estates and large farms.	November - December 1981 January 1982
7.	Printing of instructions and schedules	January - March 1982
8.	Training of field staff. Administrative arrangements. Publicity for the census programme ect.	April - June 1982

The expert would be assisting the counterpart in the country in the above work programme.

In addition FAO is proposing to hold a National Demonstration Training Centre on Agricultural Census in Sri Lanka for three weeks. Neighbouring countries would be participating. The expert would assist the Department of Census and Statistics in the work programme of the centre.

Current Agricultural Statistics.

A. Crop Forecasting System A fairly good base is already there in the country for the statistics of area and production of paddy. Time lags however exist in the preparation of estimates of area and production of paddy. The expert proposes to review the situation in consultation with the counterparts in the country and attempt to develop a crop forecasting system to ensure preparation of advance estimates of area and production of paddy.

B. Pilot survey for estimation of production of Coconut. Coconut is an important crop of the country. Estimates of production of coconut are subjective in nature and there is need to carry out regular crop estimation survey on this crop so as to get reliable data. In consultation with the counterparts in the country an attempt would be made to draw up a plan for carrying out a pilot survey for estimation of production in one of the districts in the country.

EXPERIENCES OF CENSUS TAKING IN A
DEVELOPING COUNTRY

1. A census involves a chain of operations and, as is well known, a chain is as strong as its weakest link. As surely as its strength derives from the efficiency of an administrator and the skill of the statistician, the weakness of a census is forged by the fears and doubts, arising in the mind of the farmer, when census technicalities seep into him, through the misunderstandings and errors of the enumerator. All the meticulous programming and the statistical designing can be negated and the census undertaking reduced to naught unless the census taker views concepts and definitions, carefully, against the background of practices prevalent in the country and along with precautionary instructions takes other safeguards, both on the field and off, to limit these effects of a damaging situation. In this paper, reference will be made, therefore, to certain features of the census undertaking with emphasis on a few of these "hidden" experiences of census planning. (1)

PRELIMINARY LISTING OF HOUSEHOLDS

(The Enumeration Frame)

2. Agriculture includes the raising of any crop and the keeping of livestock. It absorbs the energies of various types of persons, the farm enterprise being open to those who are totally submerged in this occupation of cultivating a crop or crops, as well as, to those who merely scratch.....

(1) The experiences are those which arose mainly out of the Census of Agriculture of Ceylon - 1962. Reference has been made in this paper to the reports of this census.

the soil to eke a living and even to others whose only "farming" experience is the gathering of produce from a few trees, which may not even have been planted by them, but perhaps by their forebears. (2)

3. The task of enumerating all land used, in this manner, for agricultural production was made more difficult in the absence of a list of holders-holdings. The several government departments dealing with agriculture and allied subjects, each had certain information - e.g. The Tea Control Department had a list of tea lands - somewhat out of date; similarly the Rubber Control Department, of rubber lands. The Land Commissioner's Department could have provided a list of persons to whom state land had been alienated, under Village Expansion Schemes, Colonization Schemes, etc. In the Department of Census itself, a list of 'estates' defined, at the time, as land 20 acres and over in extent carrying any crop was available. These estates had been listed on a parcelwise basis. It was the same with paddy (rice) lands which had been listed in parcels. These several lists were unco-ordinated and therefore unusable for a holdingwise census. (3) - e.g. it may not have been possible to detect the same Mr. X, who held tea land as well as rubber land and was listed in the separate lists. In any case, all these lists together would not have covered the entirety of land used for agriculture. The situation in regard to cadastral maps was no better, for neither did they cover the whole country nor had they been kept up-to-date.

(2) This situation could exist in many a home garden containing mixed tree crops such as Coconut, Fruits, etc.

(3) The fragmentation of holdings so widely prevalent adds to the difficulty.

4. Hence the first essential was the preparation of an Enumeration Frame. This frame was one of households, prepared villagewise, in which particulars of land areas and numbers of livestock maintained by holders, resident in each household, were shown in some detail. Easy identification of the household was ensured by affixing the serial number, shown in the list, in a prominent position for each household. Since the basic concept of an operational agricultural holding was involved in this phase, as well as, in the subsequent phases of the census, it may be worthwhile quoting the definition as given by the Food and Agricultural Organisation here:⁽⁴⁾

A holding, for census purposes, is all land which is used wholly or partly for agricultural production and is operated by one person (the holder) alone or with the assistance of others, without regard to title, size or location.

5. Among the problem connected with the preparation of the enumeration frame were :-

- (a) Duplication (i.e. double counting) of holders likely to occur owing to -
 - (1) difficulties of identifying the actual holder, which arose, for example: between absentee proprietors and hired persons - in - charge. This latter category of persons-in-charge varied from the level of a "Superintendent" in complete control of financial and

(4) See programme for the 1960, World Census of Agriculture. Food and Agriculture Organisation - Rome 1957.

Operational aspects, etc. to that of a "watcher" who was retained merely to ensure the security of the holding.

In between, a wide range of remote controls was exercised by the proprietor causing doubts as to whether he was the holder or not.

between owners of land and those to whom

all the land of the one particular owner was rented. Some of these owners had the mistaken view that their claims to the land would be credited, by default, if no entry was made in a census document. (A similar situation arose when owners who were attempting to deprive their tenants (share-croppers) of land, in view of recent or impending legislation, claimed the same land in addition to the tenants).

Between one joint owner and another,

especially in those cases where the land rotated, at the end of each cultivation season, from one of the co-owners to the next. The holder was then deemed to be the one co-owner, who worked the land for the current season. (Cultivation operations in one and the same season were also shared between joint owners - e.g. the first undertakes, ploughing, the second sowing, etc. Here the co-owners may be treated as joint holders).

(11) difficulties of identifying the permanent residence of migrant operators. The phenomenon of holders shuttling between one or other of the parcels, forming their holdings, was found in several parts of the country. But when these parcels were at some distance from each other⁽⁵⁾ the duration of stay was fairly long, increasing the possibility of such holders being listed both at their permanent residences and at the temporary lodgings.

(b) Omission of persons who held land-livestock but were unwilling to disclose this information owing to fear of taxation etc.⁽⁶⁾

(c) Inclusion of persons who adopted the subterfuge of claiming some land, in the neighbourhood, in the mistaken belief that an entry in a census document could be cited later in support.

6. The magnitude of the problems itemised in para 5 above or the effectiveness of the measures to counter them cannot be gauged. Though each of them was found in localised regions, they could together have distorted the final census results at country level. Even taken separately the faulty enumeration, which they could have caused, would have affected the figures seriously at lower regional levels. The figures in the footnote.

(5) At times, 20 to 30 miles away.

(6) Illicit cultivation may have entailed prosecution in a court of law. Such omission should not be confused with measures taken to reduce the work load when households and holders were omitted. See para 9.

note below taken from the census itself may have some relevancy.⁽⁷⁾

7. To combat these situations -

- (a) The publicity drive was advanced, in time, to cover this phase of listing of households which commenced about nine months before the date set for the census enumeration. Posters and radio talks clarified the aims and objectives of the census and stressed the confidential nature of the census documents. It was made clear that information on individuals or on a specific holding could not be disclosed to government departments even to those dealing with revenue, taxation, etc. while the persons acting as enumerators, etc. were themselves under an oath of secrecy.⁽⁸⁾

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- (7) 1997 hired persons-in-charge were returned as holders, in holdings of a size ranging from 25 acres to under 50 acres, with a further 1640 in the size group 50 acres to under 100 acres. It was mainly in holdings of these middle size groups that the confused situation, between absentee proprietors and persons in charge, would have arisen. 65,000 acres of land were reported under the system of rotatory tenure referred to.

A glaring instance of double counting of migrant operators involving nearly 15,000 to 20,000 acres or more, of land in just one localized area was detected, after the census enumeration, but in time to correct the results.

- (8) These measures were all covered by the provisions of the Census Ordinance.

(b) Listing of households was generally entrusted to the Village Headman. The limits of his division were defined well enough and known to him, to prevent overlapping. He alone, even among the village level officials, had that intimacy with the persons resident in the area which was to prove invaluable in unravelling the confused type of situations, referred to earlier. The concept of the operational agricultural holding was foreign to his way of thinking and had to be drilled into him, by means of instruction leaflets and special instruction classes⁽⁹⁾. This and a lurking fear that he would 'doctor' his lists to correspond with information already in his possession, made it essential for intensive on-the-spot field checks to be held, especially at the early stages of listing⁽¹⁰⁾. Correction of errors and further clarifications of instructions were then made. On the whole the Village Headmen responded ably to the task entrusted to them, and maintained high standards, so much so, that the instance of double counting of migrant operators, to which reference was made earlier⁽¹¹⁾ occurred ...

(9) These included reading and explanation of the instruction pamphlet, clarification of points raised, the working of an exercise prepared, for the purpose, by making entries on a blank form provided and field entries covering about ten households in a village nearby.

(10) See para 15.

(11) See foot-note (7).

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in regions where the services of other officers were used, in preference to those of the village headmen⁽¹²⁾.

- (c) The problems posed by absentee proprietors seemed large and necessitated special precautions. Where a hired employee (person-in-charge) was found, the name and address of the absentee landlord was collected on the listing form, along with other particulars. Checks made subsequently to detect duplication, between proprietors and persons-in-charge, were thereby facilitated⁽¹³⁾.

THE UNIT OF ENUMERATION: - (The Agricultural Holding)

8. It has to be noted that even though the holder was identified, his holding was not always easily determined for:-

- (a) it generally consisted ^{of} for more than one parcel⁽¹⁴⁾
The difficulties outlined at para 5 above applied to the separate parcels, forming a holding.
- (b) the holding does not necessarily remain static throughout the year for changes, in tenancy, at the end of a season in respect of one or more parcels would contribute towards the

(12) In urban areas and areas covered by Special Development Authorities, officers of the local authority were entrusted with this duty.

(13) The decision to exclude highly urbanized areas from the census minimised such checks. See para 9(a)(ii), See also footnote (22) Page (11)

(14) Earlier data on fragmentation of a holding was not available. At the census, itself, it was found that the average number of parcels per holding was 2.5. Out of 1.2 million holdings (approximately) over 0.7 million reported more than one parcel.

expansion or shrinking of a holding⁽¹⁸⁾. In such cases although the total area of a holding was determined, as on a specific date, further information as to the seasonal crops, etc. on the relevant parcels, in one or other of the seasons, had to be obtained by contacting the previous holder.

- (e) In the case of holders, who practised shifting cultivation there was the possibility that some of them had abandoned such parcels of land, at the time of the census, and would perhaps unwittingly, have excluded this information⁽¹⁶⁾.
- (d) One holder may have had more than one holding, e.g. a hired manager - person-in-charge of a holding who held land, on behalf of his employer, could also have held land on his own.
- (e) Certain holders of livestock/poultry held no land at all⁽¹⁷⁾.
- (f) There were other complications such as -
 - (i) joint holders - in these cases the holding was regarded as a fractional holding⁽¹⁸⁾. Here the enumerator

(15) The situation was aggravated by the enforcement of some provisions of the Paddy Lands Act.

(16) In certain regions, figures of land under shifting cultivation fell short of anticipated totals.

(17) Earlier figures not available. The census showed 3,490 such holders.

(18) Scrutiny of the completed schedules indicated that, at times, joint ownership was mistaken for joint operation.

returned the figures of the entire holding, on the census schedule. Adjustments were made later during the tabulation phase.

- (11) one agricultural holding within another in the large holdings of the estate sector⁽¹⁹⁾ the employees residing within the estates may have cultivated garden crops and/or tended a few head of livestock within the estate. It was found impractical to treat them as separate holdings so that such land/livestock was included as part of the main holding (estate).

The instructions to enumerators gave as much detail of the above situations, as was considered necessary, to eliminate errors of duplication or omission likely to arise⁽²⁰⁾.

COVERAGE AND ENUMERATION:

9. In order to reduce the enumeration effort the following measures were taken :-

(a) At the preliminary listing stage :

- (1) in the estate sector, the household of the holder/person-in-charge, only, was listed in each estate, on the assumption that number of employees, etc., resident within the estate and operating land would not be appreciably large to warrant the listing of a few thousand.....

(19) This sector can generally be taken to cover the larger holdings 50 acres and over in extent.

(20) For details of Instructions on enumeration see para 15.

households more, within these estates⁽²¹⁾.

- (11) the highly urbanized areas (i.e. 8 Municipal Council and 16 out of the 36 Urban Council areas) were excluded as the number of holders, resident therein, was not expected to justify the task of listing thousands of households⁽²²⁾.

- (b) Prior to the subsequent Enumeration State:

Households with less than a minimum area of land and a minimum number of livestock/₂₃ poultry were eliminated from

- (21) Where such employees held land (home gardens) or few head of livestock within the estate para 8 f(11) above applied. Where they held land outside the estate, the census would not have covered such land.

- (22) Where residents, in such urbanized areas were in the category of absentee proprietors, who could have been considered holders they were traced back at the enumeration through the list of estates - thus the larger holdings at least were not lost by default. In view of the increasing tendency among urban residents to maintain poultry, etc., steps were also taken to ensure a count of livestock and poultry, on a random sample in these urbanized areas, a decision amply justified by the results, over 10,000 head of cattle and buffaloes and over 200,000 chicken being enumerated thereby.

the lists of households⁽²³⁾

(c) At the Enumeration Stage -

Sampling was adopted in enumerating small holdings - i.e. holdings of less than 50 acres in extent. The choice of a 10 per cent sample, for small holdings, was determined on the results of a pilot census⁽²⁴⁾. A similar sample of 10 per cent of the residential premises was selected in the limited enumeration of urbanised areas, where a count of livestock and poultry, ~~any~~^{only}, was made.

10. The above procedures inevitably involved a loss in completeness of the data but effected a considerable saving in the enumeration and post enumeration phases of the census. The reduction in the number of enumerators along^e,⁽²⁵⁾ rendered the field work more manageable leading to more intensive training and closer supervision of this work, which would not have been possible otherwise. The corresponding fall in the magnitude of the non-sampling errors,

(23) In regard to the area of land a minimum limit of $1/8$ of an acre was laid down but was applied only to households in which one or more residents, severally or together, operated one solitary plot of land of an area less than $1/8$ of an acre forming the garden around the home. If however such a household maintained at least 2 head of cattle/buffaloes or 5 sheep, goats and pigs (counted together) or 20 chickens or other poultry and had any paddy land whatsoever, this lower limit did not apply and it was included in the enumeration frame from which the sample was selected.

(24) See para 11 and 12 for further details.

(25) Even so, over 5,000 enumerators had to be enlisted.

and the resultant gain in accuracy, should have compensated for the loss accruing through incomplete coverage.

THE PILOT CENSUS

11. It was really a "mini" census, in the nature of a dress rehearsal of almost the entire census undertaking, from the listing of households to the final tabulation and analysis of data. It was taken in three fairly extensive, but separate, regions selected with a view to cover as wide a cross section, as permissible, of the varying situations likely to be encountered throughout the country. The pilot census was invaluable in :-
 - (a) testing the accuracy of the listing procedure and the adequacy of the instructions which were issued for the purpose,
 - (b) determining criteria for excluding holders of minute (land and livestock) holdings, at the enumeration,
 - (c) testing the enumeration procedures, the census questionnaires and relevant instructions,
 - (d) timing the various operations such as enumeration, editing and coding of schedules, punching of cards and thereby, determining approximate requirements of men (enumerators, etc.) and materials (punch cards, etc.),
 - (e) testing the sample design.

12. While the sample design was found to be adequate⁽²⁶⁾ the pilot census, pointed to misunderstandings and doubts in the several phases of the listing of households of ...

(26) Standard errors for different characters such as average area for holding, average area under paddy per holding and average number of cattle per holding, based on the results of the pilot census showed that district estimates for characters, evenly distributed, gave a high precision. It was found, at the time that even at the smaller administrative level of a Divisional Revenue Officer's division, all standard errors for these characters were

editing the schedules with adequate checks to secure internal consistency, of punching of cards and their sorting and tabulation. Clarification of these instructions and procedures resulted in unravelling situations which, later on, in the main census operation may have proved baffling.

13. Changes in the questionnaire, used at the pilot census, were effected as follows:-

(a) In a bid to save time spent on enumeration,

(i) Tenure and Land use - information on these items was collected parcelwise, at the pilot census, but was obtained for the entire holding, at the main census,

(ii) Farm household - information was obtained for each person, separately, at the pilot census but for the entire household at the main census.

In both case the quality of the data obtained, at the main census, fell below the standards shown, at the pilot census⁽²⁷⁾.

(b) In a bid to obtain addition data,

(i) Farm machinery and implements - at the pilot census the data related to numbers in possession of the holder. The information was rather sparse and the item was therefore expanded to include data on the use of machinery etc. Even so the data was not too satisfactory.

(27) This may have been due partly to the higher educational standards of those who enumerated and the closer supervision, too, at the pilot census.

FIELD ORGANISATION AND PROCEDURES:

14. **Census Personnel.** The use of the mailed questionnaire at the enumeration was restricted to holdings 50 acres and over in extent. Such a direct approach as this would not have answered in the case of the multitude of small holders. Thus, it was necessary to set up a field organisation, of considerable proportions, beyond the normal resources of the Department of Census. Under the provisions of the Census Ordinance, the existing district and regional administrative structure was pressed into service, the hierarchy of officials taking their place downwards as Commissioners of census at District Level, Chief Supervisors of Census at regional level, Supervisors of Census and finally Census Enumerators at village level⁽²⁸⁾. The field staff of the Department of Census, strengthened as necessary, manned key points to ensure co-ordination, proper timing and effective dissemination of instructions, etc. Further liaison with the field was maintain by higher officials, of the central office, who were assigned geographical areas, inspecting and clarifying doubtful points on the spot.
15. **Intensive and systematic training of field personnel** was considered most essential and was effected by instruction courses held at all levels. Trainee-officers at supervisory levels had to participate

(28) In Urban Areas, a parallel organization of officials of the Local Government Bodies functioned in similar capacities.

in one training course⁽²⁹⁾ and to be present, at least, at a second before they were deemed fit to instruct the enumerators. A maximum of 35 trainee enumerators was prescribed for each course and attendance was secured by payment of a suitable allowance.

16. Field checks were instituted beginning with the preliminary operation of listing the households.

They were as follows:-

- (a) Listing stage - While the listing was in progress a team of about 30 officers was drafted to the field for a systematic check on the work of the village headman. On the basis of the reports made instructions were clarified and errors rectified.
- (b) Enumeration stage - Higher officials from the Central Office moved on to the field scrutinizing completed schedules making on the spot checks, etc. Where errors detected were widespread, supplementary instructions were

(29) The training course consisted of -

- (i) study of a booklet of instructions;
- (ii) oral instructions given by trained officers;
- (iii) working out of exercises in which answers had to be filled in, for situations simulating conditions in the field;
- (iv) field work during which each trainee interviewed an operator and filled in a census questionnaire.

issued (30)

- (e) Post enumeration stage - Immediately on completion of the enumeration each Chief Census Supervisor selected schedules at random and checked entries with the farmers, on the field.

17. Further checks on field work were instituted in the immediate post-enumeration phase thus:-

- (a) One completed schedule selected, at random from every one of the enumerators was copied out at the office of the Chief Census Supervisor and mailed to the central office. Here these entries were scrutinized by trained personnel and the copy returned with directions for correction of errors, where they were detected.
- (b) In the small holding sector every one of the households, selected for enumeration, was checked against the filled-in schedules.
- (c) In the same way, in the estate sector, where a complete enumeration was planned, checks against a card index of all estates, which

(30) These covered the following:-

- (i) status of holder - i.e. whether sole a joint holder and also cases of paid managers-
- (ii) the gathering of information in regard to parcels of land which had changed hands during the preceding year.
- (iii) Interplantations of crops on the samp plot;
- (iv) land use.
- (v) employment on the holding as against household work.

had been compiled for the purpose, revealed both duplications and omissions. Cases of omission were referred back to the enumerators in these areas, in which the holders were said to be residing, for resurvey of schedules, etc. By these means the number of estates which remained un-enumerated fell from over 1,100 to about 300. (31)

THE CENSUS QUESTIONNAIRE:

18. In developing countries especially, the lack of records bedevils the gathering of data in regard to the agricultural sector. The census questionnaire thus takes on the added function of a key with which the inner recesses of a farmer's memory can be unlocked, revealing, thereby, information which has not already been dimmed by the passage of time. The choice of questions to be included could be from the short list or the Expanded List of the FAO Programme or a selection from both. Whatever it be, it should be obvious that local usages, customs, terms varying perhaps with the languages and dialects in use, should be fitted into the census terminology. Even so, meaningful information may not always be elicited unless supplementary questions, of a probing and searching nature leading to the subject in hand, are used. Some of these additional questions ...

(31) The number of 'estates' finally included in the census enumeration was 5872. The 300 or so estates which were un-enumerated were "written off" and reportedly accounted for about 20,000 acres. They were probably estates which may have been known by more than one name and had therefore been enumerated already. Some may have been untraceable due to changing ownership, sub-division, etc. subsequent to being listed.

may be prompted orally by individual circumstances and thus left to the enumerators themselves, while others of a general nature, may have to find a place in the schedule itself - cases in point were land use, tenure, employment, etc.

19. The special needs of a country calls for certain additional information not found in the FAO Programme, or for further details of an item already listed there. This is understandable, but to many the census questionnaire is the panacea for all statistical ills and they feel confident that any and every question should be includedⁱⁿ the attempt to fill all the lacunae in the world of agriculture. Unless every additional question mooted, however important it is said to be is viewed against the time consumed in enumerating, editing, coding, punching and tabulating there is the danger of overloading the entire undertaking. This applies, especially, to the questionnaire itself for it is well known that enumeration fatigue causes many an error.

LAND AND CROP AREAS:

20. Physical areas of land/crops reported, at the census, were necessarily approximate and were generally recorded by inquiry from the holders without further checks⁽³²⁾. Even ^{if} were cadastral maps available in some regions, sub-divisions of parcels of land and other changes, over the year, would have rendered them unusable. Permanent crops encountered in the course of enumeration especially tea and rubber may have provided an element of accuracy, in estimation of area, for these crops were subject to ...

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(32) The enumerator was deemed to have ensured the correctness of the areas reported. Random checks on areas of land/crops by physical measurement, though contemplated as part of the census programme, did not materialise.

registration and assessment by controlling authorities⁽³³⁾. Further tea and rubber were generally in the possession of a class of land-owners who would have relied on land surveys, in acquiring or disposing of such lands, so that their areas would be known accurately.

21. A similar situation did not hold for land under coconut, which was widespread in the smaller holdings/parcels. In some of these minute coconut plots the delineation of the limits of a persons' holding was not possible, even on the ground, for palms in the same garden were apportioned between two or more holders⁽³⁴⁾. For lands reserved for the specific purpose of cultivating paddy, areas were known, in the past, in terms of the volume of grain sown, the unit of measurement varying from region to region. Over the years, some degree of standardisation of these local units in terms of acres, roods and perches had been attempted and has now been

(33) The Tea and Rubber Control Ordinances governed the cultivation these two crops. Even so data on these parcels/plots were somewhat out-dated. At the census itself it was reported (and later verified) that lands on which rubber was absent, having been uprooted, continued to be maintained on the registers as rubber land.

(34) In such cases assessment of area may have been based on an average stand of coconut palms per acre. The census schedule asked for the number of trees to be reported, in these and similar cases, where acreage could not be determined.

attained, though an element of doubt still exists as to the areas occupied by ridges, bunds, threshing floors, etc., within the tracts of paddy land.

22. The situations mentioned in paras 20 and 21 above abounded in the more densely populated wetter regions of the country. Here the area of the holding could have been built up through that of the constituent parcels/crops. In the dry zone regions, however, the position should have eased for much of the land, under cultivation was alienated in recent years by government on the basis of cadastral surveys. In this region the problem of determining both areas of parcels, under shifting cultivation, and of the separate crops on them, remained. These parcels may not have coincided with the acreage allowed on a license by the controlling authority, while mixed crops and crops, scattered in patches, added to the difficulty of estimation⁽³⁵⁾. Communal land did not form part of an agricultural holding, as defined at the census, so that the area of land used for grazing purposes fell far short of the large extents so used by the local rural community, as a whole, especially in the dry zones.
23. Under the circumstances mentioned above the view, held generally, that consistent under-reporting of areas is widely practised is open to doubt, for it pre-supposes that the farmer is aware of the accurate area and consciously under-rates it. Though there would have been differences, severe at times, between the actual areas, as they existed, and those recorded on the census questionnaires it seems more correct to infer that these differences were due, largely, to inaccuracies in assessing these areas.

(35) In such cases only very rough estimates were possible. Where mixed sowing was practised, the separate areas were assessed on the volume of a particular variety of grain used in the mixture, as against that which would have been used, per acre, had a single crop only been sown.

These differences may also have cancelled themselves, in the long run. Wide scale under-reporting should have resulted in figures which fell short of those from more reliable sources. Comparable but independent sources are not easily available for figures of an earlier census which would have differed in point of time, and we also have been subject to similar disabilities as those mentioned in paras 20 to 22 above. The air surveys conducted over the entire country have available, perhaps for the first time, data on land and crop areas from two independent sources not widely separated in point of time⁽³⁶⁾. While the figures of temporary crops which can expand or contract, from year to year, do not lend themselves to comparison, areas of land under permanent crops or under a permanent form of utilisation, as is paddy land in Ceylon, should be comparable. For a crop such as rubber these results showed an unbelievably close correspondence, for crops such as tea and paddy the differences are easily reconcilable while for others, such as coconut and cocoa, wide disparities appear, at first sight, to render the figures from one or other of these two sources, unusable⁽³⁷⁾. Strange, though it may seem, under

(36) See "A Forest Inventory of Ceylon" -
A Canada - Colombo Plan Project 1961.

(37) Relevant figures read as follows:-

	(a) Census	(b) Air Survey
Rubber	(a) 586,638 Acres	(b) 581,880 Acres
Tea	370,934 "	636,230 "
Paddy Land	1,135,188 "	1,361,910 "
Coconut	1,152,428 "	618,910 "
Cocoa	31,121 "	6,440 "
Cinnamon	29,407 "	23,520 "

the surface of the conflicting definitions concepts and circumstances of the two surveys, even these figures could be harmonised but in determining the area, for each of the crops concerned, the census estimates would certainly take precedence over those of the air photographs. (35)

CONCLUSION:

24. There are still more and varied experiences, both in Ceylon and other countries than those detailed above. These are the problems, for example:-

- (a) of securing adequate legal powers and processes which can ensure the functioning of a census organisation while, at the same time, limiting their use in pursuing the errant farmer.
- (b) of timing the census in relation to other important and arduous undertakings, such as the census of population, and phasing it in relation to the agricultural calendar.
- (c) of ensuring publicity to a degree necessary to break down the inherent biases and the ignorance of the farmer, with better understanding of the purposes of a census.
- (d) of gathering data on agricultural production from a multitude of small holders unlikely to be concerned with what their meagre efforts, at subsistence farming have gained.
- (e) of obtaining figures of employment on holdings which generally keeps the holder occupied, throughout the year but necessitates additional labour at peak periods.
- (f) of misreading crop figures listed, one under the other, in a census questionnaire in each of the phases of enumerating, editing, coding and punching.

(35) These photographs have not been able to penetrate through the overhanging foliage.

(g) of the inevitability of delays in the tabulation of data.

25. Measures to counter the difficulties may be as varied as the problems themselves and may not all meet with equal success. The knowledge that they have failed should spur the census taker to further efforts, to more care in co-ordinating the operations, to greater skill in evolving a statistical technique, to a deeper study of the nuances of agricultural and social practices, and to a better understanding of the whims and foibles of the peasant society around us. In this quest for more and improved data, experience is the great teacher for it gives us the knowledge to plan the future on the successes and, even more, on the failures of the past.