DATA SERIES No.1

A NOTE ON THE SOURCES OF OFFICIAL DATA ON LAND HOLDINGS IN TAMIL NADU

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Introduction

This note attempts to review certain features of three sources of official data on land holdings in Tamil Nadu - the reports of the National Sample Survey, (NSS), the World Agricultural Census, Tamil Nadu 1970-71 (WAC), and the Census of India 1961.(1) It deals with the nature and scope of the data available in these sources and the definitions and statistical methods employed by them. This review is part of a wider effort to utilise the available statistical material on features of the agrarian system in Tamil Nadu in the study of changing forms of ownership and forms of production in agriculture.

For purposes of the review, the term "data on land holdings" refers not only to the information on the distribution of land between households, but to all data in which statistics on agrarian households are indexed by the size of land holdings.

The first question that arises is: what is the rationale for taking land as the key variable in the classification of households? The answer lies in the fact that land is the primary prerequisite for production in agriculture and that the distribution of land between households is an important indicator of their position in the system of agrarian production. It follows that changes in the distribution of land and growing inequality among rural households in the ownership and operation of this fundamental asset(2) is an important concomitant of the changes that are occurring in the forms of ownership and forms of production.

The potential usefulness of data on landholdings to analyse agrarian change is, however, subject to limitations. The use of the size of land holdings as an index for the classification of households has the obvious implication that equality of land possessed by households establishes uniformity between them in their essential characteristics. Certainly such an assumption is not valid, as the following examples suggest.

Firstly, a single size category of land holding may conceal considerable variations in the physical characteristics of land - variations, for instance, in the irrigation and drainage facilities available to the land, the type of soil and its fertility, land utilisation and cropping pattern and so on.

Secondly, a single size category of land holding may group together households that differ even in respect of essential characteristics. The terms of possession of a holding may vary widely within a size category of land holding. A size category can encompass on the one hand households which have made considerable technical improvements upon the land, have adopted advanced techniques of cultivation, incur heavy expenditure during the crop season and receive regular surpluses from the land, and on the other, households whose methods of cultivation are still backward and which still practise agriculture as a routine craft. A single size category of land holding may conceal differences in the sources - agricultural and nonagricultural - of incomes of households. Further, given that technical change penetrates agriculture in varied forms, the size of land holding need not be a direct indicator of even the scale of production in agriculture. An index of landholdings per se does not take up the all-important question of the physical participation of members of households in cultivation; of the relationship, household by household, between labour employed and labour power expended and of the character and conditions of such labour. To take one last example, considerable variations are likely to exist in the assets -- land assets, agricultural machinery and implements, livestock and nonagricultural assets -- owned by households within a single size category of land holding. It is clear then that the size of the land holdings in terms of its physical extent need not necessarily be (and as agriculture modernises, may become less and less) an accurate measure of the economic size of the farming unit.

The fact that data on land holdings must be qualified does not, of course, mean that it can be dismissed. It only serves to emphasise that sufficient care must be paid to processing and analysing the available data.

Before going to the specific data sources, two general requirements of economic statistics on agriculture are noted below.

First, economic statistics on agriculture (in this case on land holdings in Tamil Nadu) must perform a dual function: on the one hand they must provide, through summarised statistical information, insights into economic trends in agriculture for the state as a whole. On the other hand, statistical indices for the classification of agrarian data must be taken in conformity with local conditions and forms of agriculture. This requirement of economic statistics has important implications for the manner in which samples are designed and data collected, and for the manner in which this data is aggregated, summarised and presented..

Secondly, when the problem is to study agrarian change, it is important that sets of data -- from different sources and taken at different points of time -- are comparable and are unified by some identity of purpose. This requires that statistical method always be clearly and precisely stated. Further, while innovations and refinements in statistical methods are essential for the improvement of the data base of the agrarian economy, it is necessary that they include supplementary measures to ensure a degree of uniformity and comparability of data obtained from different sources and at different points of time.

Two further points must be noted about the specific data sources that are discussed in this note. First, while the NSS, WAC and Census of India 1961 provide certain useful data on aspects of agriculture in Tamil Nadu, they are not in any sense comprehensive or conclusive if the purpose is to make a scientific socioeconomic classification of rural households. Such a classification requires that specific and detailed field study be undertaken. Secondly, with the exception of the NSS data on land holdings, the data from these three sources has not been utilised in any detail in published research on agriculture in Tamil Nadu.

I

THE NATIONAL SAMPLE SURVEY (NSS)

The NSS is the only systematised body of official data on the ownership and operation of land available for Tamil Nadu at different points of time. It is an extremely useful feature of the NSS that in every NSS volume, there is a clear statement of the concepts and definitions and the statistical methods used. Because it provides a detailed account of the method it employs in the collection of data, it is also relatively open to scrutiny.

The National Sample Survey has taken surveys of land holdings in four rounds: the 8th (July 1954 to March 1955), 16th (July 1960 to June 1961), 17th (September 1961 to July 1962) and the 26th (July 1971 to September 1972). (The reference year for the 26th round was the agricultural year 1970-71, the same as for the World Agricultural Census.) The first three were surveys of land holdings in rural areas alone; the 26th Round covered land holdings in urban blocks as well.

The data of the earliest of the land holdings surveys, during the 8th Round, is affected by considerable differences in scope and method between that and the three succeeding rounds. The first major difference is in the territory of the State of Tamil Nadu (Madras), which underwent important changes between 1954 (8th Round) and 1960 (16th Round)[3]. Significant differences also exist in the definitions and sampling method adopted in the 8th Round and succeeding surveys. While these differences affect the comparability of the data, it is interesting to make comparisons of their method, since the succeeding rounds are, in some respects, refinements of the method of previous ones.

Basic definitions[4]

In a study where the index for the classification of households, and their characteristics is the size of landholding, the definition of the term "land holding" is crucial.

At the 8th Round, all holdings of land, including those used exclusively for nonagricultural purposes including land used for house sites, for livestock-raising and pasture, forests and so on were within the definition of 'holding'. This brought many households that were essentially landless in respect of agricultural holdings into the category of holders of land. At later rounds a holding had to be put at least partly to agricultural purposes to be a 'holding' for purposes of the survey.

The NSS classification of holdings is in terms of 'ownership holdings' and 'operational holdings'.

The ownership holding was defined in 1954 as the holding that was under the ownership do jure of the household, namely, owned land over which the household exercised rights of permanent and heritable possession. It hardly needs repeating, however, that the ownership of land de facto of many -- particularly large land owning -- households often do not coincide with their patta-holdings or ownership de jure. It is a common expedient for such a household to conceal what is in fact owned land by 'transferring' it to a temple, trust or other institution or to a person (who (if he/she exists) exericises no ownership control and then to hold it on 'lease' or simply to continue to cultivate it as its owner.

A useful working definition of the ownership holding would be one that brings within it all the land over which the household has the right of permanent heritable possession, land includes patta land, all kinds of benami holding and other forms of de facto ownership taking specific note, both in the collection and presentation of data, of the status of possession of the component parts of the household ownership holding. The three latter rounds of NSS have extended the definition of ownership holding to "land owned and land held in owner-like possession", or land owned and land held under lease, assignment or grant with the right of permanent heritable possession. Put differently, the household ownership holding is the land owned by a household and operated by it with family and/or hired labour, plus land leased out and mortaged out by the household.

Two further points must be noted about the ownership holding as defined in the NSS. Firstly, since the ownership data is collected for each household (in the case of joint ownership, the share of the particular household is taken separately), the total number of ownership holdings is equal to the total number of households. Secondly, since the unit of observation is the household, land owned by institutions (temples, trusts, cooperatives, etc.) and government owned poramboke land are excluded from the NSS sample of land owned and from the estimates of total land owned.

The concept of 'operational holding' adopted in NSS data follows the recommendations of the FAO since the World Agricultural Census of 1950.(5) The unit of ownership often does not coincide with the unit of production, and it is the unit of production that the 'operational holding' seeks to identify. The operational holding consists of all land managed (and used at least partly for agricultural purposes) by a 'person' as part of a distinct technical unit. The 'person' is a definitional convenience, indicating the management of the technical unit.

Thus an operational holding, being a technical unit, need not necessarily be directly identifiable with the household. One operational holding may be managed by more than one household (joint operational holding) or by members of the same household (individual operational holding). A single household could have more than one operational holding if different holdings managed by its members constituted distinct technical units. The NSS also utilises the category of the 'household operational holding', which relates the technical unit directly to the unit of observation, the household. This is the sum of all holdings operated by members of the household plus an equal share in joint operational holdings. A household operational holding should thus be the land owned and operated (with family and/or hired labour) by the household, plus all land leased in and mortgaged in by it.

The NSS definition, however, is more broad. The operational holding covers nine categories of land -- net area sown; miscellaneous tree crops, groves, etc. pastures and grazing land; current

fallows; cultivable wastes; land put to nonagricultural uses; barren and uncultivable land; and forests -- with the proviso that the land must have been used, at least in part, for agricultural purposes. The household operational holding at the NSS, then, is considerably greater than the area of land owned and operated plus the area leased in; it consists of all land owned (including fallows, uncultivated land, house-sites and other nonagricultural land, pastures, forests, etc.) less land leased out or mortgaged out plus land leased in or mortgaged in.

This aspect of the NSS definition clearly has a bearing on the estimates of area under so-called 'self cultivation', and on figures on the extent of tenancy (taken as a ratio of land leased to the total operated area), particularly since there is no NSS data on the division of land at the state level between different utilisation-categories.

An estimate of the discrepancy between area cultivated by a household and its total 'operational holding' is provided by WAC data, in which a similar definition of operational holding has been adopted. The evidence from the WAC suggests that for most parts of Tamil Nadu the discrepancy is not very great. The percentage of net cultivated area (the sum of net sown area and current fallows) to the total operational holdings, according to the latter, is 91.69 for the State (excluding Madras, Kanyakumari and the Nilgiris).(6)

Two factors affect a coincidence between the total number of household operational holdings and the total number of operational holdings. The first is the incidence of joint holdings (the more the number of joint holdings, the greater the number of households relative to the number of operational holdings) and the second, the incidence of households which operate more than one holding (the greater the number of such holdings, the lower the number of households relative to the number of operational holdings).

The available evidence suggests that in Tamil Nadu, the divergence between the number of operational holdings and household

operational holdings is low. Of the total number of operational holdings at the 26th Round, 0.18 per cent were joint operational holdings.(17) Further, the total number of households exceeds the number of individual operational holdings by only 0.30 per cent,(8) which suggests that the incidence of single households operating more than one operational holding is also low. (WAC data puts the incidence of joint operational holdings even lower, at 0.04 per cent of the total number of operational holdings.)(9)

Two noteworthy implications of this relationship between joint holdings and households are, firstly, the development of individual households as independent units, and secondly, the validity of the present definition of 'household' as a unit of observation and of classification of rural households.

The schedules :

Certain aspects of the coverage of the schedules for households at the 16th and 17th rounds (which are similar) and the 26th Round are discussed below. At the outset, it must be noted that the NSS survey of land holdings at the 26th Round was integrated with the Reserve Bank of India Survey of Debt and Investment of 1971-72 and that the schedules designed for the 26th Round are a set common to the NSS and RBI enquiries.(10)

As introductory information on the households, the schedules of the 16th and 17th Rounds covered basic demographic (age and sex) data and occupation of household members by industrial occupation category. The 26th Round had added information on the employment status of members of households.

On particulars of area owned by households, the 16th and 17th Rounds had useful information on the specific nature of the title to land and on the extent of leasing out by the owner household. The 26th Round dropped the information on the nature of the title to owned land. At the 26th Round, however, detailed information on the terms of land lease has been collected.

The next section of the schedule for households deals with the assets of households. While the early rounds recorded only those assets that had a direct bearing on the cultivation activity of the household (draught animals, other livestock and agricultural equipment and machinery), the 26th Round made an exhaustive record of the assets of households. This is evidently because the RBI data on assets of households was collected through the same schedules as the land holding data of the 26th Round. The assets covered by the schedule include buildings and other structures, draught animals, other livestock and poultry, agricultural machinery and implements, non-farm and transport equipments, durable household assets, financial assets, and cash, grain and other commodity dues. These assets are then measured against the liabilities of households.

In the record of particulars of operational holdings, the earlier rounds disaggregated the owned part and the leased-in part by the terms of ownership and the terms of lease, while the 26th Round recorded the area of land owned and land leased in only by the terms of lease. The land is also classified by the irrigation facilities (four sources of irrigation were specified in the earlier rounds and five in the 26th Round) and drainage facilities available to it.

Operational holdings, it has been mentioned, cover nine categories of land: net area sown, miscellaneous tree crops, groves, etc., pastures and grazing land, current fallows, other fallows, culturable waste, land used for non-agricultural purposes, barren and unculturable land and forests. In the 16th and 17th Rounds schedules, area under each type of land was to be entered separately. At the 26th Round, while the definition of operational holding still covered all nine categories, area under three categories (net area sown, current fallows and other fallows) were entered separately, while the other six were brought under the "other uses" category. At the 16th and 17th Rounds, net area sown was further subdivided into the seasons and the crops grown each season. Season and crop data have been excluded from the 26th Round.

Further data on the utilisation of operational holdings include particulars of utilisation of chemical fertilisers and of irrigation and land utilisation at the 16th and 17th Rounds and particulars of utilisation of chemical fertilisers, organic manures and pesticides on irrigated and unirrigated land at the 26th Round.

The NSS schedules thus contain useful questions on a number of characteristics of households. Of prime importance are the data on the ownership and operation of land by households. There are data on the demographic and occupation characteristics of households and additional data on employment status at the 25th Round. There are data on assets of households, and thanks to the integration of the RBI and NSS 26th Round schedules, there is important and detailed information on assets of households. The schedules also ask useful questions about physical characteristics of the land and land utilisation.

With all their details, however, the NSS schedules fail to make contact with important questions. We note two.

Firstly, with regard to the involvement of labour in production, there is no information, barring a single reference to labour in the schedule for households -- one column in which the number of "permanent or attached farm workers" (modified to "attached farm workers" in the 26th Round) per operational holding was to be recorded. The seriousness with which even this perfunctory reference to labour is taken is reflected in the definitions adopted in the 16th and 17th Rounds on the one hand, and the 26th Round on the other. The 16th and 17th Rounds define "permanent or attached farm workers" as

> Workers employed by the management of the operational holdings who were more or less in continuous employment and under some sort of contract with employers during the period of employment.(11)

The problem of/ambiguity of the definition was compounded by the change in definition at the 26th Round, where "attached farm workers" were

> Those workers who are more or less in continuous employment of the management of the operational holding and are not under some sort of contact during the period of employment.(12)

The failure to deal with labour (family labour, labour-in-exchange and hired labour) and with the character and conditions of such labour is the most glaring defect of the NSS schedules.

Secondly, the schedules do not provide the raw materials for detailed analysis of the economic position of households, or even for the construction of simple balance sheets for households, in respect of income from and expenditure on cultivation and nonagricultural economic activity/and earnings from labour.

Sampling design

The following is a brief discussion of the method by which the total sample of the NSS is disaggregated and of the system of weighting adopted.(13) (The references to the 26th Round deal with the Central sample; a matching State sample was also taken at the 26th Round.)

Within the states, the total geographical area was divided into regions, which were to be contiguous districts with similar crop pattern and population density. The total number of regions were 48 each for the 16th and 17th Rounds and 66 for the 26th Round. The components of the region have not been specified for the earlier rounds. For the 26th round, Tamil Nadu was divided into the following three regions.(14)

Region	Constituent Districts
1. Coastal Northern	Chengalpattu, Madras, South Arcot, North Arcot
2. Coastal Southern	Kanyakumari, Ramanathapuram, Thanjavur, Tirunelveli.
3. Inland	Coimbatore, Dharmapuri, Madurai, Nilgiris, Salem and Tiruchirappalli.

All that can be said about the districts comprising the region is that they are geographically contiguous; it is certainly arguable whether the districts constituting the region are similar with respect to population density and cropping pattern. The very method by which the State has been divided into regions for purposes of taking the NSS sample has limited the use of the data, by pre-empting the possibility of making statistical inferences at levels below that of the State.

Within each region at the 16th and 17th Rounds, contiguous taluks with fairly homogenous populations were grouped together to make strata of approximately equal population. At the 26th Round, strata were formed by grouping taluks which were contiguous, had similar crop patterns and population density and good transport facilities among them. There were 211, 216, and 319 strata in India as a whole at the 16th, 17th and 26th Rounds. Within the strata, with the Census list of villages as the sampling frame, subsamples of villages were chosen: 2 subsamples of 9 villages each chosen circular systematically at the 16th Rounds, 2 subsamples of 6 villages each chosen circular systematically at the 17th Round and 2 subsamples of 12 villages each at the 26th Round. At the 16th Round, 135 households were chosen per subsample, at the 17th Round, 90 households were chosen and at the 26th Round, 144 households were chosen per subsample. At the 26th Round in the case of the urban sample, strata were formed on the basis of the populations of towns and cities within each state. The selection of blocks in each stratum was done in the form of 2 subsamples of equal size. The following table gives the size of the NSS samples for Tamil Nadu.(15)

Round	Number of sample villages	Number of sample rural households	NSS Estimate of total rural households (000)	3 as % of 4	Number of sample urban blocks	Number of sample urban households	NSS estimate of total urban households (000)	7 as % of 8
1	2	3	4	5	6	7	8	9

Contd...

1	2	3	4	5	6	7	8	9
16	252	2833	5859	0.05	-	-	-	-
17	236	3662	6764	0.05	-	-	-	-
26	312	2709	5829	0.05	36	1474	3015	0.05

A system of weights was assigned before the selection of households from sample villages.

At the 16th and 17th Rounds, the system of weights assigned was as follows. Information on land holdings for each household was gathered (presumably from the village records) by the investigator. All households were then classified into the following 10 categories:

1. upto 0.99 acres
2. 1.00 - 2.49 acres
3. 2.50 - 4.99 acres
4. 5.00 - 7.49 acres
5. 7.50 - 9.99 acres
6. 10.00 - 14.99 acres
7. 15.00 - 19.99 acres
8. 20.00 - 29.99 acres
9. 30.00 - 49.99 acres
10. 50.00 and above

The households falling in size category 1 constituted one group, the first and second halves of the remaining households constituted the 2nd and third groups. The households to be surveyed were allocated to the three groups in proportion to the number of size categories in each group. To taken an example: Where there are 100 households in the village, if 40 households fall in size category 1, and of the remaining 60 households, 30 fall in the two size categories 2 and 3, and the remaining 30 households in the seven size categories 4-10, then the number of households to be surveyed would be allocated to the three groups in the proportion

1:2:7; giving greater weightage of group 2 and 3 than to group 1. The rationale for the method is the assumption that households that belong to higher size categories control a disproportionately higher share of land than households belonging to the lower size categories, which is a sound assumption. The accuracy with which this method reflects the skewed nature of the distribution of land holdings can, however, be called into question.

The method of weighting was modified at the 26th Round. All the households were first divided into 4 groups on the basis of area operated (this information presumably being obtained from the village records). The first group consisted of households that operated no land and was further subdivided into 3 groups (i) agricultural labourers, (ii) artisans and (iii) others. The rest of the households were divided into three groups by equalising the land operated by them. On average, three households were selected from each of the groups. Assuming that each successive group will consist of a smaller number of households (a correct assumption) then the system of weighting would assign greater weights to households operating larger areas of land. Again, the rationale for the system of weights is that the distribution of land is skewed in favour of land holding households in the larger size-categories. The significant difference between the system of weights at the 26th Round and at previous rounds is that in the former the acreage at the cut-off points between the groups is not predetermined and could vary from place to place. Thus, in principle at least, cut-off points could be higher in areas of extensive cultivation than in areas of relatively intensive cultivation. Here also the validity of the particular weight depend on how accurately it reflects the skewness of land distribution and it is in this respect that it must be assessed.

The explanation of the method of weighting the urban sample at the 26th Round is imprecise and unclear. In the urban sector, households were first divided into four classes in the following manner:

Class I : household owning less than one acre and self-employed;

Class II : households owning one acre and more and self-employed.

Class III : households owning one acre and more and not self-employed; and

Class IV : households owning less than one acre and not self-employed plus households with no land.

The NSS provides no explanation for such a divisions of urban households. With regard to the actual selection of households, the procedure is even more unclear: "households were then arranged in increasing order of class codes and selected linear systematically".(15a)

An explanation of this classification that can be hazarded is that by "self employed" and "not self-employed" the NSS was making a distinction between absentee owners and non-absentee owners. If this is correct, then it appears that the weighting of the urban sample is based on the assumption that for purposes of the survey, the essential distinction between households in urban blocks (including those is essentially rural portions of urban blocks) are between households that are absentee owners and non absentee owners, agricultural labourers, and non-agricultural households. The system of weighting does not appear to take the difference in the size of land holding of different households sufficiently into consideration.

The presentation of NSS data:

The schedules for households provide sufficient data for the construction, at the very least, of tables that deal with the following:

- the number of households, household operational holding and operational holding by size class of ownership and operational holdings;
- area owned and area operated by size category of land holdings;
- area on lease (leased in and leased out) by size category of land holding;*

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* Tenancy data is dealt with in section IV below.

- draught animals and livestock owned by households by size category of land holding;

- data on agricultural implements owned by households by size category of land holding;

- certain data on agricultural implements owned by households for the 16th and 17th Rounds;

- detailed data on land assets, livestock assets, other agricultural assets, nonagricultural assets including financial assets and cash and commodities due to households and the relationship of these to the land holdings of households for the 26th round;

- information on land utilisation and crop and season data for households (in considerable detail for the 16th and 17th rounds) and their relationship to the size category of land holding; and

  data on irrigation, by source and by size category of land holdings of households.

Each round of the NSS provides tables on the following: number of households and area owned by size category of land holding; number of household operational holdings and area operated by size category of operational holding; and number of operational holdings and area operated by size category of operational holding. This is the prime data of the NSS; no other source provides comparable data on land distribution for different time periods. It is also the most widely used data for States on the distribution of land holdings. A useful addition to the tables on land holdings would have been to show the relationship between the ownership and operation of land by households by means at least of a bivariate table, as the RBI has done in the report of the All India Debt and Investment Survey, 1971-72 (16).

No other tables are given for the State in the reports of the 16th and 17th rounds.

The data collected at the 26th round have been presented in 21 tables. These tables are given for urban, rural and (urban and rural) combined sectors separately at the all India, State and regional levels.

The method of regionalisation of the NSS sample has been discussed above. It is sufficient to mention here that the present division of the state into regions, however useful it may be from the point of view of stratifying the sample, cannot be a valid division for presenting the data, since the basis for forming the regions appears to be primarily the geographical contiguity of the districts that comprise the regions.

A feature of the NSS data (as it is of the WAC and Census of India data) is that much of the details and degree of accuracy achieved at the stage of collection of data are frittered away at the stage of aggregating and presenting the data. Of the 21 State tables, 10 deal with the ownership and operation of land and 10 deal with various assets of households. The data on assets cover draught animals and other livestock, agricultural machinery and implements, nonfarm business equipment and transport equipment owned by households. These are only a fraction of the data on assets collected in the survey as has been shown above.

Given the immense details of schedule data on assets of households, it would have been expected that the 26th round would provide detailed and comprehensive data on assets of households and the relationship between the overall asset holdings of households and the distribution of land between them. The merging of the schedules of the RBI Debt and Investment Survey and the NSS survey of land holdings could thus have been used to considerable advantage. The bureaucratic separation of data at the stage of processing and tabulation, however, has disrupted the potential use of the schedules as sources of comprehensive statistics on land holdings and ownership of assets. As a result, the RBI Debt and Investment Survey provides detailed data on assets of rural households without relating these to land holdings and NSS sources have detailed data on land holdings without comprehensive data on asset holdings of households.

The 26th round tables give no information on land utilisation or on the sources and extent of irrigation and the distribution of irrigated land.

To sum up, the NSS is the most uniform and comparable source of data on ownership and operation of land holdings by rural households in the State. The report of 26th round also provides information on the distribution of some assets among households. The principal shortcomings of the NSS data lie, firstly, in the level to which data has been disaggregated at various rounds; secondly, in its failure to process and present much of the data that have been collected through the schedules and thirdly, in its failure to present, in statistical tables, interrelationships between key variables for which data has been collected.

Testing the NSS data

In this section, certain observations about the reliability and the direction of certain (statistical) biases of the NSS data are attempted. These are made, firstly, in respect of the area coverage of the NSS; secondly, in respect of its coverage of the population and thirdly, in respect of the data on landlessness.

The following are the estimates of total land owned and operated by rural households taken at the 16th, 17th and 26th Rounds:[17]

Round	Year	NSS estimate of area owned	%age change (+/-) over previous round	NSS estimate of area operated	% age change (+/-) over previous round
		(000 acres)		(000 acres)	
1	2	3	4	5	6
16	1960-61	11906	-	12589	-
17	1961-62	11991	+ 0.71	13107	+ 4.11
26	1970-71	10620	- 11.43	11061	-15.61

While the NSS estimate of total area operated declined from the 17th to the 26th Rounds, estimates of net area sown made by

the Government of Tamil Nadu rose by 0.33 per cent from 1960-61 to 1961-62 and by 5.50 per cent from 1961-62 to 1971-72.(18)

The underestimate of total area operated in Tamil Nadu is also evident from the table(19) below. It has been mentioned above that the NSS definition of land holding encompasses 9 categories of land. Though this may be expected to be cause for the NSS estimate of total area operated by households to exceed the figures for net area sown in the State provided by the Government of Tamil Nadu, in fact the estimate falls significantly short of it.

Round	Year	Total operated area : NSS estimate (000 acres)	Net area sown : Government of Tamil Nadu figure (000 acres)	3 as % age of 4	Total operated area: WAC figure (000 acres)	3 as % age of 6
1	2	3	4	5	6	7
16	1960-61	12589	14813	84.99	-	-
17	1961-62	13107	14862	88.19		
26	1970-71	12156	15680	77.53	18630	65.25

Note: Figures in column 3 are for rural areas for the 16th and 17th rounds and for urban and rural areas for the 26th round.

The table shows that the NSS estimates are considerably below even the 'net area sown' for corresponding years. The shortfall is even greater in relation to the WAC data, since WAC adopts the same definition of operational holdings as NSS does. Another noteworthy feature of the table is that the difference is greatest for the 26th round, which was also the first round in which the NSS estimate was extended in order to cover not only rural areas, but urban areas as well.

There is only one source of data against which the distribution of land holdings presented in the NSS of the 26th round can be compared: the WAC of 1970-71. The concentration ratio of the distribution of acre operated between different operational holdings was 0.53[20] for Tamil Nadu at the NSS 26th round, and was 0.56[21] for the distribution of aera operated between operational holdings in the state at the WAC.

The population coverage of the NSS for the state is estimated by multiplying the number of households by the average size of household in the state. The average size of household has not been provided in the reports of the 16th and 17th rounds; the following table covers only the 26th round:[22]

Round	NSS population estimate (000)	Census population 1971 (000)	2 as % age of 3
26: Urban and Rural	39710	41199	96.39
26: Urban	13507	12465	08.36
26: Rural	26405	28734	91.89

Though the NSS estimate falls short of the Census total it is a close estimate. The shortfall in the NSS estimate in relation to Census population totals has been noted for other States as well.[23]

The number and proportion of households owning no land, households operating no land and households neither owning nor operating land are given in the table below:[24]

ITEM	16th Round 1960-61	17th Round 1961-62	26th Round 1970-71		
	Rural	Rural	Urban and Rural	Urban	Rural
1. Total households (000)	5859	6764	8844	3015	5829
2. Number of households not owning land (000)	1304	1636	2696	1705	991
3. Number of households operating no land (000)	2573	2704	5170	2725	2445
4. Number of households neither owning nor operating land (000)	1170	1479	2505	1683	822
5. % age of (2) to total households	22.26	24.20	38.48	56.55	17.00
6. % age of (3) to total households	43.93	39.98	58.45	90.38	41.95
7. % age of (4) to total households	19.97	21.88	28.32	55.82	14.10

The decline in the total number of rural households that neither own nor operate land -- both absolute and relative to the total population -- is a result of the NSS that demands explanation. This is particularly so when seen along with the Census of India figures for agricultural labourers for 1961 and 1971, according to which the propor- of agricultural labourers in rural areas to total rural workers in Tamil Nadu increased by 63.94 per cent (that is, from 11.04 per cent of the population to 18.10 per cent of the population from 1961 to 1971).

Two points must be remembered: first, there are problems of comparison between the population of agricultural labourers at the Censuses of 1961 and 1971, and secondly, that "agricultural

labourers" as defined in the Census are not the same as "households neither owning nor operating land" as defined in the NSS. The decline in the NSS figure, of 44.42 per cent in the absolute member of rural households that neither own nor operate land and of 35.56 per cent in the proportion of rural households neither owning nor operating land to total households, is nevertheless difficult to accept in the light of corresponding Census data, and remains to be explained.

An important attempt to process the basic NSS data on landholdings in Tamil Nadu has been made by C.T. Kurien.(25) While we shall not deal with his conclusions in detail, it is extremely significant that that the NSS data suggest that "the major beneficiaries of changes in the ownership of land have been... those owning more than 15 acres but less than 50 acres,"[26] and that the changes in distribution of operational holdings have been to the advantage ... specifically (of) those with between 20 and 50 acres."(27)

While it has been noted that this may in part reflect concealment of households that own above 50 acres, it is clear that if the NSS data reflects the situation on the ground, then they have important implications in respect of changing scales of production in Tamil Nadu agriculture. The accuracy of this conclusion can be tested only through actual field study.

II

THE WORLD AGRICULTURAL CENSUS 1970-71, TAMIL NADU (WAC)

The World Agricultural Census 1970-71, Tamil Nadu was undertaken as part of a global project sponsored by the FAO to collect regular and comparable statistics on agriculture from its member countries. The land holdings surveys of the 8th, 16th and 17th Rounds of the NSS were, in fact recorded as India's participation in the World Agricultural Censuses of 1950-51 and 1960-61.

The FAO proposals for the agricultural census of 1970 envisaged collection of information for a large number of data items

by direct enumeration from operational holdings. For data items for which collection by complete enumeration was either not feasible or unnecessary, it was suggested that sample surveys be taken. The data items were divided into two categories: first, items for which data could be directly retabulated from existing village records, and secondly, items which required that enquiries be made from households. The first category comprised

i. number and size of agricultural holdings
ii. land utilisation,
iii. area under different crops,
iv. irrigation; and
v. tenures and tenancy,

and the second category comprised

i. farm population
ii. livestock
iii. application of fertiliser, and
iv. adoption of improved agricultural practices.[28]

The WAC in Tamil Nadu was carried out by the Directorate of Agricultural Census, Government of Tamil Nadu, by retabulating the existing records for information on the five items in category one.[29]

The WAC covered 11 districts (Chengalpattu, South Arcot, North Arcot, Salem, Dharmapuri, Coimbatore, Tiruchi, Thanjavur, Madurai, Ramanathapuram and Tirunelveli) by complete enumeration, 16,293 revenue villages in all. In Kanyakumari and Nilgiris districts, where land records were not in the regular forms and could not be retabulated in the manner of other districts, sample surveys were conducted. Madras, a wholly urban district, was excluded from the WAC.[30]

Concepts and definitions

Key definitions (in particular, that of the 'operational holding') used in the WAC follow those used by the NSS. A few points, however, must be noted.

First, the WAC deals only with operational holdings and does not take ownership holdings into consideration at all.

Secondly, the WAC differentiates between the "individual operational holding" (an operational holding which is managed by one or more members of the same household) and the "joint holding" (managed by two or more persons, all of whom are not members of the same household). The WAC does not deal with the holdings of households; there is no category corresponding to the "household operational holding" of the NSS. Where conclusions regarding households are sought to be drawn from WAC data, the assumption must be made (and this assumption must introduce a degree of error in the analysis) that operator households correspond to operational holdings.

Thirdly, while an operational holding may consist of many parcels, these must be located in the same taluk (and not State, as in the NSS) to be part of the same operational holdings.

Fourthly, utilisation of land, which is grouped into 9 categories in the village records (and in the NSS), have been regrouped into 6 categories in the WAC, in the manner shown below:

Classification in the village records	Classification in the WAC
1. Net area sown	1. Net area sown
2. Current fallows	2. Current fallows
3. Permanent fallows and other grazing lands	3. Other uncultivated land excluding fallow land.
4. Land under miscellaneous tree crops and groves not included in (1)	
5. Other fallow land	4. Fallow land other than current fallow.
6. Cultivable waste	5. Cultivable waste
7. Forests	6. Not available for cultivation.
8. Barren and uncultivable land	
9. Land put to nonagricultural uses	

Fifthly, of the other concepts used by the WAC, we note that the WAC definition of source-wise area irrigated (the sources dealt with are canals, wells, borewells and tanks), represents area irrigated under the first crop alone, so that the term 'net irrigated area' is an aggregate of land holdings that are irrigated for one crop alone and land holdings that are irrigated for more than one crop. Further, since the quality of the irrigation is not considered, the data groups together area irrigated by wells, canals and tanks of sharply varying quality.(31)

Procedure

The information contained in the WAC has been completely retabulated from two of the village records maintained by the village officer (karnam), the adangal register and the chitta register.

The adangal register contains the annual statement of occupation and cultivation of land, field by field. In it an annual field by field record of ownership, assessment, cropping patterns and seasons and categories of land utilisation are maintained. Fields are further grouped according to whether or not they are irrigated, and, where they are irrigated, according to the source of irrigation.

While the adangal register contains a field by field statement, the chitta register shows occupation of land individual holding by individual holding. The chitta register has two sections: in section I, each patta holder's holdings are to be entered, field by field, with the particulars of extent and assessment under the different heads of 'dry' and 'wet' lands entered separately for each field. Section II is a summary statement, patta holder by patta holder, of Section I.

The adangal and chitta registers served as the raw material for the WAC schedules, which were to be filled in for each operational holding.

The basic work of filling in the schedules was done by village karnams. Data at the village levels were consolidated by the Revenue Inspector, at the taluk level by the offices of the Tahsildar and the

Special Tahsildar (Agricultural Census), and the district level by the District Statistical Officer and the Collector and for the State by the Directorate of Agricultural Census.

The total reliance on the revenue staff for the collection of and preliminary tabulation of data is certainly the major source of error in the WAC. It is well known that land owners conceal the actual extent of their land holdings -- by utilising loopholes in agrarian legislations, through benami recordings, and so on -- and that this concealment is reflected in a corresponding manipulation of the village records which are maintained by the revenue staff. When this very staff is given the task of recording the size distribution of land holdings, it is difficult to expect that the distribution of land holdings and consequently the extent of concentration of the control of land holdings will be recorded without distortion.

The extent to which the method of collection and tabulation of data (particularly with respect of the distribution of land holdings) have affected its accuracy can be measured with precision only when WAC data for particular villages is tested against primary data collected by researchers, a task that is still to be done.

However, the adangal and chitta registers remain a most important source, -- and as far as I know, the only comprehensive source -- of village by village information on land utilisation, cropping pattern and irrigation. For this reason, even though the distribution of land holdings across size classes is likely to be distorted, the aggregate data on land utilisation and irrigation may constitute useful information.

Presentation of data

The results of the agricultural census have been presented in six tables:

1. number of operational holdings and area operated by size class of operational holdings;

2. holdings reporting irrigation and area irrigated by size class of operational holding;
3. number and area of holdings by tenure and size class of operational holdings;
4. area under different land uses by size class of operational holding;
5. sourcewise area irrigated by size class of operational holding; and
6. area under principal crops (irrigated and unirrigated) by size class of operational holding.

A useful feature of WAC is the fact that data is available beginning from the level of the village, a degree of disaggregation not available at any other data source. The data have been published for the State and districts in two volumes, and separately for districts, taluks and panchayat unions in district handbooks. Village level data are available on tapes at the Government Data Centre.

III

CENSUS OF INDIA 1961

Introduction

The schedules at the Census of 1961 included, in addition to the individual slip, a schedule for households. The information contained in the individual slip and the household schedule together provided the data for the Household Economic Tables (HET) which includes data on land holdings. Thus the data on land holdings were not collected as part of a survey of land holdings, but were part of the general data collected on households at the Census of 1961, and they are specific not to the (ownership or operational) holding or even to the household holding, but to the Census category of household.(32)

Concepts and definitions

It is a serious shortcoming of the Census of India 1961 that the concepts, definitions and method used in the construction of the

HET are not clearly stated at the beginning of the HET volume, as is the case, for instance, with the NSS. It appears, however, that the term "land cultivated" by a household at the Census roughly corresponds to the "household operational holding" discussed earlier, as it includes land owned and cultivated with family and/or hired labour (under "self cultivation") and land leased in or mortgaged in (land "held from private persons or institutions for payment in money, kind or share in the produce of the crop") and excludes leased-out land over which the owner does not supervise cultivation.

The Census does not make it clear whether the term "cultivator" in the HET refers to all those who cultivate any land, or only to those who cultivate land as their main activity; in other words, it is not clear whether or not the tables on land holdings include those households which, though they cultivate small plots of land, pursue agricultural labour as their major occupation.(33)

Schedule and procedure

The data on land holdings is based, as mentioned, on information collected in the household schedules. The only information in the schedule relevant to the land holding survey is in part A of the schedule, which records merely the extent of land holding and no other information.

The HET were tabulated on a sample basis. The sample, however, was of a size and on a scale that could have been attempted only by an organisation such as the Census organisation: every fifth household in the Census from the starting random household was selected to make a 20 per cent sample.

Presentation of the data

The following tables in the HET volume are of concern to us here:

1. State table B-X, of sample households (i) engaged neither in cultivation nor in household industry,

(ii) engaged either in cultivation or household industry and (iii) engaged in cultivation and household industry; and

2. State table B-XI, of sample households engaged in cultivation classified by interest in land and size of land cultivated in rural and urban areas.

It has been mentioned earlier that the potential usefulness of the information that has been collected is often frittered away at the stage of tabulation and presentation. This is particularly true of the HET. While the HET present the number of households in each size-category of land holdings, the area cultivated by households has been completely omitted. The method of tabulation has thus rendered the data virtually worthless.

IV

DATA ON TENANCY

The data on tenancy from these three sources is extremely scanty and of poor quality. As it stands, there are no time series data on tenancy in Tamil Nadu, even to the extent that such data exists for landholdings.

NSS

The NSS defines "land leased in" and "land leased out" simply enough: the former is defined as "land taken on lease without any permanent right of possession for the lessee" and the latter as "land given out on lease to others."(34)

There are two possible indices of the extent of tenancy -- first, the ratio of land leased out to total owned area, and second, the ratio of land leased in to total operated area. Of these the second is the more useful one; since the NSS does not take into consideration institutional holdings, information on the ownerships pattern and leasing out activity of institutions will be absent from NSS data.

Table : Data on leasing activities of households in successive rounds of NSS

(in per cent)

Sl. No.	Round/Year	Area leased out / Total owned area	Area leased in / Total operated area
1	2	3	4
1.	8th/1954-55	15.37	27.53
2.	16th/1960-61	n.a.	n.a.
3.	17th/1961-62	n.a.	7.05
4.	26th/1970-71	12.33	13.19

Note : n.a. = not available

Source: Successive volumes of the NSS

Area leased out is available for the 8th, 17th and 26th rounds. For reasons stated above, the 8th round must be disregarded for purposes of comparison over time. The NSS data, then, suggest that the area under tenancy has increased from 1961-62 to 1970-71 (from 7.05 per cent to 12.33 per cent), a conclusion that is certainly not corroborated by field studies that have been conducted in different parts of the State.

Data on leasing in is available only for the 8th and 26th rounds. Since the 8th round data is non-comparable, the data from the 26th round must stand on its own as the only data that the NSS provides on leasing. It must be noted that the figure of 13.19 per cent, which, according to the 26th round, was the extent of land on lease in 1970-71, appears to be lower than what may be expected for the State as a whole.

WAC

The WAC, in Table III (number and area of holdings by tenure and size class of operational holdings), distinguishes between

three types of tenure:[35]

1. wholly owned and self operated,
2. holdings which are wholly rented for fixed money, for fixed produce, for share of produce and others, and
3. holdings which are partly owned and partly rented.

The total land leased in is comprised of land holdings falling under category (2) and that part of the land under category (3) that is held on lease. However, since the WAC tables do not subdivide category (3) into the owned and leased in components, the total land leased in is a figure that is greater than the total land in category (2) but less than the sum of land under categories (2) and (3). These limits are so wide[36] as to make this data quite unusable.

Apart from the method of tabulation, the WAC data is characterised by an under-statement of area under tenancy. Since tenancy is most often unregistered and for that reason not recorded in the adangal, it went largely unrecorded in the WAC. The problem of concealment of tenancy was noted at the time of the pilot survey[37] and even though Karnams had been asked to record, for purposes of WAC, tenancy that had not been entered in the adangal,[38] the injunction appears to have remained unimplemented. A recent study indicates that in a village where a survey showed that about 17 per cent of crop land was on lease, the WAC table for the village showed that there was no land on lease at all.[39]

Census of India 1961

The HET classifies households according to what is referred to as their "interest in land," which are divided into three categories:[40]

a. owned or held from government;
b. held from private persons or institutions for payment in money, kind or share; and
c. partly held from government and partly from private persons for payment in money, kind or share.

However, since the HET make no reference to the extent of land under cultivation, they are of no use in determining the extent of tenancy.

(I am grateful to the staff at Madras Institute of Development Studies, particularly K. Nagaraj, for comments.)

September, 1979.

NOTES

1. See Bibliography, entries 41-53 and 56-57.

2. According to the Reserve Bank of India, land constituted 69.7 per cent of the assets of cultivators in Tamil Nadu in 1971. (RBI(1976), Appendix Table III. 2, p.160).

3. In this period, there were two major changes in the territory of the State of Madras. By The Reorganisation of States Act of 1956, five taluks of the old State of Travancore were added to Madras State, while the Malabar districts became part of Kerala. By The Andhra Pradesh and Madras Alteration of Borders Act of 1959, a large number of villages from Chingleput and Salem districts became part of Andhra Pradesh and certain areas of Chittoor district of Andhra Pradesh were added to North Arcot district.

4. NSS No.113, pp.6-10; NSS No.144 pp.3-4; NSS No.215 (All India) pp.3-4

5. NSS No.113, p.2; NSS No.144 p.1, NSS No.215 (All India) p.1; Sanyal, S.K., and Sinha, S.K. (1976), p.1.

6. WAC, Volume 2, p.5.The detailed breakdown is as follows:

District/State	Net cultivated area as % age of total operational holdings
Chonglepattu	89.24
South Arcot	92.51
North Arcot	93.70
Salem	94.91
Dharmapuri	95.73
Coimbatore	94.45
Tiruchirappalli	88.43
Thanjavur	92.31
Madurai	95.86
Ramanathapuram	94.54
Tirunelveli	78.98
Kanyakumari	98.95
Nilgiris	84.72
Tamil Nadu (excluding Madras, Kanyakumari and Nilgiris)	91.69

(Source : WAC, Volume 2, pp.5,53, 65, 78, 88, 98, 110, 123, 135, 147, 159, 171, 462, 482)

7. NSS No.215 (Tamil Nadu) p. 37.

8. NSS No.215 (Tamil Nadu) p. 19.

9. WAC Volume 2, p. 1.

10. NSS No.215 (All India), p.1.

11. Nss No.113, p.9; NSS No.144, p.4

12. NSS No.215, p.4.

13. NSS No.113, pp.3-5; NSS No.144, pp.3-6; NSS No.215 (All India) pp.2-3.

14. NSS No.215 (All India), Appendix, p.95.

15. NSS No.113, p.113; NSS No.162, p.15; NSS No.215 (Tamil Nadu).

16. Cited in C.T. Kurien (1978), Table 2,3.

17. NSS No.113, p.137; NSS No.159, p.18; NSS No.144, p.122, and p.165; NSS No.215 (Tamil Nadu) p.15 & p.19.

18. Economic Appraisal 1972, p.12 and
Economic Appraisal 1977, p.79.

19. Ibid, and WAC Volume 2, p.1

20. Computed from tables in NSS No.215 (Tamil Nadu) p.33.

21. Computed from WAC, Volume 2, p.1.

22. NSS No.215 (Tamil Nadu) pp.15, 39, 65. It is likely that the estimate of population in the 26th round was based on the 1961 Census frame.

23. See S.K. Sanyal (1977).

24. From successive volumes of the NSS.

25. C.T. Kurien (1978) Volume 1, Chapter 2.

26. Ibid. p.18.

27. Ibid., p.21.

28. WAC, Volume 1, pp.5-8.

29. It can be seen that data in the NSS 26th round covers the items in category 1 and 2 (with the exception of (v) in the second category).

30. WAC, Volume 1, pp.8-10.

31. Ibid., pp.63-73.

32. The Census of India 1961 defined "household" as "a group of persons who commonly live together and take their meals in a common mess unless the exigencies of work prevent any of them from doing so."

33. It has been suggested by Dr. J. Krishnamurty that the tables on land holdings are likely to include such households. This is partly evidenced by the fact that at the Census of 1961, the number of cultivators as enumerated from the household schemes far exceeded the number enumerated from the individual slips.

34. NSS, No.215 (All India), pp. 3-4.

35. WAC, Volume 1, p.70.

36. For the State as a whole, 3.12 per cent to 8.71 per cent. By way of example, Chengalpattu varies between 3.59 per cent and 14.85 per cent and North Arcot between 2.86 per cent and 13.38 per cent.

37. WAC, Volume 1, p.67.

38. Ibid., p.8.

39. Susan Ram showed me these results for a village in Uthamapalayam taluk.

40. Census of India 1961, Volume IX, part III Household Economic Tables, p.47.

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