

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

Publication No. 26

**REPORT ON THE POONA SCHEDULES
OF THE
NATIONAL SAMPLE SURVEY
(1950-51)**

**By
V. M. Dandekar**

Price Rs. 6 or 9 s.

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FOREWORD

This publication of the Institute represents the report submitted by the Institute to the Government of India in the Finance Department, on the schedules prepared by the Gokhale Institute for the National Sample Survey (commonly known as the "Poona Schedules") and the data collected through them in 644 villages in India during 1950-51. The report was sent to Government in July 1952 and it was expected that it would, in due course, be published by Government. It happened, however, that even when the report on the data obtained in 1950-51 through the Calcutta Schedules of the National Sample Survey was published in December 1952 no mention was made of the report that had been sent to Government by the Gokhale Institute on the Poona Schedules. We feared that this omission even to refer to the report prepared by the Gokhale Institute would cause misunderstanding regarding our part of the work and felt that this could be removed only by very early publication of our report. Therefore, we requested the Finance Minister of the Government of India to allow us to publish the report on our own. We are thankful to the Finance Minister for having granted the requisite permission. We would make it clear that the report is being published entirely on the responsibility of the Institute and no responsibility, in whatever form, attaches in connection with this report to the National Sample Survey.

The publication contains the report submitted to Government in July 1952 with some minor modifications. A note prepared by Mr. Dandekar, while the National Sample Survey was being conducted, for submission to the National Income Committee has been added to the report. One of the main directions in which the schedules prepared by the Gokhale Institute were oriented was that of collection of data for being presented in a national system of accounts. The approach to this problem indicated by Mr. Dandekar in his note was explored to a considerable extent in the Poona Schedules. It was, therefore, thought that the inclusion of this note (a part of which has been previously published in *Accounting Research*) might be found useful for an understanding of the structure and contents of the Poona Schedules. This note of has been included as an appendix to Chapter 8 of the report.

It would be observed that this report is concerned chiefly with the history of the preparation of the schedules, the progress of discussions in relation to them and the operations of the National Sample Survey in connection with the Poona Schedules. Many reasons were responsible for this particular approach to the preparation of the report. In the first instance, it became clear to us at an early stage of our connection with the N. S. S. that there was considerable misunderstanding among persons who were usually well informed, regarding the part played by the Institute in the inception and the progress of the work. It will be found recorded in this publication that Mr. Dandekar discovered even among workers of the Calcutta Institute prevalence of misconceptions regarding my share in the framing of the original survey scheme. Another notable instance of grave misunderstanding regarding the work undertaken and accomplished by the N. S. S. has been noticed in connection with the use of the data by the National Income Committee. The Finance Minister of the Government of India is reported to have said in reply to a question in Parliament that the data used for the estimates put forward in the Interim Report of the National Income Committee were based on the results of the N. S. S. Reference to the appendix contained in the report of the N. I. Committee will show that, in actual fact, the National Income Unit based its estimates on N. S. S. only in the case of very few minor items such as the cost of maintenance and repairs of rural houses. As a number of other misunderstandings were known to be and are likely to be current, it was thought highly desirable to make the report a fully documented statement regarding the total part played by the Institute and its workers in the planning and conduct of the N. S. S.

Apart from the removal of possible misconceptions and misunderstandings a proper appreciation of the structure and contents of the schedules prepared by us necessitated a full setting out of the facts relating to their preparation. It is only when previous discussions and existing differences of opinion are clearly set out that reasons for the particular form the schedules took are likely to be appreciated. The presentation of the material has the further merit of showing in great detail the process of building up and planning an investigation. It is very unusual that full documents on this process, with the interplay of different points of view and personalities that are involved, are readily available. It was thought that such occasional light on the processes behind the investigational build-up, the actual working of a survey project, etc. would prove at least of as much interest and profit as the results of the investiga-

tion themselves. The report may thus be taken as being, in part, a contribution to the study of procedures and methods involved in any large scale investigation.

A total of 1838 villages were selected all over India for the purpose of the survey. Of these 644 were allotted to be surveyed through the Poona Schedules as against 1189 through the Calcutta Schedules. Of the 644 villages allotted to the Poona Schedules 609 were surveyed but only 585 admitted for the final tabulation as the returns from the remaining villages were very unsatisfactory. Of the 1189 villages allotted for the Calcutta Schedules, 1111 were surveyed and apparently 1091 admitted for the final tabulation. The results of the Calcutta Schedules are therefore based on a sample of villages almost twice as large as that on which the results of the Poona Schedules are based. The number of households covered by the Poona Schedules is however very much larger than that covered by the Calcutta Schedules. For the purpose of the Poona Schedules, a sample of 16 families (8 agriculturists and 8 non-agriculturists) was selected, except in a few cases where the selected villages did not have as many as 16 households. This gave us a total of 9201 households and information on all items covered by the Poona Schedules was obtained in respect of all the 9201 households. For the purpose of the Calcutta Schedules, a sample of 16 families from each of the selected villages was similarly selected and gave a total of 16,264 households. However, only Schedule 1 of the Calcutta series giving some general information was filled in for all the 16,264 households. Other Schedules of the Calcutta series were filled only for smaller sub-samples of the selected households. The Calcutta Schedules 2.1 to 2.3, giving details of household enterprises, were filled in only for 2 agricultural and 3 non-agricultural households from each village, giving a total of less than 5250 households. On the other hand, the Calcutta Schedules 3.1 and 3.2 giving details of consumer expenditure were filled in only for 1 agricultural and 2 non-agricultural households in each village giving a total of less than 8150 households. It will be clear, therefore, that the coverage of the Poona Schedules for items of household enterprise is almost twice as large and for items of consumer expenditure three times as large as the respective coverage of the Calcutta Schedules. As in each village, an equal number of agricultural and non-agricultural households were selected the non-agricultural households obtained a disproportionately large representation in the sample of households. We have sought to correct for this bias, by appropriate underweighting of the non-agricultural households. This bias is much larger

in the sub-samples of the Calcutta Schedules. Thus in the sample for household enterprises Schedules, the agricultural and non-agricultural households are not in equal numbers but are in the ratio of 2 to 8; and in the sample for consumer expenditure, non-agricultural households are actually twice as many as are the agricultural households. It is not clear whether in the tabulation, this bias was corrected by appropriate weighting; in the absence of such weighting the results would be seriously biased. Therefore leaving aside the differences in the coverage of the Poona and Calcutta Schedules, the differences in their approach and the much shorter reference period of the Poona Schedules, it would appear that even from the purely statistical aspects of the sample size and the tabulation procedures, the results of the Poona Schedules would be found more valuable. There is an additional feature of the tabulation of the Poona Schedules to which attention might be invited. For every item for which a total or an average is given, the number of entries that is, the number of households which reported that item is also given. It is hoped that this feature would be found of value both in its own right and also as an aid to assess the completeness or otherwise of reporting.

The canvass of the Poona Schedules was based on a programme of four periodic visits to the selected households. The sudden discontinuance of the Poona Schedules after the first visit, therefore, detracts much from the value of the results, at least on items liable to considerable seasonal variation. For that reason we have not undertaken, in the present Report, any examination and analysis of the material presented. Another reason for not attempting an analysis of the data was the character of the survey. The National Sample Survey has been termed multi-purpose and it has no specific purpose beyond that of collection and presentation of data. Therefore, it was thought proper merely to present the data with full details of procedures regarding their collection and tabulation but without comment or interpretation which would necessarily involve addressing oneself to specific questions and adopting particular points of view. We also feel also that before any useful analysis is attempted, a careful scrutiny and assessment of the material is necessary. This is now being undertaken and it is hoped to publish the results in a subsequent publication.

It will be clear from the report that there were a number of differences of opinion relating to the planning and the conduct of this survey. Our point of view was that the sample unit should as far possible be the village and we planned for collecting information

a certain minimum number of cultivating families per village. We held the view that information required for annual estimates in relation to a large number of items should be collected by repeated, say, four visits in a year to the village and that for most items relating to productive activity, consumption, sales, purchases, etc. information should be elicited about a comparatively short period, a week or a month, in the immediate past. We were also anxious to operate only through investigators who should have a good knowledge of the local language and the local rural background and who should have received adequate training for investigational work. We also held the view that it would be advantageous to keep the range of enquiry limited and to keep low the number of questions asked and that the respondent should as far as possible not be required to make a number of complicated calculations in his head in order to answer a query. It was these and similar points that ultimately led to the decision to have independent Poona Schedules instead of a single set of schedules for the whole enquiry.

This report is concerned mainly with problems that arose out of the evolution of schedules, the methods of work, the agency to be employed, etc. after it had been decided to experiment with a multi-purpose National Sample Survey. Attention may, however, be drawn to issues of even wider character. There is, for example, the question of how wide, how open and how thorough a discussion or enquiry should be conducted before an experiment of the size, the cost and the long-term consequences such as the N. S. S. is launched. Apart from this general problem there are many questions that arise out of the concept of an all-purposes National Sample Survey. Most statistical information available to Governments is obtained in the course of routine administrative operations of public authorities. Most of such information is oriented to definite purposes and its record, verification, etc. are provided for in a suitable manner, for administrative purposes themselves, in the administrative machinery. No special cost has, for the major part, to be incurred in the collection of such statistical material and the material is handled by agencies who ordinarily possess special knowledge of the subject matter and local circumstance. It is, in particular instances, necessary to supplement statistical data collected through the departmental and regional authorities by special counts or enquiries. It may also be necessary for specialised departments such as the Agricultural, the Public Health, the Labour, etc. to conduct *ad hoc* or continuing surveys on important aspects. Such surveys arise out of the requirements of those activities and usually demand special knowledge and expertise for their planning and conduct.

There are many obvious advantages in the particular agency connected with a subject being allowed, in this manner, to plan and conduct its own collection of statistical material as well as its *ad hoc* surveys. In the first instance, it would be in the best position to time the enquiry so as to obtain the best responses and also to combine this with its other activities in order to make it most economical. It would also be in the best position not only to interpret the collected data in its main essentials but also to get the most by way of sidelights on other topics not necessarily closely related to the main subject of the enquiry. It would also be the only agency which could go over data not fully utilised at the time of the return or the *ad hoc* survey and look through it more amply or thoroughly or use it for historical or other comparisons etc.

The attempt to subordinate to, or replace by, an entirely independent organization, whose only expertise is in statistical sampling design, all this elaborate regional and departmental machinery that has been gradually built up over decades can be justified only if it is proved in open debate, at various levels of expertise and in various aspects, to have overwhelming advantages. A number of points are raised by recent reported changes in the statistical set-up which appear to have been brought about without proper deliberation or enquiry. There is firstly, the whole complex of the occasion of the enquiry, the person who makes the query and the attitude of the respondent. In information collected through ordinary administrative machinery, the question asked or the data collected have some significance and relevance and cannot ordinarily be looked upon as mere idle queries; and usually there are sanctions behind the request for answers or data. It is true that the known administrative purpose of a query may induce bias in replies but the direction of such bias is usually known and can ordinarily be allowed for. In an enquiry undertaken without any apparent connection with normal administrative routine, the position is different right from the initial point of rousing interest. Collection of statistical material which is divorced from day-to-day activity in this manner may, therefore, not prove useful as the normal means of collecting continuing statistical data. This is apart from the fact that such independent agency will not have the special knowledge of either the subject or local circumstance which the ordinary administrative machinery will usually possess.

The concept of an all-purpose National Sample Survey also raises questions regarding centralization in the collection of statistics and the possible consequences flowing therefrom. The obser-

vation and counting of phenomena in any particular aspect of physical or social life is helped by knowledge of the particular aspect of life; this is conceded in the province of all scientific observations. In the field of natural sciences, both physical and biological, the planning and conduct of experiments and surveys is always the business of the scientific worker and not of a statistician. The statistical expert may indicate the suitability of particular statistical designs or plans for any set of observations but the actual planners and observers are always those who cultivate the particular fields of study. Advice on or co-ordination of general statistical designs and procedures may be a proper field for the statistical expert but the actual planning and conduct of the normal work or of a special piece of work falls within the purview of the subject expert or the regional expert. An attempt at centralization of the type now apparently under way would thus lead to an unnecessary wastage of special knowledge which is readily available, by reversal of normal procedures; it also incurs the danger of lowering the quality of work through ignorance in all other directions not being adequately offset by just statistical expertise. The dangers of centralization in a country like India are of course patent and it is obvious that centralization in a form more extreme than that usually attempted even in smaller, more well-knit and more homogenous societies is extremely inappropriate, to put it mildly, in our sub-continental federation.

A special question regarding centralization that deserves to be raised is the extent to which it leaves the statistical central authority free of any possible check from any other quarter. Statistics gathered departmentally and regionally by independent States and Ministries have the possibility of mutually correcting, qualifying and cross-checking each other, and as long as unnecessary duplication is avoided and efficient techniques uniformly adopted, whether for the periodic return, the field census or for the sample survey, no demerit and a great deal of virtue may reside in a multiplicity of collecting agencies, specially in a country like India. If the agency became a single agency, the statistics would be subject to no independent check and may in time deteriorate in quality and become open to considerable doubt.

In the ordinary collection of statistical material through State Governments or Central Ministries both the collection and collation of statistical material is largely decentralized. The points of collection are many and the collation of information is done usually through agents or authorities locally established. The collation of the material also usually moves through a series of state, regional or

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divisional units and you obtain national or country-wide totals through the summation of totals obtained at lower levels. The procedure is entirely changed in a single national survey. The agents of the survey are mobile agents of a highly centralized organization and there is insistence on processing all the material in its entirety at a centre. In this case you obtain an all-India aggregate and its break-down. It is unnecessary to emphasize how in this case apart from the lack of useful check in the process of collection and collation the possibility of manipulation is heightened in a large degree. These possibilities are important as the proponents of centralization often allege bias and manipulations to others.

In this connection it is necessary to emphasize that human failings which are alleged as vitiating the data collected by administrative agencies are not necessarily their monopoly. Bias or laziness are not removed by abolishing local agents of administrative departments. The desire to scamp work may, for example, as well or perhaps in a greater degree be evident in a peripatetic agent of an authority outside any local, regional or departmental control. In the same way bias alleged against departments or ministries at the highest level may in other contexts also appear among statisticians or economists at similar levels. If the integrity, for certain purposes, of the highest rank of any departmental hierarchy is in question there will be factors which may throw equal doubt in relation to the proper and honest operation of the statistician or the economist at the highest level. With complete centralization and independent functioning the opportunity for doubtful operations may indeed be greatly increased.

The establishment of an all-purposes N. S. S. foreshadows another dangerous possibility. This is that an authority may be created which through the nature of its being will tend to exterminate all parallel agencies in the field. Being an all-purposes survey it has no specific work and being created on a huge scale it will have to keep on doing a lot to justify its existence. This will necessarily lead it to encroach on sphere after sphere in an extensive imperialistic drive. Already it is reported that some of the most important expert agencies built up after years of careful work have been abolished in order to extend the field of this somewhat non-descript authority.

Poona,

D. R. GADGIL

25th March 1958.

NOTE :- It is greatly regretted that as a result of the hurried publication of the report and of the break-down of our normal printing arrangements an unusually large number of misprints have occurred in the publication.

D. R. G.

I. INTRODUCTORY

In the year 1950-51, the Government of India initiated and first conducted on an All-India basis the Multi-purpose National Sample Survey. The period from April 1950 to September 1950 was taken up in defining the scope, method and organisation of the Survey, in finalising the form and content of the questionnaire schedules, both by discussion and field trials, and in setting up the administrative and field agency. The Gokhale Institute of Politics and Economics, Poona was often consulted during this period. The nature and official status of these consultations were not always obvious and often they took the form of informal discussions between the workers of the Indian Statistical Institute, Calcutta and ourselves. It is by no means certain that the Government was always kept fully informed of the progress and details of these discussions and it is possible that there exists, with the Government, no complete factual record of this stage of the Survey. The National Sample Survey, both in its conception and operation, is undoubtedly the most significant single phenomenon in the statistical programme of the Government and its repercussions on the general official statistics are likely to be far-reaching. It appears, therefore, necessary that a full factual record of its conception and evolution be available. In the following Report, we attempt to do this to the extent we were informed and associated with the Survey.

2. In Chapter II of this Report we present a factual record of the precise extent and manner in which we were consulted and the part we played in giving a direction to the Survey.

3. As will appear from these notes, we held somewhat different views on a number of points relating to the Survey. In deference to our views, the Government decided to give a concurrent trial to a set of questionnaire schedules suggested by us for use in the Survey. These schedules, known as the Poona schedules B and C are presented in Chapter III.

4. Consequently we had to share the responsibility of giving training and instructions to the investigators recruited for field work all over India. The details of the part we played in this respect are given in Chapter IV.

5. Subsequently the responsibility to tabulate and analyse the material collected all over the country on the basis of the Poona

(2)

Schedules was also entrusted to us. In Chapter V we give the details of our arrangement and the procedures of tabulation.

6. The results of the tabulation, namely, the tables, have been divided into two parts. The All-India tables reduced to per 10,000 families are presented in Chapter VI of this Report. Separate tables for different States are included in a supplementary volume to this Report.

7. The National Sample Survey was continued in the year 1951-52 and thereafter. Our associations with it, however, ended at the end of March, 1951, except of course our responsibility to tabulate the material collected until then. Chapter VII is a documented narration of the circumstances in which our associations with this N. S. S. ceased. As touching on the wider issues which the National Sample Survey raises the chapter might be found illuminating.

II. EMERGENCE OF THE NATIONAL SAMPLE SURVEY

1. Apparently, the first written document concerning the National Sample Survey was dated 25th December, 1949, (SU. 87- The Plan for a Multi-purpose Sample Survey) where it was suggested that a continuing National Sample Survey should be initiated in 1950 at a dimensional expenditure of Rs. 25 lakhs per year and where the objects of the proposed survey were explained in a general way. Our association with the National Sample Survey began, however, on the 3rd April, 1950, when Prof. D. R. Gadgil received a letter from Prof. P. C. Mahalanobis. The letter is fully reproduced below except for two paragraphs which were of a personal character.

2. No. C 58

87 Barrackpore Trunk Road,
Calcutta 85, 1 April 1950.
" AMRAPALI "

Prof. D. R. Gadgil,
Gokhale Institute of Politics and Economics,
POONA 4.

Dear Prof. Gadgil,

Arrangements for the National Sample are proceeding slowly.
..... on the plan.

[2] I shall briefly indicate the proposed structure :

(1) A quick try-out of forms and pilot studies beginning if possible, from the middle of April. The Bengal staff is now working in the fie'd, and can take up this work immediately. We are hoping that the Poona Institute also will be able to do something. This preliminary work is to be finished in about two or three months, that is, by the end of June or middle of July. The forms and schedules and the design of the survey would be then finalised for the current year.

(2) Training of the superior organizing and supervising staff: Simultaneously with the pilot studies, arrangements to be made for the training of the superior organising and supervising staff from all over India. We are visualizing roughly about 100 trainees from all over India, broken up possibly into two (or three) batches. The Calcutta Institute and Bengal would be quite suitable as the pilot studies would be continued here and also because a great deal of old records and equipment will be available for training purposes Poona Institute may be able to undertake a part of the responsibility by lending men or otherwise,

(3) Bengal Crop Survey: The existing design will be radically changed to fit in with the National Sample Plan. Regular work on the crop survey portion will start sometime in June and proceed according to plan to enable preparing crop estimates down to the district level.

(4) Field survey for the National Sample: As soon as the training of the superior staff is over, the trainees will go back to their respective States and start recruiting the field staff and organizing the field survey. The field work should begin in July in at least some of the States, and should be in full swing by the end of August or early September so that the main kharif season is not missed; and then to proceed according to plan. A central staff to be built up, at the same time, for all-India supervision and coordination. The field work in the Bengal region is probably to be done partly under the guidance of the Calcutta Institute. Possibility of the Poona Institute to undertake, similar responsibilities in the Bombay area to be explored.

(5) Tabulation and processing of material: To start in the Calcutta Institute from May with the material for pilot studies, and continue with Bengal data. Large scale work to begin from September, which would require necessary staff being gradually built up in time. The Calcutta Institute can undertake a good deal of responsibility in this matter as a large Hollerith Unit can be made available for this work. The extent to which the Poona Institute can help is to be explored.

(6) Final analysis for utilization of the material for National Income Work: At this stage, we shall have to rely heavily on the active co-operation of the Poona Institute which has more experience at the economic level. In fact, at this stage a very close co-operation (with some inter-change of staff and possibly intergrated and joint work) will be required between Calcutta, Poona and Delhi (National Income Unit).

3. Besides the general structure indicated above, we are also providing for two types of pilot or exploratory studies, one on the basis of the village as the unit (as decided by the National Income Committee on the 10th March), the other of a more general nature dealing with (a) the statistical design of the sample survey, (b) different types of schedules and forms, (c) organizational arrangements, and (d) special studies of village markets, transport, transactions between the rural and urban sectors, etc. Our proposal is to establish the National Sample on a continuing basis; and the object of the pilot studies will be collecting information for improving the efficiency of the sample design and working arrangements in succeeding years.

4. A personal discussion with you is essential before the plan is finalised. We are working very hard and we are trying to finish the work in Calcutta by the 5th April. Originally it was my intention to return to Delhi on the 29th March. I was unable to do so partly because of the delay in the decision of the West Bengal Government, and also partly because of the spot check of Patwari records which has been just completed in the U. P. Apparently the Patwari records are by no means free from mistake. Rai Bahadur J. P. Sinha will reach Calcutta on the 3rd April with the complete set of records for U. P. and I must make necessary arrangements for their tabulation and the preparation of a report without delay.

5. However, as I have already mentioned, we are trying our best to finish the work in Calcutta by the 5th April. It is obviously necessary that you should see the plan before it is submitted to Government. Is there any chance of your being able to come to Delhi on the 6th or 7th April or on any of the days immediately following? We want you just for one or two days. Both Moni and Ramakrishna Mukherjee will go to Delhi, also one or two other workers from Calcutta. If you can come with Dandekar and Sobhani we can all sit together and complete everything. Your presence in Delhi will be of very great help as you and I can then discuss the matter personally with Bhattacharya and other people concerned on the spot. (We shall be able to meet all expenses, of course, from the grant already sanctioned for preparing the plan). It is a very important matter, and I earnestly request you to try to come to Delhi for just a day or two.

6. If this is altogether impossible, we may send Moni and Ramakrishna to Poona with the material. But I feel it will be better if you and I can meet and put the final touches to the plan. As soon as the plan is finalised, it has to be placed for consideration before the Committee of Statisticians and Economists (and also possibly the Planning Commission). It must, of course, be placed before the Standing Finance Committee whose approval is necessary before the work can start.

7. If you can come to Delhi and we can finalise the plan by the 8th or 9th April, then we shall try to finish the Committee stage and secure the approval of the Standing Finance Committee by the middle of the month. Even then, I shall have only about 10 days or so to get the actual work started before I go abroad. The programme is very tight; and this is why I want you kindly to make a special effort to come to Delhi.

8. I have finished my long letter, and it is for you now to respond.

Yours sincerely,

Sd/-P. C. MAHALANOBIS

The following is Professor Gadgil's reply to the above letter.

Dear Prof. Mahalanobis,

Received your letter dated 1st April. I have already sent a telegram regretting my inability to come up to Delhi during this month. The programme fixed for myself during the next few weeks is as follows..... I regret my inability, therefore, to come down to Delhi in April. I shall be very glad to discuss the matter with Moni Mukherjee if he can come down to Poona any time before 12th April.

As I am replying to your letter within a couple of hours of its arrival it is not possible for me to deal with all the issues raised in it. I would, however, emphasise the need, from the beginning, of keeping distinct the work of the National Income Committee from the much bigger idea of the national sample survey. The National Income Committee has to work to a definitive time schedule and this may not be possible if we get mixed up with the national sample survey. It is necessary immediately to determine for purposes of the National Income Committee what specific gaps in information required should be covered by a sample survey and what the extent and area of sample coverage should be. This should be settled before you go abroad ; and in case you are likely to leave India before the beginning of May I should like to have a detailed note regarding your ideas on the subject. The pilot surveys regarding village accounts must also be begun immediately if they are to be undertaken at all. It would be convenient if we know the decision of the Government on this matter immediately. I am reserving such limited resources in fieldmen, etc. as the Institute can spare specially for the purpose of this survey. It will be helpful if Mr. Moni Mukherjee will be able to come here before the 12th so that he can take back a full report on all the points raised by you.

With kind regards,

Yours sincerely,
Sd/- D. R. GADGIL.

4. Prof. Mahalanobis, however, considered the matter of sufficient importance for him to make a trip to Poona and have a personal discussion with Prof. Gadgil. He therefore flew over to Poona on the 11th April 1950. Mr. Moni Mukherjee (of the National Income Unit) and Mr. V. M. Dandekar (of the Gokhale Institute) were also present during these discussions. The discussions centred mainly round two points; firstly, the scope of the Survey as represented by the contents of the questionnaires to be used and secondly, the extent and the manner in which the Gokhale Institute could possibly participate in the survey. In particular, there was no discussion on the advisability or utility of the proposed National Sample Survey on

the contemplated scale. Notes on these discussions were prepared for our record and a copy of these was sent to Prof. Mahalanobis on 18th April, 1950, which he, in a letter dated 16th April, 1950 acknowledged as "quite correct". In the following are reproduced the notes of the discussions.

5 NOTES ON THE DISCUSSIONS IN POONA ON THE 11TH APRIL, 1950

During the discussions which were attended by Prof. Mahalanobis, Prof. Gadgil, Mr. Dandekar and Mr. Mukherjee it was agreed that the survey should comprise the following main types of enquiries.

- (1) Family.
- (2) Land Utilization with special reference to practices like mixed cropping and crop production especially in relation to types of primary production for which production estimates were unsatisfactory.
- (3) Enquiry into the activities of production enterprises including marketing, trading and transport of produce.
- (4) Extensive village enquiries with special reference to the listing of trading and other types of establishments, prices at various stages, etc.
- (5) Intensive special enquiries with reference to employment, earnings, etc.

It was agreed that the family schedule should comprehend composition of family, occupation of members of family, estimates of gross income, indebtedness and capital formation, proprietary and cultivating holdings, ownership of live-stock, other productive equipment, and dwelling houses. Attempts may be made to get detailed information regarding consumption of selected families especially if the enquiry formed part of a larger survey for other purposes for which consumption data were believed to be useful. The composition of the other types of forms of enquiry was not determined in any detail. It was settled that Mr. Dandekar of the Institute should discuss drafts of these with members of the Indian Statistical Institute in the last week of April. It was decided that during April and May the schedules tentatively settled would be tried out by the Indian Statistical Institute in Bengal and by the Gokhale Institute of Politics and Economics in Poona. The final form of the schedules would be fixed in a joint meeting of Prof. Mahalanobis and Prof. Gadgil sometime in June.

Prof. Gadgil reported that the Gokhale Institute was ready to undertake the following work in connection with the survey.

1. The intensive village social account studies for which a scheme had already been put up.
2. The trying out and preparatory work in connection with schedules and the training, on a small scale, of the field staff to be later engaged in it.

Prof. Gadgil explained that as he had no experience of planning and undertaking a survey on the scale visualised he was not in a position to express an opinion regarding that part of the plan or to comment usefully on it. Also, the plans and methods of the Institute's rural economic work had been developed on somewhat different lines than those indicated in the plan for the All-India work. The Institute would be willing to have an opportunity of conducting the actual field work over restricted area, covering say about 100 units. It would do this, however, only if it was allowed some latitude in determining the set up and the agency. The Institute's work would, of course, be so conducted over its region as to fit into the All-India Scheme in respect of the size, etc. of sample and the items of information to be supplied. The Institute would, however, like to be able to adjust certain features of the plan to its own modes of work and to combine with the main enquiry some additional or supplementary enquiries. It was expected that the Institute would be able to obtain the co-operation of the Bombay Bureau of Statistics and Economics for the purpose.

It was agreed that the full results of the year's work would not be available to the National Income Committee for the Interim Report which it was contemplated to submit early in 1951. Arrangements will have to be made to tabulate material as it comes in for at least the first three months of the enquiry for being used in the Interim Report.

6. Along with his letter of 16th April, 1950, Prof. Mahalanobis sent two copies of the scheme for the National Sample Survey which, according to his letter, was then under examination by the Establishment Branch of the Ministry of Finance. There prevailed, as it became apparent to us at a rather late stage, a general misunderstanding among the statisticians and economists at Delhi as also among the workers of the Indian Statistical Institute at Calcutta, that the scheme embodied in NS. 1/14 April, 1950 (reproduced below) was formulated in consultation with Prof. Gadgil and that the same had his approval and consent. We are not aware of the precise circumstances leading to this misunderstanding. Below, we reproduce the operative part of the Scheme (without appendices, for brevity) for facility of reference against the Notes on the discussions held at Poona.

7.

NS. 1/14 April, 1950.

THE NATIONAL SAMPLE SURVEY - PROGRAMME OF WORK FOR 1950-51

1.1 In the plan for a multi-purpose sample survey (S.U. 87 of 25 December 1949) it was suggested that a continuing National

Sample Survey should be initiated in 1950 (para 81) at a dimensional expenditure of Rs. 25 lakhs per year (para 42); and the objects of the proposed survey were explained in a general way. It was suggested that arrangements should be made for an immediate check of the accuracy of crop statistics based on records prepared by Patwaries at a cost of Rs. 50,000 (para 80) and that a beginning should be made with the National Sample at a cost of about Rs. 15 lakhs in 1950-51.

1.2 In a second note (SU, 88 of 25 January 1949), the need of training and research was emphasised, and it was suggested that the experience and resources of non-official Statistical agencies such as the Indian Statistical Institute and the Gokhale Institute of Politics and Economics should be utilized to the fullest extent. It was further pointed out that the sample survey of crops in Bengal (which has been in continuing operation since 1937) could be used very conveniently for training and pilot studies. The Bengal survey supplies at present separate estimates of the total crop production for every district at a cost of about Rs. 9 lakhs per year. It was suggested that the Bengal Survey should be converted into a multi-purpose survey and used as a base for the development of the national sample. In case crop estimates were given at the divisional level, the joint cost (for both multi purpose and crop surveys) would be reduced to Rs. 6 lakhs per year. It was proposed that Rs. 3 lakhs should be provided for crop-cutting work and one lakh for special studies, bringing the total to Rs. 25 lakhs. A technical programme in outline form was given in Appendix (1); and an illustrative budget in Appendix (2).

1.3 In a third note (SU, 89 of 8 February 1950) it was pointed out that the actual items of information to be collected should be settled in consultation with the users of the results of the survey; and sanction was requested for an expenditure of Rs. 20,000 for the preparation of detailed plans, and a time programme was given for this purpose.

2. The proposal of organizing the National Sample Survey was approved by the Government of India and lump sum provision of Rs. 25 lakhs was made for this purpose in the budget for 1950-51.

3.1 Sanction was given to an expenditure of Rs. 50,000 for the spot check of Patwari records, and it was decided that the work should be done under the control of the Department of Economic Affairs, Ministry of Finance.

3.2 Actual spot check of Patwari records was started in the U.P. early in March, 1950 and was completed in that state by the end of the month. Similar work is proceeding and would continue in Vindhya Pradesh, Punjab (I), and PEPSU till the end of April or until the rabi crops are still in the field.

3.3 In the U. P., many mistakes were detected in the Patwari records; and it was found that in many instances these records

had been prepared without a personal inspection of the plots by the Patwaris. The gross proportion of mistakes in many villages exceeded thirty per cent; but some of the mistakes were of minor importance; and some would, no doubt, balance out. Detailed tabulation of the results of the spot check in the U.P. are proceeding; and a report on the enquiry would be submitted after the data collected in the other States are tabulated.

4.1 The original intention was (as explained in SU. 89 of 8 Feb. 1950) to settle the programme of work in accordance with the needs of the users of the information in the different Ministries and Government agencies; but certain developments have occurred which make it necessary to change the procedure to some extent. The National Income Committee found great difficulty in estimating national income and constructing social accounts for India as a whole owing to the lack of information relating to the vast sector of rural economy. Quite early the Committee considered the possibility of using sampling methods.

4.2 In the first report of the UN Sub-Commission on Statistical Sampling (1947) it is pointed out that the valuation of national aggregates with a sufficient degree of accuracy in many cases necessitates the use of improved techniques involving modern sampling methods. In the Second Report of the same Sub-Commission (1948) it is stated that "Figures for certain types of activities such as handicrafts, maintenance and repair shop, agriculture, independent profession, etc. are not usually available in a satisfactory form in any country; and in view of the costs involved in complete surveys, such data can only be estimated by sampling" (Chapter VI, 48). Further, in the third Report of the Sub-Commission (1949), it is noted that "sampling methods may be particularly suitable in less developed countries to obtain information on production and consumption of population groups living under conditions of a subsistence economy." (Chapter III, 16).

4.3 The idea of using a sample survey for this purpose is, of course, not new. Professors Bowley and Robertson had recommended such a survey in 1934 in their Scheme for an Economic Census of India covering 1650 villages in British India. It is worth noting that they had estimated the cost of the village survey at Rs. 22 lakhs (p. 20 of the report) at 1934 prices which would amount to at least Rs. 70 lakhs at current prices.

4.4 The National Income Committee, at its meeting held on the 10th March, 1950, gave careful consideration to the possibility of using sampling methods for the collection of data required for its work.

"After a full discussion the Committee recommended that a sample survey should be conducted with a view to securing All-India estimates to fill gaps in the information required for national income and allied estimates. In this connection mention was made of statistics relating to acreage esti-

mates in non-reporting area; agricultural out-turn; livestock; rural industries; employment; transport; capital formation in rural areas, etc. The Committee felt that the survey should be specially directed to obtain a clear picture of the structure of subsistence economy. It was decided that the NIU in consultation with Professor Gadgil and the Chairman would prepare a list of items of information to be included in the programme of work.

The Committee then considered the possibility of building up social accounts for the rural sector on the basis of sample surveys with villages as units. The Committee recommended that suitable grants should be sanctioned immediately for pilot studies to be conducted by Delhi School of Economics, the Gokhale Institute of Politics and Economics, and the Indian Statistical Institute."

At the same meeting, the National Income Committee made another decision of far reaching importance, namely, that

"As far as possible, information should be given not merely in terms of actual or imputed money values but also in terms of services and commodities."

4.5. On 25th March, 1950 Government sanctioned Rs.20,000 for the preparation of detailed plans and estimates. (G. O. No. 0-15-MES/50-694 of the Department of Economic Affairs, Ministry of Finance). As the requirements of the National Income Committee were of the highest priority, it was decided to prepare the immediate programme of work primarily with a view to the collection of information required for national income and allied estimates. In view of the fact that a substantial portion of the information must be made available to the Committee by the end of December 1950, it is intended to begin work on All-India scale as early as possible.

4.6 The possibility of using complete social accounting schedules was carefully examined but was given up for two reasons. Firstly, when an All-India survey is being conducted, it seems desirable to collect important demographic and sociological information in addition to the purely economic. For national planning such information would be of no less value than estimates of economic quantities required for purposes of social accounting. For example, a quantitative study of food consumption although not essential for social accounts, is indispensable for food planning on an objective basis. Secondly, it is apprehended that the primary investigators may not be able to make satisfactory entries in social accounting schedule on the basis of their interview with the sampled enterprises and families. Actual experience of work in India has, on the other hand, shown that trained investigators can usually fill up satisfactorily the family budget and cost of production schedules of the more familiar type. It was, therefore, decided to adopt a mixed method of combining the main heads of social accounting schedules with

breakdowns in the form of family schedules. (It may be noted that such sample survey material has been extensively used for national income and social accounting purposes, e. g. Netherlands official Income and Social accounting purposes, e. g. Netherlands official estimate; Miss Deane's estimates for Central Africa and Jamaica; Prof. Benham's West Indian Estimates, etc.)

4.7 In accordance with above decision five chief types of forms are to be used in the main enquiry.

- (1) A family schedule (FS) covering information of family composition, occupation, employment, earnings, production expenses, loans, and land.
- (2) Land utilization schedule (LS), and crop-cutting schedule.
- (3) Cost of production schedules (called PS) for different enterprises (agriculture, livestock, crafts and industries, financial intermediaries, and distributive trades).
- (4) Family budget schedule (called FBS) covering details of consumption expenditure and housing.
- (5) Village schedules (VS) for prices, depreciation, and movement of goods.

4.8 Information for the family schedule will be collected for every family included in the sample. The land utilization schedule will also be used in respect of every plot included in the sample. In view of the urgent need of information relating to national income, the cost of production schedules will be used in the next phase to collect information for an appropriate number (not necessarily all) of the families engaged in productive enterprises of different kinds. The family budget schedule will be used for such a proportion of families as may be found feasible within available resources.

5.1 As desired by the National Income Committee, a list of items was prepared by the National Income Unit in consultation with the Chairman of the Committee and Prof D. R. Gadgil. The present programme is based on this list which is given in Appendix (1).

5.2 A sample survey is, however, highly adaptable. It is, therefore, possible to include additional items either in the beginning or at a later stage. Suggestions for this purpose would be welcome, and are invited from different Ministries, the Planning Commission and other agencies; and attempts would be made to incorporate additional items in the programme of work to the extent possible within available resources. Preparatory work for the survey relating to data required by the National Income Committee, need not however be deferred for this purpose, as changes can be incorporated at a later stage.

5.3 As regards the procedure for collecting the primary information, it has been decided to use the interview method with some

modifications. An accounting method can be used only if either (a) the size of the sample is reduced to a small size (with a consequential increase in the margin of error), or (b) the total cost is increased enormously. Moreover, it is believed that in a survey of this magnitude, a large number of inaccuracies would creep in if an attempt is made to fill up elaborate accounting schedules in the case of illiterate families who would not be able themselves to keep any records. Also, in the present form of the interview method there is an additional safeguard. As the programme of the survey will show, the investigators are required to visit the same village on several occasions which will give them the opportunity of checking up some of the entries on the spot from time to time.

6.1 It is proposed to divide the entire country into 16 convenient blocks. There are about 28 different States or administrative agencies in India at present, but some of them are extremely small. In demarcating the blocks, an attempt has been made to bring together the adjoining smaller units within a single block for purposes of sampling. A list of the blocks is given in Appendix (2.1).

6.2 The area method would be used for sampling. In the surveyed area (e. g. in regions for which large scale cadastral survey maps are available) covering roughly two-thirds of the whole country, the size of the sample-unit will be half a square mile (820 acres); but appropriate variations may be made depending on the density of population, intensity of cultivation, and other factors to the extent considered desirable. In the unsurveyed area (covering roughly one-third of the total area for which no cadastral survey has been made so far and large scale maps are not available) it is proposed to use the village itself as the sample-unit. The total number of sample-units would be about 1872 as shown in Appendix (2.1).

6.3 Each block will be divided into a suitable number of strata either on a purely geographical basis or depending upon the intensity of cultivation and density of population. Within each stratum, the sample-unit will be demarcated by locating points at random on maps in the surveyed area. In the unsurveyed area, the sample villages will be selected at random or by some equivalent procedure.

6.4 Within each stratum, information will be collected in the form of two inter-penetrating networks of samples to supply efficient statistical control. As an additional check, the possibility of using duplicated enumeration for a small proportion of sample-units would be studied and used to the extent possible.

6.5 In the surveyed area, it is intended to collect information relating to every plot or holding of land and every family falling within the limits of the sample-units of approximately 820 acres in area demarcated on maps. In the unsurveyed area, a suitable proportion of the holdings and of the families within each

village will be selected at random and investigated (in case it is not feasible to cover all the families for lack of time),

6.6 Certain basic items of information would be collected for every family included in the sample. It is also proposed to use additional phase-sampling (in several concurrent or successive phases) for more intensive specialized enquiries relating to agriculture, crafts and industries, distributive trade, and financial intermediaries.

6.7 The collection of information will proceed continually from month to month and would cover all crop seasons. Crop-cutting experiments would be conducted on important crops to the extent possible within the available resources. A tentative distribution of field work over different months is shown in Appendix (2.8)

6.8 Draft family schedules (FS), land utilization schedules (LS) and family budget schedules (FBS) have been prepared and would be tried out in West Bengal (through the Bengal Sample Survey Organization), and in Bombay (through the Gokhale Institute of Politics and Economics in Poona). Cost of production schedules are being prepared jointly by the Gokhale Institute and the Indian Statistical Institute and would be tried out in the field. The final form of these schedules would be decided on the basis of such field trials.

7.1 The proposal to use the Bengal Crop Survey (which has been in continuous operation since 1987, and has a large trained and experienced staff and other facilities at its disposal) as a base for the development of the national sample was approved by the Government of India. As a result of negotiations between the Government of India and the Government of West Bengal, it has been agreed that the Bengal Crop Survey would be converted into a multi-purpose survey for training and reaserch purposes. At the same time necessary arrangements would be made for supplying the West Bengal Government with estimates of crop production separately for each district for which the West Bengal Government would make a contribution of about Rs. 4.5 lakhs per year.

7.2 In the Bengal Survey (besides sample-units of the standard size of 820 acres for the National Sample) it is proposed to use various other sizes (possibly 160, 180, 40 down to 20 acres) in different combinations of density per square mile to study cost and variance functions for the different items of information by direct field experiments. Arrangements are also being made to collect information for compact areas in the form of complete sampling experiments in the laboratory, in order to study variance functions of different types. Attempts would also be made to study the possibilities of using different types of multi-phase and multi-stage sampling, or a combination of both.

7.8 Besides cost and variance studies, it is proposed to conduct special investigations relating to forms and schedules, methods of eliciting information; type, structure, and organization of the field staff; and methods and procedures for statistical tabulation and analysis through the Gokhale Institute of Poona and the Indian Statistical Institute. The object of such exploratory studies would be to make continuous improvements in the technique so that it would be possible in future to collect more information (or to increase the accuracy of the results) at a lower cost.

8.1 In addition to enquiries relating to the family as the economic unit, it is proposed to conduct special investigations relating to the village as the economic unit, as recommended by the National Income Committee, through the Gokhale Institute of politics and Economic in Poona, the Delhi School of Economics and the Indian Statistical Institute. The work would be done in a co-ordinated manner so that valid comparisons can be made in the results obtained in the three centres. A small number of villages would be selected for intensive study; and in each village at least one whole-time investigator would be located to collect information from day to day by personal observations as well as by personal enquiries and interviews. Efforts would be made to keep an account of village transactions with the outside world, and to study marketing methods.

8.2 It is also intended to make a preliminary study of the structure of village economy, and to ascertain to what extent the village is self-sufficient, and to study outside sources and destinations of goods, services, and financial transactions. Methods of enquiry which are found to be promising in the intensive studies, would be tried out on a larger scale. Forms and details of the village studies are being worked out jointly by the institutes concerned.

9.1 The design of the survey, forms and schedules, and the general plan of work have been prepared jointly by the National Income Unit, the Indian Statistical Institute, and the Gokhale Institute of Politics and Economics, and are at present under consideration by Government. The programme consists broadly of five parts. A preliminary try out of forms and schedules is to be made in West Bengal and in Bombay in the latter part of April. In case administrative sanction is received in time, pilot studies on a large scale would be made in West Bengal and in Bombay in May and June; and the design of the survey would be finalized on the basis of such studies. Certain combined operations would begin in West Bengal in July (partly in the form of exploratory studies for the national sample and partly in the form of a detailed survey of crops) and would continue throughout the year. The village studies would also begin at about the same time in West Bengal and Bombay, and a little later in the Delhi area. In the meanwhile arrangements would be made for the recruitment and training of the All-India field staff. The main enquiry,

(relating primarily to national income and social accounts) is scheduled to begin over the whole country on the 1st of August, 1950. A detailed time schedule is given in Appendix (8).

9.2 After careful consideration it has been decided to use Hollerith machines for statistical tabulation as this would be both speedy and economic. Preparatory work on specifications of cards, and standardization of sorting and tabulation procedures as well as the recruitment and training of staff would begin in May and continue from month to month. Full scale tabulation would start in the middle of August by which time the primary data should begin to be received from the field. From September 1950, both the field survey and the statistical work should proceed according to plan. Tabulation would be arranged in continuous accumulated form so that it should be possible to get a substantial portion of the material analysed by the end of December 1950. In this way, it is hoped that some useful information would be made available in time for the use of the National Income Committee.

9.3 There is one other point which deserves to be mentioned. Information was received a few days ago that the Bombay Government intend to organize certain enquiries on a sample basis in the rural area. A suggestion has been made that the Gokhale Institute of Politics and Economics should undertake the responsibility of co-ordinating the Bombay and the All-India enquiries by some kind of combined operations with an agreed sharing of expenses (as in West Bengal). Possibilities are being explored; and in case agreement is reached, the combined surveys in Bombay would be incorporated in the all-India programme of work.

9.4 The present plan has been prepared mainly on the basis of the experience of sample surveys and socio-economic enquiries conducted by the Gokhale Institute in Poona and the Indian Statistical Institute during the last 8 or 10 years. Conditions of course, vary widely in different parts of India, and some of the work in the present scheme is of a new type. An experimental approach is, therefore, essential, and each successive stage of the enquiry should be developed on the basis of the results obtained and the experience gained in the previous stage.

9.5 As explained above the time programme is very tight. It is necessary that administrative sanction should be received before the end of April so that work may start in May; otherwise it will not be possible to obtain results in time to be of use to the National Income Committee.

8. As decided during the Poona discussions on the 11th April, Mr. Dandekar went to Calcutta in the last week of April to discuss with members of the Indian Statistical Institute, drafts of the questionnaires to be used in the survey. Several day-long discussions

extending over a week took place between Mr. Dandekar and the workers of the Indian Statistical Institute, apparently headed by Mr. Ramakrishna Mukherjee. It became clear, at the outset, that there were serious differences between the Poona and Calcutta approaches. There were differences on all the three major issues, namely, the sample design, the scope and content of the questionnaires, and the organisation of the field-work. On the sample design, the Poona view was that the concept of using a grid of half-a-square mile was too artificial for a socio-economic enquiry and further that there were serious practical difficulties in its adoption; on this, however, Mr. Dandekar was told the decision to use area sampling was final. On the scope and content of the questionnaires, the Poona view was that the Calcutta drafts were far too detailed and elaborate and that no reliable information could be expected on many of the points included; a case for instance, was an extremely detailed family budget enquiry aimed at getting itemised annual expenditure of the family; however, Mr. Dandekar was told that Prof. Mahalanobis considered family budget enquiry to be an extremely important part of the Survey. On the proposed organisation of the field-work, the Poona view was that the stay of an Investigator in each village was too short for him to get any reliable information and for the Inspector to check his work. The continuous moving from place to place also denied the Investigator any family life and could easily lead him to dishonest practices. This was, however, mainly due to the feature of interpenetrating parallel samples incorporated into the sample design and discussion on this point was considered impossible. Finally, though in the design provision was made for four visits of the Investigator to each village, the workers of the Calcutta Institute were not willing to discuss, even in broad outline, the programme for the next three visits; it was reported that Prof. Mahalanobis wanted the programme to be deliberately kept flexible. While these discussions were half-way Prof. Mahalanobis left Calcutta and subsequently India and prior to his departure Mr. Ramakrishna Mukherjee had obtained instructions that Mr. Dandekar was expected to discuss matters only within the framework of these decisions. The rest of the discussions were, therefore, confined to mechanical considerations of the draft questionnaires prepared by the Calcutta Institute and no questions of purpose or utility of this or that item were allowed to be discussed. Even the mechanical consideration had to be done under great pressure from the press which was waiting for the print order as the schedules were to be immediately sent to the field for pilot enquiry.

9. Under these circumstances, while Mr. Dandekar assisted to the best of his ability in finalising of the questionnaires, he felt extre-

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extending over a week took place between Mr. Dandekar and the workers of the Indian Statistical Institute, apparently headed by Mr. Ramakrishna Mukherjee. It became clear, at the outset, that there were serious differences between the Poona and Calcutta approaches. There were differences on all the three major issues, namely, the sample design, the scope and content of the questionnaires, and the organisation of the field-work. On the sample design, the Poona view was that the concept of using a grid of half-a-square mile was too artificial for a socio-economic enquiry and further that there were serious practical difficulties in its adoption; on this, however, Mr. Dandekar was told the decision to use area sampling was final. On the scope and content of the questionnaires, the Poona view was that the Calcutta drafts were far too detailed and elaborate and that no reliable information could be expected on many of the points included; a case for instance, was an extremely detailed family budget enquiry aimed at getting itemised annual expenditure of the family; however, Mr. Dandekar was told that Prof. Mahalanobis considered family budget enquiry to be an extremely important part of the Survey. On the proposed organisation of the field-work, the Poona view was that the stay of an Investigator in each village was too short for him to get any reliable information and for the Inspector to check his work. The continuous moving from place to place also denied the Investigator any family life and could easily lead him to dishonest practices. This was, however, mainly due to the feature of interpenetrating parallel samples incorporated into the sample design and discussion on this point was considered impossible. Finally, though in the design provision was made for four visits of the Investigator to each village, the workers of the Calcutta Institute were not willing to discuss, even in broad outline, the programme for the next three visits; it was reported that Prof. Mahalanobis wanted the programme to be deliberately kept flexible. While these discussions were half-way Prof. Mahalanobis left Calcutta and subsequently India and prior to his departure Mr. Ramakrishna Mukherjee had obtained instructions that Mr. Dandekar was expected to discuss matters only within the framework of these decisions. The rest of the discussions were, therefore, confined to mechanical considerations of the draft questionnaires prepared by the Calcutta Institute and no questions of purpose or utility of this or that item were allowed to be discussed. Even the mechanical consideration had to be done under great pressure from the press which was waiting for the print order as the schedules were to be immediately sent to the field for pilot enquiry.

9. Under these circumstances, while Mr. Dandekar assisted to the best of his ability in finalising of the questionnaires, he felt extre-

inely dissatisfied about the shape the Survey was taking. In the concluding session, therefore, he addressed the meeting of the workers and expressed in unequivocal terms his dissatisfaction and urged for more careful consideration of the entire matter. Surprisingly enough there was apparent in the meeting a general feeling of uneasiness and the Chairman, Mr. Ramakrishna Mukherjee, requested Mr. Dandekar to prepare a full note on the National Sample Survey at an early date. Mr. Dandekar agreed to submit one soon after his return to Poona. No formal minutes or records of these discussions were kept.

10. Immediately after his return to Poona, however, Mr. Dandekar received a letter from Mr. Ramakrishna Mukherjee, inviting him for fresh discussions at Calcutta. We reproduce below this letter.

11. c. 603

Indian Statistical Institute,
Presidency College, Calcutta 12.
10th May, 1950.

My dear Dandekar,

I hope you have arrived safely and got down to prepare the note on the National Sample Survey which you very kindly agreed to do for us. I had several discussions with Nihar Babu, Rai Bahadur S. P. Sinha, Sankar Babu and my other colleagues on the items of information which we should collect during our enquiry (first visit) as well as on the techniques we should develop to approach the informants. As you are perfectly aware, we have a good deal of difference of opinion on all the problems involved in the preparation for the enquiry. I have just written to Moni Mukherjee, Secretary, National Income Unit, acquainting him with all these problems and asking him to come down to Calcutta preferably on the 21st of this month. Could you also be so kind as to be here by that time, so that we can have a full and final discussion on our work?

What I envisage is this. At first, we shall have one or two conferences between you, Moni Mukherjee, Sankar Babu and I with my colleagues. After we have decided on our "fundamentals" and also on the items of information which are possible and practicable to cover during our present enquiry, we shall sit with the other Directors of the National Sample Survey, who, I presume, will be appointed by the time. Thus I hope we shall be able to decide, once and for all, all the difficulties which were raised during your last visit and which will be raised during our next conferences.

Yours Sincerely
Sd/- Ramakrishna Mukherjee

17. The conferences in Calcutta were held from 19th to 23rd May, 1950. Formal minutes of record were kept which we reproduce below. The records speak for themselves and a careful reading of these would assist in understanding the state in which the National Sample Survey stood at this stage. The conclusions of the deliberations are in the form of a resolution unanimously passed by the conference. The resolution appears at the end of the minutes.

18. Proceedings of the Conferences on National Sample Survey held from 19th to 23rd May, 1950 at the Indian Statistical Institute, Calcutta-

The following members attended the conference:-

Sri. R. K. Mukherjee (Convener); Sri. M. M. Mukherjee, Secretary, National Income Committee, Government of India; Sri. V. M. Dandekar, Professor, Gokhale Institute of Politics and Economics, Sri. A. Ghose, Sri. P. K. Mukherjee, Sri. H. K. Chaturvedi, Sri. Sitangsu Bhattacharyya, Sri. Kalpana Joshi, Sri. K. C. Cheriyan, Sri. T. K. Majumdar, Sri. Amiya Bose, Sri. Ajit Biswas.

Dr. R. K. Mukherjee opened the discussion stating the decisions made in the previous conference in the last week of April when Sri. Dandekar of the Poona Institute came down to Calcutta to discuss the designing of production schedules and the conference came to the conclusion that we need a good deal of clarification on the demands made by the National Income Committee to the National Sample Survey and the fundamental principles involved in the study to be made for such demands.

A statement from Sri. M. Mukherjee, Secretary, National Income Committee, on the demands made by the said Committee to the National Sample Survey was circulated.

It was announced that a brief outline of the points which Sri. Dandekar intends to raise in the conference to be held on the 20th May will be circulated by the evening. This will be accompanied by a note from the National Income Research Unit of the Institute (Convener Sri. Ambica Ghose) on the proposals of the Unit with respect to the schemes to be followed in this survey.

Indian Statistical Institute,
Presidency College, Calcutta, 12.
19th May, 1950.

Sri. Moni Mohan Mukherjee, Secretary, National Income Committee, feels that the list of items and the type of schedules mentioned in NS. 1/14 April 1950 "The National Sample Sur-

(relating primarily to national income and social accounts) is scheduled to begin over the whole country on the 1st of August, 1950. A detailed time schedule is given in Appendix (8).

9.2 After careful consideration it has been decided to use Hollerith machines for statistical tabulation as this would be both speedy and economic. Preparatory work on specifications of cards, and standardization of sorting and tabulation procedures as well as the recruitment and training of staff would begin in May and continue from month to month. Full scale tabulation would start in the middle of August by which time the primary data should begin to be received from the field. From September 1950, both the field survey and the statistical work should proceed according to plan. Tabulation would be arranged in continuous accumulated form so that it should be possible to get a substantial portion of the material analysed by the end of December 1950. In this way, it is hoped that some useful information would be made available in time for the use of the National Income Committee.

9.3 There is one other point which deserves to be mentioned. Information was received a few days ago that the Bombay Government intend to organize certain enquiries on a sample basis in the rural area. A suggestion has been made that the Gokhale Institute of Politics and Economics should undertake the responsibility of co-ordinating the Bombay and the All-India enquiries by some kind of combined operations with an agreed sharing of expenses (as in West Bengal). Possibilities are being explored; and in case agreement is reached, the combined surveys in Bombay would be incorporated in the all-India programme of work.

9.4 The present plan has been prepared mainly on the basis of the experience of sample surveys and socio-economic enquiries conducted by the Gokhale Institute in Poona and the Indian Statistical Institute during the last 8 or 10 years. Conditions of course, vary widely in different parts of India, and some of the work in the present scheme is of a new type. An experimental approach is, therefore, essential, and each successive stage of the enquiry should be developed on the basis of the results obtained and the experience gained in the previous stage.

9.5 As explained above the time programme is very tight. It is necessary that administrative sanction should be received before the end of April so that work may start in May; otherwise it will not be possible to obtain results in time to be of use to the National Income Committee.

8. As decided during the Poona discussions on the 11th April, Mr. Dandekar went to Calcutta in the last week of April to discuss with members of the Indian Statistical Institute, drafts of the questionnaires to be used in the survey. Several day-long discussions

extending over a week took place between Mr. Dandekar and the workers of the Indian Statistical Institute, apparently headed by Mr. Ramakrishna Mukherjee. It became clear, at the outset, that there were serious differences between the Poona and Calcutta approaches. There were differences on all the three major issues, namely, the sample design, the scope and content of the questionnaires, and the organisation of the field-work. On the sample design, the Poona view was that the concept of using a grid of half-a-square mile was too artificial for a socio-economic enquiry and further that there were serious practical difficulties in its adoption; on this, however, Mr. Dandekar was told the decision to use area sampling was final. On the scope and content of the questionnaires, the Poona view was that the Calcutta drafts were far too detailed and elaborate and that no reliable information could be expected on many of the points included; a case for instance, was an extremely detailed family budget enquiry aimed at getting itemised annual expenditure of the family; however, Mr. Dandekar was told that Prof. Mahalanobis considered family budget enquiry to be an extremely important part of the Survey. On the proposed organisation of the field-work, the Poona view was that the stay of an Investigator in each village was too short for him to get any reliable information and for the Inspector to check his work. The continuous moving from place to place also denied the Investigator any family life and could easily lead him to dishonest practices. This was, however, mainly due to the feature of interpenetrating parallel samples incorporated into the sample design and discussion on this point was considered impossible. Finally, though in the design provision was made for four visits of the Investigator to each village, the workers of the Calcutta Institute were not willing to discuss, even in broad outline, the programme for the next three visits; it was reported that Prof. Mahalanobis wanted the programme to be deliberately kept flexible. While these discussions were half-way Prof. Mahalanobis left Calcutta and subsequently India and prior to his departure Mr. Ramakrishna Mukherjee had obtained instructions that Mr. Dandekar was expected to discuss matters only within the framework of these decisions. The rest of the discussions were, therefore, confined to mechanical considerations of the draft questionnaires prepared by the Calcutta Institute and no questions of purpose or utility of this or that item were allowed to be discussed. Even the mechanical consideration had to be done under great pressure from the press which was waiting for the print order as the schedules were to be immediately sent to the field for pilot enquiry.

9. Under these circumstances, while Mr. Dandekar assisted to the best of his ability in finalising of the questionnaires, he felt extre-

vey: Programme of work for 1950-51" explain clearly the demands of the National Income Unit from the National Sample Survey. For further clarification of some of the points, the following two excerpts from his letters dated 5th and 1st May 1950 addressed to me may, however, be added :-

EXCERPT 1 FROM THE LETTER DATED 5TH MAY 1950

"I should like to give a brief outline of the current demands of National Income Unit from the National Sample Survey. Firstly, the most important part is the income estimates, the current and capital accounts of all village enterprises. Secondly, it will be desirable to have estimates of consumers' expenditure of village families. Lastly some information on current and capital accounts of all village families will also be of use. In order that the result may be incorporated in the report of National Income Committee, it should be available by the end of this year."

EXCERPT 2 FROM THE LETTER DATED 1 MAY 1950

"In a socio-economic enquiry, many entities are inherently incapable of being represented by an exact number. Age of a person on a particular date can theoretically be represented by an exact number, and entry in this respect in our schedule will be either wrong or right. But, can average monthly "family income" for the year be unequivocally expressed by a number? Continual change of the value of money (our measuring rod) to gether with arbitrary imputation of money value to some kinds of services in preference to others makes an unequivocal definition of income impossible. Thus when the concept itself is hazy, there is not much harm if its measure is also somewhat hazy. My impression is that an honest effort to fill up the schedule would add to our knowledge even when we know that some figures could have corresponded more closely to our adopted definition of the concept."

Counter signed.

Sd/-R. K. Mukherjee.

M. Mukherjee.

Points from Mr. V. M. Dandekar for discussion at a conference of the staff of the Indian Statistical Institute and Secretary of the National Income Committee to be held from 19th May to 28rd May, 1950.

1. As indicated in paras 4.1-4.8 of the programme of work of 1950-51 the requirements of the National Income Committee should receive top priority in the programme for this year. At the pilot stage, therefore, we should keep in mind exclusively the needs of the National Income Committee. The pilot work should enable us to decide later on whether we can incorporate into this year's programme any additional items.

2. At least four visits to each sample family are envisaged in the programme of field work during this year. It is advisable, therefore, to obtain information for the current year rather than the past year. We would get much better information for the current year by periodic visits.

3. Broadly speaking there are three approaches to National Income computation, namely, (1) estimates of income (2) estimates of production, and (3) estimates of consumption. It is believed that in order to meet requirements of the National Income Committee the approach from the production end would be the most suitable.

4. Following items of information are proposed to be collected.

(1) There should be an occupational census of all the households within the sample unit. This should consist only of the following items; (a) details regarding the head of the family, such as, name, sex, age, caste and principal occupation, principal and subsidiary means of livelihood of the family, if the family forms or runs a productive enterprise (including trading) an over all indicator of the size of the unit such as the number of plough cattle, number of sheep, number of looms, annual turnover of trading, number of fishing nets, etc; (b) details regarding family members such as, name, sex, age, relation with the head and whether the member is earner or non-earner. This schedule should be universal and should be filled in for all the households within the sample unit.

(2) There should be another schedule to obtain information regarding utilisation of land within the sample unit. This schedule also should be universal and should be filled in for all plots within the sample unit. The information sought for in this schedule would be as under :—

Major uses of the land such as agricultural, non-agricultural, forests, permanent fallow, waste land, etc.; land values; details regarding non-agricultural uses; in the case of permanent fallows and waste lands details regarding how long the land has been out of use; residence and occupation of the owner; reasons for not being in use; estimated cost of land improvement to bring it under use, etc. For land in agricultural use details regarding management such as owner-cultivated, tenant-cultivated, managed by non-cultivator owner with the aid of hired or direct labour (without tenancy rights) should be obtained. For tenant-cultivated lands details of cash and share rentals also should be obtained. Details regarding colour and texture of soil, erosion, areas affected by erosion, gully formation, budning, water logging and other faults of the soil; sources of and areas under irrigation; nature of land improvements done during last year and their costs; details regarding trees and income from them during last year; buildings, their purpose and areas under the buildings. Separate information for the two seasons, kharif and rabi, should be obtained on the following points: ploughing and manuring practices, that is the areas actually ploughed and manured for the kharif sowing and for the rabi sowing; crops, and crop acreage details regard-

ing inter-crops, crop mixtures and crop rotations. All the information shall have to be obtained by plot to plot inspection, once during the kharif season, and for the last mentioned items, namely ploughing, manuring and crop details once again during the rabi season.

This programme of land utilization study might be considered unwieldy and it might be thought advisable to confine this year merely to crop acreages. In that case the land utilisation schedule consisting of crop acreage detail only should be canvassed only in "non-reporting" areas. It is not thought worth while to do land utilisation study in the "reporting" areas merely to obtain sample estimates of crop acreages as alternative to those given by revenue agencies in these areas. The reasons are as under :

(1) Our field agency, hastily recruited and trained as it will be, seems unlikely to be more efficient than the revenue agency.

(2) It is difficult to imagine that the extra-temporary field agency of the sample survey will be more honest than the revenue agency.

(3) The revenue agency being long established is extremely well informed regarding the local conditions. Our agency will be ignorant on most points.

Regarding land utilisation study, therefore, there are two alternatives - one is to have a full land utilization study in all the sample units; another is to confine the enquiry only to crop acreages and concentrate the effort only in "non-reporting" areas.

Besides the two universal schedules, one of occupational census and another of land utilization, there will be two more schedules canvassed only on a sub-sample basis and called "production enterprise enquiry." The enquiry will be divided into two schedules.

One schedule would contain inventory of assets and liabilities of every production enterprise unit in the sub-sample. Another will be a schedule of periodic working account of the production enterprise unit. This latter schedule is expected to be canvassed at least four times during the year. The inventory of assets and liabilities will be taken once in the beginning and once at the end of year. The same schedule will be used at the beginning and at the end.

Productive enterprise unit in rural areas will in most cases be also a family unit but that need not be so. The enquiry is therefore to be conducted on the basis of productive enterprise unit and not on the family basis. The inventory of assets and liabilities will obtain the information regarding real estate in land, residential houses and other buildings; fixed capital assets in live-stock, agricultural implements and machinery (major items only) and non-agricultural implements and machinery (major items only); working capital, as on the day of visit, in stocks of raw materials, stock position of material in process and stocks in finished goods; long-term loan position both on business account and on family account when

productive unit coincides with the family unit; and short-term credit position at both ends; namely, credits received and credits given by the production unit.

The periodic working account schedule shall consist of the following items of information.

Production expenses in new purchases, maintenance and repairs of fixed capital, including births and deaths of live-stock, purchases of raw materials including the cost of their transportation, wages paid to hired labour and other expenses such as rentals, etc; production estimates of agriculture, livestock, fisheries, forest, mining and quarrying, etc., and all non-agricultural production; disposal of the product in kind, such as shares to landlord and their equivalents; remuneration to hired labour and to others paid in kind, home consumption which in the case of agricultural products may be confined to approximate domestic needs of major crops only, physical destruction due to bad storage, accidents, fire, etc., and other disposals in kind; sales and sales proceeds, details whether the sales were wholesale or retail, whether they were to a trader or to a consumer and place of sale; expenses of transport and marketing of finished products; and finally other receipts of the productive unit such as from servicing, from the wages received by family members working outside when the productive unit and family unit coincide and other receipts such as from rentals of real estate, fixed capital, etc. Changes in the position of loans and credits also should be noted.

Such a productive enterprise enquiry beginning with an inventory of assets and liabilities and followed by periodic working accounts of the unit and ending with an inventory of assets and liabilities is supposed to furnish the requirements of the National Income Committee.

Besides this main programme, there will be another enquiry canvassed on a week or a month basis regarding details of employment and earning.

Estimates of detailed consumption should not be attempted as they are of not immediate use for the computation of national income as approached from the production end. Similarly there need not be specific attempt to estimate family income of sample families. Details regarding income distributions between families and details regarding consumption are refinements in National Income studies which should come only at a later stage.

It would thus appear that the proposed enquiry is based on a successful programme of periodic visits. The field organization should therefore be such as to make possible at least four periodic visits to each sample unit and possibly in some cases to increase the frequency of period visits. As a first step in this direction the devise of inter-penetrating half-samples should be postponed. There are two reasons for this postponement: (a) In the case of crop acreage estimation, two independent investigators visit actually the same plot and in that sense the interpenetrating samples give us some

idea regarding the reliability of field work. In the present survey it is not expected that two field investigators shall visit the same family or the same productive enterprise unit, to canvass the same information. Interpenetrating half-samples in the present context would really be two independent sub-samples within certain sample units. Differences between the two half-samples would not therefore be only errors of investigation but would be mixed up with the unknown sampling errors.

(b) With the same object in view the proposed mobile field agency where an investigator is expected to visit twelve sample units four times during the year is thought to be inconvenient. (i) This allows an investigator less than a week at each sample unit and it is extremely difficult in rural areas to make boarding and lodging arrangements for anything like four or five days. Because of the nature of his job, an investigator is naturally looked upon with suspicion by the villagers which makes it all the more difficult for him to get even quarters. Official help, of course, sometimes will be necessary but as a general principle this should be avoided because any official connection or interference is likely to spoil the quality of the information obtainable. An attempt therefore should be made to secure wherever possible local agency either on part-time or on full-time basis. For this purpose, the final sample units should be immediately selected and a hunt for securing local agency begun. Where local agency is not available investigators should be posted in sample units for longer periods and, if possible, even amounting to whole year. The organizational and financial aspects of this proposal should be discussed at this conference.

Refinement in sample should come only at a very late stage. The field of this enquiry is so new and the agency so hastily recruited and trained that the quality of the information is not likely to be such as to justify any refinement in sampling technique. Maximum resources, therefore, should be concentrated in training the field agency and improvement of the method of approach to the informant. For this purpose simpler sampling technique than the fixed area sampling is thought desirable. The fixed area sampling is inconvenient for the following reasons :

(1) It involves an enormous amount of mapping work and the efficiency of this sample unit will depend upon the accuracy with which this work is done in the laboratory. As this is the first time that maps on All-India basis will be handled it is difficult to imagine that the desired accuracy can be attained in the limited time available.

(2) Except perhaps in the crop acreage estimation the utility and validity of area as a multiplier is not beyond doubt.

(3) From *a priori* considerations the fixed area unit appears to be extremely artificial.

It is proposed, therefore, that some similar sampling technique should be evolved for this year. Refinement in sample design should come later on.

From the point of view of the proposal that maximum resources should be concentrated this year for improving the quality of information to be collected, it is desirable to discuss the budget allocations at least broadly under following heads :—

- (1) Directorate.
- (2) Sampling and other laboratory preliminaries.
- (3) Field organization.
- (4) Tabulation.
- (5) Collation and analysis from the economic point of view. It is requested that the budget allotments on these items should be discussed at this conference.

A SAMPLING PROCEDURE FOR N. S. S.

(Proposal by Mr. V. M. Dandekar)

(1) There are about 6,000 Survey of India one inch one mile maps. Select the required number (about 1800) at random, but ensuring balanced distribution by longitudes and latitudes.

(2) Rule each one of the selected maps into 4 x 4-16 divisions, and select one out of these 16 divisions at random. The area of this subdivision will be about 16 square miles.

(3) Make a list of all villages falling within these sub-divisions.

(4) Select one village at random within each sub-division, giving equal chance to all villages.

(5) Ascertain the present population of the selected village. If it is less than 2500 (say) cluster together the neighbouring villages so as to make the total population of the cluster approximately 2500.

(6) The cluster forms our sample unit.

(7) For sub-sampling, select a fixed number of families such as 50, for each sample.

(8) When the 1951 Population Census is complete, tabulate the results of all villages falling in the 16 square mile subdivisions. The results of our enquiry should be adjusted both by the total population and its occupational distribution of these sub-divisions as revealed by the Census.

(9) If the Population Census results are not likely to be available carry out a rapid census of the villages in the subdivisions asking for total number of families in each and their occupational distribution.

Proposals of the National Income Research Unit, Indian Statistical Institute, to the Conference held on 20th May 1950 at Presidency College, Calcutta.

The National Income Unit has placed before us a very broad list of its requirements which it wants before the end of the year. A schedule was devised by the N.I.U. in consultation with others which was found by the Indian Statistical Institute, after some actual surveys, to be unwieldy and complicated. It was found that a survey carried out on such schedule is likely to give figures which will not be sufficiently reliable. In trying to revise the schedule we felt that some general principles must be thrashed out as to the exact requirements and procedures to be followed by the N. I. U. on the assumption that the data are primarily to be used to compute the National Income of India.

The excerpts submitted to us seem to be vague since there is a strong controversy as to the components which should be included in order to furnish the broad totals required by the N. I. U. Further, we feel that there are alternative methods of computing the broader components constituting national income and we feel that all the various methods should be discussed before a final decision is made.

The scheme as suggested by the National Income Unit involves all the three recognised methods of national accounting.

1. An estimation of consumption expenditures.
2. An estimation of incomes.
3. An estimation of production.

Attempts have been made to incorporate in the same schedule all the three methods. As all these methods require elaboration and a thorough enquiry, a combination of all the three makes the schedules too cumbersome and unwieldy, if full justice is done to all the three; alternatively, if short and summary figures are taken all the three methods as they are involved in the same schedule will suffer from the same limitations.

These limitations are obvious. The majority of farming families live partly on a self-subsistence basis, or, combine a variety of farm and non-farm occupations. Detailed information is being taken only for the main occupation but it is our experience that in villages traders, professionals, and other well-to-do families of all types very frequently have considerable income from agriculture though it is by no means their major occupation. In such cases taking broad totals of their income, etc. from farm and details of

their specific occupation as envisaged in the revised schedules will not be a good procedure. Information from such families if taken on an annual basis in crude and very broad totals will not be at all reliable.

The idea behind a combination of all the three methods in the enquiry is to use each as a cross-check on the other. Actually, it will defeat its own ends. As instructions will be given to investigators about the mutual relations of the three totals and as they will be told that the three should agree with each other the reliability of the three estimates at the final stage will be the same though they may perhaps help the investigator in cross-examination. Actually, they will not be independent estimates but estimates liable to similar bias. We are very strongly of the opinion that the cross-checks employed without any details being taken down will induce manipulation in case of difficulties and there will be a pretence of accuracy without obtaining it.

It seems to us from the revised schedules that emphasis is being laid, mainly, on cash evaluation on a very crude and subjective basis and not on quantities as should have been done. As a very large number of transactions in rural economy is not on a cash basis the estimation of these transactions only on a cash basis from the very beginning will not reveal the structure of rural economy which is one of the important objects of enquiry.

Further by trying to estimate expenditure, income and production on an annual basis in one sweep we shall not be able to eliminate or even to reduce some very well-defined bias which can only be reduced by repeated enquiries. The tendency of deliberate underestimation of income and exaggeration of expenditure and of concealing savings may be mentioned. We should immediately start devising means to dodge this difficulty which will crop up later on.

It is essential before the items are fixed for the investigation, to have an agreed draft of the final tables required, the suitable components in which we are to supply the figures on national income so that at least some of these components may be checked up from other sources. For example, the income of the Government from the rural sector may be estimated from the direct taxes for the different families but no provision has been made of taking down taxes and revenues, etc. going to Government separately from local rates.

We think that it is not possible to give a reliable estimate of national income in an annual survey of consumers expenditure or

income figures, which at best give an idea of the proportions in which different components contribute. We are suggesting the following alternative schemes in very general terms for consideration.

1. In our opinion the best scheme would be a survey of acreage and yield along with market prices (wholesale and retail) continued for one full year, supplemented by a survey of the production of rural crafts and industries both from consumers and from the market and a survey of the incomes from professions and services.

The national income in the above scheme will be finally given at the end of the year, each quarter's income from different sources being furnished in instalments.

2. In case an estimate must be supplied in December 1950, however crude, the production method will be the most suitable and least likely to be biased specially if quantities are noted and values are checked with corresponding market prices. Some surveys along with this for depreciation, etc. may be carried on a small scale.

3. In case it is essential that the estimate is to be given by the expenditure and income approach it is our strong recommendation that two independent surveys, one on income and expenditure should be done and the income and expenditure figures should be arrived at from independent samples in order that at least two limits may be furnished. If income and expenditures are treated separately both may be elaborated and greater emphasis may be laid on quantities than is possible now.

Proceedings of the Conference held in the Indian Statistical Institute, Calcutta, at 10 a. m. on Saturday, the 20th May, 1950.

Present :- Mrs. Kalpana Joshi in the chair.

Messrs. V. M. Dandekar, M. M. Mukherjee, S. N. Sengupta, A. Ghosh, P. Mukherjee, H. K. Chaturvedi, S. Bhattacharyya, K. C. Cheriyan, Tapash Mujumdar, Ajit Biswas, Amiya Bose, and Dr. R. K. Mukherjee (Convener). S. C. Sen.

The Chairman requested Mr. Dandekar to state his views. Mr. Dandekar stated that the conference had before them three notes, one by the Secretary of the National Income Committee, one by the National Income Research Unit of the Indian Statistical Institute and one by Mr. Dandekar himself. Mr. Dandekar was pleasantly

surprised to find that there was a large measure of agreement between the three notes. In particular, he congratulated sincerely upon the excellent work done by the National Income Research Unit of the I. S. I. He thought that there was complete agreement between the views of the Research Unit of the Indian Statistical Institute and himself and that therefore the following points need not be discussed any further:—

(1) The scope of the National Sample Survey this year should be mainly confined to estimation of national income and to meet the needs of National Income Committee in general.

(2) Annual basis of canvass for any information is not expected to give sufficiently reliable information. The main enquiry therefore should be directed to obtain information regarding current year on the basis of periodic visits to the sample of families.

(3) Main approach to computing the national income of the rural sector should be from the production end with suitable modifications in certain economic sectors, like trading, services and professions.

(4) Studies in family income and expenditure should be taken up as supplementary studies, if resources permit.

Mr. Dandekar then gave the general outline of approach to national income computation from production end. The following were the salient points of his exposition :—

(1) Agricultural production is the most important production in rural sector economy. This might be divided into (i) major crops, i. e. crops for which production estimates could be obtained directly on the basis of crop-cutting experiments and (ii) minor crops, namely, those for which the methods of crop-cutting experiments was not suitable. So far as estimation of production of major crops was concerned, it involved estimation of crop acreages and yield per acre. Mr. Dandekar suggested two alternative programmes in this respect.

(a) The enquiry this year should be confined merely to estimation of production of major crops. In that case area estimation should be concentrated only in the non-reporting areas while in reporting areas the estimates given by the revenue agency might be accepted to begin with. He did not think that having regard to the limited time available to train investigators and the rather small sample available, the sample estimates would be an improvement on the

estimates given by revenue agency. Crop-cutting experiments should be conducted all over India as a concerted programme on all major crops only.

(b) If it was thought advisable that acreage estimation should also be attempted in the reporting areas, Mr. Dandekar thought that it was advisable in that case to expand the enquiry to include details regarding land utilization in general. Such a land utilization study would include, besides crop acreages, major uses of land, details of non-agricultural use, extent and causes of permanent fallows and waste lands, details of management, erosion, bunding, drainage and other defects of the soil, sources of and areas under irrigation, land improvements during last year, trees and income from trees, and finally ploughing and manuring practices and details of inter-cropping, mixed cropping and crop rotations. The programme would need, therefore, a visit during *kharif* season for detailed land utilization study by plot to plot inspection of all land within the sample unit and noting details of *kharif* crops, and another visit during the *rabi* season for noting *rabi* crop acreages and details of double cropping.

Mr. Dandekar thought that this part of the enquiry was distinctly different from the remaining part of enquiry which would be conducted mostly on a family or productive enterprise unit basis. The training needed to investigators for these two parts of the enquiry was also of different nature. It would be convenient therefore to relegate the enquiry regarding land utilization in general or estimation of crop acreages in non-reporting areas and crop-cutting experiments on major crops all over India to an independent agency. He felt that there was already existing in this country both a Central and in many States local agencies doing similar kind of work. Also whether or not the National Sample Survey would be continued year after year, estimation of production of major agricultural crops would certainly be an annual feature. He therefore thought that it was advisable to utilize the existing official agencies both at the Centre and in the States. He recommended, therefore, that this portion from the NSS should be handed over to the appropriate official agency. That would also relieve NSS a great amount of burden and would make it possible to concentrate on the economic part of the enquiry.

(2) Production estimates of all other items including minor agricultural crops, forests (private), livestock, fisheries and all industrial production, should be estimated by means of a productive

enterprise enquiry conducted with periodic visits to sample of productive enterprise units.

(3) Production estimates of these items will have to be estimated by (i) estimates of numbers of productive enterprise units of different categories, and (ii) production per unit.

(4) Production estimates thus obtained will be gross, will not be additive and we shall have, therefore, to obtain details regarding material expenses of production, i. e. broadly speaking, raw materials used in the process, and depreciation of capital assets: This would give us estimates of net production in different sectors of the rural economy. Such net production will be additive and will give the national aggregate.

(5) Besides obtaining the grand total, the interest of national income computation of rural sector would be in two kinds of break-downs of this total:

(a) Of the total production, how much is home consumed, how much is disposed of in kind such as wages in kind, how much is sold directly by the producer to the ultimate consumer, and how much passes into the hands of the professional trader.

(b) Shares in the total net product, of family labour and hired labour and if possible, of any residual profits of enterprise.

The programme of enquiry shall have to be such as to furnish these breakdowns.

(6) In its actual operation the above programme might demand some revision of the present sample design and to some extent also of the field organization. As the time was short and the matter needed more detailed consideration, Mr Dandekar felt that the two might be taken up for discussion in the afternoon session.

The Chairman requested Sri Ambika Ghose to explain the views of the National Income Research Unit of the Indian Statistical Institute.

Sri Ambika Ghose stated that it was decided in the earlier meeting on the Agenda of the Conference, held on the 19th May, 1950, that the first session should be devoted to a purely theoretical discussion on the best way of proceeding with our survey if we were mainly interested in computation of national income. The Research Unit of the I. S. I., however, felt that certain programmes, e. g. giving estimates by December, 1950, have already been fixed and might not be altered. They, therefore, submitted in their note three schemes. The first scheme was based on the assumption that

no fixed programme was there, and as if the survey was being planned anew. Along with this scheme, they submitted two other schemes which they felt could be accepted as modifications possible within the existing programme of work. Sri Ghosh then elaborated the three schemes. He felt that the first scheme had many things in common with that of Mr. Dandekar, viz. the production approach and a plan for periodic visits. He felt, however, that in view of the fact that National Sample Survey was expected to furnish to National Income Committee estimates of National Income by December, 1950, efforts should be made to collect on an annual basis information regarding the completed year 1949-50. In obtaining information regarding production, he felt that emphasis should be on recording details of physical production by quantity and quality, and that its valuation in terms of money should be done on the basis of market data. He concluded that as the Unit did not have sufficient time they could not prepare detailed schedules nor could they suggest any sampling design. All they could do was to suggest certain procedure.

The Chairman then requested Sri Moni Mukherjee to state his views on the points raised by Mr. Dandekar and Sri Ghosh. The Chairman also requested that the conference expected from him to know exact requirements of the National Income Committee.

Sri Moni Mukherjee observed that he had not very much to state besides the points contained in his note and he would rather request the members of the conference to produce an agreed schedule of list of items to be included in the NSS so that he might be in a position to say whether it would meet the needs of the National Income Committee.

As regards the different procedures suggested, he did not feel that it was possible for him to give an opinion on all the different schemes which had been submitted here. He added on a question from Dr. Mukherjee that he had no authority to finally approve or disapprove any particular scheme. If the Institute feels hesitant, the best plan would be to write to him about the difficulties and he could circulate it to the members of the National Income Committee and he would follow the instructions received from them. But he felt that if there was any agreement between the Indian Statistical Institute and the Gokhale Institute on the plans and programme of work, there would be hardly any reason to apprehend any difficulty of implementation.

The Chairman then threw open the discussion. Sri Cheriyan said that in the present state of availability of statistics in India, a

system of social accounting may be effected if only we can get elaborate breakdowns into items of production, expenditure and other aspects of the economy. The best approach would be to collect items of production in the beginning and to collect data on expenditure at a later stage.

Sri Majumdar, Sri Mukherjee, Sri Chaturvedi and Sri Bhattacharya participated in the discussion. All of them invited certain clarifications on points raised by Mr. Dandekar and Sri Ghose. Mr. Dandekar and Sri Ghose explained their views on the matter.

In course of his speech, Mr. Dandekar stated that he could perhaps express what he felt about the requirements of the National Income Committee. For information of the members he might also state that he represented a member of the National Income Committee and to that extent his views in this matter might be listened to. There was some misunderstanding about the requirements of the National Income Committee. Some of the members felt that the National Income Committee was appointed to estimate the National Income of this country for this year, or last year or a particular period. But he felt that the National Income Committee would still be satisfied if by December, 1950, we fail to produce the National Income estimate for any year or period but instead establish the programme of collection of information which, if continued, was promising enough to supply the needed information.

The conference then appointed a Sub-Committee consisting of Sri J.M. Sengupta, Sri Moni Mukherjee, Sri Ambika Ghosh and Mr. Dandekar to produce an agreed draft and programme of work. The Sub-Committee was expected to meet from 2 to 3 p. m. and report to the conference at 3 p. m. The conference adjourned at 1 p. m.

Sd/-S. C. SEN
Chairman.

Sd/-Kalpana Joshi.

Sd/-R. K. Mukherjee.
Convener.

NATIONAL SAMPLE SURVEY.

Afternoon Session : 3-7.30 p. m.

Mr. S. C. Sen in the Chair.

In addition to the members who attended the morning session, Mr. N. C. Chakravarti also attended the conference.

The Chairman requested Mr. Dandekar to report on behalf of the Sub-Committee.

Mr. Dandekar reported that he was glad to state that the Sub-Committee produced an agreed draft of proposal. Due to lack of

time the Sub-Committee did not find it possible to go into the problems of sample design and details of field organization. The Sub-Committee, therefore, confined its discussion to formulate the schedules to canvass the necessary information. The committee thought that it would be desirable to have the following programme if possible.

(1) A schedule of occupational census of households to be covered for all households within the sample unit and containing the occupational details of the family members.

(2) An inventory of assets and liabilities as on the day of visit.

(3) A schedule of formation of physical capital during last year.

(4) Working account of the productive unit during last year.

(5) A schedule to obtain details regarding employment, earnings, expenditure, and miscellaneous receipts of an independent sample of families. The information to be obtained on a week and a month basis, for certain items on annual basis (in the first visit only) and each family within the sample expected to be visited approximately four times in the year.

(6) Working account of the productive unit since the beginning of this year (a fixed date such as 1st of June to be fixed upon) to the date of the visit. The above schedules to be collected in the 1st visit.

(7) In the 2nd and 3rd visits schedules 5 and 6 may be repeated, and in the fourth visit schedules 5 and 6 and 2, namely the assets and liabilities, will be filled in.

(8) A schedule to obtain details of land utilisation to be canvassed for all lands within the sample unit by plot inspection twice a year, once in the *kharif* season and once in *rabi* season.

The schedule of inventory of assets and liabilities of the productive unit, both at the beginning and at the end, should consist of broadly the following items of information : (i) Real estate in land, residential and other buildings, and other items; (ii) fixed capital assets in livestock, agricultural and non-agricultural implements and machinery (major items only); (iii) working capital as on the day of visit in stocks in raw materials, stocks in materials in process and stocks of finished goods; (iv) position regarding long-term loans; (v) position regarding short-term credit; (vi) other items.

The schedule of periodic account of productive enterprise unit should broadly consist of the following items : (i) production expen-

ses in new purchases, maintenance and repairs of fixed capital including births and deaths of livestock; raw materials and cost of their transportation; cash wages paid to hired labour; other expenses, such as rentals etc.; (ii) production estimates; (iii) disposals in kind, such as shares to landlord and other equivalents; remunerations to hired labour and others paid in kind, home consumption, physical destruction due to bad storage, accidents, fires, etc. and other disposals in kind; (iv) sales and sale proceeds with details of whether the sales were wholesale or retail, to a trader or to a consumer, and place of sale; (v) expenses of transport and marketing of finished products; (vi) other receipts, such as from servicing, wages earned by family members outside the unit (when the productive unit and the family unit coincide) and other receipts such as from rentals of real estate and fixed capital (vii) changes in the position of loans and credits.

The Chairman invited a discussion on the report of the sub-committee.

Mr. Nihar Chandra Chakravarti thought that the schedules of information as decided upon by the sub-committee and the envisaged programme of periodic visits to sample families or productive units involve considerations of the sample design and the field organization. As far as he could see the present sample design and the set up of the field organization would not be suited to the canvass of the contemplated schedules on a periodic basis. He also apprehended that to introduce the system of enquiry visualized by Mr. Dandekar a very much larger staff and cost than what had been sanctioned by Government of India would be needed. So far as the items mentioned by Mr. Dandekar were concerned, he said that a large majority of these items, if not all, would be covered by the system of investigation which had been envisaged in the approved scheme and for this purpose, he did not consider it necessary to make any substantial change in either the design or the set-up. He added that he would like to give his final opinion, as requested by Mr. Chairman, if Mr. Dandekar would be good enough to explain the sample design and the field programme which he was visualizing.

The Chairman requested Mr. Dandekar to give his views on the matter.

Mr. Dandekar stated that he agreed with Mr. Nihar Chakravarti that the present sample design and the field organization was not quite suited to the canvass of the schedules decided upon by the sub-committee. The alternative sampling design which he

had in mind was incorporated in his note submitted to the conference in the morning and the details of it might be found on page 4 of this note. So far as field organization was concerned, Mr. Dandekar thought that the existing mobile, field agency was not suited to the kind of enquiry they had in mind. The existing field programme left an investigator for less than a week at each sample unit and he thought that it would be very difficult for an investigator even to make his boarding and lodging arrangements for such a short while. He also felt doubtful whether the kind of information that was envisaged in the schedule would be available to an outsider visiting the sample unit for a couple of days. He recommended, therefore, that immediately after the selection of the sample units attempts should be made to secure, wherever possible, local agency either on a part-time or on a full-time basis. To the extent that this would be found possible, the investigators could be given relief from continuous touring. He proposed that provision should be made in the budget for recruiting local agency wherever available.

Mr. N. C. Chakravarti did not agree with Mr. Dandekar that the mobile field agency proposed in the scheme would not be suitable for either the scheme of work which had been sanctioned or the scheme of work which Mr. Dandekar had in mind. Only in the latter case, a very much larger staff and consequently higher cost would be needed. In the existing field programme, the period of haltage had been kept deliberately low. The scheme has not provided for sufficient money to locate an investigator in each sample area for a long period and this could only be achieved either by reducing the number of sample units or increasing the cost appreciably. On the other hand, the investigators would find it very difficult to obtain more or less forced hospitality for any appreciable number of days at a time. The haltage therefore was so arranged that an investigator might not have to stay in any one place for more than a few days which was likely to make it possible for him to obtain food and shelter from well-to-do local inhabitants either free or on a paying basis. He agreed that it was normally difficult for untrained outsiders to collect detailed information from families; it was, however, more than likely that a local investigator would have previous knowledge of the economic condition of at least some of the families and would be led by his personal bias. Besides, the experience in Bengal has shown that if technique of field investigations was properly imparted to the carefully selected investigators by thorough training, they could ascertain the information with

reasonable accuracy and obtain the friendship and create confidence amongst the local people. He, therefore, did not agree with Mr. Dandekar that the agency proposed would be unsuitable.

As regards the appointment of part-time or low-paid whole time local investigators, he stated that Prof. Mahalanobis and the Calcutta Institute were keen to utilize such an agency for economic surveys. He stated that attempts to utilize such agency in 1944-45 and 1946-47 in Bengal had given extremely unsatisfactory results. In that people who had other principal sources of living did not pay much attention or care to carry out such part-time work with the results that the work was found from experience to have been not carried out either carefully or in time. The Institute was still willing to try this system in the limited scale even in the first year. But having regard to the commitments made to the Government of India, the short time at the disposal of the organizers for building up the organization and carrying out the survey and further as there was not any provision made in the budget for such an agency, he felt that it would not be feasible to rely on such an alternative agency for carrying out the work of this year.

Mr. Chakravarti also pointed out that Mr. Dandekar's proposals had raised certain fundamental issues. The sample design proposed by him involved a radical change of the scheme which had already been shown to and generally agreed to by Prof. Gadgil and the Government of India; sanction had been based on such a scheme. The scheme as sanctioned provided for pilot surveys and experiments which shows that the authors of the scheme did not consider that it was a perfect one. Changes in the scheme may of course have to be made; but such changes should come after more dependable knowledge of different States and local areas was obtained and after pilot experiments had been carried on such proposals. At the moment without any fresh facts having come to light and without the results of pilot experiments being available it was merely a matter of opinion of one set of persons against another as to whether the existing statistical design or the one proposed by Mr. Dandekar would be a better line of approach. In this situation, he thought that the statistical design already drawn up by Prof. Mahalanobis and generally agreed to by Prof. Gadgil and which had been voted by the Inter-departmental Committee of Statisticians and the concerned Departments of the Government of India should not be radically altered at this stage. He also expressed doubts as to whether there was time to discuss the relative merits of the two designs and to have

the alternative design approved by the same authorities on whose vetting the Government of India had approved the original scheme. He felt sure that no such radical change in the scheme could be made without the approval of the Government of India and if at this stage it became necessary to go up for such an alternative there would be scarcely any time left for carrying out the work during the current year.

At this stage there was considerable discussion whether the conference was competent to make any radical changes in the sample design. The conference could not come to any agreed decision on the matter, but the conference felt that the situation was somewhat serious, especially in view of the following statement by Mr. Dandekar.

Mr. Dandekar stated that he had the authority on behalf of Prof. D. R. Gadgil to state that Prof. Gadgil viewed the following points as essential features of the National Sample Survey.

(i) While attempts might be made to obtain information on an annual basis regarding the completed year 1949-50, in order to obtain more reliable information and estimates of production, the main enquiry should be directed to obtain current information by periodic visits.

(ii) All production estimates, except for those for the major agricultural crops, should emerge on the basis of (a) estimates of numbers of productive units in different categories and (b) estimates of current production per unit.

(iii) Estimates of numbers of productive units in different categories should be based on a wider canvass of occupational census than might be available on the present sample design of half a square-mile grid (in approximately 70,000 families).

(iv) In order to estimate production per unit it was desirable that there were included in the sample sufficient number of productive units of each category. He feared, for instance, that if we were to depend upon the 70,000 families falling within the sample units, there might be among them an overwhelming number of farming units leaving very few non-farm productive enterprise units to estimate with any accuracy their production per unit.

Mr. Dandekar stated that Prof. Gadgil was not particular about any sample design, but would insist that it should be such as to accommodate the above features of the enquiry which he held essential.

Mr. Dandekar stated that he had the authority of Prof. Gadgil to inform this conference that if for any reason the National

Sample Survey was incapable of furnishing production estimates on the lines above suggested and elaborated in greater detail by Mr. Dandekar, Prof. Gadgil would be inclined to dissociate himself and his Institute from the National Sample Survey.

Mr. N. C. Chakravarti pointed out that the suggestions which were reported to have been made by Prof. Gadgil were certainly entirely unexceptionable and the workers in the Institute would perhaps have absolutely no objection to adopt the same to the extent possible having regard to the limitations of time, funds and organization for implementing the scheme sanctioned by Government of India. As regards (i) it would certainly be an excellent thing if in addition to information relating to a completed year, information could also be obtained periodically, say, for every quarter immediately after the end of the quarter. In the current year the survey was proposed to be commenced from the 1st of August. If 1949-50 was taken as the basis year, the investigators would during the first visit be able to collect the data for a period—April to July 1950. From November onwards they could collect data for the period August—October; from February onwards for period November—January, and for period February to March, the data would have to be collected after the 31st of March, say, during April and May, 1951. Unfortunately, however, the present sanction of Government of India, was only for a period up to 31st March, 1951 and even if we wanted it we could not collect the data for 1950-51 without the sanction being extended for some months in 1951-52. Having been asked to implement the particular scheme sanctioned by the Government of India, it was scarcely possible for workers in the Institute to anticipate the Government of India sanction and adopt a scheme which would automatically require the extension of sanction for at least some months. This was a matter which Prof. Gadgil and Prof. Mahalanobis could take up at the highest level and if they took necessary action to obtain the required sanction for this purpose, there would be no objection from technical point of view to data for both the years being collected. With Professor Mahalanobis away from India, and having regard to the limitation of time, such a course would, perhaps, be not feasible. The next best thing which could be done was to require the data to be collected for the period of a year ending 1st July (or more properly 30th June 1951) which would bring the period of enquiry a little nearer.

Mr. Chakravarti also pointed out that 3 or 4 visits by the investigators to the sample families of each unit for the purposes visua-

lized by Mr. Dandekar would virtually keep the whole staff engaged in household schedule survey leaving them little or no time for carrying out the land utilization and yield estimation survey. This would involve a wholesale alteration of the basic scheme and converting the present multi-purpose survey sanctioned by Government of India to a mere economic survey leaving the aspect of agricultural production to be either obtained through the existing State agencies, or in the alternative, through a separate agency which would cost an extra expenditure of several lakhs of rupees. This was clearly a matter regarding rules in which Prof. Gadgil and Professor Mahalanobis could take a decision in consultation with Government of India and such a change was clearly beyond the scope of officers discussing the ways and means for implementing the sanctioned scheme.

Mr. Chakravarti also pointed out that carrying out even on the basis of larger occupational lists, and with the rural industries given a high weightage, it would be impossible to get a sufficient number of units for each industry for working out an average production, etc. from each class of industry, and besides the question of estimating the total number of units even on the basis of the larger occupational tables would scarcely be dependable having regard to the widely scattered nature and the innumerable types of rural industries existing in different parts of the country. With the present financial and organizational resources, Mr. Chakravarti therefore thought that it would be scarcely feasible to achieve the objective visualized by Mr. Dandekar in this first year of the enquiry. The ideals mentioned were certainly unexceptional and he thought that everyone's intention was to gradually work up to that ideal instead of trying to achieve the ideal in the very first year of their work.

Mr. Chakravarti also felt that Prof. Gadgil must certainly have foreseen all these difficulties when he gave his general consent to the scheme in his discussion with Prof. Mahalanobis. In this situation, he thought that if the entire situation was properly explained to Prof. Gadgil he would give his consent to the detailed working plan being worked out on the basis of the approved scheme, pending any basic alteration thereof which might be introduced after he had discussed the whole matter with Prof. Mahalanobis on the latter's return from U. S. A.

In the meantime, he proposed that having regard to the extremely short time within which the scheme was intended to be implemented the workers here should proceed to develop the detailed working plan within the broad statistical design which had been laid

down, giving effect to as much of the suggestions of Prof. Gadgil as was found feasible within the limits mentioned. To this end he proposed the following resolution.

After detailed consideration of all aspects, this conference of the workers invited to assist in the National Sample Survey work (a) feels that the scope of this conference is limited to the following: Within the limitation of the finance, time and organization visualized in the scheme by the Government of India, and (b) within the frame-work of design of the survey as passed by the Government of India to draw up the best possible scheme for implementing the work.

The conference adjourned till Monday, the 22nd May, 1950.

Sd/- S. C. SEN,
Chairman.

Sd/-R. K. Mukherjee,
Convener.

NATIONAL SAMPLE SURVEY

The Conference resumed on Monday, the 22nd May, 1950 at 4.80 p. m. at the Statistical Laboratory, Presidency College, Calcutta.

Present:— Mr. S. C. Sen in the Chair.

Messrs V. M. Dandekar, M. M. Mukherjee, J. M. Sengupta, N. C. Chakravarti, A. Ghosh, P. Mukherjee, H. K. Chaturvedi, S. Bhattacharyya, Mrs. K. Joshi, Messrs. K. C. Cheriyan, Tapash Majumdar, Ajit Biswas, Amiya Bose, S. K. Bhattacharya, and Dr. R. K. Mukherjee (Convener)

The minutes of the conference held on Saturday, the 20th were read and approved.

Mr. Dandekar then proposed the following resolution alternative to Mr. N. C. Chakravarti's resolution on Saturday the 20th.

Members of the National Income Research Unit of the Indian Statistical Institute and the representative of the Gokhale Institute feel after considerable deliberation, as indicated by their respective notes submitted to the conference on Saturday morning (20th May), that the contents of the schedules prepared in the last conference held in the Statistical Laboratory, Calcutta, in April-May, 1950, and the stages of enquiry envisaged in the said conference were not suitable in many respects. Nevertheless the conference is aware that it is somewhat too late now to consider the matter but recommends that in the research programme connected with the National Sample Survey due attention should be given to the difficulties expressed in the aforesaid notes so that in case the National Sample Survey was approved by

the Government of India as a routine programme in subsequent years, the design and technique could be substantially improved in future.

Mr. N. C. Chakravarti withdraw his resolution, moved on the 20th, and heartily seconded Mr. Dandekar's.

Mr. Dandekar's resolution was carried unanimously.

The Chairman thanked the members, and declared the conference closed at 7.05 p. m.

Sd/-S. C. SEN.
Chairman.

Sd/-R. K. Mukherjee,
Convenor.

14. Differences between the Calcutta and Poona approaches to the National Sample Survey were revealed in the most emphatic form during the conference on 20th May, 1950. On the following day the conference did not meet. However, in the afternoon, Mr. S. C. Sen, Joint-Secretary, Indian Statistical Institute requested Mr. Dandekar to summarise the numerous differences in the form of an alternative programme. This Mr. Dandekar submitted on 22nd May, 1950. Below, we reproduce the same together with its covering letter. For brevity, all appendices except IV, have been omitted.

15.

Calcutta, 22nd May, 50.

My dear Mukherjee,

Yesterday I was told by Mr. Sen that you and your colleagues would like to have my various proposals in the unified form of an alternative programme. Within the short time I had, I have done it. I had to be brief but I hope I am sufficiently clear.

While drawing up this programme I have kept in mind only two limitations, namely, the total grant of Rs. 25,00,000 and the fact that this was to be spent by 31st March, 1951. I thought that might help to make clear the full implications, both financial and administrative, of my proposals. However, I should perhaps state that while submitting these proposals, there is no intention to present you with a rigid alternative. If after due consideration, you and your colleagues feel that any of my proposals might be incorporated into the programme of work for this year, I would be glad to assist you.

Yours sincerely,
Sd/- V. M. DANDEKAR

Dr. R. K. Mukherjee,
Indian Statistical Institute,
Presidency College,
Calcutta.

**THE NATIONAL SAMPLE SURVEY—PROGRAMME OF WORK
FOR 1950-51**

(Proposals from Mr. V. M. Dandekar)

1. The objective this year will be mainly confined to the estimation of national income of the rural sector of India. For the purpose of this survey rural areas will be defined as villages and towns of population under 5,000.

2. The approach to computation of national income estimates will be chiefly from the production end with appropriate modifications in certain economic sectors like trading, professions and services.

3. Production in rural economy might be roughly divided as agricultural and non-agricultural. Agricultural production might further be divided as (i) production of major crops such as can be estimated by the method of crop-cutting experiments, and (ii) production of other crops which is not amenable to the method of crop-cutting experiments. Two independent methods will be used, one to estimate the production of major agricultural crops and the other to obtain production estimates of all other items including remaining agricultural crops.

4. The estimates of production of major agricultural crops will be obtained on the basis of (i) estimates of acreages under these crops, and (ii) estimates of yield per acre. So far as estimates of crop acreages are concerned, effort, this year, will be concentrated only on the non-reporting areas while from the reporting areas the estimates given by the revenue agency will be accepted. In order to obtain estimates of average yield per acre, crop-cutting experiments will be conducted throughout India on major crops only. A suitable budget allocation from the NSS should be made to the Indian Council of Agricultural Research for this purpose, and details of plans and procedures should be invited from them.

5. Estimates of production for all other items including remaining agricultural crops will be obtained by means of a sample enquiry of productive enterprise units in rural areas. The final estimates of production of various items will be obtained on the basis of (i) estimates of numbers of productive units of various categories, and (ii) estimates of production per unit.

6. The design of the sample for the productive enterprise enquiry will be as under:-

(i) Out of the 6,000 and odd 1"=1 mile maps of the Survey of India, 1 in 8 will be selected at random with statistical local

control along longitudes and latitudes. That is to say, while choosing at random, provision will be made that from each row, and from each column of the Survey of India map 1 in 8, 1"=1 mile maps will be selected. There will thus be approximately, 2,000 maps selected.

(ii) Each such selected map will be divided into $4 \times 4 = 16$ sub-divisions, and from each map, one out of these 16 sub-divisions will be selected at random again with appropriate statistical local control over rows and columns of different maps.

(iii) A list of villages falling within the sub-divisions selected (of approximate area of 16 sq. miles) will be made, and a village will be selected from each sub-division at random giving equal chance to all villages.

(iv) In case a selected village has a population under 2500, it will be clustered along with the adjoining villages so as to form a cluster of approximately 2500 population. In case all the villages falling within the 16 sq. mile sub-division do not contain a population of 2500, no attempt will be made to go beyond the sub-division.

(v) An occupational census of all households within the selected villages or the cluster of villages will be made.

(vi) On the basis of the occupational census a fixed sample of 80 productive enterprise units will be selected from within each selected village or cluster of villages. While making the selection care will be taken to include within the sub-sample of 80, adequate number of each type of productive enterprise units.

(vii) The productive enterprise enquiry will be conducted only in respect of these sub-samples of 80 units at each sample point.

7. Final estimates of production will be obtained as under. The productive enterprise enquiry will furnish estimates of production per unit in each sub-division of 16 sq. miles. If in certain sub-divisions no estimates of production are available in respect of a certain productive enterprise, the same will be taken from the nearest sample unit where it is available. Estimates of numbers of productive enterprise units of various categories within each sample sub-division of sixteen square miles will be obtained either on the basis of occupational census conducted in the selected village or cluster of villages or preferably, and, if possible, from an early tabulation of 1951 Population Census returns for all villages falling within the 16 square miles sub-division. The estimates of number of units and production per unit will furnish us production estimates of various categories within each sub-division of 16 sq. miles. To obtain All-India estimates of production of these items, appropriate area multipliers will be used.

8. The productive enterprise enquiry will be divided into two schedules (i) a schedule of inventory of assets and liabilities of the productive unit to be filled in both at the beginning and at the end of the current year, and (ii) a schedule of periodic account of the productive unit canvassed at least thrice in the year, once at the beginning, once at the end, and once in the middle. Attempts will be made to increase the periodic visits wherever possible.

9. The periodic account schedule will be so designed as to furnish the following breakdowns of the national aggregate.

(a) A breakdown by different economic sectors.

(b) A breakdown by type of disposal of the product such as home consumption, disposals in kind, sales from producer to direct consumer and quantities passing through the professional trader.

(c) Shares out of net product of the hired labour, family labour and profits of enterprise, if any.

10. The items of information in the three schedules (i) occupational census of households, (ii) inventory of assets and liabilities of the productive unit, and (iii) periodic working account of the productive enterprise unit are given in Appendices, I, II and III respectively.

11. The organization of the field work will be as under:—

(i) There will be approximately 2000 sample-units.

(ii) For every 4 units, there will be an investigator who will be in charge of the ultimate field work in the four units.

(iii) Every group of 5 investigators will be inspected and assisted by one inspector.

(iv) The entire field work will be controlled by 25 field offices with a jurisdiction over approximately 80 sample-units managed by 20 investigators under the inspection of 4 inspectors. The field officer, itself will consist of a Supervisor, who will be a gazetted officer, an Assistant Supervisor, a clerk and a peon.

12. While the main field work will be begun and carried on by the above described field agency, it is recognized that it might be advisable in some places to recruit local agency wherever available either on part-time or full-time basis. This will (i) give relief to the investigator from constant touring and will enable him to have some sort of an establishment at one of the four sample-units under his charge; (ii) enable to increase the frequency of periodic visits to collect periodic accounts of the productive units; (iii) enable to

incorporate into the periodic schedule some other information such as that relating to details regarding employment, family incomes and family expenditures, which it is realized can be obtained only if canvassed on a short-period basis; (iv) wherever two part-time local investigators are available it would be possible to incorporate into the sample design the feature of two interpenetrating half samples. The local agents will be entrusted with periodic visits.

13. The schedules as they are completed will be sent to the respective field offices. The field offices after primary scrutiny will send the returns to the Indian Statistical Institute at Calcutta. Tabulation should be done by the Hollerith equipment available at the Institute and the entire tabulation programme should be entrusted to the Indian Statistical Institute.

14. The tabulated material should be sent to the Gokhale Institute of Politics and Economics, Poona where it will undergo further processing and analysis from the economic point of view. This work to the end of formulating final All-India estimates and furnishing a report to the National Income Committee should be entrusted to the Gokhale Institute of Politics and Economics, Poona.

Appendix IV.

ESTIMATES OF COST FOR 1950-51 (SUMMARY)

Directorate

I.	A.	Head Office.	Rs. 1,00,000	
	B.	Four Regional Offices at Rs. 87,000 per office	Rs. 1,50,000	
		Total I		Rs. 2,50,000.

II.	A.	Twenty-five field offices at Rs. 9,000 per office	Rs. 2,25,000	
	B.	100 Inspectors at Rs. 250 per Inspector per month for 9 months	Rs. 2,25,000	
	C.	500 Investigators at Rs. 150 per investigator per month for 9 months	Rs. 6,75,000	
	D.	Provision for local agency	Rs. 1,25,000	
		Total II		Rs. 12,50,000

III.	Tabulation (Block grant to I. S. I.)	Rs. 1,50,000
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IV.	Crop acreage and yield estimation. (Block grant to I. C. A. R.)	Rs. 7,50,000
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V.	Analysis and Report (Block grant to G. I. P. E.)	Rs. 25,000
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VI. Training, Research and Publication.

A.	Research at I. S. I.	Rs. 25,000.
B.	—do— G. I. P. E.	Rs. 25,000.
C.	—do— Delhi School	Rs. 10,000.
D.	Publication,	Rs. 10,000.
E.	Training of field Staff (to be done by directorate staff)	Rs. 5,000.

Total VI. Rs. 75,000.

Total N. S. S. I. -- VI. Rs. 25,00,000.

16. The absence of Prof. Mahalanobis from India was a great handicap and apparently when he left India, he left behind him no one competent to take fresh decisions or to revise earlier ones in the light of difficulties coming to notice. After the conference on 22nd May 1950, little progress was therefore made until the return of Prof. Mahalanobis on the 5th July 1950. Immediately after his return from abroad, Prof. Mahalanobis proceeded to Poona for a meeting with Prof. Gadgil and Mr. P. C. Bhattacharya (of the Ministry of Finance). The meeting was also attended by Mr. M. Nukherjee and Mr. V. M. Dandekar. The Gokhale Institute had prepared for this meeting detailed proposals on all aspects of the National Sample Survey. Their consideration was however postponed until 10th July, when it was decided to have another meeting at Calcutta. Brief notes on the discussions held in Poona on 4th July, were prepared by Prof. Mahalanobis and sent to Prof. Gadgil. They are reproduced below.

17. DISCUSSIONS AT POONA—4TH JULY 50.

A meeting was held at Poona on the 4th July, 1950 and was attended by P. C. Mahalanobis, D. R. Gadgil, P. C. Bhattacharya, V. M. Dandekar and M. Mukherjee.

P. C. Mahalanobis (who had returned to India from abroad on the previous day) gave a brief account of his discussion with Mr. J. R. N. Stone in England and with Prof. Simon Kuznets in the U. S. A. and stated that they were expected to come to India in December this year. P. C. Mahalanobis felt that the work of the National Income Committee was now likely to progress satisfactorily, and desired to withdraw from the Chairmanship of the Committee. If desired, he would be glad to continue as a member.

At this stage, it was explained that this was not intended to be a formal meeting of the National Income Committee, but it was desired to have an informal discussion about the National Sample Survey. P. C. Mahalanobis stated that he would be

glad to participate in the discussion purely in his individual capacity and not on behalf of the Indian Statistical Institute.

(2) After a full discussion there was a general agreement on the following points :—

(i) Attempts should be made to conduct the survey with about 1800 sample-units.

(ii) The forms and schedules (which were being used at the try-out stage) would be modified as necessary. V. M. Dandekar and M. Mukherjee would go to Calcutta for joint discussions with the workers of the Indian Statistical Institute for this purpose.

(iii) The importance of giving adequate training to the field staff was emphasised. To ensure this, it was agreed that the main enquiry need not begin everywhere on the 1st August as originally proposed. Field work should start *pari passu* with the recruiting and the training of the field staff; and 1800 sample-units should be brought into operation as early as possible, but not necessarily all at the same time.

(iv) The Indian Statistical Institute (Calcutta), The Gokhale Institute of Politics and Economics (Poona) and other similar Institutes, should be entrusted with as much responsibility as each Institute was prepared to undertake in respect of (a) the main NSS work, and (b) special researches.

(v) The design of the sample survey is to be developed on the assumption that the NSS would continue from year to year. The method of phase sampling would be both convenient and efficient for this purpose as it would enable either (a) the intensity or (b) the coverage, or both intensity and coverage of sampling being increased gradually in the light of experience and in accordance with the required extent or precision of the information.

(8) It was agreed that P. C. Mahalanobis would return immediately to Calcutta and begin work on the revision of (a) forms, (b) design of the survey, and (c) the time programme (including training); and that a meeting would be held in Calcutta on Monday the 10th July to be attended by P. C. Bhattacharya, S. P. Sinha, V. M. Dandekar, M. Mukherjee and the workers of the Indian Statistical Institute.

4. The general position would be again reviewed at a meeting in Delhi on the 28th or the 29th July, 1950, which would be attended by D. R. Gadgil.

5. It was suggested that a Committee consisting of P. C. Mahalanobis, D. R. Gadgil and P. C. Bhattacharya might be set up to advise Government in regard to the National Sample Survey. P. C. Mahalanobis stated that he would naturally like to be associated with the NSS but was unable to make

any definite commitments at this stage as the decision would necessarily depend on his over-all programme.

18. In the following is part of the letter from Prof. Gadgil to Prof. Mahalanobis, approving the above notes of the discussions, subject to two observations.

18th July, 1950.

My dear Mahalanobis,

I agree generally with brief record prepared by you, though I am not sure that I have fully understood the implications of (5). I may add on my own behalf the caveat that you have registered in the record regarding yourself. The proceedings of the informal meeting may not be held to commit either myself or my Institute to anything or any course of action.

Yours sincerely,

D. R. GADGIL.

19. As decided in the discussion at Poona, a meeting was held at Calcutta on 10th May. The meeting was attended by Prof. Mahalanobis, Mr. P. C. Bhattacharya, Mr. M. Mukherjee, Mr. V. M. Dandekar and a dozen workers of the Indian Statistical Institute. If any minutes of the proceedings were kept, no copy was made available to this Institute. Every important decision was postponed, presumably for the meeting on the 29th July, when Prof. Mahalanobis and Prof. Gadgil were expected to meet in Delhi.

20. When Prof. Mahalanobis and Prof. Gadgil met on 29th July, again there was little in the nature of final decisions. This would be clear from the two letters addressed by Prof. Gadgil to Prof. Mahalanobis and Mr. P. C. Bhattacharya respectively, on 31st July, 1950. We reproduce below the two letters.

21.

31st July, 1950.

My dear Prof. Mahalanobis,

I reached Poona last night and have begun today to look into the questionnaire schedules. I feel that I have many suggestions to make in relation to these schedules. I also feel that many questions regarding the programme of the National Sample Survey during the next year are yet unsettled and that they should be decided upon before you leave for Europe towards the end of the month. In view of the urgency of taking decisions in Committee on all these matters I am prepared to travel up to Delhi again for a meeting of the Committee. I find that the two days which I can most conveniently spare before your scheduled departure are the 22nd the 23rd August. I am writing to Bhattacharya at Delhi suggesting these days for a meeting of the Committee.

Dandekar and myself will, through the next fortnight work intensively on the schedules trying to incorporate as much of your material as possible in them. We are also preparing a full programme for the twelve months coverage which was agreed upon in Delhi. You will of course elaborate further your suggestions regarding the choice of sample, the size of it, etc.

With kind regards,

Yours sincerely,
D. R. GADGIL.

22.

81st July, 1950.

My dear Bhattacharya,

On thinking over the matter after I left you on the 29th I came to realise that there were far too many things in relation to the National Sample Survey still unsettled. It thus appears absolutely essential to hold a meeting of the Committee, which I take, it has now been formally appointed or will be shortly appointed to direct the operations of the National Sample Survey. The coverage of the survey, the twelve months time programme for the survey, the sample, the questionnaire to be used, all these should formally come under consideration of the Committee at this first meeting. It would be an advantage if the Secretary of the Committee is the field Director of the Survey. I have been so impressed with the need for a meeting for settling the initial plan that I am prepared to undertake a journey to Delhi for this purpose during this month. I could come to Delhi on 22nd and the 28rd August and the Committee would require two days if it is to go through all the work. Please let me know immediately whether you agree with the suggestion and will fix the days for the meeting of the Committee. I am writing to Prof. Mahalanobis also and directing the letter to Calcutta.

Yours sincerely,
D. R. GADGIL.

28. It would be clear from this letter, that Prof. Gadgil attached great importance to taking decisions in a properly constituted committee. The advisability of forming such a committee was discussed and agreed to in the discussions at Poona on 4th July. Reference to it might be found in para 5 of Notes of that discussion reproduced in para 17 above. The formation of this committee was however never formally communicated to Prof. Gadgil, but from a letter dated 4th August, 1950, from Prof. Mahalanobis to Prof. Gadgil, it appears that the Committee was formed and that Prof. Mahalanobis had agreed to a meeting of that Committee on 22nd and 28rd August, 1950. In the following is reproduced this letter of Prof. Mahalanobis.

No. 790/SU/50,
Cabinet Secretariat,
New Delhi.

My dear Prof. Gadgil,

4th August, 1950.

Your letter of the 31st July, 1950 addressed to Calcutta has just reached me in Delhi after redirection from Calcutta. In the meantime, Bhattacharya spoke to me about your suggestion to have a meeting of the Committee on the 22nd and 23rd August and I have already agreed. In fact it can be just fitted in, as I am due to leave for London on the 23rd August night.

I am glad you are working on the schedules. In the meantime, we are naturally proceeding on the schedules as prepared by us for purposes of training. I shall try to get a programme for twelve month coverage; but I, of course, believe in keeping things somewhat flexible so as to allow appropriate changes being made on the basis of actual experience.

Yours sincerely,
P. C. MAHALANOBIS.

25. The Gokhale Institute attached great importance to systematic discussion of all problems and to the taking of decisions in formally constituted committees. We, therefore, prepared detailed notes on all major points, such as, the Sample Design, Organization of Field Work and a detailed Programme for 1950-51. A complete set of Schedules to be used was also prepared. Advance copies of these were sent to Prof. Mahalanobis and Mr. P. C. Bhattacharya on 16th August, 1950. We reproduce below the covering letter from Prof. Gadgil to Mr. Bhattacharya as it will bear out our anxiety regarding definite decisions on basic procedures and programme.

26.

16th August, 1950.

My dear Bhattacharya,

I enclose herewith a series of notes on the National Sample Survey and the complete set of schedules as prepared by us. The notes cover the following points, on all of which and the schedules, definite decisions have to be reached before a proper start can be made with the N. S. S. (i) Sampling procedure, (ii) Organization of field staff, (iii) Programme of investigation during the year. I enclose a note also on the proposed terms on which N. S. S. work can be undertaken by the Institute.

I attach great importance to the basic procedures and the programme being clearly defined at the outset. I hope that the N. S. S. Committee which is to be responsible for this has now been formally set up and that we shall have, on the 22nd the first meeting of this Committee. It is essential that the Director of

Field Operations should be present at this meeting and that, if possible, he should be the Secretary of the Committee.

Yours sincerely,
D. R. GADGIL.

27. The schedules and notes on all points were in the final form and constituted a large measure of compromise so as to secure the maximum possible common ground between the Calcutta and the Poona proposals. In the following sections we reproduce our proposals on (i) Sampling Design, (ii) Organization of Field-work and (iii) Programme for 1950-51. The notes indicate the detail in which we would have the decisions taken in a formal Committee. We do not reproduce here the schedules as they will be discussed in greater detail in the next Chapter.

28

NATIONAL SAMPLE SURVEY

The Sample Design.

The design of the sample will be as under :-

1. The ultimate unit of sampling will be a village.
2. The total number of sample units, approximately 1800, will be distributed between different states according to their rural populations (1941). In cases, however, it is considered advisable to have proportionately more sample units in backward and unexplored areas like certain Native States, the total number of sample units might as well be distributed not on the basis of population but on the basis of areas. As most of the backward and unexplored areas are also likely to be less densely populated they will receive proportionately more sample units by this method. It should be remembered, however, that for the same reason the field work in such areas will also be comparatively difficult for dearth of adequately qualified staff and other facilities. It appears, therefore, that the total number of sample units should be distributed on the basis of population. That will also give the sampling procedure a uniform basis.
3. The sample units allocated to a State should be distributed between its districts on the basis of their rural population.
4. Within each district the allocated number of villages will be selected by giving each village a chance proportional to its population. All villages and towns of population over 5000 should be omitted.
5. The selection villages within a district might be carried out in two stages. In the first stage the Tahsils should be selected by giving each Tahsil a chance proportional to its population. Unless a Tahsil is sufficiently large to justify more than one sample unit it should be not selected twice even though during random selection two random numbers happen to fall within it. In

the second stage villages should be selected from within the selected Tahsils.

6. It is hoped that the 1941 census population will be available for all districts in India. As considerable revision and re-organisation of districts and States has taken place in many parts of India, it would be advisable to proceed on the basis of old districts and States. After the sample units have been allocated and selected on this basis, they might be regrouped according to the revised boundaries of districts and States for administrative purposes.

7. In order to select villages, a complete list of villages within each district or the selected Tahsil will be needed with their populations in 1941. Such lists might not be available for all areas. Certain modifications will have, therefore, to be made in the above sampling procedure so as to ensure, only approximately, the condition of proportional probabilities to different villages.

8. In areas where complete lists of villages with populations are available, the method should be followed faithfully. The method needs a cumulative total of population of all villages within a district or the selected Tahsil. In such cases if the selection of villages is carried in two stages as suggested and Tahsils are selected in the first stage, saving of labour will be done in the accumulation of village populations. In such cases it is hoped that the labour of getting cumulative total of villages will not be prohibitive.

9. However, if even in the above case it is thought that the labour of accumulating total is prohibitive the following approximate method might be used. There will be available the distribution of villages in each district according to their populations in four groups : (i) 0-500 (ii) 500-1000 (iii) 1000-2000 (iv) 2000-5000. Within each district then villages might be selected by giving equal chance to each village, but ensuring that within each population size group of villages, the number of villages falling is proportionate to the total population of the group. As the number of villages to be selected within each district will be rather small, it will be difficult to ensure this condition within each district. The condition of allocating villages to different population size groups on the basis of their population therefore, should only be ensured not for each district but for the whole of the State. The method of selection would then amount to two-way stratified sampling without control on sub-strata. As is well-known, such selection presents both theoretical and practical difficulties; nevertheless, the method might be adopted if the labour of getting cumulative totals for all villages is found really prohibitive.

10. In areas where village lists are available but not their populations, a large number of villages should be selected within each district by giving equal chance to each village. Approxi-

mate populations of the selected villages should then be ascertained from the state or district authorities. From these then should be selected the required number of sample villages by giving chance proportional to their approximate populations.

11. In areas where no village lists are available small areas will have to be selected on maps. If the districts are divided into Tahsils with approximately known populations it might be worthwhile making a selection of Tahsils rather than choosing random areas on the map. A list of all villages from within the selected Tahsils or the areas should then be obtained with approximate populations. The selection of villages should then be made on the basis of such lists.

12. In selected villages the National Sample Survey needs two sub-samples (a) A sub-sample of households and (b) a sub-sample of lands for land utilisation study.

13. One of the first duties of an Investigator will be to take (i) a census of all households within selected villages and (ii) a record of all land within the vilalge. Schedules for these are prepared and attached herewith. A sub-sample of households will be selected on the basis of the census of households and a sub-sample of lands will be selected on the basis of the record of lands.

14. As will be seem from the schedules for census of households, the census will obtain for all households the areas of lands under their respective cultivation. In cases where such areas are not even approximately available there is a provision to obtain the number of plough cattle owned by each household. On the basis of areas under cultivation or where these are not available on the basis of number of plough cattle, the households will be arranged in order, beginning with larger cultivators. They will then be given a new serial number which is denoted in the schedule as the stratified serial number of the household. Immediately after completing the census of households the Investigator should inform the field office of the number of households within the selected village and the proceed to arrange them in order and to give them then stratified serial numbers. The total number of households should be divided into two equal sections and then each half section should further divided into five sub-sections. Thus the total number of households will be divided into 10 approximately equal sub-sections. From among the first five sub-sections, one number from each will be selected at random, while from the five latter sub-sections, three randum numbers from each will be selected. The selection of random number should be done by the field office and the investigator should be informed of the selected numbers. The households having their stratified serial numbers corresponding to these random numbers will form the sub-sample of households. Thus it will be noted that within each selected village we shall have a sub-sample of 20 households; the village will be divided

into two halves—one half being predominant in agriculture and the other half in non-agriculture. From the first half we shall select 5 households while from the second we shall select 15 households. This will ensure the inclusion of proportionately more non-agricultural activity within the sub-sample. It will be readily appreciated that the allocation of sub-sample numbers to agricultural and other households is so designed as to avoid making a definition of agricultural and non-agricultural and to present minimum difficulties at the stage of estimation.

15. The record of lands will list all lands of the village by the smallest unit for which at least approximate areas are available. Such unit might, for further reference, be designated as fields. It will be noted that the record of lands provides a column for accumulating the total areas of such fields. It is hoped that, at any rate within a district, population and areas of a village will be highly correlated. Therefore, the villages having been selected by giving chances proportional to their population, we might suppose that within a district they have been selected by giving chance approximately proportional to their areas. In selecting a sub-sample of fields within a village, therefore, fields should be given a chance proportional to their areas. This will, of course, need accumulating their total areas. However, this is considered worthwhile in view of the possibility that the crop in larger and smaller fields are likely to be somewhat different. It is proposed that a fixed proportion of fields, such as 5 per cent, might be selected in the sub-sample.

29.

ORGANISATION OF FIELD WORK

1. For every group of 12 villages there will be two investigators.

2. Each Investigator will have a semi-permanent headquarters. The two Investigators might choose for their headquarters two bigger villages of the 12 under their charge, and there they might establish themselves with their families if they so choose. The time programme of the field-work will be so arranged that each investigator will be allowed a stay of at least one week of each month in the village of his semi-permanent residence.

3. Each Investigator will visit each month two villages under his charge so that the twelve villages will be visited in three months.

4. The group of 12 villages should be distributed at random over three months. Then the four villages allotted to each month should be visited by the two Investigators by random allotment of two villages to each investigator. Complete field-work programme for three months should be fixed in advance and the Investigators should know during which week they will be visiting each particular village.

lized by Mr. Dandekar would virtually keep the whole staff engaged in household schedule survey leaving them little or no time for carrying out the land utilization and yield estimation survey. This would involve a wholesale alteration of the basic scheme and converting the present multi-purpose survey sanctioned by Government of India to a mere economic survey leaving the aspect of agricultural production to be either obtained through the existing State agencies, or in the alternative, through a separate agency which would cost an extra expenditure of several lakhs of rupees. This was clearly a matter regarding rules in which Prof. Gadgil and Professor Mahalanobis could take a decision in consultation with Government of India and such a change was clearly beyond the scope of officers discussing the ways and means for implementing the sanctioned scheme.

Mr. Chakravarti also pointed out that carrying out even on the basis of larger occupational lists, and with the rural industries given a high weightage, it would be impossible to get a sufficient number of units for each industry for working out an average production, etc. from each class of industry, and besides the question of estimating the total number of units even on the basis of the larger occupational tables would scarcely be dependable having regard to the widely scattered nature and the innumerable types of rural industries existing in different parts of the country. With the present financial and organizational resources, Mr. Chakravarti therefore thought that it would be scarcely feasible to achieve the objective visualized by Mr. Dandekar in this first year of the enquiry. The ideals mentioned were certainly unexceptional and he thought that everyone's intention was to gradually work up to that ideal instead of trying to achieve the ideal in the very first year of their work.

Mr. Chakravarti also felt that Prof. Gadgil must certainly have foreseen all these difficulties when he gave his general consent to the scheme in his discussion with Prof. Mahalanobis. In this situation, he thought that if the entire situation was properly explained to Prof. Gadgil he would give his consent to the detailed working plan being worked out on the basis of the approved scheme, pending any basic alteration thereof which might be introduced after he had discussed the whole matter with Prof. Mahalanobis on the latter's return from U. S. A.

In the meantime, he proposed that having regard to the extremely short time within which the scheme was intended to be implemented the workers here should proceed to develop the detailed working plan within the broad statistical design which had been laid

down, giving effect to as much of the suggestions of Prof. Gadgil as was found feasible within the limits mentioned. To this end he proposed the following resolution.

After detailed consideration of all aspects, this conference of the workers invited to assist in the National Sample Survey work (a) feels that the scope of this conference is limited to the following: Within the limitation of the finance, time and organization visualized in the scheme by the Government of India, and (b) within the frame-work of design of the survey as passed by the Government of India to draw up the best possible scheme for implementing the work.

The conference adjourned till Monday, the 22nd May, 1950.

Sd/- S. C. SEN,
Chairman.

Sd/-R. K. Mukherjee,
Convener.

NATIONAL SAMPLE SURVEY

The Conference resumed on Monday, the 22nd May, 1950 at 4.30 p. m. at the Statistical Laboratory, Presidency College, Calcutta.

Present:—Mr. S. C. Sen in the Chair.

Messrs V. M. Dandekar, M. M. Mukherjee, J. M. Sengupta, N. C. Chakravarti, A. Ghosh, P. Mukherjee, H. K. Chaturvedi, S. Bhattacharyya, Mrs. K. Joshi, Messrs. K. C. Cheriyan, Tapash Majumdar, Ajit Biswas, Amiya Bose, S. K. Bhattacharya, and Dr. R. K. Mukherjee (Convener)

The minutes of the conference held on Saturday, the 20th were read and approved.

Mr. Dandekar then proposed the following resolution alternative to Mr. N. C. Chakravarti's resolution on Saturday the 20th.

Members of the National Income Research Unit of the Indian Statistical Institute and the representative of the Gokhale Institute feel after considerable deliberation, as indicated by their respective notes submitted to the conference on Saturday morning (20th May), that the contents of the schedules prepared in the last conference held in the Statistical Laboratory, Calcutta, in April-May, 1950, and the stages of enquiry envisaged in the said conference were not suitable in many respects. Nevertheless the conference is aware that it is somewhat too late now to consider the matter but recommends that in the research programme connected with the National Sample Survey due attention should be given to the difficulties expressed in the aforesaid notes so that in case the National Sample Survey was approved by

Dandekar and myself will, through the next fortnight work intensively on the schedules trying to incorporate as much of your material as possible in them. We are also preparing a full programme for the twelve months coverage which was agreed upon in Delhi. You will of course elaborate further your suggestions regarding the choice of sample, the size of it, etc.

With kind regards,

Yours sincerely,
D. R. GADGIL.

22.

31st July, 1950.

My dear Bhattacharya,

On thinking over the matter after I left you on the 29th I came to realise that there were far too many things in relation to the National Sample Survey still unsettled. It thus appears absolutely essential to hold a meeting of the Committee, which I take, it has now been formally appointed or will be shortly appointed to direct the operations of the National Sample Survey. The coverage of the survey, the twelve months time programme for the survey, the sample, the questionnaire to be used, all these should formally come under consideration of the Committee at this first meeting. It would be an advantage if the Secretary of the Committee is the field Director of the Survey. I have been so impressed with the need for a meeting for settling the initial plan that I am prepared to undertake a journey to Delhi for this purpose during this month. I could come to Delhi on 22nd and the 23rd August and the Committee would require two days if it is to go through all the work. Please let me know immediately whether you agree with the suggestion and will fix the days for the meeting of the Committee. I am writing to Prof. Mahalanobis also and directing the letter to Calcutta.

Yours sincerely,
D. R. GADGIL.

23. It would be clear from this letter, that Prof. Gadgil attached great importance to taking decisions in a properly constituted committee. The advisability of forming such a committee was discussed and agreed to in the discussions at Poona on 4th July. Reference to it might be found in para 5 of Notes of that discussion reproduced in para 17 above. The formation of this committee was however never formally communicated to Prof. Gadgil, but from a letter dated 4th August, 1950, from Prof. Mahalanobis to Prof. Gadgil, it appears that the Committee was formed and that Prof. Mahalanobis had agreed to a meeting of that Committee on 22nd and 23rd August, 1950. In the following is reproduced this letter of Prof. Mahalanobis.

No. 790/SU/50,
Cabinet Secretariat,
New Delhi.

My dear Prof. Gadgil,

4th August, 1950.

Your letter of the 31st July, 1950 addressed to Calcutta has just reached me in Delhi after redirection from Calcutta. In the meantime, Bhattacharya spoke to me about your suggestion to have a meeting of the Committee on the 22nd and 23rd August and I have already agreed. In fact it can be just fitted in, as I am due to leave for London on the 28th August night.

I am glad you are working on the schedules. In the meantime, we are naturally proceeding on the schedules as prepared by us for purposes of training. I shall try to get a programme for twelve month coverage; but I, of course, believe in keeping things somewhat flexible so as to allow appropriate changes being made on the basis of actual experience.

Yours sincerely,
P. C. MAHALANOBIS.

25. The Gokhale Institute attached great importance to systematic discussion of all problems and to the taking of decisions in formally constituted committees. We, therefore, prepared detailed notes on all major points, such as, the Sample Design, Organization of Field Work and a detailed Programme for 1950-51. A complete set of Schedules to be used was also prepared. Advance copies of these were sent to Prof. Mahalanobis and Mr. P. C. Bhattacharya on 16th August, 1950. We reproduce below the covering letter from Prof. Gadgil to Mr. Bhattacharya as it will bear out our anxiety regarding definite decisions on basic procedures and programme.

26.

16th August, 1950.

My dear Bhattacharya,

I enclose herewith a series of notes on the National Sample Survey and the complete set of schedules as prepared by us. The notes cover the following points, on all of which and the schedules, definite decisions have to be reached before a proper start can be made with the N. S. S. (i) Sampling procedure, (ii) Organization of field staff, (iii) Programme of investigation during the year. I enclose a note also on the proposed terms on which N. S. S. work can be undertaken by the Institute.

I attach great importance to the basic procedures and the programme being clearly defined at the outset. I hope that the N. S. S. Committee which is to be responsible for this has now been formally set up and that we shall have, on the 22nd the first meeting of this Committee. It is essential that the Director of

Field Operations should be present at this meeting and that, if possible, he should be the Secretary of the Committee.

Yours sincerely,
D. R. GADGIL.

27. The schedules and notes on all points were in the final form and constituted a large measure of compromise so as to secure the maximum possible common ground between the Calcutta and the Poona proposals. In the following sections we reproduce our proposals on (i) Sampling Design, (ii) Organization of Field-work and (iii) Programme for 1950-51. The notes indicate the detail in which we would have the decisions taken in a formal Committee. We do not reproduce here the schedules as they will be discussed in greater detail in the next Chapter.

28

NATIONAL SAMPLE SURVEY

The Sample Design.

The design of the sample will be as under :-

1. The ultimate unit of sampling will be a village.
2. The total number of sample units, approximately 1800, will be distributed between different states according to their rural populations (1941). In cases, however, it is considered advisable to have proportionately more sample units in backward and unexplored areas like certain Native States, the total number of sample units might as well be distributed not on the basis of population but on the basis of areas. As most of the backward and unexplored areas are also likely to be less densely populated they will receive proportionately more sample units by this method. It should be remembered, however, that for the same reason the field work in such areas will also be comparatively difficult for dearth of adequately qualified staff and other facilities. It appears, therefore, that the total number of sample units should be distributed on the basis of population. That will also give the sampling procedure a uniform basis.
3. The sample units allocated to a State should be distributed between its districts on the basis of their rural population.
4. Within each district the allocated number of villages will be selected by giving each village a chance proportional to its population. All villages and towns of population over 5000 should be omitted.
5. The selection villages within a district might be carried out in two stages. In the first stage the Tahsils should be selected by giving each Tahsil a chance proportional to its population. Unless a Tahsil is sufficiently large to justify more than one sample unit it should be not selected twice even though during random selection two random numbers happen to fall within it. In

the second stage villages should be selected from within the selected Tahsils.

6. It is hoped that the 1941 census population will be available for all districts in India. As considerable revision and re-organisation of districts and States has taken place in many parts of India, it would be advisable to proceed on the basis of old districts and States. After the sample units have been allocated and selected on this basis, they might be regrouped according to the revised boundaries of districts and States for administrative purposes.

7. In order to select villages, a complete list of villages within each district or the selected Tahsil will be needed with their populations in 1941. Such lists might not be available for all areas. Certain modifications will have, therefore, to be made in the above sampling procedure so as to ensure, only approximately, the condition of proportional probabilities to different villages.

8. In areas where complete lists of villages with populations are available, the method should be followed faithfully. The method needs a cumulative total of population of all villages within a district or the selected Tahsil. In such cases if the selection of villages is carried in two stages as suggested and Tahsils are selected in the first stage, saving of labour will be done in the accumulation of village populations. In such cases it is hoped that the labour of getting cumulative total of villages will not be prohibitive.

9. However, if even in the above case it is thought that the labour of accumulating total is prohibitive the following approximate method might be used. There will be available the distribution of villages in each district according to their populations in four groups : (i) 0-500 (ii) 500-1000 (iii) 1000-2000 (iv) 2000-5000. Within each district then villages might be selected by giving equal chance to each village, but ensuring that within each population size group of villages, the number of villages falling is proportionate to the total population of the group. As the number of villages to be selected within each district will be rather small, it will be difficult to ensure this condition within each district. The condition of allocating villages to different population size groups on the basis of their population therefore, should only be ensured not for each district but for the whole of the State. The method of selection would then amount to two-way stratified sampling without control on sub-strata. As is well-known, such selection presents both theoretical and practical difficulties; nevertheless, the method might be adopted if the labour of getting cumulative totals for all villages is found really prohibitive.

10. In areas where village lists are available but not their populations, a large number of villages should be selected within each district by giving equal chance to each village. Approxi-

mate populations of the selected villages should then be ascertained from the state or district authorities. From these then should be selected the required number of sample villages by giving chance proportional to their approximate populations.

11. In areas where no village lists are available small areas will have to be selected on maps. If the districts are divided into Tahsils with approximately known populations it might be worthwhile making a selection of Tahsils rather than choosing random areas on the map. A list of all villages from within the selected Tahsils or the areas should then be obtained with approximate populations. The selection of villages should then be made on the basis of such lists.

12. In selected villages the National Sample Survey needs two sub-samples (a) A sub-sample of households and (b) a sub-sample of lands for land utilisation study.

13. One of the first duties of an Investigator will be to take (i) a census of all households within selected villages and (ii) a record of all land within the vilalge. Schedules for these are prepared and attached herewith. A sub-sample of households will be selected on the basis of the census of households and a sub-sample of lands will be selected on the basis of the record of lands.

14. As will be seem from the schedules for census of households, the census will obtain for all households the areas of of lands under their respective cultivation. In cases where such areas are not even approximately available there is a provision to obtain the number of plough cattle owned by each household. On the basis of areas under cultivation or where these are not available on the basis of number of plough cattle, the households will be arranged in order, beginning with larger cultivators. They will then be given a new serial number which is denoted in the schedule as the stratified serial number of the household. Immediately after completing the census of households the Investigator should inform the field office of the number of households within the selected village and the proceed to arrange them in order and to give them then stratified serial numbers. The total number of households should be divided into two equal sections and then each half section should further divided into five sub-sections. Thus the total number of households will be divided into 10 approximately equal sub-sections. From among the first five sub-sections, one number from each will be selected at random, while from the five latter sub-sections, three randum numbers from each will be selected. The selection of random number should be done by the field office and the investigator should be informed of the selected numbers. The households having their stratified serial numbers corresponding to these random numbers wil' form the sub-sample of households. Thus it will be noted that within each selected village we shall have a sub-sample of 20 households; the village will be divided

into two halves—one half being predominant in agriculture and the other half in non-agriculture. From the first half we shall select 5 households while from the second we shall select 15 households. This will ensure the inclusion of proportionately more non-agricultural activity within the sub-sample. It will be readily appreciated that the allocation of sub-sample numbers to agricultural and other households is so designed as to avoid making a definition of agricultural and non-agricultural and to present minimum difficulties at the stage of estimation.

15. The record of lands will list all lands of the village by the smallest unit for which at least approximate areas are available. Such unit might, for further reference, be designated as fields. It will be noted that the record of lands provides a column for accumulating the total areas of such fields. It is hoped that, at any rate within a district, population and areas of a village will be highly correlated. Therefore, the villages having been selected by giving chances proportional to their population, we might suppose that within a district they have been selected by giving chance approximately proportional to their areas. In selecting a sub-sample of fields within a village, therefore, fields should be given a chance proportional to their areas. This will, of course, need accumulating their total areas. However, this is considered worthwhile in view of the possibility that the crop in larger and smaller fields are likely to be somewhat different. It is proposed that a fixed proportion of fields, such as 5 per cent, might be selected in the sub-sample.

29.

ORGANISATION OF FIELD WORK

1. For every group of 12 villages there will be two investigators.

2. Each Investigator will have a semi-permanent headquarters. The two Investigators might choose for their headquarters two bigger villages of the 12 under their charge, and there they might establish themselves with their families if they so choose. The time programme of the field-work will be so arranged that each investigator will be allowed a stay of at least one week of each month in the village of his semi-permanent residence.

3. Each Investigator will visit each month two villages under his charge so that the twelve villages will be visited in three months.

4. The group of 12 villages should be distributed at random over three months. Then the four villages allotted to each month should be visited by the two Investigators by random allotment of two villages to each investigator. Complete field-work programme for three months should be fixed in advance and the Investigators should know during which week they will be visiting each particular village.

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4. The group of 12 villages should be distributed at random over three months. Then the four villages allotted to each month should be visited by the two Investigators by random allotment of two villages to each investigator. Complete field-work programme for three months should be fixed in advance and the Investigators should know during which week they will be visiting each particular village.

5. A group of four investigators will be inspected and assisted by one Inspector. The Inspector will have a more or less permanent headquarter and will be expected to tour within his area and check the investigators in his charge while they are on their visits to different villages. For this purpose, it is necessary that the Inspector is furnished with a complete time-programme of the four investigators under his charge.

6. The entire field-work will be controlled by approximately 20 field offices. A field office will have jurisdiction over approximately 100 sample villages. The field office will itself consist of a Supervisor who will be a Gazetted Officer, an Assistant Supervisor, a Clerk and a Peon.

7. Attempts should be made, wherever possible, to decentralise the work of tabulation coding, punching and verification of the tabulation, cards should be done, as far as possible, at the respective, field offices. The field office should be equipped with the necessary equipment and the staff for this purpose. This will enable a closer scrutiny and inspection of returns on the spot and make it possible for the field offices to correct and improve the work of the investigators. That will also enable the field offices to note down peculiar conditions within their area and will avoid a number of language and terminology difficulties. If this is found feasible it might be even possible to reduce the English knowing qualification of the investigators, and recruit, in their place investigators who though not knowing enough English would, nevertheless be better qualified to do the kind of job they are expected to do.

80.

PROGRAMME FOR 1950-51.

1. The initiation of field-work in all the sample villages will have to proceed gradually. In order to initiate the N. S. S. work in a sample village the following steps will have to be taken.

(a) Occupational census of all households within the sample village.

(b) Stratification of households on the basis of the occupational census and selection of a sub-sample of 20 households.

(c) Record of lands lying within the area of the village and selection of a sub-sample of fields for the purpose of land utilisation study.

(d) Filling of the household schedule with inventory of assets and liabilities and the schedule of monthly accounts for one month for the sub-sample of 20 households.

(e) Land utilisation of the selected fields by a field to field visit.

2. In September the field offices will be established and the field staff recruited and trained.

3. The initiation of the field work in all sample villages will be spread over next six months from October to March as under :—

(a) During October, November and December each investigator will initiate the work in three randomly selected villages under his charge by the procedure indicated in 1.

(b) During January, February and March the Investigator while initiating the field-work in the remaining three villages allotted to him will also revisit the first three villages initiated by his co-investigator and will visit the sub-samples of households therein for their monthly account and the sub-sample of fields for the land utilisation.

4. From April onwards each investigator will visit two villages each month for the work of monthly accounts of the households and the inspection of sub-sample of fields.

5. The year of survey work in a selected village should ordinarily begin in April, May or June. The rather late beginning this year, therefore, has to be corrected. During their visits in April, May and June, along with the monthly working account and land utilisation schedules, the investigators will also fill in, for the sub-sample of households, the household schedules with inventory of assets and liabilities. Such inventories will furnish thenceforth the beginning and end inventories necessary to complete the annual report.

6. The only economic activity which is inadequately covered by the proposed "Working Account Schedule" is trading. The schedule is so designed as to furnish estimates of the total volume of business passing through the hands of professional traders. Working accounts of the traders are however, not covered by this schedule. The difficulties in this regard are many and are well known. Nevertheless, some efforts will have to be made to try and cover the sector of rural trading.

7. It is expected that the villages in which the investigators will make their semi-permanent residence will be somewhat bigger villages and that a larger part of the trading activity in a marketing area could be studied in these villages. The occupational census of households will, of course, furnish a list of traders residing in the sample village. On the basis of this list a more detailed investigation into the nature and scope of their activities both in their commodity and geographical coverage could be planned without necessarily getting into the financial accounts of their business. The villages of semi-permanent residence of the

investigators, will also in many cases, be the centres of weekly village bazzars. An investigation into the nature and volume of transactions at these bazzars could also be taken up, with special reference to the areas they serve and the areas from which they draw their commodities. It is proposed that detailed plans of investigation in this respect should be drawn up by December.

8. In the meanwhile an immediate beginning might be made with the collection of price data. The investigators will be expected to make for a selected list of commodities, a monthly return of prices prevailing in villages of their residence. Apart from furnishing valuable information regarding geographical and seasonal variation in prices, the material will also provide the basis on which the values and quantities appearing in the monthly working account schedule might be mutually converted.

81. When Prof. Gadgil went to Delhi on 21st August, 1950, he had expected to attend on the following days the meeting of the National Sample Survey Committee. The following is his letter of the 7th August, intimating his programme.

7th August, 1950.

My dear Bhattacharya,

The Planning Commission Advisory Board it appears, is to meet on 21st and 22nd August. I have to attend the meeting of this Board and will, therefore, come up to Delhi on 21st. We could begin the work of the National Sample Survey Committee on the 22nd and I shall stay on 23rd in Delhi to finish the work.

Yours sincerely,
Sd/- D. R. GADGIL.

82. However when he met Prof. Mahalanobis on the 22nd and 23rd August, 1950, the personnel composition of the conference was a little different from what Prof. Gadgil expected. From the summary, as prepared by Prof. Mahalanobis, of decisions reached on 22nd and 23rd August, it appears that what transpired in Delhi on these days was "a series of discussions in between Professors P. C. Mahalanobis and D. R. Gadgil, Messrs. P. C. Bhattacharya, S. C. Sen, S. P. Sinha, N. C. Chakravarty, M. M. Mukherjee and R. K. Mukherjee". Briefly told the main decisions reached during these discussions were that (i) on matters of sampling design and organization of field-work the views of the Calcutta Institute should hold; and that (ii) As for the Schedules, instead of attempting a compromise, both sets of schedules, namely those prepared by the Calcutta and the Poona Institutes respectively should be given a trial. Apparently no minutes of the proceedings were recorded during these discussions. On 24th August, Prof. Mahalanobis sent a summary, which he had prepared of the decisions reached about the National

Sample Survey on the 22nd and 28rd August. We reproduce below this summary in full.

88. NATIONAL SAMPLE SURVEY

The following decisions were reached in the course of a series of discussions in New Delhi between Prof. P. C. Mahalanobis and D. R. Gadgil, Messrs. P. C. Bhattacharya, S. C. Sen, S. P. Sinha, N. C. Chakravarti, M. M. Mukherjee and R. K. Mukherjee on the 22nd and 28rd August, 1950.

1. Geographical coverage:- Rural areas of the Union of India in accordance with the Census definition (with the exception of Kashmir and Jammu.)

2. Subject coverage:- As settled in the meeting on the 29th July, 1950 and as shown in the Poona and Calcutta schedules.

3. Design of the Survey:- (a) Two-stages:- With village as first stage and census household as second stage. The whole area to be divided into about 100 blocks, each block consisting of either one district or a group of adjoining districts, or in special cases a group of Part C States.

(b) Stratification of villages by population, but selection of sample villages by probability proportional to the size (area) of the village. Where population figures are not available, selection by probability proportional to area (size) of the villages with subsequent stratification by population for purpose of estimation. For regions for which neither population nor area of village nor maps are available, selection may be made by clusters of villages by serial numbers and preliminary information collected about population and area to enable final selection being made as explained above. If this entails too much delay, simple random selection by giving equal probability to each village may be used in a first stage.

(c) The division into blocks, stratification and the selection of sample villages to be done in the same uniform manner for the whole sample.

4. Regional Scrutiny:- The field Inspectors, Supervisors, and Assistant Directors will be responsible for regional scrutiny of the primary material.

5. Coding and Punching:- All primary material will be sent in the same standardized form for central coding (except where code numbers are entered by the field staff) and punching in the Indian Statistical Institute. Standard processing and preparation of standard tables will also be done there.

6. Supplementary processing and analysis:- Additional processing and analysis will be done to the extent possible in Poona and Calcutta at the discretion of the respective Institutes.

7. List of households :- Instead of an occupational census of the village, complete list of all households in the village (together with the Census serial number) will be prepared (about two days). In the case of a large village, the investigator will inform the regional office and a second investigator will be sent over to the same village or to another sample-village which would be taken over later by the first investigator to prepare the list of household.

8. Joint use of Poona and ISI schedules :- In the first round, ISI schedules (1), (2.1), (2.2), (2.3), (3.1), and (3.2) will be used in one set of villages and the Poona schedules (B) and (C) in another set of villages in the proportion of 1:2 in the districts to be surveyed under the supervision of the Poona Institute, and in the proportion 2:1 in all other areas. The two sets villages to be arranged in the form of two inter-penetrating networks of random samples.

9. Sample of 16 households :- Out of the list of households a sample of 16 households will be selected with the help of random numbers with the restriction that, to the extent possible the principal occupation of the head of 8 households will be agriculture, and the principal occupation of the remaining 8 households will be non-agriculture. The procedure to be followed will be to pick up one household at a time at random and to ascertain the principal occupation of the head of the household, and proceed in this way until either 8 agricultural and 8 non-agricultural households have been obtained or 100 households have been tried. When the quota of 8 agricultural (or 8 non-agricultural) households has been obtained, subsequent agricultural (or non-agricultural) households would naturally have to be rejected; but care must be taken to record correctly the occupation of any household which is rejected. That is, a complete record must be kept of the occupation of each household whether or not included in the sample of 16.

10. ISI Household schedule 1 :- Will be completed for each of the 16 households selected in the manner explained above (about three days).

11. ISI Enterprise Schedules :- Enterprise Schedules 2.1 2.2 and 2.3 will be filled, if possible, for 2 agricultural households and 8 non-agricultural households selected in a random manner out of the 16 households included in the sample.

12. ISI Consumption Schedules 3.1 and 3.2 :- will be filled for one agricultural and two non-agricultural households selected at random out of the 16 households included in the sample.

13. Poona Schedules B and C :- will be completed for all 16 households included in the sample.

14. Village and Price Schedules :- A village schedule and price schedule of important commodities will be prepared by the Poona Institute and sent to Calcutta as soon as possible.

15. Land Utilization Survey :- Sheets with perforations numbered in a random manner will be supplied by the Calcutta Institute. 20 clusters of plots consisting of 5 consecutive serial numbers (1-5, 6-10; 11-15, etc.) will be surveyed in each village. This is to be considered a minimum programme for 4 days, but investigators should be encouraged to do as many more as possible.

16. Four days on an average would be allotted for crop cutting work at harvest time in two or more of the six villages to be visited by each investigator.

17. Field training - Will start in 6 centres; Mathura, Allahabad, Poona, Madras, Cuttack and Shillong from the 1st September, 1950 and all arrangements for this purpose will be made by Shri S. P. Sinha. Training arrangements will be according to the time programme prepared by him.

18. Forms and Schedules :- Both Calcutta and Poona Schedules will be printed and supplied from Calcutta. The Poona Institute may, however, print the schedules in vernacular for use in 12 districts under its charge.

19. Instructions :- For the Calcutta schedules will be got ready by the 5th September. The Poona Institute will send the instructions for Schedules B and C to reach Calcutta by the 28th August, 1950.

20. ISI workers will be present at the 6 training centres to give instructions about ISI schedules. Attempts will be made to send at least 2 workers of the Poona Institute to visit the different training centres to give instructions about schedules B and C.

21. Implements :- for crop-cutting experiments will be supplied from ISI both for training and for a general enquiry.

22. List of sample villages :- A list of sample-villages will be prepared in Calcutta and will be supplied to the investigators before the 28th September, 1950.

23. Each investigator will be required to send all schedules filled by him in a village directly to the Calcutta Institute. He will be asked to keep with him a duplicate copy of all such schedules.

24. Additional staff :- 10% additional field staff to be recruited in the first instance to expedite the work in the first phase and to supply a reserve for replacements.

25. Start of work:- In case all the investigators are not available at first the enquiry will begin not later than the 1st of October with at least one village in each of the 100 or so sub-blocks. New recruits will be appointed and trained and work will be started in other sample-villages as soon as possible.

26. Attempts will be made to collect through the NSS Organization such special information as may be needed from time to time by the National Income Committee.

84. Prof. Mahalanobis, of course, expected that the above would be "a correct record of the decisions." On reading through the summary, however, Prof. Gadgil did not feel sure that on a few important points the summary was quite correct. However, in the meanwhile Prof. Mahalanobis had left India and there was little possibility of usefully communicating with him on these points. Prof. Gadgil, therefore thought it best not to approve the summary but otherwise to leave matters where they stood. The summary of decisions as prepared by Prof. Mahalanobis was therefore, in fact, not approved by Prof. Gadgil.

85. Though little prepared for the immense responsibility thrown on the Institute by deciding to give a concurrent trial to the Poona schedules all over India, we accepted these decisions, and agreed to work the whole complex of the National Sample Survey even though in large parts we had grave misgivings about it. In the following chapters we shall present in detail the part we played. In concluding this chapter giving a summary of the manner, in so far as we were associated with it, in which the National Sample Survey emerged and the part we played in giving it a direction, we shall record two observations. The first concerns the amazing informality, not to use a stronger term, with which programmes involving such large expenditure were discussed and decided upon and the persistence with which the formation of a properly constituted consultative or advisory body was avoided or evaded. The second concerns the share of responsibility of this Institute. We have narrated in full the occasions on which and the precise manner in which we were consulted upto the end of August, 1950. As a statement of fact, we should observe here that after this we were not consulted on any administrative or technical point whatever, except the operation of the Poona Schedules. Our responsibility was therefore strictly limited to the technical instructions regarding the filling in of the Poona Schedules and as will appear from later sections, to the tabulation and analysis of these schedules. In particular, we did not share the responsibility of recommending to Government, the National Sample Survey of any form and of any scale.

III. THE POONA SCHEDULES

1. As already stated the schedules we put before the meeting on the 22nd and 23rd August 1952, represented a large measure of compromise necessary to accommodate the point of view of the Calcutta Institute. The main reason for the failure to reach agreement on the scope and content of the schedules, it appears to us, was a total lack of any unified approach to the problem. During the long and protracted discussions that preceded, there seemed to have been accepted no principle by which inclusion or exclusion of particular items and their scope and definition, could be decided upon. To invite proposals from various Ministries and Departments and to enquire of the needs of different agencies likely to make use of the collected material was, of course, to be commended; but to attempt to cater for the many diverse needs without a unity in the contents of the schedules seemed not advisable. The proposal to load the schedules by including as many items as possible might be a good political expedient but surely not a sound investigational procedure. In putting forward our final proposal, therefore, while fully trying to meet the requirements of others, we insisted on a unified approach clear enough to be obvious to the investigators without which, we thought, it would be impossible for them to obtain an integrated appreciation of the items on which information was sought. Considering the short time available for recruiting and training of field staff and the general lack of information about the diverse conditions prevailing in different parts of the country, we also thought it advisable to include relatively simpler items requiring minimum definition and instructions and further to keep the number of such items to a minimum.

2. After considerable deliberation we decided to adopt the accounting approach. Logical implications of this approach are fully discussed in Appendix B. Serious differences arose regarding the period for which the accounting information from selected families could be collected during a visit to a family. Our view was that such information was difficult to obtain for any period longer than one month and that for certain items of receipt and expenditure, the period would have to be much shorter, say, one week. The workers of the Calcutta Institute seemed to believe that due to certain phenomenon called "integrated memory" it was easier to give accounting information for a period of one year. No compromise seemed possible and we held to the view that the accounting information

could only be collected by means of a series of periodic visits to the selected families. The Poona Schedules were, therefore, based on this procedure.

8. There were two schedules, B and C. The B schedule aimed at ascertaining the beginning and the end position by means of an inventory of assets and liabilities. In this schedule, members of the household were classified into only two categories, namely earners and non-earners, as the Census concept of earning dependents appeared rather vague. In the inventory of assets and liabilities were included only assets in real estate, livestock, implements and stocks of commodities other than agricultural commodities. No attempt was made to enquire into financial assets and assets held in bullion, ornaments or cash as these were thought to be unobtainable. For the same reasons no enquiries were made into stocks of agricultural commodities held by cultivators and others unless they were held as raw materials for further processing and transformation.

4. Schedule C was termed "the monthly working account" of the selected families, though not all items appearing in this schedule referred to one month. A month was defined, for greater clarity and facility of identification as four weeks immediately preceding the day of visit, and while most of the items referred to this period, some referred only to one week. In fact details regarding employment for all members of selected households were obtained only for three days immediately preceding the day of visit.

5. The family account was divided into two sections, business account and personal or household account. Blocks I to XII dealt with the business account while Blocks XIII and XIV with the household account. Within the business account the distinction was made between the current and the capital accounts as also between the cash and the commodity accounts. Barter and money transactions were separately noted and all sales and purchases were distinguished according to whether at one end or the other a professional trader was involved.

6. Finally, the structure of all blocks of items was kept as uniform as possible and sufficient space was kept for the investigator to write. Coding of information was kept to a minimum and only in the simplest cases the job was shifted on to the investigator. In all such cases, the code numbers appeared on the schedule itself. So far as it lay with us, little purely clerical work was thrust on the investigators.

7. The forms of the Schedules are reproduced in Appendix A to this Chapter. Details of their form and content and scope of defi-

nitions of various items appearing in them would be clear from the Instructions to Investigators issued by us; these are reproduced in full as an appendix to the next Chapter.

8. The logical implications of the accounting approach adopted for the schedules were worked out and developed in the form of a paper submitted to the National Income Committee. The paper was entitled "Measurement of National Income and Construction of Social Accounts for an Industrially Backward Economy" and was accepted by the Committee as one of its working paper (N. I. U. Working Paper No. 67) The theoretical part of the paper consisting of the first 52 sections was later published in the Journal of "Accounting Research" in two parts. (Vol. II -No. 4. Oct. 1951; Vol. III - No. 1 Jan. 1952). With kind permission of the Journal, we reproduce the entire paper in Appendix B to this Chapter.

Appendix A Faces this page.

lized by Mr. Dandekar would virtually keep the whole staff engaged in household schedule survey leaving them little or no time for carrying out the land utilization and yield estimation survey. This would involve a wholesale alteration of the basic scheme and converting the present multi-purpose survey sanctioned by Government of India to a mere economic survey leaving the aspect of agricultural production to be either obtained through the existing State agencies, or in the alternative, through a separate agency which would cost an extra expenditure of several lakhs of rupees. This was clearly a matter regarding rules in which Prof. Gadgil and Professor Mahalanobis could take a decision in consultation with Government of India and such a change was clearly beyond the scope of officers discussing the ways and means for implementing the sanctioned scheme.

Mr. Chakravarti also pointed out that carrying out even on the basis of larger occupational lists, and with the rural industries given a high weightage, it would be impossible to get a sufficient number of units for each industry for working out an average production, etc. from each class of industry, and besides the question of estimating the total number of units even on the basis of the larger occupational tables would scarcely be dependable having regard to the widely scattered nature and the innumerable types of rural industries existing in different parts of the country. With the present financial and organizational resources, Mr. Chakravarti therefore thought that it would be scarcely feasible to achieve the objective visualized by Mr. Dandekar in this first year of the enquiry. The ideals mentioned were certainly unexceptional and he thought that everyone's intention was to gradually work up to that ideal instead of trying to achieve the ideal in the very first year of their work.

Mr. Chakravarti also felt that Prof. Gadgil must certainly have foreseen all these difficulties when he gave his general consent to the scheme in his discussion with Prof. Mahalanobis. In this situation, he thought that if the entire situation was properly explained to Prof. Gadgil he would give his consent to the detailed working plan being worked out on the basis of the approved scheme, pending any basic alteration thereof which might be introduced after he had discussed the whole matter with Prof. Mahalanobis on the latter's return from U. S. A.

In the meantime, he proposed that having regard to the extremely short time within which the scheme was intended to be implemented the workers here should proceed to develop the detailed working plan within the broad statistical design which had been laid

down, giving effect to as much of the suggestions of Prof. Gadgil as was found feasible within the limits mentioned. To this end he proposed the following resolution.

After detailed consideration of all aspects, this conference of the workers invited to assist in the National Sample Survey work (a) feels that the scope of this conference is limited to the following: Within the limitation of the finance, time and organization visualized in the scheme by the Government of India, and (b) within the frame-work of design of the survey as passed by the Government of India to draw up the best possible scheme for implementing the work.

The conference adjourned till Monday, the 22nd May, 1950.

Sd/- S. C. SEN,
Chairman.

Sd/-R. K. Mukherjee,
Convener.

NATIONAL SAMPLE SURVEY

The Conference resumed on Monday, the 22nd May, 1950 at 4.80 p. m. at the Statistical Laboratory, Presidency College, Calcutta.

Present:— Mr. S. C. Sen in the Chair.

Messrs V. M. Dandekar, M. M. Mukherjee, J. M. Sengupta, N. C. Chakravarti, A. Ghosh, P. Mukherjee, H. K. Chaturvedi, S. Bhattacharyya, Mrs. K. Joshi, Messrs. K. C. Cheriyan, Tapash Majumdar, Ajit Biswas, Amiya Bose, S. K. Bhattacharya, and Dr. R. K. Mukherjee (Convener)

The minutes of the conference held on Saturday, the 20th were read and approved.

Mr. Dandekar then proposed the following resolution alternative to Mr. N. C. Chakravarti's resolution on Saturday the 20th.

Members of the National Income Research Unit of the Indian Statistical Institute and the representative of the Gokhale Institute feel after considerable deliberation, as indicated by their respective notes submitted to the conference on Saturday morning (20th May), that the contents of the schedules prepared in the last conference held in the Statistical Laboratory, Calcutta, in April-May, 1950, and the stages of enquiry envisaged in the said conference were not suitable in many respects. Nevertheless the conference is aware that it is somewhat too late now to consider the matter but recommends that in the research programme connected with the National Sample Survey due attention should be given to the difficulties expressed in the aforesaid notes so that in case the National Sample Survey was approved by

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In the meantime, he proposed that having regard to the extremely short time within which the scheme was intended to be implemented the workers here should proceed to develop the detailed working plan within the broad statistical design which had been laid

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Appendix A Faces this page.

GOVERNMENT OF INDIA NATIONAL SAMPLE SURVEY, 1950-51

Poona-B. Household Schedule with Inventory of Assets and liabilities

1.1 State			1.5 Investigator			1.9 Date of visit	
1.2 District			1.6 Inspector			1.10 Name of head of household	
1.8 Tahsil			1.7 House No.			1.11 Caste of head	
1.4 Villag			1.8 Household No.			1.12 Principal Occupation of head	

II. Members of the household (as reported by the head)

Name 1.	Relation to head describe .2	1. Male 2. Female .3	Age in completed years 4	1. Earner 2. Not-Earner .5	If Earner		If Earner	
					Principal Occupation .6	Code .7	Subsidiary Occupation .8	Code .9
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								

III. Real estate in lands and Buildings.

IV. Real estate improvement during last year

V. Residential House

VI. Details of Livestock Owned :

1	2	3	4	5	6	1	2	3	4	5
Kind	Code	Age in years	1. Homebred—describe 2. Purchased 8. Otherwis acquired	Since when acquired— years	If purcha- sed, purchase Rs.	Kind	Code	1. Home-made 2. Purchased 8. Otherwis describe	Since when acquired years	If Purchase Price Rs.

VII. Farm & other implement and machinery
major items only

1	2	3	4	5	6	1	2	3	4	5
---	---	---	---	---	---	---	---	---	---	---

VIII. Valuation of Stock in (Ag. Commodities excluded)

Raw material		Material in process		Finished product		Purpose		IX. Outstanding Credit position				
1	2	3	4	5	6	1	2	3	4	5		
Description	Value	Description	Value	Description	Value	1. Household	2. Business	8. Other	Loans received	Loans given	Credits received	Credits given

GOVERNMENT OF INDIA NATIONAL SAMPLE SURVEY, 1950-51

Poona-C. Monthly Working Account Schedule

1.1 State			1.5 Investigator			1.9 Date of visit	
1.2 District			1.6 Inspector			1.10 Name of head of household	
1.8 Tahsil			1.7 House No :			1.11 Caste	
1.4 Village			1.8 Household No:			1.12 Principal Occupation of head	

II. Three day employment details for all household members of age six and above

Categories of employment	Name	1. Male 2. Female	Age in completed years	How was the person employed			Cash salary & wages earned As. 7.
				yesterday	one day before yesterday	two days before yesterday	
EARNING	.1	.2	.3	.4	.5	.6	7.
1. On own farm	1.						
2. On other farm as exchange labour	2.						
3. On other farm on salary or wages	3.						
4. In own non-farm occupation	4.						
5. In other non-farm occupation on salary or wages.	5.						
6. Household but gainful work such as repair to own house, etc.	6.						
NOT EARNING							
7. Domestic duties	7.						
8. School	8.						
9. Not seeking work for obtaining rest or otherwise	9.						
10. Unemployed	10.						
11. Ill-health	11.						
12. Disabled	12.						

IV Production and other Receipts in kind during last month.

NOTE : In putting down the value in column 8. evaluate other receipts of type 1) and 4) at wholesale prices while receipts of type 2) and 3) at retail prices. Receipts of the type 5) should be valued at either wholesale or retail prices according to their nature, the above rule giving the clue.

OTHER RECEIPTS IN KIND

1) As owner share. 2) As remuneration to hereditary and artisan services. 3) As wages in kind. 4) As material contributions from landlords, cosharers, partners etc. 5) other—describe

Commodity	Code	Production		Valued at wholesale price Rs.	OTHER RECEIPTS IN KIND		
		Q. local unit	Q. Stand. Unit		Nature of Receipt	Q. in local unit	Value in Rs.
.1	.2	.3	.4	.5	.6	.7	.8
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							

V Sales and other Disposals in kind during last month.

NOTE:— In putting down value in column .8) evaluate or disposals of type 1), 4), 5), and 6) at wholesale prices while disposals of type 2) and 8) at retail prices. Disposals of type 7) should be valued at either wholesale or retail prices according to their nature, the above rule giving the clue.

Value of quantities exchanged for other commodities (summarised from blocks VI, VIII, IX, X, XIII, XIV)

OTHER DISPOSALS IN KIND

1) As owner share, 2) As remuneration to hereditary and artisan services. 3) As wages in kind. 4) As material contributions to tenants, cosharers, partners, etc. 5) Used as raw materials in production. 6) Physical destruction. 7) other-describe.

Commodity 1.	Code 2.	Sales		.5	OTHER DISPOSALS IN KIND		
		Q. local unit .3	Proceeds Rs. .4		Nature of Disposal .6	Q. in local unit .7	Value in Rs. .8
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							

VI. Births, Deaths, Slaughter, Sales and Purchases of Livestock during last month

1. Bull
2. Bullock
3. Cow
4. Calves
5. He-buffalo
6. She-buffalo
7. Calves
8. Sheep
9. Goat
10. Pig
11. Horse
12. Donkey
13. Mule
14. Camel
15. Other animals
16. Ducks
17. Hens
18. Other poultry & birds.

Kind of livestock	Number of animals involved	Code	1. Birth 2. Purchase 3. Gift 4. otherwise acquired	1. Death 2. Slaughter 3. Sale 4. Gift 5. otherwise disposed	Age in years	Sale to or Purchase from 1. Consumer or producer 2. Trader 3. other describe	Proceeds of Sale or price of purchase	If barter commodity exchanged
.1	.2	.3	.4	.5	.6	.7	.8	.9

VII. Cash Receipts during last month

By liquidating assets and creating liabilities

Return on Capital assets rentals, interest dividends etc. Rs.

Sale to 1. Consumer 2. Trader etc.	Sale proceeds Rs.
.1	.2

NOTE. 8) below includes sale and purchase of, interest and dividends on share etc. and also creation of new deposits and withdrawal of old ones. 9) include payment of premium or contribution to and also mature or premature withdrawals from. Enter all capital receipts and outlay in column .2

VIII. Outlay during last month.

On forming new assets and clearing old liabilities

Return paid on capital assets rentals, interest, dividends etc. Rs.

Purchase from 1. Producer 2. Trader 3. Other	Outlay Rs.	If barter, commodity exchanged	Rs.
.1	.2	.3	.4

1. Sale purchase and rentals of land
2. of Residential buildings
3. of other buildings.
4. of Livestock (capital assets)
5. of Farm implements and machinery

Expenditure on purchase of raw materials during last month including their transport costs and other marketing expenses

IX. For farm, forest and livestock production					X. For other production				
Commodity	Code	Purchase from	Expenditure Rs.	If barter commodity exchanged	Commodity	Code	Purchase from	Expenditure Rs.	If barter commodity exchanged
.1	.2	.3	.4	.5	.1	.2	.3	.4	.5
1.					1.				
2.					2				
3.					3				
4.					4.				
5.					5.				
6. Total Expenditure Rs.					6. Total Expenditure Rs.				

XI. Cash Receipts during last month		Rs.	XII. Cash Expenditure during last month		Rs.
1. By liquidating assets and creating liabilities from VII			1. On farming assets and clearing liabilities—VIII		
2. As returns on capital assets—from VII			2. As returns paid on capital assets—VIII		
3. Cash contributions from landlords, cosharer, partners etc.			3. Cash contributions to tenants, cosharer, partners, etc.		
4. By sale of farm, forest, and livestock products from V.			4. On purchase of raw materials for farm, forest & livestock production—IX		
5. By other production sales—from V			5. On purchase of raw materials for other production—X		
6. Income from maintenance and repair services.			6. On maintenance & repairs of capital assets		
7. Income from transport services.			7. On transport of finished product		
8. Income from storage and incidental services.			8. On storage and incidental marketing costs of finished product.		
9. As other receipts			9. On other expenditure		

XIII. Household expenditure during last week

XIV. Household expenditure during last month

XIII. Household expenditure during last week				XIV. Household expenditure during last month							
On items	Purchase from 1. Producer 2. Trader etc.	Expenditure As.	If barter commodity exchanged	On items	Purchase from 1. Producer 2. Trader etc.	Expenditure As.	If barter commodity exchanged	On items	Purchase from 1. Producer 2. Trader etc.	Expenditure As.	If barter commodity exchanged
.1	.2	.3	.4	.1	.2	.3	.4	1.	.2	.3	.4
1. Rice				28. Milk				1. Firewood			
2. Wheat grain & flour				24. Ghee and butter				2. Charcoal			
3. Millets				25. Other milk products				3. Kerosene			
4. Other cereals grain & flour				26. Vegetable				4. Other fuel and light			
5. Arhar seed & pulse				27. Fruits				5. Clothing-means			
6. Gram seed pulse & flour				28. Salt				6. Womens'			
7. Other pulse & pulse seed				29. Chilies dry & powder				7. Children's			
8. Coconut & kopra				30. Other spices				8. Footwear & repair			
9. Ground nut & seed				31. Sugar				9. Soap			
10. Other nuts & oil seed				32. Gur (cane)				10. Hair oils			
11. Mustard oil				33. Other sugars				11. Other toilets			
12. Ground nut oil				34. Tea				12. Books periodicals, education			
13. Coconut oil				35. Coffee				13. Medicines & Medical service			
14. Linseed oil				36. Other beverages				14. Domestic & personal services			
15. Other edible oils				37. Prepared foods & drinks				15. Entertainment			

APPENDIX B

* MEASUREMENT OF NATIONAL INCOME AND CONSTRUCTION OF SOCIAL ACCOUNTS FOR AN INDUSTRIALLY BACKWARD ECONOMY.

From the point of view of measurement of the national income and construction of social accounts for a backward economy, the chief problem appears to be subsistence and family production. In contrast to an industrially advanced economy, in a backward one there exists a considerable amount of production on a family or household basis. Except in the case of larger productive units, production is carried on mainly for home consumption and there hardly exist any conceivable accounts of the productive enterprise as such. Households are almost universally both producers and consumers but the basic distinction between production and consumption is hard to draw. It is the household which forms a single and the most natural accounting entity. As a consequence, a considerable amount of the total product never appears on the market and only a part of what is exchanged, is exchanged for money. The working system of social accounts set out in the Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts is "based essentially on the model of an advanced industrial economy in which transactions in money are dominant." It appears, therefore, that this system would have to be somewhat modified so as to accommodate the phenomena of subsistence and family production.

2. It is obviously desirable, nevertheless, that changes should be as few as possible and that the basic layout of the system should remain the same. This should not be difficult for, after all, even in a backward economy, there exists a large number of accounting entities which should be amenable to the same or similar treatment as that accorded to entities in an advanced economy. In general, all accounting entities other than households could be treated in this manner. It is proposed that this should be done. In that case, all such entities would be grouped in the four sectors as prescribed in the working system mentioned above. Those sectors are : (i) Productive enterprise; (ii) Financial intermediaries; (iii) Insurance and social security agencies and (iv) Final consumers. They would be keeping

* Reprinted from *ACCOUNTING RESEARCH*, Volume two, Number four, October 1951.

XIII Household expenditure during last week

XIII Household expenditure during last week				XIV. Household expenditure during last month			
On items	Purchase from 1. Producer 2. Trader etc.	Expenditure As.	If barter commodity exchanged	On items	Purchase from 1. Producer 2. Trader etc.	Expenditure As.	If barter commodity exchanged
.1	.2	.3	.4	.1	.2	.3	.4
1. Rice				28. Milk			
2. Wheat grain & flour				24. Ghee and butter			
3. Millets				25. Other milk products			
4. Other cereals grain & flour				26. Vegetable			
5. Arhar seed & pulse				27. Fruits			
6. Gram seed pulse & flour				28. Salt			
7. Other pulse & pulse seed				29. Chilies dry & powder			
8. Coconut & kopra				30. Other spices			
9. Ground nut & seed				31. Sugar			
10. Other nuts & seed				32. Gur (cane)			
				1. Firewood			
				2. Charcoal			
				3. Kerosene			
				4. Other fuel and light			
				5. Clothing- means			
				6. Womens'			
				7. Children's			
				8. Footwear & repair			
				9. Soap			
				10. Hair oil			

APPENDIX B

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the same type of accounts as described there and in much the same manner. There would be only two exceptions. As we are taking out all households for separate treatment, the second sub-division in sector (i) should be dropped. It consists of all persons or households in their capacity as house-owners, house-ownership having been classified as a productive enterprise. Secondly, the sub-division of sector (iv) consists mainly of persons or households in their capacity of final consumer. It also includes other non-profit-making bodies. The division, therefore, must be retained, but would consist only of the non-profit-making bodies other than households. Finally, sector (v), constituting the rest of the world, would of course remain as it is.

8. We now propose to take out all households and group them in a separate sector, which might be termed the sector O. By households we shall understand the traditional units of a social organization. In their social content, they are organized units of final consumers. That is their universal character. However, in a backward economy they also act as producers, mainly engaged in all types of primary production and some secondary production too. They form the most natural accounting entities, and we shall require their accounts to cover the whole of their activity both as producers and consumers. It is obviously necessary that for a business or enterprise to be considered as a household business, no person outside the household should have any proprietary interests in it. The condition is not, of course, difficult to satisfy. Every business or enterprise in which more than one household has a proprietary interest, should be constituted into a separate accounting entity. In such cases it is expected that, of necessity, its accounts will be distinct from the accounts of the households having joint interests in it.

4. It is possible that, thus constituted, the scope of households, and consequently the scope of sector O, would be too large. In the interests of maintaining comparability with social accounts of an advanced economy over as large a part as possible, it is necessary to restrict the scope of the new sector, namely O, as much as possible. For this purpose, we propose to restrict the scope of the household still further. A household might own a business or an enterprise in which no outsider has any proprietary interests. If such an enterprise is run in a manner such that its accounts are kept distinct or with some effort can be so separated from other accounts of the household, then it is possible and advisable to form it into a separate accounting entity and to treat it, in an appropriate sector elsewhere, in the usual manner. When a household combines

within itself the functions of a producer and a consumer, there are usually three points at which the two activities come in close contact and the respective accounts get mixed up. The first is location, that is to say, the place of residence and the place of business. When these are the same, the accounts to that extent become inseparable. Secondly, the employment of unpaid family labour. Such labour is not only not paid in any formal manner, but it is almost always engaged on terms and conditions of work which are usually ill-defined and often extremely irregular. Particularly when work is carried on in the same place as the place of residence, this irregularity assumes extreme forms. Measurement and evaluation of family labour employed, therefore, becomes difficult. The third difficulty concerns home consumption of own-production without formal accounting. If a household runs an enterprise where these points of contact are avoided or can be separated in the account without resort to complex procedures of imputation, there would be little difficulty in constituting such an enterprise into a separate accounting entity distinct from the household. In a sense, it is not a case of family production. Such cases will not be found wanting and their separation from the household sector will enlarge considerably the scope of that which, in a backward economy, is directly comparable with an advanced economy. In particular, this will enable private trading, both wholesale and retail, professional money-lending and other activities as financial intermediaries, to be treated outside the household sector, for in these cases the business accounts are expected to be kept distinct. The household sector O will then consist of all households in their capacity as final consumers, together with such of their productive activity which cannot be separated, in an accounting sense, from their activity as consumers. There will, of course, be some households which are pure consumers with no productive enterprise of their own. It should perhaps be mentioned that they are not excluded from sector O.

5. In the working system for an advanced economy it was recognised that an important productive activity, namely house-ownership, was carried on at personal or household level. However that was about the only productive activity of household which needed to be taken into account. Persons as owners of houses were therefore constituted into separate accounting entities, as distinct from persons as final consumers. It might be thought that a similar procedure could be followed in respect of all productive activity of households. This course does not appear possible for two reasons. Firstly, under circumstances in which production is actually carried on by households the distinction in many cases might be too

artificial. The productive enterprise of the household is more a way of life than an independent business apart from the total family activity, and finer points of distinction are difficult to make. Secondly, for the productive activity of the household to be constituted into the separate accounting entity, there would need to be a very clear and unambiguous definition of what constitutes a productive enterprise. As we shall see, this is not easy to make. In these circumstances, if a household is artificially broken into two accounting entities there is the possibility of some activity being left uncovered by both entities. Thirdly, from the point of view of investigational procedure, it appears more natural and convenient to treat the household as a single accounting entity. We therefore prefer to treat it as such.

6. We shall now consider the type of accounts that a household would keep. Even though the distinction between the productive and consuming activities of the household is not considered to be sufficiently clear to warrant their separation into two accounting entities, an attempt must obviously be made to obtain the distinction as far as possible, by means of separate accounts within the entity. We propose, therefore, two separate accounts, one for the productive activity and the other for the consumer activity of the household. For each branch there will, of course, have to be a current and a capital account. Thus, a household is to maintain four types of accounts which might be termed the operating, the capital, the revenue and the reserve accounts. The first two will cover its activity as a producer, while the latter two will cover its activity as the final consumer. The nature of the operating and capital accounts will be much the same as for other productive enterprises treated in sector (i). However, here we shall not have an appropriation account. All other receipts of the household will be credited to its revenue account. We shall also not have the reserve account in the same sense as for other productive enterprises in sector (i). Here the reserve account will appear as the capital account of the household as the final consumer.

7. The operating account of a household relates to all current activities undertaken as part of its productive enterprise. Now, it is in the nature of a backward economy and particularly of subsistence and family production, that the enterprise is almost always of a very mixed type. This is because within a given productive capacity the normal object is to produce as much for home consumption as possible and not so much for the market. It would be desirable, if possible, to set up separate operating accounts for

the several branches of activities. But the mixing up is so complete that any attempt to separate them would involve us in a series of imputations of costs and receipts as between the different activities. The problems of imputation would be both of definition and of measurement, and it is feared that the procedure might lead to meaningless hair-splitting. It is proposed therefore to treat the entire productive activity of the household as one single enterprise without any attempt to separate the accounts of its several constituents. As a consequence it will not be possible to classify the national product in the household sector by branches of activity.

8. The situation is not, of course, peculiar to the household sector. Even in other sectors it is not infrequent that enterprises contribute to more than one branch of activity. Even here, therefore, "it is not easy in practice to obtain a classification of the national product by branches of activity in such a way that the elements within each branch can be compared with one another on a meaningful basis." For certain purposes, it may be sufficient to use a classification of branches of activity coincident with the main activity of different groups of enterprise. In that case, in the household sector, the households might also be classified by their principal productive activity.

9. Another problem arising in connection with the classification of national product by branches of activity concerns the distinction between a payment to a factor of production and a purchase from an enterprise. The distinction assumes importance while setting up the accounts of a household; on that depends whether a certain receipt will be credited to the operating or to the revenue account. For example, if payments made to a jobbing carpenter are regarded as wages, they will be credited to the carpenter's revenue and not to the operating account. On the other hand, if they are regarded as purchase of service, they will be credited to the carpenter's operating account, as sales proceeds. Usually the distinction is easy to make on a conventional basis, but it does not seem possible to make a uniform definition to settle the borderline cases. In relation to every person engaged in a productive activity, a fundamental question to ask is whether the person is working on his own or is employed by some other person or enterprise. In other words, the point to settle is to whose enterprise the productive activity belongs. That question is not easy to answer without reference to institutional peculiarities. An abstract principle to decide issues which might be useful in some cases would be to minimise the complexities of single enterprise. Thus when a farmer employs a carpenter on job,

if there is any doubt about the nature of the employment, it is advisable to decide in favour of the carpenter, for that makes the farmer's enterprise less complex. When the national product in the household sector is classified by branches of activity coincident with the principal activity of the households the classification would thus be more satisfactory.

10. Next we have to consider the types of transactions which should be kept distinct. In the working system for an advanced economy, three types of transactions are distinguished namely, real transactions, nominal transactions and transfers. In such an economy, transactions in money are dominant, and the first two types refer to transactions in which money passes for something real and nominal respectively. We might say that the real transactions, in this sense, are those in which money is exchanged for something real, while in the nominal transactions money and its equivalents are mutually exchanged. In a backward economy not everything is exchanged for money, and there are numerous transactions in which something real is mutually exchanged without the intervention of money. Such transactions are an integral part of a backward economy—as is, for instance, the market in an advanced economy. In order to know the relative dimensions of the monetary and non-monetary transactions it is necessary to recognise two kinds of real transactions. One is cash transactions in which something real is exchanged for money. The other is barter which is an exchange without the intervention of money. We shall therefore recognise four types of transactions; barter, cash transactions, nominal transactions and transfers.

11. Of the four types mentioned above, the latter three appear in the accounts of an advanced economy and no new problems are likely to arise when dealing with them in the accounts of a backward economy. Barter, however, is peculiar to these accounts and it is worthwhile considering the manner in which it would appear in the system of accounts. It is possible to consider barter as a sale and a purchase from both ends with indirect or hypothetical intervention of money. The accounting procedure, however, becomes somewhat simpler if we regard barter as purchase from both ends. This might be done by debiting both the accounts from where barter purchase is made while crediting the corresponding accounts dealing with inventories. Changes in inventories are dealt with in capital accounts and hence either the capital or the reserve account will be credited according as the original debit is to the operating or the revenue account. For instance, let us suppose that fodder is excha-

nged for food grains for home consumption. The "purchase" of fodder should then be debited to the operating account of the farmer making the purchase, while his capital account should be credited. This may be done by means of a transfer from the operating to the capital account in respect of inventories taken over. On the other hand, as the food grains were supposedly obtained for home consumption, the "purchase" should be debited to the revenue account of the person concerned, at the same time crediting his reserve account by means of a transfer from the revenue account in respect of inventories taken over. The transaction is not considered to be a sale at either end and hence the operating accounts of neither parties show receipts under sales proceeds. In a sense, this treatment accords more nearly with the facts, for barter is essentially a double coincidence of wants. It is of course possible to look at the same transaction from a slightly different point of view. We could suppose that the operating account of the farmer makes a purchase of fodder directly from the capital account of another person while the revenue account of the person makes a purchase of food grains directly from the capital account of the farmer. Thus, while the operating and the revenue account would be debited as before for the respective purchases of fodder and food grains made, the credits would appear in the corresponding capital accounts in both cases, and could be made to appear as sales proceeds rather than as transfers from the operating and the revenue accounts respectively. The former procedure is, however, to be preferred as it accords with the normal practice of taking over inventories to the current accounts for sales and other disposals. It should be noted, however, that in neither procedure sales proceeds appear in the current accounts. When goods are exchanged, we would therefore treat the transaction as a purchase from both ends and follow the first procedure of debiting the accounts in which the purchase is made and crediting the corresponding capital accounts by means of a transfer in respect of inventories taken over.

12. There are two exceptions where the situation does not seem to accord exactly with above procedure. One is barter between goods and services; the other is the payment in kind to factors of production. We shall refer to these as a barter purchase of services and barter payments to factors of production. In a backward economy there appear two important cases of barter purchases of services. In accordance with the recommendation made in the working system for an advanced economy, we shall regard rentals as purchase of services rather than as payment to factors of production. Therefore when rentals are paid in kind, as they are in cases of share-renting, it is

to be regarded as a case of barter purchase of services. The other case is important from the point of view of certain institutions as they actually exist in a backward economy. In many parts of India, for instance, certain artisan, community and personal services are maintained by the agricultural communities by means of contributions in kind at harvest. In this category come such artisans as, for instance, the carpenter, smith, cobbler and rope-maker, all of whom are necessary to maintain and keep in repair the implements of farming. The system also covers community services like watch and ward and personal services like those of the barber, washerman, potter, butcher and priest. The traditional remunerations to them are therefore in the nature of a barter purchase of services. Besides these there would, of course, be numerous cases where services are paid for in kind.

13. Earlier it was pointed out that for certain purposes it is more convenient to regard barter as a purchase at both ends. This treatment also appeared to be more in accordance with facts. In the case of a barter purchase of services, however, particularly in the two cases pointed out above, this treatment appears to be some what unreal. Share-rents are often as big as half of the total production, and when allowance is made for the numerous payments in kind which a cultivator makes, the share in kind received by a landlord is often bigger than the net production receipts of the cultivator. As a result the landlord has often as much saleable surplus as the cultivator. It would be difficult, therefore, to suppose that the landlord "purchases" his share. The same is true of traditional remunerations received in kind by artisans, and other services. The total remunerations accruing to some of the more important artisans, like the carpenter and smith, often are of the same size as the production of an average cultivator. In fact they have a fair-sized saleable surplus and left to themselves they surely would not purchase all their receipts. In other cases, even though the total receipts are not as big, they are usually in terms of the staple food grains, part of which must be exchanged for other requirements like salt and sugar. It appears, therefore, that these transactions are genuine cases of a sale on one side and a purchase on the other. It is necessary, therefore, that in the operating account of an artisan or a landlord, there appear receipts of proceeds of barter sales of services. This can be done if we agree to treat such proceeds of barter sales of services on the same footing as the original production receipts of the producer of goods. Let us suppose, for instance, that a farmer pays a share-rent to a

landlord. As before, the operating account of the farmer will be debited by means of a transfer to his capital account in respect of inventories taken over for barter purchase of goods and services. The operating account of the landlord would then be credited by means of a transfer from his capital account in respect of proceeds in kind of barter sales of services. Here, as before, the transaction could be looked at from a slightly different point of view. The farmer's operating account then could be debited for a barter purchase of services and the landlord's operating account credited for the proceeds of a barter sale of services directly and not by means of transfer items. On the other hand a sale must be effected from the capital accounts of the farmer to the capital account of the landlord. The procedure has the advantage that that we have direct entries in terms of sale and purchase rather than of transfers. However, for reasons already stated, we would prefer the former procedure where inventories are taken over to the operating account for disposals in kind.

14. Finally, we have the case of barter payments to factors of production. Such payments might be classified, as usual, into two categories. One is wages and salaries in kind, including wage-supplements. The other is payment of interest in kind. The first is universal in a backward economy; the second is not uncommon. It refers to two practices. One is the loan in terms of grain which is repaid in kind, with interest in kind added. Towards the end of the agricultural season, small cultivators often run short of their grain requirements. It is then usual for them to borrow grain, which is returned together with interest after harvest. The other practice is somewhat more difficult to handle in practice. Often money loans are secured by a plot of land or a house or a plough or a milch cow which passes into the physical possession of the lender who enjoys the income therefrom in lieu of the interest on the loan. Both are, however, cases of interest payment in kind. Let us suppose that a farmer has made such payments in kind to factors of production. In such cases we shall, as before, debit the operating account and credit the capital account of the farmer by means of a transfer in respect of inventories taken over. Factor payments are credited to the revenue and not the operating account of those who receive them. As such the revenue account of the wage-earner, and not their operating account, will have to be credited. We shall do this by means of a transfer from his services to the revenue account. We would do it by means of a transfer from the capital, rather than from the reserve account. However, as factor payments are entered in the revenue and not the operating account, it appears more

appropriate to deal with the consequent changes in inventories in the reserve rather than in the capital account. It should be noted that this procedure places the reserve account in the same position in its relation to the revenue account as is the capital account in relation to the operating account. Here again, as before, we could treat the transaction in a slightly different manner. The operating account of the farmer could be debited by means of a direct payment from that account to the revenue account of the wage-earner, rather than by means of a transfer. It would be necessary in that case to make a sale from the capital account of the farmer to the reserve account of the wage-earner. For reasons already explained, we prefer the first procedure.

15. So much about barter purchases of goods and services and barter payments to factors of production. We shall next consider certain transfers in kind. As inventories are held in either the capital or the reserve account the transfers will be to these accounts. Let us first consider transfers to the capital account. Here it is convenient to distinguish three types of such transfers. The first is in respect of material used in production, which will be done by means of a transfer from the operating account. The second is in respect of material used in capital works which will be done by means of an internal transfer within the capital account. The third is in respect of withdrawals for home consumption, including gifts, etc. This transfer could be made directly from the revenue account. It is preferable, however, to make it to the capital account from the reserve account. Firstly, we should note that inventory changes due to receipts in kind of payments to factors of production are to be dealt with in the reserve account. In a sense, therefore, the reserve account functions as the resting account for stocks of commodities to be released for final consumption. If therefore, some withdrawals for final consumption are to be made directly from the capital account, we shall need some such convention as that stocks held in the reserve account should receive priority in this respect. This difficulty is avoided if we agree to make withdrawals for final consumption through the reserve account and not directly from the capital account. Secondly, stocks are often withdrawn from capital account, professedly for final consumption but are not in fact directly consumed within the household. They are instead bartered for other household requirements. Consistent with procedures so far outlined, this requires that the corresponding stocks are held in reserve account. We propose, therefore, that transfers to the capital account in respect of inventories taken over

for final consumption, including those bartered for that purpose, should be made from the reserve account.

16. Next, as regards transfers to the reserve account. These will be mainly in respect of withdrawals for final consumption and hence will be made from the revenue account. These might be distinguished in three categories. One is in respect of barter payments to factors of production from the revenue account. Another is in respect of barter purchase of goods and services for final consumption. The third would be for direct home consumption. Besides the main transfer from the revenue account, there should be some provision for transfers from the capital account. We should note again that payments for factors of production received in kind are directly taken to the reserve account. Now it often happens that a wage-earner not only barter some of the wages he received in kind but actually sells some of them for cash. As we do not normally credit any sales proceeds to the revenue account, proceeds of such cash sales should be credited to the operating account. This could be done by a direct transfer from the operating account to the reserve account. For reasons precisely similar to those discussed above it is preferable, however, to do the transfer through the capital account. The transfer to the reserve account in this respect would therefore be from the capital account.

17. The treatment of barter transactions outlined above will be peculiar to the sector O. In other sectors such transactions are few and should be dealt with by postulating the intervention of money. The procedures suggested above appear more direct and will help ascertaining the volume of non-monetary transactions in a backward economy. It should be noted, however, that no new accounting principles are involved. One of the functions of the capital accounts is to deal with changes in inventories. It is by means of a full exploitation of this function that it is proposed to accommodate barter transactions within the standard framework.

18. In connection with the treatment of transactions to be kept distinct, another problem arises, namely, that of transactions occurring within the entity. These might be distinguished, firstly, according as they are between two accounts or within a single account of the entity. Thus home consumption of a product when it is in the nature of final consumption is a transaction between the operating and the revenue accounts. On the other hand, when consumption occurs in the process of production, it is a transaction within the operating account. Another distinction is that between actual transactions, that is, those which physically take place, and

transactions that are imputed for consistency in accounting procedure. Thus when fodder is fed to the cattle, it is an actual transaction. On the other hand, payment of wages to family members is an imputed transaction. Now, a decision is necessary as to which of these transactions should appear in the accounts and which might be neglected altogether. As a general principle it appears necessary that all transactions, whether actual or imputed, between two accounts should be recorded. On the other hand, there is an obvious choice regarding internal transactions, that is, transactions within an account. Between the two alternatives of either making all of them appear or neglecting them altogether there is a third choice of recording only the actual transactions, while neglecting the imputed ones.

19. The matter is of some practical importance and might be discussed by means of a practical illustration. With reference to the operating account of a household, let us consider two transactions, one imputed and the other actual. The first is the imputation of rentals to owner-cultivated land. The other is the feeding of home-grown fodder to own livestock. The first is a matter of allocation of receipts to different branches of activity—as, in this case, between farming and ownership of land. To the extent that certain receipts are credited to land, they will appear as costs of farming. In practice, such allocations of receipts and costs are difficult to handle statistically and unavoidably involve cost accounting procedures. If we proceed with them to their logical extreme, we shall be really trying to separate the accounts of the different branches of activity within the enterprise. This, we have decided not to do. Such imputations are therefore best not done. The rentals to be imputed will in any case appear as part of the operating surplus of the complex enterprise.

20. The other transaction, namely, feeding of home-grown fodder to own livestock, is a fact of the situation, but fundamentally, not on a different footing. Once it is decided to treat all the productive activity of the household as a single enterprise, the home-grown fodder fed to own livestock, or the home-yard manure put into the home farm, are no more than intermediate products and are essentially of the same nature as materials in process. They might, therefore, with some justification, be altogether omitted from the accounts. It is obvious that such omissions would not affect the operating surplus of the complex concern. On the other hand, they are material transactions and if we decide to enter them on both sides of the operating account there would be no

serious difficulties of imputations. Their recording brings the accounts more in accordance with the facts of the situation, giving an explicit statement of the economy in operation, and might help in ensuring complete enumeration of the product. We might, therefore, agree to record all transactions within the household enterprise when they are quantitatively measurable and do not involve problems of imputation and, particularly, of cost accounting. It should be clearly understood, however, that this does not make it possible to separate the accounts of the constituent branches of activity. The measurable transactions are almost always in the nature of one branch consuming material product of another branch, and form only part of the transactions between different constituent branches. There remain many others which, without some principles of imputation, often arbitrary, and elaborate cost accounting, cannot be recorded. They are, therefore, as decided above, best avoided.

21. It is perhaps important to be clear about the effect of omitting transactions within a productive enterprise. In the first instance, it should be noted that their omission is merely the logical consequence of the decision not to recognise branches of activity within an enterprise. From such a combined account, it is really not justifiable to try to work out the production costs of single-items of product of the enterprise. But if that is done and there is apparently sufficient temptation to do it, the cost of single items are under-estimated. Thus, if it is decided to disregard both home-grown fodder and farmyard manure to the extent that they are consumed within the enterprise, the home-grown fodder would not appear as an item of cost in the livestock products and so also the farmyard manure would not appear in the cost of farm products. In other words, single items of product would represent larger net values added per unit to the national product than they in fact do. The national aggregate is, however, not affected, as the over-estimation of net value added per unit is compensated by under estimation of quantities of single items, to the extent that they are consumed within the enterprise. For instance, if the sales proceeds in such accounts are classified by commodities, quantities of commodities, such as fodder and manure, would be, under-estimated to that extent. This seriously distorts the facts of actual production. It is to avoid the picture being seriously distorted in this manner that it is desirable to record transactions within the enterprise, when that is feasible.

22. This brings us to the final point in this discussion, namely, imputation of wages to family labour. It is conventional to treat

persons as not a part of business equipment and to regard payments to them as payment to factors of production which are received to the revenue account of persons. It is not impossible to adopt this procedure and impute wages to family labour which will be debited to the operating account and credited to the revenue account. The imputation might be made by means of two alternative procedures. In one case the family members are treated as hired labour and to them are imputed wages at rates payable to the hired labour for the number of days they actually worked in the household enterprise. Alternatively, they might be treated [as labour under permanent or long-term contract and then might be paid annual wages at rates payable to the labour under annual or long-term contract. By imputing wages at rates payable to the hired casual labour the family labour is likely to be remunerated at rates unduly high, for no allowance is made for the fact of an assured employment or for preference in being employed when work is available. In this respect family labour is more akin to labour under annual contract, but it differs from the latter in the fact that while the latter is usually kept fully employed, the former often enjoys considerable leisure. At any rate, not all family members do the same amount of work as is done by hired labour under annual contract. Some members of the household work during peak periods only when labour is short. A further complication is introduced by the fact that often members do not engage themselves full time in the household enterprise because it does not afford sufficient employment. In such cases, they work outside and earn wages. Now it is obvious that if the members are to be supposed to have been employed under an annual contract and if to them are to be imputed wages at annual rates, their earnings from outside should be credited to the operating account and not to the revenue account of the household. In other words, the family members are to be regarded as part of the productive equipment of the household. This is contrary to accepted notions, for it results in not accepting anything in the nature of final consumption. It appears, therefore, that the family labour will have to be imputed wages on the basis of days when they actually worked in the household enterprise. It is equally obvious that the imputed rates must not be those payable to casual labour. Wages to family labour might, therefore, be imputed for days of actual work only and at average daily rates which a person employed under an annual contract would receive per day when he actually worked.

28. If wages could be imputed to family labour on some such principal as put forward above, these would of course be debited

to the operating account and credited to the revenue account of the household. The content of the operating surplus in that case would be precisely the same as that of a productive enterprise treated in sector (i). However, the problems of measurement involved in the procedure suggested above are considerable. In particular, it is difficult to impute wages for work which is commonly done by family members only. We have for example, the case of the housewife collecting firewood and other fuel, or the children, who are perhaps good for no other job, tending the cattle. Numerous activities appear which must be regarded as gainful, but where evaluation and formal imputation of wages would be too artificial. The alternative, therefore, is not to impute any wages to family labour. When members work outside and earn salaries or wages, they would of course be credited to the revenue account, but for their work done in the household enterprise nothing would be credited to the revenue account. Remuneration to family labour therefore, could appear as part of the operating surplus. This procedure fundamentally changes the character of the operating surplus and places the household enterprise on a footing different from that of the productive enterprises treated in sector (i). But that is a fact of subsistence economy and it is best to recognise it in the system of accounts. The so-called enterprise is not so much of a business proposition as a way of life, and the operating surplus is no more than a source of receipt available for expenditure. The family members are a charge on the enterprise and what is not often realised, in its bad days the enterprise is a charge on other resources of the household. We propose, therefore, that to the extent that their labour enters the family product, no attempt should be made to separate the family members from the enterprise. They should be treated as an integral part of it and their remuneration should appear as part of the operating surplus.

24. We shall now proceed to set out and discuss the scope and content of the four accounts to be kept by a household. Broadly speaking, the contents of the operating and the revenue accounts will be similar to the operating account of other productive enterprise, treated in sector (i), and the revenue account of final consumers treated in sector (iv), respectively. Capital and reserve accounts will deal with the capital transactions relating to the transactions dealt with in the operating and the revenue accounts respectively. As already indicated, one of the principal functions of these accounts will be to deal with changes in inventories.

25. The operating account would be as under :

SECTOR O—HOUSEHOLD.

(1) OPERATING ACCOUNT.

<p>1. Cash proceeds of sales.</p> <p>2. Subsidies.</p> <p>3. Transfers from capital account in respect of :</p> <p>(a) production receipts.</p> <p>(b) proceeds in kind of barter sales of services.</p> <p>(c) work-in-progress and unused material.</p>	<p>5. Cash payments for factors of production.</p> <p>(a) wages, salaries, etc.</p> <p>(b) interest.</p> <p>6. Cash purchases of goods and services.</p> <p>7, 8 and 9. As in sector (i).</p> <p>10. Transfer to capital account in respect of inventories taken over for—</p> <p>(a) payments in kind for factors of production—</p> <p>(i) wages, salaries, etc.</p> <p>(ii) interest.</p> <p>(b) barter purchase of goods and services.</p> <p>(c) use in production.</p> <p>(d) cash sales.</p> <p>11. Transfer to capital account in respect of depreciation and obsolescence.</p> <p>12. Transfer to revenue account of persons in respect of bad debts.</p> <p>13. Transfer to revenue account of surplus.</p>
<hr/> <p>4. Total receipts.</p>	<hr/> <p>14. Total payments.</p>

26. On the receipts side there is only one item which needs some explanation. It is 3 (a), namely, transfers from capital account in respect of production receipts. The normal procedure is to carry over to the capital account only the unsold goods out of current production. That requires a division of the current sales into those out of current production and those out of stocks at the beginning. This is difficult to obtain in practice. We therefore prefer to carry over the entire production to the capital account before making any sales. This is also in accordance with the proposal to use this account more or less as a resting account. The transfer will of course be made at current market prices. Agricultural commodities, for instance, will be carried over at harvest prices. The transfer under 3 (b) has

already been discussed. When services have been bartered, their proceeds in kind are to be treated in the same manner as original production receipts. The transfer under 3 (c) is in respect of work-in-progress and unused material. With primary production, the item would be usually negligible and difficult to measure in practice. It would be perhaps worth-while to disregard it altogether.

27. On the payments side, the transfer item 10 (d) is necessary to cancel the receipt item 1. In evaluating this item there are two alternatives. The inventories taken over for cash sale might be transferred at the same prices at which they were carried to the capital account. This would leave a margin on sales to the operating account. It would be in the nature of trading profits and would appear as part of the operating surplus. Alternatively, the transfer might be made at sales prices, so that the transfer 10 (d) would completely cancel the receipt item 1. The margin in this case would rest with the capital account as due to change in value of inventories and would not contribute to the operating surplus. The latter alternative is to be preferred. Firstly, it is similar to work with in practice. Secondly, we have agreed to take professional trading out of sector O. If this is done, the margin on sales is better regarded as change in inventory value. It is advisable, therefore, that they appear as such in the household sector. If this is agreed to, the advantage of carrying over the entire production to the capital account, as is done by the transfer item 3 (a), would become more obvious. Other items under 10 have been already discussed.

28. As we have defined it, the households are non-profit-making bodies. The operating surplus is therefore not in the nature of profits, but just an item of receipt available for family living. In fact it is inclusive of remuneration to family labour. By transfer item 13, it is therefore carried to the revenue account.

29. We shall next consider the revenue account.

(2) REVENUE ACCOUNT.

<p>198. Wages, salaries, etc. (a) Cash. (b) Transfer from reserve account in respect of wages received in kind.</p> <p>199. Interest. (a) Cash. (b) Transfer from reserve account in respect of interest receipts in kind.</p> <p>200 to 210, except 202. As in sector (iv).</p> <p>202. Transfer from operating accounts of surplus. 21 and 22. As in sector (i).</p>	<p>212. Cash payments of factors of production. (a) wages, salaries, etc. (b) interest.</p> <p>213. Cash purchases of goods and services.</p> <p>214 to 221. As in sector (iv). 27, 28. As in sector (i). † Transfer to reserve account in respect of (a) payments in kind to factors of production. (i) wages, salaries, etc. (ii) interest. (b) barter purchase of goods and services. (c) final consumption.</p> <p>29. Transfer to reserve account of surplus.</p>
<p>211. Total receipts.</p>	<p>223. Total payments.</p>

80. The only new items on the receipts side are the two transfers from the reserve account 198 (b), and 199 (b) in respect of the payments to factors of production received in kind. Their nature has been discussed earlier. In place of the item 202, net return from house-ownership, appearing in sector (iv), we have here 202 transfer from operating account of surplus. On the payments side, though items 27 and 28 from the appropriation account of business enterprises have been incorporated, item 26, it should be noted, is not included. It refers to payments of contingency claims assumed to be handled by insurance rather than by reserves. Here it appears more appropriate to assume them to be handled by reserves. The item is therefore debited to the reserve account.

81. Next, we have the capital account.

(8) CAPITAL ACCOUNT

<p>81. Transfer from operating account in respect of inventories taken over.</p> <p>82. Transfer from operating account in respect of depreciation and obsolescence.</p> <p>83. Transfer from revenue account in respect of property insurance claims.</p> <p>84. Transfer from reserve account (a) in respect of net withdrawals. (b) to balance the account. * Imputed receipts in respect of (a) payments in kind for factors of production. (b) barter purchase of goods and services.</p>	<p>86. Payments for factors of production. (a) wages, salaries, etc. (i) cash. (ii) in kind.</p> <p>87. Purchases of goods and service. (a) cash. (b) barter.</p> <p>88. Net purchases of existing equipment and other assets.</p> <p>89. Transfer to operating account in respect of production receipts, etc.</p>
<hr/> <p>85. Total receipts.</p>	<hr/> <p>40. Total payments.</p>

82. The only items needing explanation are the last two on the receipts side. As explained earlier, all withdrawals for final consumption are to be made through the reserve account. On the other hand, in so far as parts of goods received directly in the reserve account (as for instance wages received in kind) might be sold for cash, they are to be transferred through the capital account. Withdrawals for final consumption will of course be usually very much larger than this reverse item. It is therefore convenient to treat them by means of a single transfer for net withdrawals. This is done by item 84 (a). The other item, 84 (b), is a transfer from the reserve account in order to balance the capital account. The last item of receipt, marked *, is in respect of materials out of stock used within the capital account. They include payments in kind to factors of production and barter purchases of goods and services.

88. Finally, we have the reserve account as under:

(4) RESERVE ACCOUNT

<p>224. Transfer from revenue account of surplus.</p> <p>225. and 227. As in sector (iv).</p> <p>41. As in sector (i)</p> <p>* Transfer from revenue account in respect of payments to factors of production, barter purchases, etc.</p>	<p>282 to 286 As in sector (iv)</p> <p>26. 47 and 48. As in sector (i)</p> <p>49. Transfer to capital account.</p> <p>(a) in respect of net withdrawals.</p> <p>(b) to balance that account.</p> <p>* Transfer to revenue account in respect of payment to factors of production received in kind.</p> <p>87. Net purchases of gold and silver bullion.</p>
<hr/> <p>46. Total receipts.</p>	<hr/> <p>54. Total payments.</p>

84. All items appearing on both sides above, except the last one on the payment side, have been discussed. It is well known that in a backward economy, households often build up their reserves in the form of gold and silver bullion. Even when expenditure is made on ornaments of gold and silver, it is essentially a form of saving and seldom a final consumption. In such cases, therefore, only charges for making ornaments, etc., should be debited to the revenue account, while the purchase of the bullion itself should be debited to the reserve account.

85. We shall now examine the effects of these modifications on the framework in which the United Nations statistical experts recommend national income statistics should be presented. Table I in the experts' report[‡] shows the income available to persons, that is, to individuals and non-profit-making bodies. The purport of the above discussion is that it is more in accordance with facts to treat households, even while engaged in a productive activity, as non-profit-making bodies. As such, the operating surpluses of their productive enterprises, which are inclusive of remuneration to family labour, should be classified under the category of personal income arising from participation in economic activity. As it appears

[‡] *Measurements of National Income and the Construction of Social Accounts* (Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts), United Nations, 1947, pages 9-11.

this suggestion is not entirely new to the system of accounts recommended; for here, while house ownership is regarded as a productive enterprise of persons and actually is constituted into a sub-sector of the productive enterprise sector, its operating surplus is treated differently and classified as personal income under item I (d) in Table I. According to the suggestion now being made, house ownership is only one of the productive enterprises of households and it needs no special treatment. The scope of item 1 (d) in Table, I, therefore, should be enlarged so as to include the operating surpluses arising out of all current productive activity of households. There need be no other change in this table. In a backward economy both in dimensions and in economic status, item 1 (d), namely, operating surpluses of households, would of course be predominant, and hence might appropriately be rated 1 (a), rather than 1 (d).

86. There would be no change in Table II.* In Table III, † where in the first column national income is broken down by income shares, item 14 (c) will need a sub-division. We shall have, therefore, 14 (c) (i)—operating surpluses of households, and 14 (c) (ii)—operating surpluses and net dividends received from the rest of the world. In the second column of this table, where national net product is classified by branches of activity, under item 16 (a) there should also be included household enterprises as represented by the operating and the capital accounts in the household sector. The households as final consumers are represented by the revenue and reserve accounts of this sector and consequently, under 17 a (a) would be included only payments to factors of production made out of the revenue and reserve account of the household sector. In particular it will not include payments made by households out of operating and capital accounts. They come under 16 (a). In the last column of this table where national expenditure is classified according to different types of final expenditure, item 21 (a), namely, domestic net capital formation by persons, will no longer be restricted to land and buildings. It is advisable, therefore, to sub-divide it in the same three categories into which is divided 21 (c). The domestic net capital formation by persons would, therefore, appear under three categories, thus (i) construction work and durable equipment, (ii) inventories, and (iii) gold, silver bullion and coin. The first two items will be obtained from the capital account while the last one from the reserve account of the household sector.

* *Ibid.*, page 11.

† *Ibid.*, pages 12-18.

Due to a distinct reserve account to deal with capital transactions of households in their capacity as final consumers, there is also a possibility of adding one more category, namely, (iv) durable consumer goods.

87. In Table IV, * where an alternative breakdown of national income by income payments is given, under item 80 (a) are grouped items 1 (c), 1 (d) and (e) of the previous breakdown as given in Table I. As indicated above, item 1 (d) would now include operating surplus of all household enterprises and would be an item of considerable, if not of the first magnitude and significance. It would be inappropriate, therefore, to lump it with other items. It should, therefore, be shown separately and might appear as the first item in Table IV. Item 80 (a) then could remain as it is, but exclusive of 1 (d). No new items appear in Tables V, VI, VII, VIII, and IX.†

88. Thus for an industrially backward economy, we have a working system of social accounts directly comparable with the one recommended for an industrially advanced economy. Basically the working system provides us with a list of items necessary to build up national aggregates. Subsequent problems, which in a sense are of the first importance, particularly in a backward economy, are those connected with the measurement of these items. It is proposed to indicate their nature in the following sections. Here as elsewhere, we shall confine the discussion to problems which are peculiar to a backward economy. In other words, we shall consider only problems arising in connection with setting out the account of the household sector.

89. Problems of measurement in this sector arise out of the fact that households, as we have defined them, do not generally keep any accounts and are not required to submit returns to the administration by any act of legislation. It is convenient to distinguish two types of problems. Firstly, there are problems of definition and approach. Secondly, there are those arising out of the fact that it would be ordinarily impossible to approach all the households and hence resort will have to be made to some kind of sampling procedures. We shall first consider the first type of problems, namely, those of definition and approach. It should perhaps be stated that those problems in general would be peculiar to local conditions and that therefore their nature would be different in different countries. Thus it is inevitable that the

* *Ibid.*, page 14.

† *Ibid.*, pages 14-17.

discussion below will be largely based on conditions as they are known to exist in India.

40. It should be noted that we propose to regard the household as one single accounting entity and that all such entities have been grouped in one sector of the economy, called the household sector. The initial problem is therefore that of defining the household as an accounting entity. It is obvious that some such definition as is used for census purposes will have to be adopted. The operations of a census are, however, completed within a short period of time and hence their requirements are somewhat different and in a sense simpler. On the other hand, for purposes of constructing accounts, it is usual to take the accounting period as one whole year. It is necessary, therefore, that by definition, a household as an accounting entity should remain invariable over the whole year. Another obvious requirement is that there should be left no persons outside the households and that no persons should be twice included. It is worth considering how far these requirements can be met in practice.

41. The difficulties of definition are centred round persons who seasonally migrate to other places. Their number is not small and their case needs careful consideration. There are, for instance, seasonal migrants to towns and cities and also to rural areas growing special crops, like sugar-cane, requiring a large amount of seasonal labour. It is obvious that not in all cases can such persons be constituted into separate households. They often include among them earning members of the parent households. Their stay outside the native village is sometimes much too short. The decision must therefore be made on the basis of the length of period during which they remain outside the village. For instance, we might require that to be considered as members of the household concerned they must have stayed within the village for a minimum period during the accounting year. This period could not be of less than six months, for otherwise there arises the possibility of some persons being included in more than two households. On the other hand if the period is made of more than six months, it is not impossible that during the year under consideration, some persons did not stay at any single place for more than six months and as such could not be included in any household. The possibilities of omission and double counting become particularly serious when we proceed by tabling details, not of all households, but only of a sample of them. In a relatively small sample it might happen that no persons were counted twice among the households actually

to be regarded as a case of barter purchase of services. The other case is important from the point of view of certain institutions as they actually exist in a backward economy. In many parts of India, for instance, certain artisan, community and personal services are maintained by the agricultural communities by means of contributions in kind at harvest. In this category come such artisans as, for instance, the carpenter, smith, cobbler and rope-maker, all of whom are necessary to maintain and keep in repair the implements of farming. The system also covers community services like watch and ward and personal services like those of the barber, washerman, potter, butcher and priest. The traditional remunerations to them are therefore in the nature of a barter purchase of services. Besides these there would, of course, be numerous cases where services are paid for in kind.

18. Earlier it was pointed out that for certain purposes it is more convenient to regard barter as a purchase at both ends. This treatment also appeared to be more in accordance with facts. In the case of a barter purchase of services, however, particularly in the two cases pointed out above, this treatment appears to be some what unreal. Share-rents are often as big as half of the total production, and when allowance is made for the numerous payments in kind which a cultivator makes, the share in kind received by a landlord is often bigger than the net production receipts of the cultivator. As a result the landlord has often as much saleable surplus as the cultivator. It would be difficult, therefore, to suppose that the landlord "purchases" his share. The same is true of traditional remunerations received in kind by artisans, and other services. The total remunerations accruing to some of the more important artisans, like the carpenter and smith, often are of the same size as the production of an average cultivator. In fact they have a fair-sized saleable surplus and left to themselves they surely would not purchase all their receipts. In other cases, even though the total receipts are not as big, they are usually in terms of the staple food grains, part of which must be exchanged for other requirements like salt and sugar. It appears, therefore, that these transactions are genuine cases of a sale on one side and a purchase on the other. It is necessary, therefore, that in the operating account of an artisan or a landlord, there appear receipts of proceeds of barter sales of services. This can be done if we agree to treat such proceeds of barter sales of services on the same footing as the original production receipts of the producer of goods. Let us suppose, for instance, that a farmer pays a share-rent to a

selected. It should be noted that this is not sufficient. It is necessary to rule out the possibility from the definition itself.

42. Let us suppose that a satisfactory definition is made, and that it is possible to enumerate the persons who should constitute the household. We would then require that in the accounts of this household the entire activity, in and outside the village, of these persons is properly accounted for. This is difficult to obtain in practice. The parent household is ordinarily not aware of the income and expenditure account of the migrated persons. In other words it is practically impossible to construct the accounts of a household in a manner such as to cover the entire activity of all its members unless all the members happen to be residing together for most part of the accounting period. If this period is one year, there will be a considerable number of households not satisfying this condition.

43. An alternative is to constitute all persons into separate households for that part of the accounting period during which they migrate and live as an independent accounting entity. This would mean that the number and the composition of households would not remain invariable. There is no serious objection to this fact in itself, for, after all, the personnel of a household would certainly change because of natural phenomena like births and deaths. The difficulty, however, would be of enumerating and collecting accounts of those households which exist for only a part of the year. For instance, if the agricultural labourers migrating to a sugar-cane tract and temporarily settled around a sugar factory are to be constituted into separate households and as such their activity is not to be covered by the accounts of the parent households, it is absolutely essential that they are enumerated, contacted and their accounts collected while they are so temporarily settled outside their native village.

44. These difficulties appear unavoidable. Nevertheless their dimensions could be considerably reduced by taking a shorter accounting period. Thus, for instance, if we take a month, rather than a year, as the accounting period, it would be easier to enumerate members of the household in such a manner that most of them were found together for most part of the accounting period, and there would be fewer possibilities of omission and double counting. As we shall presently see, the choice of a shorter accounting period also appears to be advisable for an altogether different reason, namely, the desirability of getting reliable information. Thus even supposing that the accounting period is taken to be a whole year, it would be

obviously impossible to obtain details of income and expenditure for the whole year in a single visit to the household. Firstly, items of expenditure are usually incurred in small amounts and are spread over the whole year. In a backward economy, the pattern of expenditure does not remain stable over the year. Not only it is marked with considerable seasonal variations, but often it is radically affected by the vagaries of the agricultural seasons. On the other hand, though certain items of receipts are obtained in large single bulks, such as, for instance, the production receipts of major agricultural crops, there are numerous items of receipts which are obtained in small and irregular amounts. Among these are, for instance, such items as production of minor agricultural crops, sales proceeds of livestock and forest produce, and casual earnings from hired labour. It becomes difficult, therefore, to obtain reliable information regarding items of expenditure and of numerous miscellaneous receipts by means of a single visit to the households at the end of the year. Secondly, there occur cases when certain households take to certain subsidiary occupations only in certain seasons. Makers of rope from sisal fibre may be instanced. It is also not unknown for primary school teachers to take up such occupations as tailoring during the summer. An investigator visiting the household once in the year is likely to miss such seasonal activity unless he is conversant with local conditions. The difficulty is aggravated by another fact of actual procedure. In order that the accounts of all households might be combined it is of course necessary for the accounting year to be the same for all. This seems necessary for another reason also, namely that when the accounting year does not approximately coincide with the agricultural year, it becomes rather artificial and confusing to the household reporting its accounts. For obvious reasons all the households cannot be visited immediately at the end of the accounting year. The investigational work has, for practical reasons, to be spread over the whole year. This means that some of the households would be visited as late as three or four or even six months after the close of the accounting period. In such cases it becomes all the more difficult to obtain reliable information in respect of a whole year ended several months previously. It appears necessary, therefore, to visit the household more frequently than just once in the year and to obtain accounting details for a period less than a year. In other words, it becomes necessary to adopt an accounting period shorter than a year.

45. A year as an accounting period has obvious limitations, as pointed out above. It has nevertheless one advantage. Even in a

Backward economy, it is the most natural unit of reckoning time and is therefore easily identifiable. As soon as we decide to have a shorter period, difficulties of identification appear. Thus, for instance, if we adopt three months as the accounting period, and approach a household for information relevant to that period, it becomes extremely difficult to identify transactions within a given period of three months. There is every possibility that some transactions properly belonging to this period will be omitted altogether, and that some others belonging to an earlier period will be included. Unless, therefore, we are to rely on such errors being "random" and hence mutually cancelling, we need to choose a period sufficiently short to be easily identifiable. A week is perhaps the most suitable period from this point of view. However, it might be considered rather uneconomic to visit a household and obtain only a week's accounting information. A month is the next and perhaps the longest identifiable period. It should be noted, nevertheless, that in a backward economy, it is not so much of a natural accounting period as it happens to be in an advanced economy. A person not instructed in a calendar month is most likely to regard a month as equivalent to four weeks, which for him are more readily identifiable. The distinction is not purely academic, for it makes, it should be noted, a difference of as much as ten per cent. It might be advisable, therefore, to define the accounting period as of four weeks rather than one month. In that case these four weeks might be those immediately preceding the day of visit.

46. Consider next the sampling of households. They are conveniently sampled in two stages. In the first stage we select certain sample areas. In the second stage we select a sample of households from the households belonging to these areas. The areas to be selected in the first stage might be either artificial areas of given shape and size, technically called grids, such as square grids of say, half a square mile in area, or they might be more natural areas defined by villages. The advantage of choosing artificial areas of given shape and size is that the problem of what is called the multiplier, that is of inflating the sample estimates to bring them dimensionally to the size of national aggregates, becomes simpler. The disadvantages are threefold and become relatively serious if, as is sometimes proposed, the grids to be chosen are comparatively small. Firstly, a considerable amount of map-work is necessary in order to locate the grid in the field and to decide which houses or households belong to it. Secondly, border-line cases have to be decided by approximation. Thus, it might be decided to include a whole village in the grid if half or more of it is actually within it and

fect the whole of it in other cases. With smaller grids, the effects of such border-line decisions become disproportionately large. Thirdly, as the population density varies from place to place, the total content of human population is very different in different grids. As a consequence, the amount of actual investigational work also varies between different grids. This is not very convenient from the point of view of administration of the field-work. Villages are traditional congregations of households and in parts of the country the houses belonging to a village are often found clustered in a compact area called the village site. With villages the problem of enumeration of households belonging to the area chosen therefore becomes simpler. However, unless total counts of households are available from a recent census the problem of determining the multiplier, that is of inflating the sample estimates, becomes difficult. A compromise between the two alternatives might be sought by choosing larger grids, so as to include a number of villages with negligible border effects. By this procedure while the problem of the multiplier will have been tackled, the disadvantages arising out of small grids will be reduced.

47. Once the sample areas have been chosen, it becomes necessary to enumerate all the households belonging to these areas. For this purpose it is necessary to take a full census of all households. It is convenient at this stage to obtain details of the principal means of livelihood of the households, so that these might later be stratified before making the selection of the sample of households. While taking the census two points are worth while bearing in mind. In India all the houses possess census numbers. It is therefore convenient to utilise them while taking the census of the selected areas. It must be borne in mind, nevertheless, that besides households residing in numbered houses, there are many who reside in temporary dwelling places which do not obviously bear any census numbers. Such, for instance, are unsettled wandering tribal people. Among these must be included sheep-rearers as well, who though they have a settled residence in some village, move about in the country from place to place during part of the year. There are other similar cases where entire households, having a normally settled place in some village, migrate to other regions during parts of the year and are temporarily settled in hutments not bearing census numbers. Care must be taken to enumerate these in appropriate places. The problem here is twofold. One is of definition of households who are supposed to belong to an area and the other is one of procedure which will ensure that all those covered by definition are also covered by enumeration. The other point concerns the members

to be enumerated within a household. The nature of the problem has already been discussed. As already stated, the difficulties associated with defining the composition of a household seem unavoidable, except that by reducing the length of the accounting period their dimensions could be considerably reduced. It might be advisable to avoid this problem at the census stage. But it will surely have to be faced after the sample of households is selected.

48. This brings us to the second stage in sampling, namely, sampling of households. In a backward economy, such as in India, a large majority of households are engaged in agriculture as their principal occupation. Therefore unless special steps are taken, a large number in the selected households would be engaged in agriculture while all other occupations would be represented by means of very small numbers. This could be avoided by stratifying the household by their occupations and taking appropriate sub-samples from different strata. This might be done by two alternative procedures. In practice it does not seem possible to divide the households in more than two groups, such as those engaged in agricultural occupations, and those engaged in non-agricultural occupations. Separate sub-samples then might be taken from these two groups. Thus, for instance if we need a sample of sixteen households from the selected area, we could take a sample of eight from agricultural households and another sample of eight from the remaining households. This would give the necessary differential weight to occupations other than agriculture. The main difficulty in this procedure is that of classifying households into two categories such as those engaged in agriculture and others. The distinction is difficult in border-line cases where households practise agriculture and some other occupation during the off-season. There are also cases where different members of a household follow very different occupations. It is difficult in such cases to classify the households as required. The criterion of classifying them by means of the principal occupation, namely, the one which brings the largest income does not work well in practice. For, firstly, incomes are difficult to obtain at the census stage and, secondly, incomes from agriculture are entirely dependent on the nature of the season. The other technical defect of the procedure is that the relative sampling fractions for agricultural and for other occupations are different for different villages. The alternative procedure is to arrange all households in a stratified order. Thus all the cultivating households would come first and would be arranged by the size of their cultivation. The non-cultivating households could then follow, arranged, if possible, by their occupations. We might then divide the list into two equal

nalves and select from each half a fixed number of households. Thus out of the sixteen households to be selected, only four might be selected from the first half while the other twelve come from the second half. The procedure thus avoids the classification by agricultural and other occupations while the problem of combining the two sub-samples becomes comparatively simpler. Further, if while selecting the four households from the first half, they are selected from four equal sub-divisions of the half, and similarly if the twelve households from the other half are selected from twelve equal sub-divisions of that half, we have a much better stratified sample than the one obtained by the former procedure. Perhaps it should be mentioned that this last procedure is not incapable of furnishing what are called sampling errors.

49. If the accounting period is decided to be one year, we might next proceed to obtain from the selected households accounting details for one year. The limitations of this procedure have been discussed earlier. If on the other hand, shorter accounting period is adopted, the selected households will have to be re-visited by means of a number of periodic visits. It is advisable, during each such visit, to check the census of households from where the sample is selected and ascertain households which have left the area and those which have newly entered it. Without necessitating a selection of an entirely new sample, care should be taken to exclude those which have left and include those which have newly arrived.

50. This brings us to yet another problem, the problem of what might be termed sampling in time. The case of households which exist as independent accounting entities only for a part of the year has already been discussed. It is obvious that for them no accounts could be collected for the whole year, unless their accounts for the part of the year are regarded as their annual accounts. In a sense this is of course so. The other case is of those households which do not remain settled at one place for the whole year. It should be repeated that these include not only the so-called unsettled tribes people, but many other households, whose occupations cause them to migrate seasonally. In such cases it becomes difficult in practice to follow them up by means of a number of periodic visits. The problem then is whether the accounts of such households for only part of the year are entirely useless and wasted. This does not seem to be so. If we have taken, for instance, a month as an accounting period, there appears little difficulty in combining the accounts of several households for any single month. By so doing, we could in fact estimate the national aggregates month by month,

These monthly estimates would themselves be of sufficient interest and they could be consolidated to produce the required annual estimates. This suggests another possibility. We need not in that case visit even the settled households every month. We could visit them, for instance, only once in three or four months to obtain the monthly accounts of the preceding month. That should enable us to approach a larger number and hence a greater variety of households. Thus the accounts of each month become a complete item in themselves, and from the point of view of building up the national aggregates there need not be any specific attempt to construct the annual accounts of any particular household. While this becomes physically impossible for unsettled households, for settled ones, though there is no difficulty in making repeated visits, they are always a cause of nuisance and often arouse resistance and opposition.

51. Finally, we shall bring this discussion to a close by mentioning a point which is likely to raise controversy. The presumption underlying procedures of randomly selecting households for obtaining accounting details, is that all households, when randomly selected, do furnish details of their income and expenditure. This is basically not true. Human nature being what it is, there is no reason to suppose that conditions in a backward economy are particularly bad in this respect, households are generally not willing to part with this information. In a backward economy where persons are illiterate and have natural suspicions regarding such investigations, the situation is worse still, for there is seldom plain refusal to part with information. Understatement of income and overstatement of expenditure is universal. That is a common bias and is unavoidable. But instances of plain mischief are not uncommon. They prevail particularly in the higher income groups of households. When this factor is taken into consideration along with the character of the investigating agency usually available for this type of work the result is disastrous. Investigators are often temporarily recruited and have no permanent interest in the work. They are of necessity hastily trained, stationed in unfamiliar regions and required to undergo life with which they are unaccustomed. In order to cover larger number of households spread over more centres, they need to be kept continuously moving. Unfamiliar with local conditions, they are in the first instance unable to detect incorrect statements. Having detected them, they cannot do much to correct them. They are not interested in correcting them either, for if they did so they would reduce the amount of investigational work they can finish in a given period. The realisation that they are noting down obviously

false information, soon demoralises even the honest among them. It is doubtful, therefore, whether estimates based on random samples of households, many of them being frankly reluctant to part with information, would be worth-while at all.

52. Willingness on part of the households to part with information relating to their income and expenditure appears to be a fundamental prerequisite in any attempt to construct social accounts of the household sector. This means that the necessary information must be obtained not from a randomly selected set of households, but from those who are willing to furnish such information. Experience suggests that such households if properly approached will not be found to be altogether wanting. There are some who are willing to part with any information because they feel that they have nothing to lose thereby. There are others who are willing to co-operate because of an accounting sense, which, though perhaps uneducated, is instinctive in them. It is proposed, therefore, that in each of the randomly selected sample areas, a household accounting service should be initiated. The object of this service should be to educate persons in the purpose and utility of keeping accounts and to offer a free service to those who wish their accounts to be kept. Aided by adequate propaganda, it is hoped that the response will not be altogether poor. Surely, it should be possible to obtain a sizeable sample of households from each selected area. The sample would not, of course, be a random one and consequently the problems of the multiplier—that is of inflating or in this case, generalising the sample results—would be difficult. This is a problem for statistical technique and it is hoped that its solution would not be beyond the skill of statisticians not unaware of the peculiarities and requirements of the applied field. The solution might not be theoretically perfect but it is unlikely to yield results worse than those derived from the response of a random sample. For instance, we might, as before, take a complete census of all households of the selected area and arrange them in a stratified order based on the readily available information. The households voluntarily furnishing their accounts could then be marked off on the list and each such household might be supposed to represent all households in its immediate neighbourhood on the list. It is not suggested that this provides a solution of the statistical problem, which is undoubtedly complicated and will surely exact considerable skill and ingenuity. It is suggested, however, that it is not impossible to obtain a reasonably satisfactory solution.

58. We shall now turn to the form of actual questionnaires to be used for obtaining the requisite information. The working system

of accounts in itself does not provide such a form. For firstly, it is not always in terms of the distinctions recognised in this system that a household conceives its transactions. Secondly, whether or not we are ultimately interested in a greater sub-division of the items and considerations appearing in the working system, provision has to be made in the questionnaire form to be used in the field for noting down all minor details and sub-divisions. Without these the aggregates of interest cannot be usually obtained directly. The working system of accounts gives a framework in which all items in the questionnaire should ultimately fit in. In the following sections we shall describe the general structure and scope of the questionnaires recommended for use and the manner in which these are expected to furnish items appearing in the working system of social accounts of the household sector.

54. In all three questionnaires were recommended for use termed Schedules, A, B and C respectively. The Schedule A which incidentally was not adopted by Government for the National Sample Survey, was designed for the purpose of taking a complete census of all households belonging to the area. Provision was made in it for noting down the principal occupations of all households together with an item indicating the size of their production units. For instance, for cultivators, this was to be the size of their cultivating holdings or if this were not readily available the number of their plough cattle; for weavers, the number of their looms; in the case of sheep-rearers, the size of their flocks; the number of fishing nets of the fishermen and so on. Particular attention was to be paid to the character of the households, as for instance, whether they were permanently or temporarily settled in the selected village or area, and in the case of the temporarily settled, as to when, wherefrom and why for did they arrive in the area and as to when they were likely to leave. The purpose of this information was to enable us to decide as to which households were to be supposed to belong to the area selected and then to arrange them in a stratified order by occupation and within each occupation by the size of the production unit.

55. The next schedule B, was to be filled in only in respect of the sample of households selected for detailed enquiry. Its purpose was to ascertain the position of the household in respect of its assets and liabilities. This was to be done once at the beginning and once again at the end of the year. The schedule was expected in the first instance, to furnish directly certain items appearing in the capital and reserve accounts of the household. Secondly, it is was to furnish information necessary to derive some other items appearing

in these accounts. Thirdly, the census of assets, though not directly relevant to the construction of accounts, was thought of sufficient interest in itself. In Block II of this schedule are taken occupational details of all members of the household. These in themselves do not directly furnish any item of the accounts. The information is, however, necessary for scrutiny of the next schedule C. Particularly, it helps in suggesting what items of receipt and expenditure to expect in this schedule. In Block III are taken details of the real estate improvements, as distinct from maintenance and repairs, during the previous year. This year is not itself the accounting year but as the related items of expenditure are incurred in large single sums, it was thought possible to get the information for a whole year and it was decided to take it down at the commencement of the survey. These items were of course to be covered by the current monthly schedule. But according to proposed procedure, each household was to be visited only once in three months. Improvements to real estate, in land and buildings are usually undertaken during certain seasons. For instance, land improvements are done at the beginning of the season and improvements to buildings usually at the end of the monsoon. As the actual field-work of the survey was expected to start sometime late in October it was possible that these items would be missed altogether unless the schedule was again filled at the end of the year. In the event of this not happening, it was thought desirable to utilise previous year's information as an approximation. In Block V, are taken details of the residential house. It was thought that rentals could be imputed to owner-occupied houses on the basis of actual rentals paid by households residing in rented houses. In practice this might not turn out to be very satisfactory as the number of households staying in rented houses are rather few. In any case the imputation could not be more than approximate.

56. In Block VI are taken details of livestock where for each animal are given its age, as to whether it was home-bred or purchased or otherwise acquired, since when it was in the possession of the household and in case of purchase, its purchase price. Thus this block would furnish numbers and age distributions of livestock at the beginning and at the end of the year. This would be evaluated on the basis of the current prices of livestock of different kinds and of different ages, to be obtained from the actual sales and purchases during the current year reported in schedule C. The difference between the value at the end and at the beginning, consists of two components. One is the net purchases during the year. The other is the depreciation or appreciation due to natural phenomena, such

as births, deaths including slaughter, and changes in the age distribution. Net purchases during the year are to be obtained from Block VI of schedule C, where incidentally are also given the births, deaths and slaughter of livestock. The balance will be the other component namely, depreciation or appreciation. This will be part of the transfer item 82, appearing in the capital account namely transfer from operating account in respect of depreciation and obsolescence. It should be noted that the change in the value of livestock due to changes in prices has been disregarded. It should not appear as it would be very unreal, based as it would be on scanty price data.

57. In Block VII is taken an inventory of implements and machinery. Here as in the earlier Block, we have, in respect of each implement, its age and purchase price. The main object of this information is to work out some kind of depreciation allowances. It is usual for this purpose, to ask the informant about his own expectations regarding the life of implement. That does not appear to be a fruitful approach. Instead we propose to take the ages of implements in actual use. It is thought that this information might be made use of, to derive the average life of different implements. The problems are however considerably complicated. In particular, it should be noted that the average life of an implement is not the average age of the implements in use. A better approximation would be the average age of the older implements. The problem, however, is difficult and perhaps all that is theoretically needed, is not available. The block therefore collects all the information that can possibly be asked for. Based on this will be worked out allowances for depreciation which will be in the nature of constant proportion of the purchase price. This will furnish the remainder of the transfer item 82 appearing in the capital account.

58. In the next Block VIII, is attempted an inventory of stocks. The possibility of taking inventories of stocks was always in doubt. For this reason, household inventories and inventories of agricultural commodity stocks were not attempted at all. Here an attempt is made to take inventories of stocks of raw materials, of materials in process, of and finished product, in the case of non-agricultural productive enterprises only. Even here the completeness of such inventories is in doubt and valuation, particularly of materials in process, difficult to make. The inventories help nevertheless in suggesting what raw material purchases and finished product sales to expect from households engaged in different occupations. The information in this block by itself does not provide directly any item

of the account. Finally, in Block IX, are taken particulars of borrowings and lendings. While they will enable us to obtain net borrowings and lendings, they also help in imputing interest receipts because these latter are often not actually received and hence not reported.

59. The schedule C has been termed the Monthly Working Account of the household. In Block II of this schedule are obtained details of employment and earnings of all members of the household during three days immediately preceding the day of visit. The purpose of this information is twofold. Firstly, it furnishes estimates of cash wages and salaries earned by the members of the household. This is the receipt item 198 (a) appearing in the revenue account. Secondly, it provides estimates of actual work done by the household members in household enterprise. This has its own interest and is essential if wages are to be imputed to family labour. In Block III are required details of salaried and hired labour employed by the household during the week immediately preceding the day of visit. This has been divided into three categories according as the labour employed was employed for farm, non-farm or domestic work. The distinction between farm and non-farm work is of secondary importance from the point of view of the accounts. The separation of the labour employed for domestic work is however important as the corresponding wages paid will have to be debited to the revenue account. Thus this block will furnish information necessary to derive payment items 5 (a) and 212 (a) appearing in the operating and the revenue accounts respectively. The distinction between labour employed in current productive activity and that employed in capital works should have been distinguished. That seemed to load this block with too many and rather difficult distinctions. It was, therefore, not made. Outlay on capital works is being separately assessed and some adjustment could then be made in this item.

60. A kind of accounting distinction which a household in a backward economy readily understands is the distinction between cash transactions and barter transactions. While interviewing it is convenient therefore to make a separate account of receipts and payments or disposals in kind. This is done in Blocks IV and V respectively. In Block IV are to be noted all receipts in kind during the the month. The receipts are to be noted commoditywise. The main distinction is that between production receipts and other receipts. Production of all commodities during the month is to be noted in terms of quantities and valued at wholesale prices current during the month. This gives us the transfer item 8. (a) appearing in the

selected. It should be noted that this is not sufficient. It is necessary to rule out the possibility from the definition itself.

42. Let us suppose that a satisfactory definition is made, and that it is possible to enumerate the persons who should constitute the household. We would then require that in the accounts of this household the entire activity, in and outside the village, of these persons is properly accounted for. This is difficult to obtain in practice. The parent household is ordinarily not aware of the income and expenditure account of the migrated persons. In other words it is practically impossible to construct the accounts of a household in a manner such as to cover the entire activity of all its members unless all the members happen to be residing together for most part of the accounting period. If this period is one year, there will be a considerable number of households not satisfying this condition.

43. An alternative is to constitute all persons into separate households for that part of the accounting period during which they migrate and live as an independent accounting entity. This would mean that the number and the composition of households would not remain invariable. There is no serious objection to this fact in itself, for, after all, the personnel of a household would certainly change because of natural phenomena like births and deaths. The difficulty, however, would be of enumerating and collecting accounts of those households which exist for only a part of the year. For instance, if the agricultural labourers migrating to a sugar-cane tract and temporarily settled around a sugar factory are to be constituted into separate households and as such their activity is not to be covered by the accounts of the parent households, it is absolutely essential that they are enumerated, contacted and their accounts collected while they are so temporarily settled outside their native village.

44. These difficulties appear unavoidable. Nevertheless their dimensions could be considerably reduced by taking a shorter accounting period. Thus, for instance, if we take a month, rather than a year, as the accounting period, it would be easier to enumerate members of the household in such a manner that most of them were found together for most part of the accounting period, and there would be fewer possibilities of omission and double counting. As we shall presently see, the choice of a shorter accounting period also appears to be advisable for an altogether different reason, namely, the desirability of getting reliable information. Thus even supposing that the accounting period is taken to be a whole year, it would be

as births, deaths including slaughter, and changes in the age distribution. Net purchases during the year are to be obtained from Block VI of schedule C, where incidentally are also given the births, deaths and slaughter of livestock. The balance will be the other component namely, depreciation or appreciation. This will be part of the transfer item 82, appearing in the capital account namely transfer from operating account in respect of depreciation and obsolescence. It should be noted that the change in the value of livestock due to changes in prices has been disregarded. It should not appear as it would be very unreal, based as it would be on scanty price data.

57. In Block VII is taken an inventory of implements and machinery. Here as in the earlier Block, we have, in respect of each implement, its age and purchase price. The main object of this information is to work out some kind of depreciation allowances. It is usual for this purpose, to ask the informant about his own expectations regarding the life of implement. That does not appear to be a fruitful approach. Instead we propose to take the ages of implements in actual use. It is thought that this information might be made use of, to derive the average life of different implements. The problems are however considerably complicated. In particular, it should be noted that the average life of an implement is not the average age of the implements in use. A better approximation would be the average age of the older implements. The problem, however, is difficult and perhaps all that is theoretically needed, is not available. The block therefore collects all the information that can possibly be asked for. Based on this will be worked out allowances for depreciation which will be in the nature of constant proportion of the purchase price. This will furnish the remainder of the transfer item 82 appearing in the capital account.

58. In the next Block VIII, is attempted an inventory of stocks. The possibility of taking inventories of stocks was always in doubt. For this reason, household inventories and inventories of agricultural commodity stocks were not attempted at all. Here an attempt is made to take inventories of stocks of raw materials, of materials in process, of and finished product, in the case of non-agricultural productive enterprises only. Even here the completeness of such inventories is in doubt and valuation, particularly of materials in process, difficult to make. The inventories help nevertheless in suggesting what raw material purchases and finished product sales to expect from households engaged in different occupations. The information in this block by itself does not provide directly any item

of the account. Finally, in Block IX, are taken particulars of borrowings and lendings. While they will enable us to obtain net borrowings and lendings, they also help in imputing interest receipts because these latter are often not actually received and hence not reported.

59. The schedule C has been termed the Monthly Working Account of the household. In Block II of this schedule are obtained details of employment and earnings of all members of the household during three days immediately preceding the day of visit. The purpose of this information is twofold. Firstly, it furnishes estimates of cash wages and salaries earned by the members of the household. This is the receipt item 198 (a) appearing in the revenue account. Secondly, it provides estimates of actual work done by the household members in household enterprise. This has its own interest and is essential if wages are to be imputed to family labour. In Block III are required details of salaried and hired labour employed by the household during the week immediately preceding the day of visit. This has been divided into three categories according as the labour employed was employed for farm, non-farm or domestic work. The distinction between farm and non-farm work is of secondary importance from the point of view of the accounts. The separation of the labour employed for domestic work is however important as the corresponding wages paid will have to be debited to the revenue account. Thus this block will furnish information necessary to derive payment items 5 (a) and 212 (a) appearing in the operating and the revenue accounts respectively. The distinction between labour employed in current productive activity and that employed in capital works should have been distinguished. That seemed to load this block with too many and rather difficult distinctions. It was, therefore, not made. Outlay on capital works is being separately assessed and some adjustment could then be made in this item.

60. A kind of accounting distinction which a household in a backward economy readily understands is the distinction between cash transactions and barter transactions. While interviewing it is convenient therefore to make a separate account of receipts and payments or disposals in kind. This is done in Blocks IV and V respectively. In Block IV are to be noted all receipts in kind during the the month. The receipts are to be noted commoditywise. The main distinction is that between production receipts and other receipts. Production of all commodities during the month is to be noted in terms of quantities and valued at wholesale prices current during the month. This gives us the transfer item 8. (a) appearing in the

operating account, namely, transfer from capital account in respect of production receipts.

61. It should be mentioned here that it was not intended to visit a household each month to collect the monthly account or its working for the past month. As already noted such repeated visits are often a cause of nuisance and even of irritation to the household. Instead it was proposed to visit each household every three months. Nevertheless in each visit the schedule would be filled in respect of one month only. This procedure has been described earlier as sampling in time. In an agricultural economy a large number of production receipts, such as those of major crops, are concentrated in two or three months of the year. It is possible therefore, that for a number of households such major receipts would be missed altogether. If the programme of visits were so arranged that the households to be visited in any month would constitute a representative sub-group of the total sample, there was no harm in such omissions. In fact theory assures that the estimates would not be affected. In practice it is not however always safe to rely on theory to the full extent of its claims. This is not casting doubts on theory. It is merely a caution that all the assumptions of the theory might not be satisfied in practice. At any rate it did not appear advisable to rely on procedures of sampling in time to obtain estimates of such major items as productions of agricultural crops, which are so much concentrated in time. The purpose of the monthly schedule, as earlier explained, was to obtain estimates of numerous items of miscellaneous receipts which accrue in small amounts spread over the whole year. It was positively not expected to obtain estimates of production of major agricultural crops through this schedule. Estimation of agricultural crop production is now a much-discussed subject and considerable progress has been made in this country in applying modern sampling techniques for this purpose. Reliance must be placed on those methods and overall estimates of production of major agricultural crops, that is in fact all crops amenable to these techniques, should be obtained. Information collected in this respect through this schedule should nevertheless enable us to obtain a breakdown by types of disposals of an otherwise known total.

62. Other receipts in kind are distinguished into a number of categories such as (i) rentals received in kind, (ii) proceeds of barter sales of services, (iii) wages received in kind, (iv) material contributions received from land-lords, co-sharers, partners, etc. and (v) other receipts in kind to be specified. The first two together furnish transfer item 3.(b) in the operating account, namely the

transfer from the capital account in respect of proceeds of barter sales of services. The nature of this item is fully discussed earlier. The next item (iii) above provides the transfer item 198.(b) appearing in the revenue account, namely, the transfer from the reserve account in respect of wages received in kind, The item (iv) refers to the practice of landlords sharing certain items of costs such as seed and manure when land is share-rented, and similar other practices. The item does not directly appear on the receipts side of the operating account but the item 10-(c) on the other side of the account, namely, transfer in respect of inventories taken over for use in production will be treated on a net basis. Thus in the operating account of the tenant cultivator, such material contributions received from the landlord would neither appear on the receipts side nor when they are used up in production, would they appear as items of cost on the payments side. On the other hand, in the operating account of the landlord, the item would be included under the transfer item 10. (c) mentioned above. The justification of this procedure lies in the fact that we treat rentals as sales proceeds which are receipted to the operating account. Such contributions as the landlord makes are his genuine costs of renting out the land and should thus appear as cost items in his operating account. The tenant cultivator is no more than the agent who actually incurs the costs. Other receipts in kind will have to be dealt with according in their nature which it is required to be noted down.

68. In Block V are shown the disposals in kind. Here it is convenient to include the cash sales as well. The basic distinction here is thus between sales and other disposals in kind. Sales during the month are noted commoditywise in terms of both actual quantities and sales proceeds. The first item on the receipts side of the operating account is cash proceeds of sales. It is convenient to divide it into two categories as I. (a). Cash proceeds of sales of goods and 1. (b) of services. Column 4 of Block V, furnishes the cash proceeds of sales of goods only. Other disposals in kind have been distinguished in to a number of categories as under :-

(O) exchanged in barter purchase of commodities. (i) rentals paid in kind, (ii) barter purchase of services, (iii) wages paid in kind (iv) material contributions by landlords, etc. (v) used as raw materials in production, (vi) physical destruction and (vii) other disposals to be specified. (O) concerns the exchange of commodities in barter purchase of commodities. Details of such barter purchases appear in other blocks of the schedule and it is possible to sub-divide this total according as the barter purchase is made from the operating or the revenue account. It thus furnishes parts of the transfer

items 10. (b) and *. (b) appearing on the payments side of the operating and revenue accounts respectively. The next items (i) and (ii) are barter purchases of services and will furnish the remainder of the transfer item 10. (b) of the operating account. Of these two, (i) is of course to be debited to the operating account under 10. (b). This is not however true of (ii). All remunerations to hereditary artisans and services cannot properly be debited to the operating account. The hereditary artisans and services include among them such artisans as the potter and such personal services as the barber, washerman, butcher, priest, etc. Remunerations to them should therefore properly go under *, (b) and be debited to the revenue account. This distinction should have been made in the schedule. It was not made through oversight and is a flaw. The same is true in respect of the next item (iii) namely, wages paid in kind. These are partly to be debited to revenue account under * (a) - (i). As however, the distinction is not made, these would be all debited to the operating account under 10. (a) - (i). The nature of the next item (iv) has been discussed already and it together with the item (v), would furnish the transfer item 10. (c) in the operating account. Physical destruction by fire, floods, etc. are to be treated as capital losses by means of a transfer from the reserve to the capital account under 84 (a) appearing in the capital account. Other disposals in kind should be treated on their merit.

64. In Block VI of the Schedule are noted all transactions in livestock including their births, deaths, slaughter, sales and purchases. As already noted, the data on sales and purchases will enable us to build the item 88 in the capital account, namely, net purchases of equipment and other assets. Data on births, deaths and slaughter enable us to check the changes in livestock inventory at the end of the year. Sales and purchases of equipment and assets other than livestock appear in Blocks VII and VIII respectively. Some of them relate to the capital and others to the reserve account. An item in these blocks refers to sales and purchases of gold and silver bullion. It is not expected however that any reliable information in this respect will be available. The item is mentioned only for completeness. The same is partly true about borrowings and lendings. Information about borrowings is not so difficult to obtain if properly approached. The information on lendings however is seldom complete. As regards transactions in financial market, such as in bank deposits, securities, shares, premiums, etc. it is advisable to approach from the other end rather than from the household end. As it is convenient for noting, provision is made in these same blocks, for noting rentals and other returns on capital assets paid and received

Rentals of lands and buildings and of other capital equipment such as livestock and implements when they are hired out, should appear in the operating account under sales proceeds if they are received and under cash purchases of goods and services if they are paid. Other items of receipt and payment such as interest and dividends, etc. should appear in the reserve account.

65. In Blocks IX and X are noted all purchases of goods for production purposes. These purchases have been distinguished according as they are cash or barter purchases. On the other hand, as in the case of cash wages paid, the distinction between purchases for current production and those for capital works has not been made. The blocks thus directly give part of the item 6 in the operating account, namely, cash purchases of goods and services, but will have to be subsequently adjusted.

66. In Blocks XI and XII have been brought together all cash receipts and payments during the month. New items appearing in these blocks relate, firstly, to purchases of goods and services and payments to factors of production for formation of capital assets including improvements particularly to land. These therefore, might be considered to be giving items 86 and 81 of the capital account, but jointly. Other items in these blocks are mostly in the nature of sales proceeds and purchases of a number of services commonly met with in a backward economy. They therefore furnish the residuals of sales proceeds and cash purchases of goods and services in the operating account.

67. Finally, in Block XIII and XIV are brought together all items of household expenditure. These items have been divided into two groups. In one group, covered by Block XIII, are included all items of routine expenditure such as all food items. It appeared sufficient and more accurate to ask information about expenditure on these items only for one week immediately preceding the day of visit. In the other group, covered by Block XIV, are included all other items which are more or less of occasional expenditure such as, for instance, clothing. Expenditure during one month is required for all items. These blocks thus furnish all items appearing on the payments side of the revenue account.

68. This completes the survey of the questionnaire schedules proposed for a sample survey of households. It would thus appear that the schedules are designed to furnish all items appearing in the system of accounts drawn except that the payments to factors of production and purchases of goods and services are not satisfactorily distinguished as for current production and for capital works.

Though some adjustment seems possible it is undoubtedly advisable to revise the schedule from this point of view. Secondly, the home consumption of product is not directly sought. Its estimation will have to be done otherwise.

69. There is one particular in the schedules which needs special mentioning. It is that all sales are required to be distinguished according as they were made to a professional trader or to any other person. Similarly, all purchases are required to be distinguished according as they were made from a trader or from any other person. The object of this information is to assess the volume of exchange handled by professional traders. It seemed impossible to obtain any reliable information from the traders themselves except in respect of certain items of cost such as rentals of shops, transport, wages to assistants and labour, etc. It was therefore thought worthwhile attempting as an indirect method of estimating the volume of trading. As prices of all sales and purchases were to be noted, it was also thought possible to estimate gross profits of trading. If items of costs could be estimated by direct questionnaire to the traders, it seemed possible in this way, to ascertain the net operating surplus of trading.

IV. INSTRUCTIONS AND TRAINING OF FIELD STAFF

1. In accordance with the decisions reached in Delhi on 28rd August, the Gokhale Institute was to make arrangements for giving instructions in Poona Schedules at six training centres all over India. Mr. Dandekar returned from Calcutta by the end of the month, where he had been to finalise the forms of the schedules and seeing the final press proofs at the Eka Press, Calcutta, where all printing arrangements were made. By the time, the training camp at some centres had already been opened and there was hardly any time left for drafting of detailed instructions. On 1st September, 1950, Mr. Dandekar with a number of workers of the Gokhale Institute visited the training centre at Alandi (near Poona) and explained to the trainees the working of the Poona Schedules. Copies of the Poona Schedules were not received at the training centre before 7th September and little training therefore could be undertaken. In the meanwhile full and detailed instructions for filling in the Poona Schedules were drafted and cyclostyled. On 11th September, 1950, Instructors from Poona were sent to various training centres with copies of full instructions.

2. Mr. V. N. Bapat visited the training centres at Cuttack and Shillong and also met the workers at the Calcutta Institute between 11th to 28th September. Mr. N. S. Kulkarni visited the training centres at Muttra and Allahabad between 11th and 20th September. Mr. V. M. Nadkarni visited the training centre at Madras between 12th and 17th September. Mr. S. G. Apte visited the training centre at Gwalior between 11th and 18 October. Again Mr. V. M. Nadkarni visited the training centre at Vajreshwari between 1st and 8rd of November. Further in December, Mr. S. G. Apte visited centres at Vyara and Earthan between 7th and 12th December and 21st and 25th December respectively.

3. As already stated the instructions were drafted very hurriedly and it was expected that they might be found inadequate in some respects. The instructors were therefore asked to note all the difficulties raised at various training centres, so that supplementary instructions might be issued. In fact, however, the instructions were generally found to be adequate and no supplements were issued. The instructions are reproduced in full in an appendix to this chapter as they might assist in understanding the nature of the Poona Schedules. On a reading of these instructions it might appear

that on some points a great deal was left to the discretion of the investigators and hence that to that extent these instructions were not full. The need to leave some points to the discretion of the investigators arose out of a number of considerations. The first of course was the extremely short time in which the instructions were drafted. Secondly, it was thought difficult to have hard and fast instructions which would be applicable to conditions in different parts of the country. In the first instance, we lacked sufficient knowledge of the variety of conditions all over the country; this knowledge must forthcome only from regional studies of sufficiently small regions and until a number of such studies are made in different parts of the country, the information collected in a centrally directed countrywide survey must necessarily be artificially standardised. Further, even if this knowledge were available, instructions to cover all the variety would be too voluminous and it was doubtful whether we should require the investigators to read all the volume of instructions concerned with situations they were unlikely to meet with. This appeared particularly undesirable in view of the fact that the investigators recruited were in many cases new to this type of work. Instead of burdening them with hard and fast and in many cases necessarily unimaginative instructions on every point, we preferred to give them a general idea of the purpose of the schedules and general directions to decide border-line cases.

APPENDIX
GOVERNMENT OF INDIA - NATIONAL SAMPLE SURVEY
POONA SCHEDULES B AND C - 1950-51
INSTRUCTIONS TO INVESTIGATORS

Gokhale Institute of Politics and Economics
Poona 4

1. INTRODUCTORY.

1. The structure and object of the Poona Schedules are somewhat different from those of the Calcutta Schedules. It is advisable therefore to know in a general way their objectives and approach.

2. The purpose of the Poona Schedules is to construct the annual account of each selected household through a series of periodic visits to the household. There are two schedules prepared for this purpose :—

B. Household Schedule with Inventory of Assets and Liabilities;

C. Monthly Working Account of the Household.

3. Schedule B is designed to ascertain the position of the household in respect of its assets and liabilities on a given day, namely, the day of our visit. It is akin to stocktaking of a concern on a given day. Schedule C is designed to obtain information regarding all incoming and outgoing transactions of the household during a given month, namely, the month immediately preceding the day of the visit. For the purpose of this schedule a month is taken to be four weeks. It is obvious, therefore, that in order to build the annual accounts of the household, it is necessary to ascertain :—

(i) the beginning position of its assets and liabilities (Schedule B)

(ii) Monthly (that is, four weekly) accounts of income and expenditure by means of a series of 13 periodic visits, once in four weeks (Schedule C) and

(iii) the end position of its assets and liabilities (by means of schedule B again).

4. The schedules will be used in about 600 villages all over India. In each such village, a sample of 16 household is selected. Thus we shall be trying to compile the annual accounts of approximately 10,000 households distributed all over India. These 10,000 households have not been selected because of any special interest in them. Their purpose is to provide a representative picture of the Indian conditions and they

Though some adjustment seems possible it is undoubtedly advisable to revise the schedule from this point of view. Secondly, the home consumption of product is not directly sought. Its estimation will have to be done otherwise.

69. There is one particular in the schedules which needs special mentioning. It is that all sales are required to be distinguished according as they were made to a professional trader or to any other person. Similarly, all purchases are required to be distinguished according as they were made from a trader or from any other person. The object of this information is to assess the volume of exchange handled by professional traders. It seemed impossible to obtain any reliable information from the traders themselves except in respect of certain items of cost such as rentals of shops, transport, wages to assistants and labour, etc. It was therefore thought worthwhile attempting as an indirect method of estimating the volume of trading. As prices of all sales and purchases were to be noted, it was also thought possible to estimate gross profits of trading. If items of costs could be estimated by direct questionnaire to the traders, it seemed possible in this way, to ascertain the net operating surplus of trading.

IV. INSTRUCTIONS AND TRAINING OF FIELD STAFF

1. In accordance with the decisions reached in Delhi on 28rd August, the Gokhale Institute was to make arrangements for giving instructions in Poona Schedules at six training centres all over India. Mr. Dandekar returned from Calcutta by the end of the month, where he had been to finalise the forms of the schedules and seeing the final press proofs at the Eka Press, Calcutta, where all printing arrangements were made. By the time, the training camp at some centres had already been opened and there was hardly any time left for drafting of detailed instructions. On 1st September, 1950, Mr. Dandekar with a number of workers of the Gokhale Institute visited the training centre at Alandi (near Poona) and explained to the trainees the working of the Poona Schedules. Copies of the Poona Schedules were not received at the training centre before 7th September and little training therefore could be undertaken. In the meanwhile full and detailed instructions for filling in the Poona Schedules were drafted and cyclostyled. On 11th September, 1950, Instructors from Poona were sent to various training centres with copies of full instructions.

2. Mr. V. N. Bapat visited the training centres at Cuttack and Shillong and also met the workers at the Calcutta Institute between 11th to 28th September. Mr. N. S. Kulkarni visited the training centres at Muttra and Allahabad between 11th and 20th September. Mr. V. M. Nadkarni visited the training centre at Madras between 12th and 17th September. Mr. S. G. Apte visited the training centre at Gwalior between 11th and 18 October. Again Mr. V. M. Nadkarni visited the training centre at Vajreshwari between 1st and 8rd of November. Further in December, Mr. S. G. Apte visited centres at Vyara and Earthan between 7th and 12th December and 21st and 25th December respectively.

3. As already stated the instructions were drafted very hurriedly and it was expected that they might be found inadequate in some respects. The instructors were therefore asked to note all the difficulties raised at various training centres, so that supplementary instructions might be issued. In fact, however, the instructions were generally found to be adequate and no supplements were issued. The instructions are reproduced in full in an appendix to this chapter as they might assist in understanding the nature of the Poona Schedules. On a reading of these instructions it might appear

that on some points a great deal was left to the discretion of the investigators and hence that to that extent these instructions were not full. The need to leave some points to the discretion of the investigators arose out of a number of considerations. The first of course was the extremely short time in which the instructions were drafted. Secondly, it was thought difficult to have hard and fast instructions which would be applicable to conditions in different parts of the country. In the first instance, we lacked sufficient knowledge of the variety of conditions all over the country; this knowledge must forthcome only from regional studies of sufficiently small regions and until a number of such studies are made in different parts of the country, the information collected in a centrally directed countrywide survey must necessarily be artificially standardised. Further, even if this knowledge were available, instructions to cover all the variety would be too voluminous and it was doubtful whether we should require the investigators to read all the volume of instructions concerned with situations they were unlikely to meet with. This appeared particularly undesirable in view of the fact that the investigators recruited were in many cases new to this type of work. Instead of burdening them with hard and fast and in many cases necessarily unimaginative instructions on every point, we preferred to give them a general idea of the purpose of the schedules and general directions to decide border-line cases.

APPENDIX
GOVERNMENT OF INDIA - NATIONAL SAMPLE SURVEY
POONA SCHEDULES B AND C - 1950-51
INSTRUCTIONS TO INVESTIGATORS

Gokhale Institute of Politics and Economics
Poona 4

1. INTRODUCTORY.

1. The structure and object of the Poona Schedules are somewhat different from those of the Calcutta Schedules. It is advisable therefore to know in a general way their objectives and approach.

2. The purpose of the Poona Schedules is to construct the annual account of each selected household through a series of periodic visits to the household. There are two schedules prepared for this purpose :—

B. Household Schedule with Inventory of Assets and Liabilities;

C. Monthly Working Account of the Household.

3. Schedule B is designed to ascertain the position of the household in respect of its assets and liabilities on a given day, namely, the day of our visit. It is akin to stocktaking of a concern on a given day. Schedule C is designed to obtain information regarding all incoming and outgoing transactions of the household during a given month, namely, the month immediately preceding the day of the visit. For the purpose of this schedule a month is taken to be four weeks. It is obvious, therefore, that in order to build the annual accounts of the household, it is necessary to ascertain :—

(i) the beginning position of its assets and liabilities (Schedule B)

(ii) Monthly (that is, four weekly) accounts of income and expenditure by means of a series of 13 periodic visits, once in four weeks (Schedule C) and

(iii) the end position of its assets and liabilities (by means of schedule B again).

4. The schedules will be used in about 600 villages all over India. In each such village, a sample of 16 household is selected. Thus we shall be trying to compile the annual accounts of approximately 10,000 households distributed all over India. These 10,000 households have not been selected because of any special interest in them. Their purpose is to provide a representative picture of the Indian conditions and they

have been chosen by scientific methods of selection so as to ensure their representative character. In particular, they include among them all kinds of households, both poor and better doing and following all manners of life. We are thus not interested in them as single families, but as a group of households representative of Indian conditions.

5. As a first step, we shall ascertain the beginning positions of the assets and liabilities of the selected households. That should give us a representative stocktaking of the assets and liabilities of households in rural India. Normally, we would like to begin our accounting year sometime in April, May or June, for it is sometime then that the agricultural year begins all over India. This year, however, we are somewhat too late to begin our survey work. Nevertheless we must ascertain the position at the beginning. If the survey is continued after the end of this official year, that is after the end of March, 1950, we shall do a similar stocktaking sometime during April, May or June. That will provide us with the end position for the six months' period during the current year, and also the beginning position for the next year's account. Our first job is thus to fill in the B schedule for all households during our first visit to them.

6. As already pointed out, in order to construct complete accounts of a household, it would be necessary to follow our first visit with a series of four-weekly visits. However, just as, in order to build the accounts of the country as a whole, it is not necessary to ascertain the individual accounts of all the households, so in order to know approximately the income and expenditure account of a family it is not necessary to keep its monthly accounts for all the months. It would be sufficient for our purpose to have only a few visits to each household. According to the present plan, each household will be visited only four times during the year. If we properly time our visits, it should be possible to visit each family during both its good and bad months. For instance, if we have our visits made once in three months, we shall have visited the family during all the seasons. On the other hand by so doing, we shall not be needed to visit all the households every month. Instead we shall be distributing our work of one visit over three months; that is to say, we shall be visiting each month, only about 8,200 of the 10,000 selected families. We shall complete in three months one visit to all families and then begin our second visit in the same manner. Now, while we distribute our households over three months for the purpose of any single visit, we could arrange to include among the 8,200 households to be visited during any month, a representative sub-sample of our sample of 10,000 households. That is to say, within each group of 8,200 to be visited during any month, we shall include all kinds of households. In that case, just as the original sample of 10,000 could give us a representative picture of the conditions in the country, each sub-sample of about 8,200

households would furnish a representative picture of conditions obtaining in the month during which they will be visited. Our periodic visits to the sub-sample, therefore, would give us a series of pictures of the conditions in successive months. By piecing these pictures together, we shall get to know a complete picture for a whole year.

7. Following our first visit, therefore, our next task would be to visit each selected household once in three months in order to gather its income and expenditure account for four weeks immediately preceding our visit. You must know that the selection of the sample of households so as to ensure its representative character is a technical matter. So also, now that we shall not be visiting each household every month the decision as to exactly when a household is to be visited is a technical matter and just as, in order to obtain valid results on the basis of as few as 10,000 households all over the rural India, no changes could be allowed in the selected households, similarly, in order to build annual accounts on the basis of only four month accounts, no changes could be allowed in the time programme of your visits. You will be given the time programme of your visits in advance, and you are earnestly requested to try your utmost to conform to the selected households and to the scheduled time programme of the visits. In case, due to circumstances beyond your control, or due to overwhelming difficulties, you find it impossible to keep to the selection and the time programme, please immediately inform the office of the circumstances. Strictly, you are not allowed to make any changes in either. Therefore, try your utmost to conform to the selected households and the time programme. In case of lapse due to unavoidable circumstances, immediately report the matter to the office. You are warned that any lapse on your part in this respect will most certainly disqualify you as an investigator.

II. POONA B. HOUSEHOLD SCHEDULE WITH INVENTORY OF ASSETS AND LIABILITIES.

1. As already indicated, this schedule is designed, to ascertain the position of a household in respect of its assets and liabilities on the day of the visit. All the information in this schedule will, therefore, be as on the day of the visit.

2. The assets of a household consist of all the material goods that it owns. We might classify them as under :

- (i) Real estate in land and buildings.
- (ii) Capital goods, such as tools of production.
- (iii) Stocks of raw materials, materials in the process of production and finished goods yet unsold.
- (iv) Stocks of consumption goods including household articles like furniture, utensils, etc.

(v) Gold, silver, ornaments, shares, bank deposits, cash on hand, etc.

It is obvious that it would be difficult to obtain any information regarding (iv) and (v). As regard (iv) it would be a long process to make an inventory of all household articles even if the persons concerned, allowed us to do it. Also, in the present conditions, it is unlikely that any one would reveal his stocks of agricultural commodities. As regards (v) no one naturally likes to reveal his position in this matter. For this reason, we shall not try to obtain any information as regards both (iv) and (v).

8. Coming to the liabilities of a household, they mostly consist of loans and credits received from others. There is of course a parallel item of assets, namely, loans and credits given by the household to others. As regards loans and credits received by the household from others is concerned, it is not usually difficult to obtain information about them. The same is, of course, not true about loans and credits given by this household to others. The situation in this respect might be found to be particularly difficult due to recent legislation in many states controlling the activities of the moneylenders. Nevertheless, we shall try to seek information on both sides of this item.

4. This is the kind of information we shall try to obtain in this schedule. For convenience of entering, the schedule is divided into the following blocks:—

- I. Identification.
- II. Members of the household with their occupations.
- III. Real estate in land and buildings.
- IV. Real estate improvement done during the past year.
- V. Description of the residential house.
- VI. Details of livestock owned.
- VII. Details of major implements and machinery owned.
- VIII. Valuation of stocks of raw materials, materials in process, and finished goods.
- IX. Outstanding position regarding loans and credits.

First, you should make yourself familiar with the general layout of these blocks of information. As you will see, the first five blocks are placed on the front side of the schedule while the remaining four appear on the back side of it. We shall now proceed to explain the items in each block.

5. BLOCK I—IDENTIFICATION.

This block consists of a number of items necessary to identify the particular household to which the schedule belongs when similar schedules all over India are collected in the head office for analysis. You will appreciate that this is absolutely essential. Make sure therefore that all the items in this block are fully entered without any error before you proceed to other blocks.

Enter the names of State, District, Tahsil and the village to which the household belongs and enter their code numbers supplied to you. Two columns are given; in the first column enter the names, and in the second, write the code numbers. Similarly enter the name, and the number of the investigator (i.e. your own) but only the number of the inspector. Do not write the name of the inspector. Keep the space blank. If and when this particular schedule is checked by your inspector, he will put his signature in that space. Next, write :-

- (i) the house number, that is the census house number of the house and
- (ii) the number of the household, which is merely its serial number in the village.

As you know, in each village, there are sixteen selected households. They are serially numbered and you are required to visit them in their serial order. Then write the date of the visit. Write it very clearly as, for instance, 13-10-1950. Please note that all the information in this schedule refers to this day and hence it is an integral part of the information of this schedule. Therefore, it is absolutely necessary to write it very clearly.

Then write the name of the head of the household. Note that being the head of the household is a matter of social status. In many cases, of course, he will also be the principal earning member, but that need not necessarily be so. In extreme cases, in fact, he need not even be an earning member of the household. Therefore, you should accept whosoever has in fact the social status of the head. Obviously we are not so much concerned with his name as such. But still you should write it legibly, though it need not be very full.

While you write the caste, it will be presumed that the person is a Hindu by religion unless you mention otherwise. In fact, if the religion is not Hindu, you need write only the religion in the space given for caste. In all such cases, castes within such religion other than the Hindu religion need not be mentioned. In writing out the principal occupation of the head, provided he is an earning member, write it in full so as to give a complete description of the nature of his occupation. The following procedure should be followed in classifying the principal and subsidiary occupations of informants as given by them. The occupation bringing him the major part of his income should be accepted as the principal one; and the one bringing him an income somewhat less than the one brought by the principal occupation should be treated as the subsidiary occupation. You should leave the coding space given for the coding of caste and occupation blank. The coding will be done in the office.

6. BLOCK II—MEMBERS OF THE HOUSEHOLD.

In this block we obtain details regarding the household members and particularly their occupations. It is always difficult to

decide for an outsider like you, as to who are the members of the family. You will have to depend on the reporting of the head and if he considers someone as a member of his household, it will be difficult to deny it. You should know, however, that, for a person to be included in this schedule, he has to be in the first instance a normal resident of the village. Try to ascertain this point in cases of doubt. A line is given to each member of the household. Enter all information relating to him on one line. Name is merely for your own guidance and there is no need to write it in full. Ascertain the relation with the head exactly and that will help you in making sure that the person is in fact a member of the household, in all cases other than those of the first relations (such as father, mother, husband, wife, brother, sister, son or daughter). Ascertain that the person does not in fact belong to any other household within the village or outside. In cases of more distant relations, ensure that the person is not an outsider such as a guest. On the other hand, make sure to include in the schedule any member who happens to be temporarily outside the village on the day of the visit. Note that in this block you have to include the head of the household as well. In fact you should begin with him and enter all information relating to him in the first line. In his case, in the column of relation to head, write "self".

Sex of each person should be noted directly in code; 1, standing for Male and 2 for Female. Age is to be written in completed years.

Next note whether the person is or is not an earning member of the household. This again should be done directly in code, 1, standing for earner and 2 for non-earner. Here again you will have to depend upon the report and the opinion of the head. For your guidance, you should note that an earning member should be one who takes part in the economic activity which brings sustenance to the household, as a matter of course and not in the case of emergency only. It is not necessary, however, for this purpose that the person should be "working" regularly every day or that he should be employed full time.

In the next two columns, enter the principal and subsidiary occupation of each earner. Leave the coding space blank. Note that for every earning member, there must be some principal occupation; it is not necessary that he should have a subsidiary occupation also. In such cases, however, write in the column of subsidiary occupation the word "nil" to make sure that you have not merely forgotten to note the subsidiary occupation. Leave the coding space for the principal and the subsidiary occupations blank. The coding will be done in the office.

7. BLOCK III—REAL ESTATE IN LAND AND BUILDINGS.

In this block, we ask for details regarding land and buildings owned by the household. As regards land, you have to

note the total area of the land owned. Enter the area in round acres, by which is meant that you are to leave out a fraction of less than half an acre, while consider a fraction of half or more acre as complete acre. Accordingly, when the land owned happens to be less than half an acre, the entry will have to be 0. It is necessary to make the distinction between those who own some land, though less than half an acre, and those who do not own any. Hence in cases where the household does not own any land, note it as "nil" in words.

As regards "ownership", you should know that there exist various kinds of rights in land. That right in land, which enables the person to sell his right at will and obtain about the same price which a full owner could get, should be considered as ownership for the purpose of this entry.

The owned land need not necessarily be in the village of residence. Hence you should specifically enquire whether the household owns any land outside the village; it is very likely that such land might not be reported without special enquiry. In such cases, however, you should make sure that the lands concerned are in the sole ownership of this single household, for in many cases they are likely to be undivided properties of joint families who have actually formed into more than one household.

As regards owned buildings again they need not be within the village of residence. In the case of each such building note the purpose for which it is being used or is intended, for instance, residential warehouse, temple, cow-shed, etc. Also note for each such building approximately the area under its roof. By approximately is meant that if you could note in round hundred square feet, that should be sufficiently accurate. By area "under the roof" is meant the area which is protected from the sun. In particular, it need not be enclosed by walls of any kind on any side. By building is, however, meant some structure which is erected for a permanent purpose and not merely for an occasion.

8. BLOCK IV-REAL ESTATE IMPROVEMENTS DURING LAST YEAR.

In this block are included only two categories. One is land improvements, by which is meant such improvements as digging of a well or developing other sources of irrigation, building and similar measures to remove other defects of the soil such as water-clogging, etc. The other is new construction which should also include extensions to existing structures or such improvements as would increase the permanency of the existing structure. It should not include, however, mere repairs. A line is left for you to enter if you come across anything which you may like to call improvement of real estate not included in the above categories. In such cases, use the third line, but give the description of the improvement. In all cases, give the total expenditure incurred on the improvements.

9. BLOCK V-RESIDENTIAL HOUSE.

This block is really an independent piece of enquiry concerning what might be called housing. In particular, it is not a part of the inventory of assets and liabilities. It concerns the residential house of each household whether owned or not. If it is owned, you have already noted it in Block IV. Nevertheless enter it again in Block V. Mention whether the residential house (in which the household resides on the day of visit) is owned or rented. The code numbers for this purpose are 1 and 2 respectively. Please note that rented house need not necessary have some rent. A house might be free rented. As regards ownership, there should not be much difficulty but for uniformity and in doubtful cases you should have the same criterion as given for the ownership of land. Ownership should carry with it a marketable title which would fetch about the same price as in the case of full ownership.

Mention the number of stories as 1, 2, etc. Note that the ordinary houses with only ground floors will be said to be one-storied. Entering the number of rooms please note that a room should ordinarily be an area which is capable of being enclosed on all sides. In particular, do not count as rooms, the verandhas, which are open from one or more sides. About the area under the roof, as already said, it should be the area protected from the sun and should be given approximately in round hundred square feet.

In considering the quality of structure, it is possible that not all parts of the house are structurally of the same quality. You are, therefore required to describe the structure of the best portion of the house. There are three main items while considering the structural quality of a house, plinth, walls and roof. You should give the structural type of each one of these by means of the code numbers provided in the block. Note that, plinth is some raising from the ground. For houses, which are built at the ground level with no plinth, write as "nil" in the space given for plinth.

You are likely to come across families residing in extra temporary structures which could be moved at will, as far instance, tents, etc. The point we are considering here is not the "strength" of the structure, but the manner in which it is fixed to the ground. If it is of a mobile nature, such as could be shifted at will from one place to another, write across the entire space provided for residential house, that the residential arrangement is "not" fixed and then describe what exactly it is, such as tent, etc.

10. BLOCK VI-DETAILS OF LIVESTOCK OWNED.

You will find a complete list of all kinds of livestock given in Block VI of Schedule C. We might group them in two groups as (i) large animals and (ii) smaller animals. In the

first group might be included such animals as bull, bullock, cow, he and she buffalo, horse, donkey, mule, camel, etc. and their youngstock. In the second group might be included such animals as sheep, goat, poultry and other birds. In the present block you are required to note details of all animals owned by the household. For each single animal falling in the group (i) above, you are required to note its age in years, as to how the family came to possess the animal, how long is the animal in the possession of the household and if it were purchased, its purchase price. Thus you will have to use one line for each single animal. You should write the kind of the animal in column 1, such as bullock, and then write its code number in column 2. The code number for any kind of animal is merely its serial number in the list of livestock given in Block VI of Schedule C. The age should be written in completed years. The manner in which the household came to possess the animal should be given in column 4 by means of the code numbers given at the head of the column. Thus 1 for homebred, 2 for purchased and 3 for otherwise. In the last case, write 3 and describe the nature of the acquisition such as gift. In column, 5 write in completed years since when the animal is in the possession of the household. Thus animals of age less than one year will appear as with age 0 in column 3 and animals which are in the possession of the household for less than one year, will also appear with 0 in column 5. In the last column you have to give the purchase price of the animals purchased, that is those for which you have put 2 in column 4. For the smaller animal falling in group (ii), there is no need to give their ages and also as to how long they have been in the possession of the household. For these animals, therefore, the column 3 and 5 will remain blank. This will enable you to note these smaller animals in groups and will avoid using one line for each single animal. Thus you could note ten poultry birds on one line provided all of them were homebred or purchased or otherwise acquired in the same manner. In such cases you should clearly note in the first column the number of animals involved, such as 10 sheep. In column 2 note as before their code number, in column 4 the manner in which they were acquired, which should be the same for all the animals being noted on a single line, and in the last column, if they were obtained by purchase, give their combined purchase price in rupees. You will of course have to use different lines for different kinds of animals and two separate lines if 3 goats were homebred and were purchased.

11. BLOCK VII—IMPLEMENTS AND MACHINERY (MAJOR ITEMS)

For your guidance, you are being given names of the major implements of farming. It is obviously impossible to make a similar list for all kinds of industries. You should, therefore, write down all the major implements and machinery both of farming and other occupations. Note their names in the first

column. By major implements is meant all those which would cost more than Rs. 10/- each if made new today. In the next column of code, you have merely to write 1 if the implement is meant for farming and 2 if otherwise.

The next two columns are obvious. Note the number of years since the implements are in the possession of the household and their purchase price in rupees.

The following are the major implements of farming :-

- | | | |
|------------------------|------------------|-----------------|
| (1) Plough | (2) Clod-crusher | (3) Harrow. |
| (4) Bullock-hoes | (5) Seed-drill | (6) Water-lift. |
| (7) Bullock-cart, etc. | | |

These are the usual implements. In some cases you might also find such machinery as a tractor, oil engine, etc. In other implements and machinery are included all types of conveyances such as a cart, a car, or a bicycle.

12. BLOCK VIII-VALUATION OF STOCKS.

As already pointed out, we shall not be taking stocks of agricultural commodities and also of the household goods and articles. Therefore, it is only in the case of households engaged in some productive occupation other than agricultural that this block will be entered. The commodities are classified into three categories for convenience. They are :-

- (i) raw materials of production,
- (ii) materials in the process of production and
- (iii) finished goods yet unsold.

The distinction is not always clear and it is merely for the convenience of taking stock that the classification is done. It does not matter, therefore, if in some cases the distinction is not clear to you. You might put the item in any one of the categories according to your judgement. You should try, however, to make a complete stocktaking of all commodities connected with the productive occupation of the household. You might omit from this list minor items or very small stocks of other commodities when for instance the value of such items is less than Rs. 5/- each. If the omitted items together look like exceeding a total value of Rs. 10/- you should enter a miscellaneous item at the end and put the combined value of all such small items. For all other commodities enter their names and their value at cost price in rupees.

Please note that the transactions which affect the marketable commodities of a trader in stock are not to be entered in Block VIII Schedule B. The other items such as furniture, etc. should, however, be entered in that Block.

18. BLOCK IX - OUTSTANDING CREDIT POSITION

The distinction between Loans and Credits is that loan is more formal and is liable to interest charges or their equivalents.

Credits are in the nature of business or personal accommodation on which no interest is charged. There are four columns given for—

- (i) loans received.
- (ii) loans given out by the household;
- (iii) credits received and
- (iv) credits given out by the household.

Only the outstanding loans and credits are to be noted. Thus debts once incurred but now fully repaid are not to be recorded. There might be a number of transactions of either kind and a line is provided to note each one of these transactions. With respect to each such transaction you should also note whether it was done on business account or household and personal account. Thus, when a loan is taken or given for say purchase of implements, of raw materials, etc. it is on business account. On the other hand, when it is for such purposes as household expenditure or for marriage and other ceremonies, etc. it is on personal account. Sometimes a loan is taken or given merely to repay an old loan; in that case, the purpose of the new loan depends upon the nature of the old loan being repaid. Note the purpose of the transaction by means of the code numbers given in column 1.

14. In all blocks, where totals are indicated, add all relevant items and complete the blocks. On items where no information could be obtained put a cross in the appropriate space. Thus, if the household does not own any land, you have to write nil; when the information as to whether the household owns any land or as to how much it owns is not available for any reason, put a cross. Write legibly, and keep the schedule clean.

III. POONA C. MONTHLY ACCOUNT SCHEDULE.

1. As already pointed out at the beginning we shall be concerned in this schedule with the monthly accounts of the household for the one month immediately preceding the day of the visit, and that, for the purpose of this schedule, one month will mean four weeks. You will appreciate that it would be easier to fix the attention of the village on four weeks by day rather than one calendar month by date. Nevertheless, you should take particular care to locate each transaction to be noted in one of the four weeks and ensure that it really occurred in one of them.

2. When we consider the monthly accounts, there are a few broad categories of income and expenditure, which it would be useful to keep in mind. First is the distinction between what is called the (i) capital account and (ii) current account. If during the month, the household sold its house for Rs. 2,000/—, that could not be an item of current income; similarly if during the month he purchased a house for Rs. 10,000/— that again is not an item of current expenditure. These and such others are

called items of capital income and expenditure and it is necessary to show them separately in a separate capital account.

8. Coming to the current account, we shall make a further-distinction (i) Business account and (ii) Personal account. Personal Account is the household or domestic account and we shall presume for simplicity that it consists of only the expenditure items. In this account, therefore, we shall include all items of household expenditure. In the business account we shall include all his current income and expenditure incurred on activities which bring him income.

4. There is yet another distinction which we should make particularly as we shall be concerned with rural areas. It is the distinction between those items of income and expenditure which are received and incurred in terms of money and those which are done in kind; that is in terms of commodities and services. The distinction is important because it is likely that a considerable portion of the transactions will be found to be taking place in terms of commodities and services and not in terms of money. For purposes of aggregating, it will, of course, be necessary to evaluate such items in terms of money, but clearly such valuations will have to be imputed. In order that such valuations are put on them on a uniform basis, it is necessary to note such transactions separately and then evaluate them. That will also enable us to know the proportion of transactions, which though finally expressed in terms of money, do not in fact involve money.

5. We shall now examine the layout of the schedule and note where and how provision is made for entering these distinct categories of income and expenditure separately. The blocks of items in this schedule are as under:—

- I. Identification.
- II. Three day details of employment of the household members.
- III. Details of salaried and hired labour employed during one week.
- IV. Production and other Receipts in kind.
- V. Sales and other disposals in kind.
- VI. Births, Deaths, Slaughter, Sales and Purchases of Livestock.
- VII. Receipts from (i) Liquidating Assets and creating liabilities and (ii) Returns paid on capital assets.
- IX. Purchase of raw materials for farm, forest and livestock production.
- X. Purchase of raw materials for other Production.
- XI. Cash Receipts.
- XII. Cash Expenditure.

XIII. Household Expenditure on certain items for one week

XIV. Household Expenditure on certain items for one month.

These are the blocks of items of information and you should first make yourself familiar with them in a broad way.

6. The first three blocks, I, II, III appear on the front page of the schedule in its folded form. (I) is merely a block to identify the household for which the schedule is filled in. The purpose of (II) block is to get the estimates of cash wages and salaries earned by the members of the household. As employment in rural area is often very irregular and casual, we shall ask for details regarding only three days immediately preceding the day of visit instead of the whole month. Block III concerns the other side of the block II, namely, the cash salaries and wages paid by the household. For the same reason we shall ask information only with respect to one week rather than four weeks. Our estimates of earnings and expenditure on cash wages and salaries will thus be based on the three day and one week information, respectively. Earnings and expenditure in kind by way of salaries and wages received and paid will come in blocks IV and V respectively.

7. Now turn the schedule in its folded form. On the other side appear the two folded sides. On the left hand folded side appears Block IV while on the right hand folded side appears Block V. Block IV concerns Receipts in kind while Block V, Disposals in kind. The following are the types of Receipts and Disposals in kind that we are likely to meet with.

RECEIPTS IN KIND.

(1) Production receipts.

(2) Purchase against cash

(3) Commodity receipts in exchange of other commodities.

(4) Receipts as owner-share and similar receipts and returns in kind on capital assets rented or lent out.

(5) As remunerations received by hereditary and artisan village services.

(6) As wages and salaries received in kind.

DISPOSALS IN KIND

(1) Consumption—
A. Home consumption.
B. Consumption for production.

(2) Sales against cash.

(3) Commodity disposals in exchange for other commodities.

(4) Disposals as owner-share and similar disposals as returns in kind on capital assets rented in or borrowed.

(5) As remunerations paid to hereditary and artisan village services.

(6) As wages and salaries paid in kind.

RECEIPTS IN KIND

(7) As material contributions received from landlords, co-sharers, partners, etc.

(8) Other receipts in kind.

DISPOSALS IN KIND

(7) As material contributions made to tenants, co-sharers, partners, etc.

(8) Other disposals in kind such as physical destruction of stocks, etc.

As regards receipts (2) and (8), namely, purchases both against cash and kind, that is cash and barter purchases, we have included them elsewhere for convenience of noting. If you now unfold the schedule, you will find in the upper half of the central page, Blocks IX and X, and on the right hand page, Blocks XIII and XIV. All purchases might be divided into two categories:—

(A) Purchases of raw materials of production and

(B) Purchases of commodities of consumption.

Purchases (A) are included in Blocks IX and X while purchases (B) in Blocks XIII and XIV.

All other receipts in kind are included in Block IV.

Coming to the disposals in kind, we shall not attempt to estimate directly disposals of the type (1) namely consumption. This is only because it is feared that it might be considerably difficult. As to disposals of type (8), namely, commodities exchanged in barter purchases of other commodities, we are providing space to note them wherever we shall be noting barter purchases as for instance in Blocks IX, X, XIII and XIV. We shall summarise the contents of such disposals from these blocks and enter this in Block V.

All other disposals in kind are to be noted directly in Block V.

8. Again for convenience of noting we have singled out all types of livestock from other "commodities." This is firstly because the nature of receipts and disposals in kind of livestock is somewhat different from the types described above for other commodities. For instance, we might like to call production of livestock as births, while among the disposals, we might like to note separately their deaths and slaughter.

Secondly, we would like to know a few other details of livestock transactions as for instance, the ages of the animals involved. Thirdly note, all livestock transactions which could be included in "current accounts". For instance, livestock like the plough and transport animals, are in the nature of capital assets and transactions in them should affect the capital account. We find it therefore more convenient to deal with livestock transactions including their purchases and

sales, in a separate block. Now that you have before you the schedule in its unfolded form, you will find on the upper half of the left-hand page, Block VI. We shall note all livestock transactions in this block.

9. Below this Block are Blocks VII and VIII. The two constitute the receipts and expenditure sides of the Capital Account. They also include, however, receipts and expenditures as returns on capital assets. Interest, rent, dividend, etc. are not items in capital account. They are included in these blocks merely for the convenience of noting. They would be summarised from these blocks and transferred to the Current Account which appears in blocks XI and XII.

10. As already pointed out, Blocks IX and X are meant for cash and barter purchases of raw materials of production. Such materials are divided into two principal categories as:—

(a) those for farm, forest and livestock production and

(b) those for other production.

Purchases of these, appear in Blocks IX and X respectively.

11. Below these two blocks, appear Blocks XI and XII, which consist of cash receipt and cash expenditure side of the current account. For convenience of reference, in the first two lines of this account we shall also give a summary of the capital account from Blocks VII and VIII.

12. Finally, we have the two blocks XIII and XIV. As already noted they are meant for cash and barter purchases of consumption of goods. These goods have been divided into two categories.

(a) those of more or less frequent and regular nature and.

(b) those of somewhat occasional character.

We note the purchases of (a) in block VIII and restrict the period of inquiry to only one week instead of four weeks. We shall build our estimate of monthly expenditure on that basis. The items (b), we note in Block XIV. As the items included in Block XIV are rather occasional, we shall ask for information regarding them for four weeks as in all other cases. It might be noted that this block includes besides commodities of consumption, certain other items of household expenditure. The blocks XIII and XIV, are thus designed to cover all items of household expenditure and thus between them give us the personal account of the household. Please note that the transactions which affect the trading account, i. e. the day to day sales of marketable commodities of a trader, are not to be entered in blocks VII, VIII, XI and XII of Schedule C. The other items such as shop rents, salaries and wages of servants should however, be noted in the relevant blocks,

We should now proceed to consider the detailed items in each block.

13. BLOCK I—IDENTIFICATION.

This is the same block as the Block I in Schedule B and is to be filled in precisely the same way. We should nevertheless note once again, that the serial number of the household is given to you and you are required to visit the several households in a village in the order of their serial numbers.

14. BLOCK II—THREE DAY DETAILS OF EMPLOYMENT OF ALL HOUSEHOLD MEMBERS OF AGE 6 AND ABOVE.

You are concerned with all members of the household including temporary guests who are present in the village either on the date of visit, or on one of three days immediately preceding the visit. There is a line given to each such member and you are to enter all details of his employment on that line. After noting name, sex and age in the same way as you did in Schedule B, you have to give the exact manner in which the person was employed or occupied on each one of the three days immediately preceding the day of visit. There is a column given to each one of "yesterday", "day before yesterday", and "two days before yesterday," and you have to enter the employment details on the three days separately in the three columns given to them. The categories in which you have to classify his employment or occupation on these days are given in the margin of the schedule. Please refer to them.

To begin with, you should note that you are concerned with only those days on which the person concerned was in the village. If therefore, the person was out of the village on one of the three days, enter merely O, in the corresponding space. A villager who goes out of the village for some occupational work and returns to the village for stay at night should be taken to have resided in the village for that day. His occupation should not be classified as "O" in Block II. For the days he was in the village, his occupation is classified in 12 categories. Write down the appropriate number in the space under each day. The categories are very broad and it should not be difficult to put the person on any day in one of the categories. But if in any case, you are unable to make up your mind as to which category the person should belong, you are advised to write down the detailed description of the nature of the case.

As you will see from the list of categories in the margin of the schedule, the twelve categories fall in two main groups, (i) Earning and (ii) Not-earning. The first six categories are put in earning while the last six are put in not-earning class. Activities which bring or are expected to bring to the household or to an individual member of it, incomes either in cash or in kind or in the form of services rendered by other persons to this household or which are expected to add to, or improve the

assets of the household or diminish its liabilities, all such activities are to be classified as earning activities. All others are non-earning activities, even though they might be useful. The distinction as to when a person is to be considered earning and when not earning is obvious in many cases but is of course difficult to make in the marginal cases. Therefore you have necessarily some judgement to exercise and you should be guided by categories where the distinction is obvious.

The six earning categories might again be divided into two distinct groups as (i) farming and (ii) other activities. The first three earning categories are farming while the next three are non-farming. All farm activity should be directly connected with the cultivation of one or more crops. In this should be included all work done on the farm, and certain other types of work done at home or elsewhere such as preparation of seed, attention and repair to one's own farm, implements and machinery and attending to one's own plough-cattle and other pack animals directly used in the cultivation of crops. All other earning activities should be included in one of the three remaining categories 4, 5 and 8.

There is a second distinction to be noted among earning activities and which cut across the distinction between farming and non-farming activities. We shall make a distinction between those activities which a person does on his own account and those activities which he does for others for consideration of wages or salary, either in cash or in kind. Categories 1, 2, 4 and 6 constitute earning on own account, while categories 3 and 5 are earnings from wages or salary. This completes the scheme of classifying the earning activities.

Thus when a person is engaged in a farming activity on his own farm he comes under (1). There prevails considerable exchange of mutual labour in farming. Thus when a person is working on somebody else's farm as an exchange labour, that is, not for salary or wages, but for mutual convenience and for the fact that some other person did or would similarly work on his farm, the activity should be classified as earning on one's own account. But in order to avoid confusion we have made a separate category for this kind of mutual employment, and hence it is to be classified as (2). When a person is engaged in a farming activity for consideration of salary or wages, it comes under the category (3).

The non-farm earning on own account comes under (4). It is possible that there also exist systems by which households exchange their labour-power mutually in activities other than farming. However, the system is not likely to be as widespread as in farming, hence we did not give a separate category for this purpose. Such activity of mutual employment in non-farm work should therefore be classified under (4). When a person is engaged in a non-farm activity for consideration of wages or salary, he should come under (5).

As already noted above, it is often difficult to say whether a certain activity is to be considered as earning or non-earning and unless we make an exhaustive list of all human activities and classify them, there would be marginal cases where doubts would exist. It is to include all such activities when you are inclined to consider them as coming under the earning category that the category (6) is made. Use it for that purpose. In such cases the persons concerned, must of course be working on their own account.

Such activities could not also be in the nature of a regular occupation. These will be in the nature of jobs which do not belong to a regular occupation, but which are necessary for the well-being of the household and by doing them himself the person saves some of his expenditure on that account. In this category, for instance, could be included the repairs or even construction of own house. You will surely come across a few more types of this kind.

Coming to the non-earning activities, they could also be divided into two broad categories. One is when the person is a non-earner of his own choice or the collective choice of the household. The other is, when the person is not earning due to circumstances beyond his control. The first three non-earning categories namely (7) domestic duties, (8) school and (9) not-seeking work for obtaining rest or otherwise come in the first group when the person is not earning of his own choice. The remaining three categories are such that the person could not earn, even if he would.

It is the distinction between the categories (6) and (7), namely (6) household, but gainful work and (7) domestic duties, that is the dividing line between the earning and non-earning categories. As pointed out, the distinction is not always obvious. Domestic duties are usually of more or less routine nature which keep the consumption side of the household going. There are also occasions for concentrated domestic activity such as in marriage and other functions. All kinds of services rendered by one member to another member of the household should come in this category. In cases of doubt, if you feel inclined to consider the activity as an earning activity put it as (6); otherwise put it as (7). If you could not make up your mind either way, write down the description of the activity. Whenever you have to write any description you need not confine yourself to small space available for coded writing. You could use the adjoining space if it is available or even a separate blank paper and attach it by a pin or preferably by gum. But let the description be always complete and sufficient for the office to decide in the matter.

The next category (8) school, is of course meant for the schoolgoing children. It is not for instance to be used for a teacher or a peon of a school.

The category (9) Not seeking work for obtaining rest or otherwise, means voluntarily unemployed. For instance, a farmer might not have any work on his farm to do, nor would he be willing to accept a hired employment even if available. This might be in order to obtain rest or for any other reason. As distinguished from this, is the next category (10) Unemployed. In the case of unemployment there is a definite presumption that the person concerned is fit to do some job and is willing to do it if offered on reasonable terms.

The last two categories include persons who are not physically fit to do the job and hence are really out of the labour force. In (11) we include cases where the disability is temporary, such as illness. In (12) are included all cases of permanent disabilities, such as physical disabilities of all kinds and old-age.

Children of school-going age, that is, all persons between 6 and 15, both inclusive, when they neither go to school nor do any work even though fit, should be included in (9), that is not seeking work.

Usually there should be no difficulty for a person's activities on any day to be classified under one of the categories above described. However, sometimes you might find that a person was engaged on a single day in activities which could be classified in more than one category. In such cases the following practice should be adopted.

If a person has engaged himself in activities which could be called earning, for four or more hours of a day, he should be considered as earning on that day, and should be classified in one of the first six categories. Having decided that a person is to be considered as earning on a given day, he should be classified in that category with which the major portion of his earning activity as measured by the time spent, was concerned. Incidentally, it should be noted that salaried persons when they are either enjoying a holiday such as Sunday or earned leave, or leave with full or partial pay, should be considered as earning. Similarly, school-going children should be considered to have gone to school on days when the school is closed.

- (i) Even if a child is employed for more than four hours on a school day in an occupation falling within the earning categories, its activity should be classified as "going to school" on that particular day; however, the wages earned by it should be noted in Block II, column 7.
- (ii) If a child is employed in any activity falling in the earning categories for more than four hours on a holiday, its activity should be classified in the relevant earning category such as working on one's own farm, etc. and the wages it earns therein should be noted in column 7 of Block II.

- (iii) Similarly, if on holiday or on a leave day, a salaried person is engaged in an occupation falling within the earning categories his occupation should be as classified in the relevant earning category in Block II. In such a case you should note in column 7 the actual wages earned by him on these three days plus his salary for these days.

Coming to the non-earning categories, it should be emphasised that it is only when the person on that day could not be classified as earning that he should be classified in one of the categories. Thus if a farmer's wife did more than four hours of work on the farm, then she should not be classified under (7) namely, domestic duties even when she is in addition doing all the normal household duties. There is only one exception to this rule, namely when children after attending the school do some odd job even if it is more than four hours of the day, they should be considered to have gone to school and should be classified as such.

There should not usually be any difficulty in classifying a non-earning person in one of the six categories provided for the purpose.

It should be reminded again that in this block we are concerned with activities done by members of the household even if guests, but present in the village and activities actually done within the village. If on any one or more of the three days, a person is reported to be outside the village, he should be classified as O.

After noting the employment details of a person in column 4, 5 and 6 you come to the last column 7. If at any time during the three days the person was employed on salary or wages, that is to say, if on any day, he was classified in categories either (8) or (5), then you have to note in column 7, his cash receipts as wages or salary. The receipts might be actual receipts or simply his dues for the work he did during the three days. If the person was employed for wages, you have to calculate the total cash wages receivable by him for the work he did during the three days. If he was employed on salary, one-tenth of his monthly salary, shall be his salary dues for the three days. Note the cash earnings in annas that is you should convert even the whole rupees in terms of annas and give the final figure in annas. Thus one rupee and four annas will appear as 20 in column 7. Here you have to take account of the cash earning only. His receipts in kind such as grain will be recorded in Block IV and here you should not make any attempt to evaluate them in terms of money. There is only one exception to this rule. When a person employed on salary or wages, receives from the employer full board, that is either one or two meals a day, that should be evaluated and added to his cash wages for the purposes of not-

ing his cash earnings in column 7. For the purpose of this evaluation, we shall take one meal as worth four annas, so that for a person who gets both his meals, we should add eight annas to his cash earnings of the day.

Obtain similar information for all members of the household of age six and above including temporary guests, who were present in the village on the day of the visit or one or more of the three days and thus complete this block.

16. BLOCK III - DETAILS OF SALARIED AND HIRED LABOUR EMPLOYED DURING THE WEEK.

As pointed out above, the purpose of Block II, was to obtain estimates of cash wages and salaries earned during the previous month. Now Block III is intended to give estimates of wages and salaries paid by the household concerned during the previous month. As before, it is felt that it might be somewhat difficult to remember all the wages and salaries paid during a month, particularly because of the extremely casual and irregular employment of labour in rural areas. In this block, therefore, we shall seek information regarding only one week, namely, the week immediately preceding the day of visit. It is on the basis of this information that we shall make our estimates of wages paid during one month.

The labour employed by the household during the previous week is distinguished firstly as (i) male (ii) female and (iii) child. Child labour should include both males and females of age fifteen and under. Secondly, we shall make distinction according as the labour were employed for (i) farm work (ii) non-farm work and (iii) household work. In considering the nature of the employment of the household members in Block II we made 12 categories. Now in Block III, employed for farm work is the same as (3) among those categories. Employed for non-farm and household work, is the same as (5) in those categories. But here we would like to make a distinction. When labour is employed for (ii) non-farm work, that would be an item in the business account while if it is employed for (iii) householdwork, that would be a charge to household expenditure. Thus, when labour is employed for, say weaving it would come in (ii) while household servants such as sweeper, cook, etc. would come under (iii). The distinction between the non-farm work and household work might be sometimes difficult to make. Generally, all labour for any activity which leads to non-farm production, should be in (ii). Thus, a servant employed for milking cows, etc. should come under (ii) even though dairying as such were not an "occupation" of the household. All labour which from the point of view of the employer is not productive should come under (iii).

The male, female and child labour employed should thus be put in the appropriate categories. Separate columns are

given for each one of these categories and one for the total, while separate lines are given for noting male, female and child labour and their total. In each case you have to note (i) the number of labour days employed during the week and (ii) the cash salaries or wages paid for the purpose. During the week the household might have employed say, three men each for two days and two men only for one day each, the number of labour days employed would then be $3 \times 2 + 2 \times 1 = 6 + 2 = 8$. This is a convenient way of writing the fact. In the column of labour days under each head you should, therefore, write the labour days appropriately calculated.

17. In the adjoining column, you have to write the cash salaries, or wages paid or payable for the labour days employed during the week. For labour employed on wages, it will be the cash wages payable for the work done during the week. For the labour employed on salary, one-fourth of the monthly salary would be the salary dues for one week. As in the Block II, you have to write the cash wages and salaries in terms of annas, that is to say you will have to convert even whole rupees in terms of annas. Now in case of salaried employed, the monthly salary will be obviously expressed in terms of rupees. In order to get the salary dues for one week, you will make one-fourth of this. Now please note this little rule. After you make one-fourth of the monthly salary in rupees, while converting these rupees to annas, take one rupee equal to 15 annas and not 16 annas. You should know the purpose of this little adjustment. As you know, one month is usually 80 days, while one week is 7 days so that a week is a little less than one-fourth of a month. In converting the monthly salary in rupees to annas, if you use, the ratio of 15 annas a rupee, you will see that you get very nearly to the correct dues for one week.

As in Block II, you are concerned here with only the cash wages and salaries, and you are not to add to them any payment made in kind. They will be noted in Block V. However, as before, we shall make an exception to this rule. We shall add to the cash wages any meals given to the employed labour. Therefore, evaluate the meals given, at four annas per meal and add their values to the cash wages and salaries before writing them in columns .2, .4, .6.

Finally make all totals both of rows and columns and complete the block.

18. BLOCK IV--PRODUCTION AND OTHER RECEIPTS IN KIND DURING LAST MONTH.

As already noted you are required to note in this block details of all commodity receipts by the household during the month. Commodity receipts are of different kinds and you have to note all of them in this block. Thus, for instance, consider the

commodity rice. If there are any kind of receipts of rice by the household during the previous month, write down the name rice in column .1. Leave blank column .2 in which the code number for rice is to be written. That will be done in the office. But write the name of the commodity very clearly. Now if the rice has been received from the farm, that is as a production receipt, put the actual quantity received in local units in column 3 and write down its equivalent in standard units in column 4. Next put down its value at wholesale price prevailing in the village during the month. The household could receive rice during the month in a number of other ways also. Some of these have been given at the head of the columns 6, 7 and 8. They are as under :—

(a) As owner's share :—For instance the household might have rented out some of its lands on a share cropping basis. If the tenants were growing rice on the rented lands, the household might receive some rice as a share of the crop grown on its rented lands.

(b) As remuneration to hereditary and artisan service :— Some member of the household might be an artisan such as carpenter or a smith or might be a hereditary village servant such as a watchman, etc. Now in many parts of our country such village artisans and hereditary servants are paid in kind by all families in the village. Please note that such payment is not for any specific job or service done to the family concerned. The tradition is that such artisans or village services are to be maintained by the village as a whole and are therefore remunerated by the village as such by means of contributions from all families residing in the village. The artisans in their turn are under obligation to do certain routine repairs and maintenance of the implements and machinery of the villagers and render similar other service. Thus the carpenter is under obligation to make repairs to the wooden implements of the cultivators and in some cases even supply certain minor implements of cultivation. Manufacture and supply of larger implements such as a plough does not come within his obligations under this system and therefore if and when he supplies such implements to any household he makes a specific charge for the specific job done. Such specific receipts are of course not included under this head. They are in the nature of receipts from sales or specific services by the carpenter to the cultivator and these are not to be noted in this block.

(c) As wages in kind :—The household might receive some quantity of rice by way of wages received in kind by its members.

(d) As material contributions from landlords, etc. :— It is usual for the landlord to contribute certain materials for the pur-

pose of cultivation. For instance the landlord often contributes part or whole of the seed and manure. Similar systems of contributions prevail also in occupations other than farming. If the household with which we are concerned is itself in the place of a tenant for some lands under its cultivation, it might receive from the landlord some quantity say of rice as seed. Similar material contributions from landlords and their equivalents in other occupations and also from partners should come under this head.

(c) Other receipts:— of which you will have to describe the nature.

19. First of all mention the nature of the receipt in column .6. If the receipt is one of the first four types, you need write only the corresponding number. If it is any other type, write number 5 and give a description of its nature. In column 7, note the actual quantity received in local units. In column 8 you have to put down its value in rupees. In putting down this value, you have to use either the wholesale or the retail prices then prevailing, according to the nature of the receipt. You will find the rule in this respect given at the head of column from .1 to .5.

It might happen that the household is in receipt of a single commodity, like rice, in more than one way besides its production receipts. Thus it might happen that it received rice both as remuneration to artisans and as wages in kind. In such cases you could not obviously accommodate the information on a single line. In this case you will have to use two lines; on one line you should note his receipts as production and receipts as remuneration to artisan and on another line, his receipts as wages in kind. In short, for each single commodity you have to use a line and in exceptional cases when the household is in receipt of the same commodity in more than one way, besides production, you will have to use a separate line for each kind of his receipt.

20. There are all kinds of commodities and goods that a household might receive during a month. You will be furnished with a comprehensive list of such commodities. But obviously it would be absurd to read the entire list in front of the informer and ask him if he received during the previous month any of these commodities. You should be guided by the occupation and particularly the productive enterprise in which the household members are engaged. That should give you an indication as to which are the commodities that the household is directly engaged in cultivation, you should expect some receipts from the farm during a month. You should particularly take care of those small quantities of farm produce which the farmer continually brings home for home consumption. In this category come most of the garden crops, like fruit and vegetable. Even when the household is not a cultivator, in most cases you

will find that the rural households do receive farm products in different ways. You should particularly keep in mind the wages received in kind. Another universal item of receipt will be the firewood. In most cases this would be collected by the members of the household themselves. Its quantity in such cases would be difficult to put down. You should nevertheless be able to put on it an approximate valuation in rupees. Besides firewood there would be many more items of forest production and you should have them in mind, if there is any forest in the vicinity of the village. Products of livestock again are those items which you should look for in the case of almost every household. Such for instance are the receipts of milk, egg, farmyard manure, etc. Please note that all such receipts are to be noted even when they are used up as home consumption. In fact, it is to note these small receipts which are consumed at home, that we have restricted ourselves to only one month for taking the information. Besides these primary commodities of farm, forest and livestock production there will be other commodities and goods which are the products of industry. Such for instance are cloth, oil, paper, etc. In these cases the receipts will be mostly in the nature of production, but you should not rule out the possibility of other kinds of receipt of such commodities as well.

21. BLOCK V - SALES AND OTHER DISPOSALS IN KIND DURING THE MONTH.

This block is other side of the earlier block and is intended for noting all outgoing of commodities. All sales against cash will be noted in column .3 and the respective sale proceeds in column .4. Besides sales for cash, there might be exchange of some commodities for other commodities. Thus rice might be given in exchange for salt or chillies. Such transactions, we shall term "barter purchases" rather than sales. We shall say that salt or chillies were purchased in exchange for rice, rather than saying that rice was sold for salt and chillies. This is just for convenience of noting. As already pointed out, we shall note the purchases in other blocks. Wherever we do note them we shall inquire whether it was a cash purchase or a barter purchase. In case of barter purchase we shall note the commodity that was exchanged in the purchase. You can, therefore, know from these blocks, the total value of rice, given out in exchange of other commodities. You are required to summarise such information from Blocks VI, VIII, IX, X, XIII and XIV, and enter in column .5 the value of each single commodity exchanged.

In the next column you have to write the information regarding other disposals in the same way as you did it for other receipts in Block IV. The types of other disposals are similar to the types of other receipts. However, there are two additional types to which there are no corresponding types in receipts.

(5) Used as raw material :- Under this category come such disposals as seeds, manure, fodder, etc. which are used up in the process of production of other products. Therefore look up for all kinds of raw materials used up during the month in the processes of all types of production. Here again you should be guided by the productive enterprises in which the number of the household are engaged.

(6) Physical Distribution :- Such as due to flood, fire, bad storage, etc. The manner in which columns .6, .7 and .8 of this block are to be filled in is exactly similar to the one for the same columns of Block IV.

22. BLOCK VI - BIRTHS, DEATHS, SLAUGHTER, SALES AND PURCHASES OF LIVESTOCK DURING LAST MONTH.

In this block you have to note all transactions of livestock which include their births, deaths, slaughter, sales and purchases and other acquisitions and disposals. You will have to use one line for each single transaction. The transaction might involve one or more animals. But, in order to include more than one animal, all of them must be of the same kind and all information relating to them to be entered in the subsequent columns must also be identical. When this is not so, you should break one transaction into more than one and enter them separately on separate lines. For instance, a farmer might have sold a bullock and a cow in a single transaction, but as it involves two kinds of animals, you will have to enter two transactions, one for sale of a bullock and another for sale of a cow. Even if they were both bullocks, their ages could be different. As you have to enter their ages in column .6, you will have to enter them separately. You should note however, that as in the case of Block VI in Schedule B, you need enter the age of the larger animals only so that for the smaller animals like sheep, goat, pig and poultry, you will keep column 6 blank. As a rule, therefore, you will have to use one line for each larger animal while it would be possible to enter a transaction involving a group of smaller animals of the same kind, on a single line.

23. In the first column, enter the kind of animal and in column 3, its code number. Code number in each case is the serial number of the animal in the list of livestock given in the margin of the block. In column .2, you have to enter the number of animals involved in the transaction on the line. Thus if the household has purchased .5 hens (which, incidentally, include cocks, chickens, etc.) you will write in column .1 the word hen, in column two the number 5 and in column .3, the code number 17. Next you have to enter the exact nature of the transaction. If it is a transaction resulting in the receipt of an animal, it will appear in column .4; if it results in the disposal of an animal, it will appear in column .5. Note the exact nature of the receipt of the animal by means of the code numbers given at the head of the column. Thus, write (1) for birth, (2) for

purchase, (3) for received as gift, and (4) for otherwise acquired. In last case write the number 4 and describe the nature of the acquisition.

On the other hand, if it is a disposal, write the nature of the disposal in column .5 by means of the code numbers given at the head of the column. Thus write (1) for death, (2) slaughter, (3) sale, (4) for disposed of as gift, and (5) for otherwise disposed of. In the last case, write the number 5, and describe the exact nature of disposal. Distinction between death and slaughter is clear. In the case of sale, note that it must be a sale of livestock so that sale of either dead or killed animals do not come under this block. Such sales are of sales of livestock products such as meat and would come under Block V, namely, sales and disposals in kind.

24. In the next column .6, you have to note the age of the animal concerned in completed years, so that animals with age less than a year will be noted to have the age O. Note again that if information on any item is not available you have to put a cross. Hence if the age is not available put a cross. As already said you have to note age only of the larger animals such as bull, bullock, cow, he and she buffalo, horse, donkey, mule, camel, etc. and the young stock of these animals. For the smaller animals therefore column .6 will remain blank.

25. If the transaction is either a sale or a purchase, you have to note some additional information in column .7, .8 and .9. In other cases these columns will remain blank. If it is a sale you have to note whether it was to (1) a consumer or to (2) a trader or (3) to any one else. Note it by means of these code numbers. In the last case, write the code number 3 and then describe the nature of the sale, for instance, to government, to co-operative society, to army and so on. Similarly, if it is a purchase you have to note whether it was from (1) a producer or (2) a trader or (3) from any other. Note it by means of the code numbers and in the last case give in addition the nature of the case.

In column .8 you have to note the proceeds of the sale or the price of the purchase according as the transaction is a sale or a purchase. If the animal was sold or purchased against cash there should be no difficulty. But if it was exchanged for some other commodity, there would be some difficulty in noting the proceeds of the sale or the price of the purchase. Now as already said, whenever two commodities are exchanged, we shall always call it a barter purchase and not a barter sale. Thus, if a farmer sold some chickens for some wheat, we shall call it a barter purchase of wheat and not a barter sale of chickens. In fact in this case we disposed of chickens in exchange of other commodities. In column .5 they therefore would not appear as (2) namely sale, but as (5) namely, otherwise disposed of with a note that they were exchanged for other commodities. In such cases,

therefore, there would not be any entry in column .8 under sale proceeds. But if the farmer purchased some chickens for wheat, then it would be called a purchase, and in column .4 the transaction would appear as (2), namely, purchase. But it would be a barter purchase and this fact would be indicated in the last column .9 where you will note "wheat" by which will be understood that the chickens entered in columns .1, .2 and .3 were not purchased for cash, but that they were purchased by exchange of wheat. Note that in column .9 you have to note only the name of the commodity exchanged and not its quantity. Coming back to column .8 where you have now to enter the price of purchase, you should note its price as it would be if they were purchased for cash. To take the case of the purchase of chicken for wheat, the entries in different columns would be as under:—

Chickens 8; 17; 2; —; —; 1; Rs. 2; wheat.

This will read as follows:—

Three chickens were purchased from a farmer (producer) for wheat worth Rs. 2/-/-.

Sale proceeds or price of purchase as it will be noted in column .8 will be in round rupees, that is to say fractions of less than half a rupee will be neglected while half and fractions greater than half will be taken to be a full rupee.

Enter all transactions of livestock and complete the block.

26. BLOCKS VII AND VIII—CASH RECEIPTS AND OUTLAY DURING LAST MONTH,

Primarily the blocks together constitute the Capital Account of the household. Thus we have in Block VII the receipts obtained by liquidating assets and creating liabilities and in Block VIII the outlay on forming new assets and clearing liabilities. The capital receipts are to be noted in columns .1 and .2 of Block VII, while the capital outlay to be noted in column .1, .2 and of Block VIII. Receipts noted in column .8 of Block VII and the outlay noted in column .4 of Block VIII are not in the nature of capital receipts and expenditure. They are nevertheless included in these blocks for convenience of noting and we shall consider their nature later.

27. Capital receipts are obtained by liquidating assets, that is mainly by sale of material and financial assets. A number of material and financial assets are given in the first eight lines of these blocks. If any of such assets have been sold during the previous month, you have to note the fact in column .1 and .2 of Block VII. In column .1 note whether the sale was to (1) a consumer or (2) a trader or (3) any other. In the last case describe the exact nature of the transaction. Note that the distinction between a consumer and a trader is that, a consumer purchases something because it has use for him while a trader buys in order to sell. Thus

when land is sold to a farmer, it has been sold to a consumer; on the other hand, if it is sold to an estate agent, it is sold to a trader.

In column .2 is to be noted the proceeds of sales in rupees. Withdrawals from deposits and cashing of certificates are in the nature of sales of financial assets; and their proceeds, that is, amounts withdrawn or values cashed, should be noted in column .2. In such cases, there will not be any entry in column .1. Leave it blank.

28. Just as capital receipts are made by sale of material and financial assets, so capital expenditure might be made on formation of capital assets which, in many cases, would be purchases of material and financial assets. A number of material and financial assets are given on the first eight lines. If any of these have been purchased during the last month you have to note the fact in columns .1, .2 and .8 of Block VIII. In column .1 write whether the purchase was from (1) a producer or (2) other, by means of the code numbers as usual. By producer here, is meant not necessarily the producer of the material assets concerned, but also one who used those assets in his productive enterprise. Thus when an iron plough is purchased from a smith it is of course purchased from a producer. But even if it is purchased from a farmer, who is selling it not as a business but for other considerations, it should be classified as a purchase from a producer. Perhaps it would be simpler to say that the distinction is between a trader and a non-trader. The category (8) is reserved when the buyer or purchaser is not an individual but a corporate body like a co-operative society, etc.

The purchase price paid should be noted in column .2. Even if it were a barter purchase, the price should be noted as it would be if the assets were purchased for cash. In the case of a barter, however, you have to note the commodity exchanged in the transaction. In column .8, enter the name of the commodity exchanged. You have not to note the actual quantity exchanged.

As before, making of fresh deposit and fresh investments in shares and certificates should be considered as equivalents of purchase and the outlay on them should be noted in column .8; the column .1 should be left blank in such cases.

29. Besides the simple sales and purchases of material and other assets, there are a few other items of capital receipts and expenditure. Provision is made for these items on the lines from 9 to 12 of the Blocks VII and VIII. The receipt from these items should be noted in column .2 of block VII leaving column .1 of that block blank; expenditure on them should be noted in column .2 of block VIII, again leaving column .1 of that block blank.

Payments of insurance premium and contributions to provident and such other funds is a capital outlay and should be

noted on line 9. Withdrawals from loans against insurance and provident funds, their receipts after maturity or under equivalent circumstances are capital receipts and should also be noted on line 9. Recovery of old loans is a capital receipt and similarly repayment of loans is a capital expenditure. They should be noted on line 10. Fresh borrowings or raising of fresh loans are capital receipts and similarly new lending, or advances made are capital outlay. They should be noted on line 11. For any other capital receipts and outlay not covered by the items in the first eleven lines, you have the line 12. Give a full description of the case and note the receipt or outlay in appropriate space.

80. Now we shall consider column .3 of Block VII and column .4 of Block VIII. As already said they do not form part of the capital account. In column .3 of Block VII you are to note all returns on capital assets received during the last month. In column .4 of Block VIII enter all returns on capital assets paid during last month. Such returns on capital assets include rentals on material mentioned on lines from 1 to .6 dividends and interests on items mentioned on lines .8, .9 and .10. They should be entered on the corresponding lines and in appropriate columns.

Finally get a total of columns .2 and .3 of Block VII; and columns .2 and .4 of Blocks VIII on the last line and complete the two blocks.

81. BLOCKS IX AND X - EXPENDITURE ON PURCHASE OF RAW MATERIALS.

We have already covered the purchases of livestock and purchase of capital assets in Blocks VI and VIII respectively. In Blocks IX and X, we shall now cover the purchase of raw materials of production. Purchases of commodities for consumption are included in Blocks XIII and XIV.

Raw materials of production are divided into two groups. In Block IX we include raw materials for farm, forest and livestock production. Under this category come such items, as for instance, seed and plants, manure, fodder and other livestock feeds, and as in livestock production we would also include fisheries, nets, paint and varnish for the boats, etc. Note the commodity in column .1 and leave column .2 blank for office coding of the commodities. In column .3, you have to note as to from whom was the purchase made such as a producer, a trader, etc. by the usual coded method. In column .4, note purchase price which in the case of barter should be the equivalent cash price. Finally in the case of a barter purchase you should note in column .5 the name of the commodity exchanged. You have not to enter its quantity.

On the last line, add column .4 and complete the block.

In Block X, you have to enter in exactly the same manner the purchase of raw materials for all other kinds of production. Make sure that they are in fact raw materials of production.

It might some time happen that the space in either Block IX or X is found insufficient while the other block is almost blank. In that case you might turn one block into another by mere change of heading. In each block are given five lines for entering. When you requisite space from another block, the lines in that block should be numbered from 6 onwards. The total should be given on the last line of the original block and should include items written on the lines requisitioned from the other block.

82. BLOCKS XI AND XII—CASH RECEIPTS AND CASH EXPENDITURE DURING THE LAST MONTH.

The two blocks together constitute the current cash account of the household. In Block XI, we note the cash receipts while in Block XII we note the cash expenditure. There are altogether 15 items each of receipts and expenditure, and in most cases, there is correspondence between them. 4 of these 15 items are in fact summaries of receipts and expenditure noted in other blocks while the remaining items of receipts and expenditure are not covered elsewhere. In the following we give a brief description of these items.

(1) Capital receipts and expenditure :— These are not in fact part of the current account but we reproduce them here for ready reference. On the receipts side it is the total of the column .2 of Block VII. On expenditure side, it is the total of column .2 of Block VIII.

(2) Returns on capital assets :— On receipts side it is the total of column .8 of Block VII. On expenditure side it is the total of column .4 of Block VIII.

(3) Cash Contribution from landlords, etc. :— This is an item of receipt and expenditure exactly analogous to the item number (4) of receipts and disposals noted in Blocks IV and V. In the present blocks, of course, we are concerned with contributions in cash. Such cash receipts should be noted in Block XI, and such cash expenditure in Block XII.

(4) Sale of farm, forest and livestock products :— This is of course only a receipt item. All sale proceeds have been noted in column .4 of Block V. You have to pick out from these, proceeds of sale of farm, forest and livestock products, add them together and enter it in Block XI, against this item.

The corresponding item of expenditure in Block XII, is purchase of raw materials from farm, forest and livestock productions. These are recorded in Block IX. Get their total and enter in Block XII against this item.

(5) Other production sales - Purchases of raw materials for other Production.

The first is the receipt item, and you get it as the balance out of total of column .4 of Block V after you have noted the receipt item 5.

(6) Maintenance and repair services :- This will be an income item for artisans such as carpenters, smiths, ect. You should note that this covers only their cash receipts for repair and maintenance of capital assets. It does not include the income they derive by selling their products, such as a plough, cart wheels, etc. These are already covered in item 5.

(7) Income from transport services - Expenditure on transport of finished product.

For households having transport as one of their occupations, this would be an income item. Please note that for this purpose, transport has to be their own occupation. For instance, if some members of the household are employed in transport service for wages or salary, that would come under income from wages and salary and not as an income from transport service. The transport service might be just a bullock cart engaged in carrying passengers and transporting goods, or it could be a motor bus and truck service or a ferry service across a river or a channel. As such occupations do not directly lead to any material production in the ordinary sense, income from them could not be noted under such head as production sales. They are in the nature of a service as are repair and maintenance for instance, and income from them should be noted in Block XI against this item.

The corresponding expenditure item is the cost of transport of finished products. Please note that the purchase price of raw materials noted in Blocks IX and X was inclusive of their transport costs. The same, therefore, will not appear under the present item. Also expenditure on transport of members of household, that is expenditure on travelling, etc. will form part of the household expenditure and will be covered in Block XIV. The same also should not appear under the present item. In the present item are included only the transport costs of finished products.

(8) Storage and incidental marketing service :- Storage of marketable commodities is an important service. Income from it would thus appear as receipts item for households engaged in it as their own occupation. In many cases it would be for providing accommodation in godowns, etc. Charges for this purpose should not be classified as rents and should be included as income from storage service. Rent is return on capital asset and for any receipts to be classified as such, the presumption is that they are purely returns on capital assets, that is to say,

the owner simply rents out his capital assets and practically does no more than collecting the rent for the same. Also for receipts to be classified as rentals of building such as godowns the rental period should be sufficiently long; in the case of storage services, this period is likely to be rather short.

Incidental services would include such services as clearing and forwarding. Thus it might include such services as clearing goods from railways, shipping and other transport companies or forwarding the goods to other places or to sale agents, etc.

The corresponding expenditure item is the storage of finished product and incidental marketing expenses such as those mentioned above. As before such expenses for raw materials have been included in their purchase price and therefore the same should not be included in the present item.

(9) Sales commission:- This will of course be an item of receipt for the sales agents while an item of expenditure for the producer marketing his products. Sales commission, however, is to be distinguished from the profits of trading. Commission is in the nature of payment for a specific service rendered for marketing. In the case of sales commission it will usually be bringing together the buyer and the seller.

(10) Income from other professions and services :- this is a receipt item and covers income from such professions as those of doctors, lawyers, musicians, etc. and such domestic and personal services as those rendered by barbers, washermen, cooks, domestic servants, etc.

There is no corresponding item of expenditure; for expenditure on fees of such professionals and payments to such services would in most cases be items in the household expenditure and we would cover them in Block XIV.

Just to balance the receipt item No. 10, we have put the expenditure item No. 10 as other marketing costs. They will include all costs of marketing of finished products not covered by items No. 7, 8 and 9. In particular, these will include expenditure on packing, travelling, lodging and boarding of persons accompanying the goods to the market.

Obviously, there is no correspondence between the receipt item No. 10 and the expenditure item No. 10

(11) Salaries and Wages earned by members by working within the village.

This is a receipt item. We have noted such earnings of the household members in Block II. In that Block, however, we noted the earnings only for three days. The earnings were then noted in terms of annas. These multiplied by 10 would give us the estimates of earnings for 30 days. Now convert them to

rupees and annas and deduct from this amount as many annas as there are whole rupees in it. Thus suppose the earnings in three days were ten annas. The earnings for 80 days would be 100 annas. These converted to rupees and annas is equal to Rs. 6/4/- Now this contains 6 whole rupees hence deduct from this amount six annas and you will have Rs. 5/14/-. This is very nearly the estimate of earnings for 28 days or four weeks. Now all entries in Blocks XI and XII are to be made in terms of whole rupees, that is to say, you have to neglect annas in the amount when they are less than eight and consider eight or more annas as equivalent to a whole rupee. The estimate of earnings for four weeks in the particular case taken for illustration would thus be Rs. 6/-.

(12) Net earnings brought home by working outside the village.

It should be remembered that in Block II, we confined ourselves to the activities and earnings within the village only. Under the present item we shall take account of their wages and salaries earned outside the village during the month. However, while they were outside the village they must have incurred certain expenditure on travelling, lodging and boarding. We should deduct such expenses from their earnings and note under this receipt item, only their net earnings which they actually could bring home.

(i) Earnings include earnings in kind also.

(ii) If a person brings home any earnings in kind or any article purchased out of his earnings, it should be noted in Block XI after evaluation and also as a purchase in the relevant block.

(18) Pensions and Compensations :-Under pensions should be included all kinds of pensions such as ordinary service pensions, army pensions, pensions for the disabled, widow-pensions, etc. Under compensations should be included compensations both for material and personal damages, which are not in the nature of capital receipts.

Correspondings to the receipts item 11, 12 and 13 we have the expenditure items 11, 12 and 13 namely, cash wages and salaries paid to male, female, and child labour. We have already noted this expenditure for one week in the Block III. You should now get a total from that block, of the wages paid to labour employed for farm and non-farm work only; that is to say, you should exclude wages and salaries paid to labour employed for household or domestic work. That will be included in Block XIV.

Thus you will get estimates of salaries and wages paid to male, female and child labour on business account for one week.

This multiplied by four and converted to rupees will be the entries against expenditure items 11, 12 and 13 in Block XII.

(14) Remittances :- Cash remittances received from members of the household working outside the village should be noted in Block XI, against this item. Cash remittances made to members outside the village should be recorded in Block XII, against the same item.

(15) Other cash receipts and expenses :- All other cash receipts and expenditure on business account not covered by the above items, should be recorded in this item.

Note that all entries in these Blocks are in round rupees. Finally make the total in both columns and complete the two blocks.

83. BLOCKS XIII AND XIV - HOUSEHOLD EXPENDITURE.

All items of household expenditure are divided into two groups; those which are more or less regularly recurring and those which are only occasional. Expenditure on the first group of items will be closely timed with the weekly bazaar in the rural area. It would be more convenient to get only the weekly expenditure on these items. This is done in Block XIII. All expenditure is to be noted in terms of annas.

Expenditure on other items is to be noted in Block XIV and will be for the period of one month, that is four weeks. All expenditure in this Block is to be noted in round rupees.

In each case you have to note whether the purchase (in the case of purchase of commodities) was from (1) producer, (2) trader or (3) other. Then note the expenditure in annas in Block XIII and in rupees in Block XIV. In the case of barter purchase, the expenditure would be the cash value of the purchase. In such cases you have also to note, the value of the commodity exchanged. You have not to note its quantity.

Finally make the totals and complete the Blocks.

84. We have tried to make these notes as complete as possible. Nevertheless, India is too big and the conditions in different parts are too varied. We expect you to know situations where these notes might be found inadequate. You are requested to discuss such situations with our instructor. However, there are six training centres all over India and you will appreciate the need for uniform instructions in all places. Our instructor, therefore, is strictly not allowed to go beyond these notes. We hope that for most purposes these notes will be found adequate. Nevertheless, if in fact, there appear situations not covered by these notes, our instructor will make a note of them. After our instructor's return from different training centres, we shall consider all the difficulties felt by you and shall immediately issue a supplement to these notes.

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85. The entire success of the survey depends upon the quality of the information you collect. Surely, there are methods of detecting obviously bad investigational work. But so much depends upon your willing cooperation and honest effort. If there are difficulties and doubts, we shall do our best to remove them, but you must let us know what they are. We are aware that your job is a hard one. You should know that it is also interesting, provided you take sufficient interest in it.

V. TABULATION ARRANGEMENTS AND PROCEDURES.

1. The decision to give a concurrent trial to Poona Schedules all over India came to us as a surprise for which we were not prepared. During the conference in Delhi on 22nd and 28rd August, 1950, it was also decided that "all primary material will be sent in the same standardised form for central coding and punching in the Indian Statistical Institute. Standard processing and preparation of standard tables will also be done there." On second thoughts it appeared to us that in view of our responsibilities in the trial being given to the Poona Schedules a change of decision was necessary in respect of the tabulation arrangements. The reasons for this will be apparent from the following extract from a letter dated 26th August, 1950 from Prof. Gadgil to Mr. P. C. Bhattacharya,

26th August, 1950.

My dear Bhattacharya,

.... There is one matter in which I feel a change of decision necessary. In our original notes we had suggested that the data be at least punched at regional field offices. Prof. Mahalanobis put forward difficulties regarding later work in Calcutta in connection with this and I did not pursue the point further. However, when we began to plan the work on my return to Poona, I realised that unless we have the full processing and tabulating done at the Institute in Poona it would be impossible to give the Poona Schedules a fair chance. What tables are to be prepared from materials collected according to our schedules, and the manner and stages of their compilation can hardly be judged by anybody else but ourselves. This means that our Institute will have to arrange for the tabulation of the whole of the data collected all over India according to our schedules. That part of the data that we collect in our area according to the Calcutta Schedules will be sent by us in the full English forms to Calcutta. In short, the material collected all over India according to the Calcutta Schedules will be processed and tabulated at Calcutta while that collected according to the Poona Schedules will be processed and tabulated at Poona. We do not possess as advanced mechanical equipment as at Calcutta but I am hoping to make arrangements which will be adequate for the volume of data that we shall have to handle during the next year. These arrangements will be as expeditious and at least as cheap as those at Calcutta. I shall give you detailed estimates of costs in due course. However, I should

like you to register your assent to this decision before you leave India.

Yours sincerely,
Sd/- D. R. GADGIL.

2. However, immediately after the Delhi conference on 22nd and 28th August, Prof. Mahalanobis had left the country and it was not considered advisable that a revision of arrangements should be made in his absence. It seemed that Prof. Mahalanobis did not leave behind him any one to act on his behalf during his long absence from the country. It was also clear that besides Prof. Mahalanobis there was no properly constituted authority to direct the National Sample Survey or to advise Government in that respect. This appeared to us a strange situation and Prof. Gadgil wrote as under :—

31st August, 1950.

My dear Bhattacharya,

With reference to your letter dated 28th August, 1950, I have no objection to deferring final decision till Prof. Mahalanobis returns. There are only two difficulties in the way of postponing the decision. Firstly, the determination of the code on the Poona Schedules must initially be such as not to prejudice the final decision. This can, perhaps, be achieved by seeing that the coding system does not conflict with either the Calcutta or the Poona tabulation arrangements. Secondly, the decision regarding tabulation arrangements must pre-date the arrival of first schedules. The Investigators will presumably begin to send in material for tabulation by the middle of October. The final decision must, therefore, be taken before this date. I am agreeable to postponing decision till the beginning of October on the understanding that the postponement will not result in my having to accept the existing situation because of Prof. Mahalanobis does not return in time.

Yours sincerely,
Sd/- D. R. GADGIL.

3. The following letter indicates what Government did in respect of the above letter; apparently the Government could not do anything but refer the matter to the Joint Secretary of the Indian Statistical Institute and furnish us a copy of his letter.

F. 19 (2)-P/50
Ministry of Finance,
Department of Economic Affairs,
New Delhi, the 4th Oct., 50.

Dear Prof. Gadgil,

Will you please refer to your letter dated 31st August, 1950 to Bhattacharya regarding punching and tabulation of schedules of the data collected for the National Sample Survey work, wherein you agreed to defer final decision in the matter till Prof. Mahalanobis returns, provided that the determination of the code on the Poona Schedules is initially such as not to prejudice the final decision and that the decision regarding tabulation will predate the arrival of the first schedules? I wrote to Mr. S. C. Sen, in the matter and I enclose for your information a copy of his letter No. C. 2696/1149 dated 23rd September, 1950. I trust that para 2 of his letter meets your points.

Your sincerely,
Sd/- G. R. KAMAT, 8-10-50

Indian Statistical Institute,
Presidency College,
Calcutta, 12.

Dated 23rd September, 1950.

Dear Mr. Kamat,

Will you please refer to your No. F. 19 (2)-P/60 dated the 16th September, 1950?

As regards the determination of the code on the Poona Schedules and their adaptation to mechanical processing, this was done in consultation with Mr. Dandekar of the Poona Institute and with his full concurrence. There is thus no question of the final decision being prejudiced in so far as this aspect is concerned. As regards pre-dating of the final decision relative to the arrival of the first schedules, Prof. Mahalanobis is not due back until the middle of October and it is difficult for the Institute to make any commitment without his views being obtained. This was also Mr. Bhattacharyya's opinion. I do not, however, think that the schedules are likely to be coming in from the field until towards the end of October, as these will have to be scrutinized by the inspection staff before despatch to the processing centres.

Yours sincerely,
Sd/- S. C. SEN,
Joint Secretary.

* We had however not given up the idea that the direction of so large a government project as the National Sample Survey should rest with a properly constituted Committee of Direction. The following is a copy of a letter which Prof. Gadgil wrote to Mr. S. C. Sen, Joint Secretary of the Indian Statistical Institute.

5th October, 1950.

Dear Mr. Sen,

I expect to be in Delhi on 16th and 17th October. I expect Mr. Bhattacharya will have returned to Delhi by then also.

I want to discuss with Mr. Bhattacharya the problem of the tabulation of the Poona Schedules, consideration regarding which was suspended as he went abroad. If necessary, therefore, you may hold a formal meeting of the N. S. S. Committee in Delhi on either the 16th or the 17th October, to go into the matter.

Yours sincerely,
Sd/- D. R. GADGIL.

5. The proposed meeting was held in Delhi on 17-10-1950 and it was decided that the tabulation of the Poona Schedules all over India should be entrusted to the Gokhale Institute of Politics and Economics, Poona. The following are the minutes of the meeting.

GOVERNMENT OF INDIA
MINISTRY OF FINANCE

(Department of Economic Affairs)

Minutes of a meeting held on 17-10-1950 to consider the processing and tabulation arrangements of schedules of the National Sample Survey Scheme.

Present :—

1. Prof. D. R. Gadgil — Director, Gokhale Institute of Politics and Economic, Poona.
2. Mr. S. C. Sen, — Joint Secretary, Indian Statistical Institute, Calcutta.
3. Mr. P. C. Bhattacharya — Joint Secretary, Economics Affairs Department.

It was agreed that all original schedules will be forwarded to the Indian Statistical Institute, Calcutta, in the first instance. Returns from villages surveyed by the Calcutta Schedules will be retained by that Institute. Returns from villages surveyed by the Poona Schedules will, after preliminary examination of the schedules by Calcutta Institute, be forwarded by them to the Gokhale Institute of Politics and Economics at Poona in a regular stream. To begin with, instalments should be small but frequent so as to reduce the time lag to a minimum. An attempt will be made to despatch the schedules to Poona within a week of their receipt by the Calcutta Institute.

2. Administrative and financial arrangements in this connection will be finalised by the beginning of December, 1950.

Sd/- O. K. Ghosh.

No F. 19 (7)-P/50-II. New Delhi, the 15th November, 1950.
Copy to all present at the meeting and also to :—

1. The Officer on Special Duty, National Sample Survey.
2. The Gokhale Institute of Politics & Economics, Poona.
3. The Indian Statistical Institute, Calcutta.

6. In spite of the above arrangements, no schedules were received in this office up to 9th December, 1950 when the first instalment arrived. During December, January and February the schedules kept coming in more or less regularly and the arrangements were on the whole satisfactory. But no schedules were received during March and considerable delays in the receipt of schedules followed thereafter. The last instalment was received on the 18th August, 1951. In the following is given the progress of the receipt of schedules in this office.

**Receipts of Schedules from the Calcutta Institute between
9-12-1950 and 10-8-1951**

Date	No. of villages for which schedules were received.
9th December, 1950	18
16th December, 1950	21
22nd December, 1950	27
2nd January, 1951	27
9th January, 1951	15
18th January, 1951	20
29th January, 1951	14
5/6 February, 1951	15
16th February, 1951	9
21st February, 1951	55
7/9th April, 1951	82
14/16th April, 1951	27
1st May, 1951	48
18st May, 1951	29
23rd May, 1951	27
25th May, 1951	21
28th May, 1951	58
4th June, 1951	49
13th June, 1951	20
6th July, 1951	19
18th August, 1951	4
Total	609

7. For more than a month after the last instalment was received we were left guessing whether there were any further instalment to be received. It was only by means of a letter dated 27th September, 1951 that we were informed that the despatch was complete. No summary tabulations could be undertaken until then. We reproduce below this letter.

No. C 2386/11490.
The Director,
The Gokhale Institute of
Politics and Economics,
Poona 4.
Dear Sir,

Indian Statistical Institute,
206, Barrackpore Trunk Road,
Calcutta, 85.

I beg to inform you that the last instalment of the completed schedules (Poona Schedules) was sent to you by the middle of July, 1951 and for the rest of the villages totalling 89 no further schedules will be sent. Of these 89, 88 of the villages could not be surveyed during the first round and their distribution according to regions is shown in the statement enclosed. 6 of the villages were uninhabited and their names are also listed in the enclosed statement.

Yours faithfully,
Sd/- S. B. SEN.
for Joint Secretary.

Enc : 1 Statement.

8. All schedules immediately after their receipt in this office were subjected to close and careful scrutiny in the scrutiny section specially created for the purpose. Scrutiny might be broadly differentiated into two categories : formal and material. Formal scrutiny consists mainly in the checking of the returns for internal consistency and for arithmetic of totalling and of transfer entries. It is usually possible to detect errors in these when they exist; though it may not always be possible to locate an error. Thus when two entries were mutually inconsistent an error was detected but it would not be possible to locate which one of them was in error if both of them were plausible. Some aspects of the checking of the schedules for conformity with the instructions issued to the Investigators might also be regarded as formal scrutiny. Here it is usually possible to detect errors of commission but not of omission. It should be emphasised that passing of schedules in formal scrutiny does not credit the investigator with more than a satisfactory understanding

of the structure of the questionnaires and technical and arithmetical care in their filling. These must of course be regarded as the minimum requirements. Material scrutiny on the other hand consists in generally satisfying that the information appearing in the schedules was filled with material integrity and care and that the blanks appearing in the schedules were justified. Besides an item by item examination, this requires, generally speaking, an overall view of the schedules. Errors of commission and omission, false entries and otherwise dishonest manipulation of the schedule, when they are present may be suspected but rarely discovered except in the case of gross mischief and carelessness. During scrutiny and editing, the policy was to leave all original entries unchanged unless the errors were not only discovered and located, but correct entries in their place were positively indicated by other parts of the schedule. With the field organisation and the time programme of the National Sample Survey as it was, there was no possibility of referring back any set of schedules for a field re-check. This distinctly limited the possibility of improving the quality of the information through office scrutiny of the material coming in. Nevertheless, all schedules were subjected to careful scrutiny not so much for correction and improvement but for a judgment of the quality of the material being tabulated. It is hoped to edit and publish these scrutiny notes sometime later.

9. The tabulation was done on Powers-Samas 88 column punched card machines. Our installation consisted of the following machines:—

1. Tabulator.
2. Sorters
 1. Automatic Verifier
 4. Automatic Key Punches.
10. Hand Punches.
2. Hand Verifiers.

Punching was usually done on the hand punches by operators who were paid by piece-rate. It is on the basis of these punched cards that the mechanical sorters and tabulator prepared the necessary tabulations. It is obvious, therefore, that the accuracy of the final tabulations depended to a very great extent on the accuracy with which the cards were punched or in other words on the accuracy with which the information on the schedules was transferred on to the punched cards. Therefore, we thought it advisable and worth the expenditure involved to verify completely all the cards punched. The Powers-Samas verifying device is proof against mischief

by punch operators and ensures almost complete accuracy. In fact, verification involves a repunching of the cards which leaves its mark on each of the previously punched hole in the the card. When the cards are first punched, the holes in them are round. When for purposes of verification they are repunched, the opration makes into them another set of round holes, slightly removed from the originals. As a result wherever there is an agreement between the original punching and the re-punching, the original round hole is elongated. On the other hand if the re-punch is different from the original the disagreement leaves two round holes in the column concerned.

The errors are detected due to the existence of such round holes. After all cards are verified, that is re-punched, they are put into the Automatic Verifier, which machine sorts out all cards with round holes, that is cards with errors in one or more columns. Such errors are then referred to the original schedules and corrected and fresh cards punched and verified. We wish it to be noted that all cards punched and used as a basis for further tabulation were thus fully verified.

10. Six different types of cards were punched out of Schedule B so as to accommodate all the information contained in different blocks of the schedule. In addition a summary card was punched giving the number of different types of cards punched out of each schedule. This enabled a check to be taken that all the cards puched were actually used in the tabulation. In the following table we give the total number of cards of each type punched, out of Schedule B.

Schedule Blocks	Number of cards punched.
II	25,765
III and IV.	8,552
V.	9,197
VI.	20,158
VII.	8,402
VIII & IX	5,475
Summary	9,197
Total	<u>86,746</u>

11. Ten different types of cards including a summary card were punched to accommdate all the information containing in different blocks of Schedule C.

In the following table we give the total number of cards of each type punched out of Schedule C.

Schedule Blocks.	Number of cards punched.
II	88,886
III	4,121
IV and V	28,727
VI	2,410
VII and VIII	5,821
IX and X	3,860
XI & XII	15,455
XIII	55,881
XIV	22,714
Summary	9,197
Total	<u>181,872</u>

12. In the first instance the schedules belonging to each village were handled separately. Usually in each selected village, sixteen families were investigated of which eight were of agriculturists and eight of non-agriculturists. Thus the sampling proportions for the agricultural and non-agricultural families varied from village to village requiring for each village two separate tabulations for the agricultural and the non-agricultural families respectively. This was done.

13. Immediately after each tabulation, the number of cards tabulated under each block was checked with the totals of summary cards to make sure that all cards punched for each block were actually tabulated. The village tabulation gave us for each village two separate sets of totals, one for the agricultural and the other for the non-agricultural families, of all items appearing on the schedules. In order to obtain consolidated village totals it was necessary to get a weighted total of the totals for Ag. and NAg. families. We did not have the necessary punched card machines to do this work and hence the work was done manually aided of course, by the ordinary calculators. Tabulation books called the Village Summary Books were prepared for this purpose, on which were noted from the machine tabulation sheets Ag. and NAg. totals of all items together with the number of entries on the schedules of which each was a total. This gave us an opportunity to carefully scrutinise the machine tabulation sheets. On the tabulation books were then worked out the weighted totals for all items. The weights used were as under:—

Let N be the number of families for which occupational census was taken in the village. This number, it should be noted, was usually 80. Of these N families, let N_1 and N_2 be the numbers of Ag. and NAg. families. Let n_1 and n_2 be the numbers of Ag. and NAg. families

by punch operators and ensures almost complete accuracy. In fact, verification involves a repunching of the cards which leaves its mark on each of the previously punched hole in the the card. When the cards are first punched, the holes in them are round. When for purposes of verification they are repunched, the opration makes into them another set of round holes, slightly removed from the originals. As a result wherever there is an agreement between the original punching and the re-punching, the original round hole is elongated. On the other hand if the re-punch is different from the original the disagreement leaves two round holes in the column concerned.

The errors are detected due to the existence of such round holes. After all cards are verified, that is re-punched, they are put into the Automatic Verifier, which machine sorts out all cards with round holes, that is cards with errors in one or more columns. Such errors are then referred to the original schedules and corrected and fresh cards punched and verified. We wish it to be noted that all cards punched and used as a basis for further tabulation were thus fully verified.

10. Six different types of cards were punched out of Schedule B so as to accommodate all the information contained in different blocks of the schedule. In addition a summary card was punched giving the number of different types of cards punched out of each schedule. This enabled a check to be taken that all the cards puched were actually used in the tabulation. In the following table we give the total number of cards of each type punched, out of Schedule B.

Schedule Blocks	Number of cards punched.
II	25,765
III and IV.	8,552
V.	9,197
VI.	20,158
VII.	8,402
VIII & IX	5,475
Summary	9,197
Total	<u>86,746</u>

11. Ten different types of cards including a summary card were punched to accomodate all the information containing in different blocks of Schedule C.

In the following table we give the total number of cards of each type punched out of Schedule C.

Schedule Blocks.	Number of cards punched.
II	88,886
III	4,121
IV and V	28,727
VI	2,410
VII and VIII	5,821
IX and X	8,660
XI & XII	15,455
XIII	55,881
XIV	22,714
Summary	9,197
Total	<u>181,872</u>

12. In the first instance the schedules belonging to each village were handled separately. Usually in each selected village, sixteen families were investigated of which eight were of agriculturists and eight of non-agriculturists. Thus the sampling proportions for the agricultural and non-agricultural families varied from village to village requiring for each village two separate tabulations for the agricultural and the non-agricultural families respectively. This was done.

13. Immediately after each tabulation, the number of cards tabulated under each block was checked with the totals of summary cards to make sure that all cards punched for each block were actually tabulated. The village tabulation gave us for each village two separate sets of totals, one for the agricultural and the other for the non-agricultural families, of all items appearing on the schedules. In order to obtain consolidated village totals it was necessary to get a weighted total of the totals for Ag. and NAg. families. We did not have the necessary punched card machines to do this work and hence the work was done manually aided of course, by the ordinary calculators. Tabulation books called the Village Summary Books were prepared for this purpose, on which were noted from the machine tabulation sheets Ag. and NAg. totals of all items together with the number of entries on the schedules of which each was a total. This gave us an opportunity to carefully scrutinise the machine tabulation sheets. On the tabulation books were then worked out the weighted totals for all items. The weights used were as under:—

Let N be the number of families for which occupational census was taken in the village. This number, it should be noted, was usually 80. Of these N families, let N_1 and N_2 be the numbers of Ag. and NAg. families. Let n_1 and n_2 be the numbers of Ag. and NAg. families

selected for B and C Schedules. These latter numbers were 8 and 8 usually. Then if Ag. and NAg. represent the totals of an item for all the Ag. and NAg. families respectively, the weighted total was worked out as under:—

$$\frac{G_4}{N} \left[N_1 \frac{Ag.}{n_1} + N_2 \frac{NAg.}{n_2} \right]$$

Thus the consolidated village totals were per 64 families.

14. The weighted totals of all items formed the village summary. These totals were then punched into village summary cards.

In the following is given the number of village summary cards punched out of different blocks of the two Schedules.

Schedule - Block	Number of cards punched.
B. III	576
IV	868
V	581
VI	6276
VII	2687
VIII	458
IX	546
B. Total	11,942
C. II	6168
III	1818
IV	7228
V	4604
VI	1419
VII	1488
VIII	1991
IX	2320
X	607
XI and XII	4846
XIII	18912
XIV	8540
C. Total	54,486
GRAND TOTAL	66,378

15. The manner in which the village summaries should be combined to obtain the State summaries depends upon the scheme of sampling of villages. As already stated the sampling design and the

actual selection of villages was done at the Calcutta Institute. We reproduce below the details of the Sampling Design as given by the Calcutta Institute.

1. Formation of Strata :

Each State, comprising the Republic has been divided into one or more strata, the formation of each stratum being based on geographical contiguity, and other topographical homogeneity.

2. Sub-stratification :

In the strata, where the available information permitted, four substrata have been formed, these being based on the population level of each village. The four sub-strata are the population levels 1-500, 501-1000, 1000-2000 and above 2000. This population classification has followed that adopted in the 1941 Census tables.

As a result of the above stratification, we have 154 strata in all, out of which 32 have been further sub-stratified to give 128 ultimate strata. In all there are 250 ultimate strata.

3. Selection of village in each stratum.

This has been done in five different schemes, depending on the nature of information regarding the villages available upto the time of selection. The different schemes are : Probability of selection is

- (1) equal
- (2) proportional to village area
- (3) proportional to village population
- (4) proportional to village area, but separately within each sub-stratum.
- (5) proportional to village population, but separately within each sub-stratum.

4. Allocation of Sample Villages.

As regards the number of villages selected in each stratum, the quota for each stratum has been made approximately proportional to rural population, the total number of villages decided to be surveyed being about 1800 for the whole of India. In each stratum the number of sample villages selected has been made a multiple of 8 in order to allow allocation of the samples between Calcutta and Poona Schedules in the ratio of 2:1 generally.

5. Selection of Households in Sample Villages.

- (1) All the households are completely listed.
- (2) A random sample of 80 households is taken up for Occupational Census,

- (3) The 80 households are classified into two groups :
- (a) agricultural—i. e. those households which definitely have agricultural enterprises (as primary occupation) to be reported in Schedules 2. 1.
 - (b) non-agricultural—i. e. other households which definitely have enterprises (as primary occupation) to be reported in Schedules 2.2 or 2.3.
- (4) Out of the agricultural households 8 are selected at random. Similarly 8 are selected from non-agricultural households. All the 16 households are taken up for investigation as per schedule 1 in the "Calcutta" series of villages and Schedules B and C for the "Poona" series of villages.
- (5) Out of the above 8 agricultural households 2 are randomly selected for investigation as per Schedule 2.1-2.3. Similarly 8 non-agricultural households out of the above 8 households of the same category are taken up for the investigation for Schedule 2.1-2.3.
- (6) Out of the remaining 6 agricultural households 1 is selected for investigation in Schedules 3.1-3.2. Similarly out of the remaining 5 non-agricultural households 2 are randomly selected for investigation in the same Schedules.

16. Thus the villages were selected according to five different schemes. We give below a full statement showing the number of villages selected according to each scheme in different States of the Union.

Distribution of the Sample Villages by States and by sampling Schemes.

Range	State	Schemes					Total Villages
		1	2	3	4	5	
NORTH							
11	Punjab	24	2	—	—	—	26
12	Bilaspur	—	—	—	—	—	—
13	Himachal Pradesh	2	—	—	—	—	2
14	P.E.P.S.U.	8	—	—	—	—	8
15	Delhi	—	2	—	—	—	2
EAST							
21	Assam	—	—	—	18	—	18
22	Tripura	1	—	—	—	—	1
23	Manipur	1	—	—	—	—	1

Range.	State	Schemes					Total Villages
		1	2	3	4	5	
24	Uttar Pradesh	3	2	-	24	49	78
25	Vindhya Pradesh	-	16	-	-	-	16
26	Bihar	-	54	-	-	-	54
SOUTH							
81	Orissa	11	8	2	-	-	21
82	Madras	1	-	-	-	72	78
83	Hyderabad	12	-	11	-	-	23
84	Mysore	-	-	-	-	18	18
85	Coorg	-	1	-	-	-	1
86	Travancore and Cochin	-	-	-	-	12	12
WEST							
41	Rajasthan	-	19	10	-	-	29
42	Ajmer	-	2	-	-	-	2
43	Madhya Bharat	5	11	-	-	-	16
44	Bhopal	-	-	2	-	-	2
45	Saurashtra	5	9	-	-	-	14
46	Kutch	-	2	-	-	-	2
47	Bombay	28	-	-	86	-	89
48	Madhya Pradesh	8	-	-	24	28	50
CALCUTTA							
51	West Bengal	-	80	-	-	-	80
52	Andaman and Nicobar	-	-	2	-	-	2
Total		99	158	27	182	109	585

17. Strictly speaking, in order to obtain the State summaries groups of villages selected according to different schemes must be combined separately; the groups' summaries have then to be combined to form the State summaries. This necessitated one more stage in tabulation; moreover, in many cases the village totals would need weighting before combining. As each village summary contained several hundred items, the weighting would involve enormous computational labour. As explained earlier, due to circumstances beyond our control the tabulation programme had been greatly

delayed and we did not think it advisable to adopt a procedure which might cause further delays. The State summaries were, therefore, obtained by simple addition of the village summaries.

18. The number of villages selected from some of the States, due of course to their own size, appeared too small to justify separate summaries for these States. They were, therefore, combined into convenient groups. In the following is given the list of States or groups of States for which State summaries were prepared.

1. Punjab
2. Himachal Pradesh, P. E. P. S. U., Delhi.
3. Assam, Tripura, Manipur.
4. Uttar Pradesh.
5. Vindhya Pradesh.
6. Bihar.
7. Orissa.
8. Madras.
9. Hyderabad.
10. Mysore Coorg, Travancore Cochin.
11. Rajasthan, Ajmer.
12. Madhya Bharat, Bhopal.
13. Saurashtra, Cutch.
14. Bombay.
15. Madhya Pradesh
16. West Bengal
17. Andaman, Nicobar.

19. As already remarked the simple addition of village summaries was not strictly correct. We shall, therefore, briefly indicate the nature and extent of error introduced due to this procedure. According to sampling plans 2 and 3 the villages were given chances proportional to their area and population respectively. Sampling schemes 4 and 5 were analogous except that they were applied in each sub-stratum separately. The sub-strata were size groups of villages according to their population and presumably as in the case of the strata the number of villages allocated to different sub-strata were approximately in proportion to their rural population. No appreciable error would, therefore be introduced by neglecting the distinction between the sampling schemes 2 and 3 on the one hand and 4 and 5 on the other. In the sampling scheme 3 and 5 where villages were given chances in proportion to their populations the village summaries of the sample of 16 families are simply additive; that is to say they could be combined without weighting. This is not strictly true of the sampling schemes 2 and

4 where villages were given chances proportional to their areas. Nevertheless, as this was done within each stratum or sub-stratum we might expect a high degree of association between area and population of a village. To this extent, the error due to not weighting the village summaries of these villages would not be too great again. In short, unweighted simple totals of villages selected according to schemes 2, 3, 4 and 5 appear unlikely to result in any appreciable error. The difference between the sampling scheme 1 and all the other schemes is, however, fundamental. In scheme 1, villages were given equal chances; when a fixed sample as of 16 families is selected this results in a disproportional weight being given to population living in smaller villages as compared to that living in bigger villages. To counter this the village summaries must be given weight in proportion to their populations. If this is not done, the State summaries are slightly biased in favour of the population living in smaller villages. This bias would be important for those characteristics in which the population in bigger villages differs from that of the smaller ones.

20. In the case of the Punjab, almost the whole of the sample of villages was selected according to scheme 1, so that the State summary for the Punjab would be affected by the bias due to unweighting. The same is largely true of group of States of Himachal Pradesh, P. E. P. S. U. and Delhi. In the case of Orissa and Hyderabad, about half the sample was selected by scheme 1 and thus, though to a smaller extent, the summaries of these States also would be affected by the consequent bias. In the case of Madhya Bharat and Saurashtra only about one-third of the sample was so selected according to scheme 1 while in Bombay only one-fourth of the sample was so selected. The resulting bias in their respective summaries would, therefore, be relatively small. In the case of other States summaries, the bias on this account is negligible.

21. The All-India totals were obtained by simple addition of State summaries. Out of a sample of 585 villages only 99 were selected according to the Scheme 1 so that the bias on account of unweighting is small in the All-India Summary.

VI. TABULATION RESULTS

1. The procedures of tabulation are fully detailed in the earlier Chapter. In this Chapter we shall present the final results. Only the All-India tables reduced to per 10,000 families are included in this Chapter. The State tables are included in a mimeographed supplementary volume.

2. According to the original plan of field work it was intended to fill in the B Schedule once at the beginning and once at the end of the year while the C Schedule was to be canvassed four times in the year by means of a series of equally spaced periodic visits to the families. The field work was started in October 1950, and by the end of March 1951, only one visit to the selected villages was completed. Before the second visit could be started our association with the National Sample Survey came to an end and consequently the use of the Poona Schedules was discontinued. The circumstances in which this occurred are narrated in the next Chapter. The following tables are therefore, based on only one visit to the selected villages sometime from October, 1950 to March 1951. The visits to the approximately 600 villages were more or less evenly spread over this period and as the order in which the villages were visited was presumably randomised, the tables might at most be supposed to indicate the average conditions during this period. We must emphatically note, however, that they do not represent the average conditions in any year such as 1950-51. Most items of the Poona Schedules refer either to the day of visit or some short period immediately preceding that day; and many items in them are liable to considerable seasonal variations. It is for this reason that we have purposefully presented these tables as relating to only one month (four weeks) or a week or only three days as the case may be and have not inflated them to be brought to an annual basis. The reader is, therefore, cautioned against making use of these tables as relating to average conditions in an year.

3. The tables are based on information contained in different blocks of the Schedules and bear numbers identical with the numbers of these blocks. This will facilitate a reference to the respective schedule blocks and related instructions and hence will enable a clearer understanding of the contents of each table. Following is a list of the tables to follow:—

LIST OF TABLES	
Table I	General Information about Sample of Villages and the Sample of Families.
Table B-II (1)	Distributions by Age of Earning and Non-earning Males and Females.
Table B-II (2)	Distributions by Principal Occupation of Male and Female Earners.
Table B-II (3)	Distributions by Subsidiary Occupation of Male and Female Earners.
Table B-II (4)	Distributions of Male and Female Non-earners according to the Principal Occupation of Earners on whom they are dependent.
Table B-III IV, V, VIII, and IX	Assets and Liabilities other than Livestock and Implements.
Table B-VI	Details of Livestock Owned.
Table B-VII	Details of Farm and other Implements and Machinery Owned.
Table C-II	Three-day Employment details of Persons of Age 6 and above.
Table C-III	Details of Salaried and Hired Labour Employed during one Week.
Table C-IV	(Summary) Production and other Receipts in Kind during one Month.
Table C-IV	(Details) —do—
Table C-V	(Summary) Sales and other Disposals in Kind during one Month.
Table C-V	(Details) —do—
Table C-IV-A	Details of other Receipts in Kind appearing in Table C-IV.
Table C-V-A	Details of other Disposals in Kind appearing in Table C-V.
Table C-VI	Purchases and Sales of Livestock during one Month.
Table C-VI-A	Details of Purchases and Sales appearing in Table C-VI
Table C-VI-B	Other Receipts and Disposals of Livestock.
Table BC-VI	Inventory of Livestock and reported Slaughter and Deaths during one Month.
Table BC-VI -1.1, 1.2, 1.3	Age Distributions of Animals and Slaughter and Deaths, appearing in Table BC-VI.
Table C-VII	Cash Receipts during one Month from (i) Sale of Capital Assets and (ii) Returns received in the form of rentals, interest, dividend, etc.

Table C-VIII	Cash Outlay during one Month on (i) Purchase of Capital Assets and (ii) Returns paid in the form of rentals, interest dividend etc.
Table C-VII-A and VIII-A	Details of Sales and Purchases appearing in Table C-VII and C-VIII.
Table C-IX	Expenditure during one Month on Purchase of Raw Materials for farm, forest and livestock production.
Table C-X	Expenditure during one Month on Purchase of Raw Materials for non-farm production.
Table C-XI	Cash Receipts during one Month.
Table C-XII	Cash Expenditure during one month.
Table C-XIII	Household Expenditure during one Week.
Table C-XIV	Household Expenditure during one month.
Table C-IX-A and X-A	Details of Purchases appearing in Tables C-IX and C-X.
Table C-XIII-A and XIV-A	Details of Purchases appearing in Table C-XIII and C-XIV.

ERRATA

Page	Table	Line	Read	For
168	B-VI	4, 5	Total No. of	Table No. of
177	C-V (Summary)	15	Class 10.- Sub-total	Class 0.-Sub-total
185	C-VI-(B)	5	708	704
185	"	6	2818	1814
186	BC-VI	18	7484	5891
186	"	29	56646	55108
187	BC-VI-1.1	20	88	88
195	C-X	11	A8	A8
198	C-XI	7	126	156
198	C-XI	11	4898	4898

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Table No. 1

General Information

About the Sample of 585 Villages and the Sample of families.

	Number of villages for which infor- mation is available	Total Number	
1. No. of households according to 1951 Census	481	112616	Households
2. No. of households as per Sch. O.	585	144025	"
3. No. of households as per Sch. O. 1.			
(a) Agricultural	585	24640	"
(b) Non-Agricultural	585	15078	"
4. No. of households selected for Sch. B. and C.			
(a) Agricultural	585	5108	"
(b) Non-Agricultural	585	4098	"
5. Population by 1941 Census.	884	586742	
6. Area.	529	1259609	Sq. miles

Table B-II (1)

Distribution by Age of Earning & Non-earning Males and Females.

Age in years	Males		Females	
	Earners	Non-earners	Earners	Non-earners
0-	149	6971	96	6789
10-	2864	2850	1466	8895
20-	4030	182	2011	2845
30-	3628	56	1655	1718
40-	2565	84	1042	1188
50-	1598	53	549	991
60-	906	108	222	788
70-	258	85	48	814
80-	78	39	18	111
90-	7	18	2	29
100-	-	1	-	-
Total	16068	10887	7104	18108

Table B — II -- (2)

Distribution by Principal Occupation of Male & Female Earners.

Industry Group	Earners	
	Males	Females
Agriculture	12110	5588
Forestry, Plantations & Breeding	818	287
Mining and Quarrying	108	28
Foodstuffs, Textiles Leather and their Products (PM)	506	219
Metals, chemicals and their products (PM)	111	4
Others (PM)	869	74
Constructions and Utilities	188	50
Commerce	428	87
Transport, Communications and Storage	100	1
Health, Education and Public Administration	222	23
Other Services	1178	799
Total	16068	7104

Table B - II - (8)
Distribution by Subsidiary Occupation of Male and Female Earners.

Industry Group	Earners	
	Males	Females
Agriculture	8688	885
Forestry, Plantations and Breeding	242	59
Mining and Quarrying	28	14
Foodstuffs, Textiles, Leather and their products (P M)	276	87
Metals, Chemicals and their Products (P M)	48	1
Others - (P M)	180	17
Construction and Utilities	48	8
Commerce	887	86
Transport, Communications and storage	109	11
Health, Education and Public Administration	92	11
Other Services	641	819
No Subsidiary Occupation	10459	15684
Total	16068	7164

(PM) - Processing and Manufacture

Table B-II-(4)

Distribution of Male and Female Non-earners according to the Principal Occupation of Farmers on whom they are Dependent.

Industry group:	Non-earners	
	Male	Female
Agriculture	7967	14042
Forestry, Plantations and Breeding	266	400
Mining and Quarrying	40	59
Foodstuffs, Textiles, Leather and their Products (PM)	881	580
Metals, Chemicals and their Products (PM)	80	186
Others (PM)	812	580
Construction and Utilities	98	189
Commerce	820	588
Transport, Communications and Storage	92	182
Health, Education and Public Administration	254	362
Other Services	627	1190
Total	10887	18108

PM — Processing and Manufacture.

Table—B—III, IV, V, VIII AND IX
ASSETS AND LIABILITIES OTHER THAN LIVESTOCK AND IMPLEMENTS

Item	No. of entries	Total
8.1 Land Owned-Acres	6277	70142
8.2 Building Owned-Area under roof sq. ft.	9822	4276798
REAL ESTATE IMPROVEMENT DURING ONE YEAR		
4.1 Land Improvement Value in Rs.	1868	180887
4.2 New Construction-Value in Rs.	797	185128
4.3 Other-Value in Rs.	417	48827
4.4 Total-Value in Rs.	2582	414287
RESIDENTIAL HOUSE		
5.1 Number of Rooms	9978	20815
5.2 Area under Roof sq. ft.	9978	8545826
VALUE IN RS. OF STOCK IN COMMODITIES OTHER THAN AGRICULTURAL		
8.1 Raw material	809	16991
8.2 Material in Process	181	10825
8.3 Finished Product	295	24972
8.4 Total-value in Rs.	785	62288
OUTSTANDING CREDIT POSITION		
9.1 Loans received-Rs.	5464	1808204
9.2 Loan given-Rs.	456	152070

Table B-VI
DETAILS OF LIVESTOCK OWNED

Item	Table No. of animal	Of which purchased		Value of all animals at purchase price.
		No. of animals	Purchase value Rs.	
Bull	916	404	61868	140264
Bullock	11895	6945	1080778	1778285
Cow	9594	1972	126871	614809
Calves	7869	857	15624	822502
He-buffallo	1247	886	98220	181202
She-buffalow	8950	1584	808420	758884
Calves	2804	150	4964	92794
Sheep	7997	1028	18878	96226
Goat	7089	1801	19658	106882
Pig	548	79	898	6216
Horse	222	142	18694	29226
Donkey	186	86	4898	6955
Mule	15	15	2276	2276
Camel	116	69	81475	52914
Other Animals	215	14	288	4846
Ducks	812	112	810	864
Hens	6887	921	1702	12685
Other Poultry and Birds	467	84	49	678
Total				4150152

Table B-VII
DETAILS OF FARM AND OTHER IMPLEMENTS & MACHINERY OWNED

Item	Total No. of Imple-ments	Of which purchased		Value of Implements at purchase price
		No. of Im-plements	Purchase Value Rs.	
Plough	5888	3755	55214	85848
Clod-Crusher	551	348	6392	10268
Harrow	1269	686	8027	16016
Bullock hoes	670	288	3875	9174
Seed-drill	804	438	7875	14455
Water-Lift	770	715	88929	41924
Bullock-Cart	1871	1684	255454	292506
Machinery	671	584	118981	186706
Others	8476	2748	67540	85588
Total				692480

Table C-II

Three-day Employment details of persons of age 6 & above
(Number of person-days spent in different categories)

Categories of employment	Males		Females	
	Non-Adults	Adults	Non-Adults	Adults
Out of village	269	2347	865	1142
EARNING				
On own farm	2044	17298	1097	5117
Exchange farm-labour	69	500	20	189
Hired farm labour	759	5208	521	2860
Own non-farm occupation	1582	5421	447	1287
Hired non-farm labour	684	4021	206	1818
Household but gainful work	914	1976	579	1282
NOT EARNING				
Domestic duties	1190	1154	7126	24808
School	6544	680	2022	827
Not seeking work	5828	2626	5816	1569
Unemployed	127	1818	66	801
Ill-health	800	1808	166	1857
Disabled	871	1192	408	2874
Total	20181	45989	18884	48821

N. B.—Employment details for three days immediately preceding the day of visit were asked for all members of age 6 and above of the selected households. In the above is a classification of the person days into different categories of employment.

Table C-III

Details of salaried and hired labour employed during one week.
(Labour days employed in farm, non-farm and domestic work and
respective cash wages paid.)

Category of hired labour	Labour days		Cash wages in Rs.	
	No. of entries	Labour days	No. of entries	Wages paid Rs.
Male-Farm	1892	16785	1819	15269
Non-Farm	229	1698	228	1772
Domestic	120	1044	115	1057
TOTAL	1741	19477	1657	18108
Female-Farm	744	18824	684	7557
Non-farm	28	280	26	168
Domestic	108	817	89	298
TOTAL	880	14921	799	8018
Child-Farm	111	916	108	486
Non-farm	45	848	44	181
Domestic	21	142	15	44
TOTAL	177	1406	162	711
All-Farm	2247	81475	2106	28812
Non-farm	802	2826	298	2121
Domestic	249	2008	219	1899
GRAND TOTAL	2798	85804	2618	26882

N. B.—Details of salaried and hired labour employed by the selected households during the week immediately preceding the day of visit were asked for. All categories of hired labour would not naturally appear on every household schedule. The number of entries refers to the number of schedules in which the item appeared. The 'number of entries' like all other items, in this and subsequent tables, are expressed per 10,000 families. In a few cases where the number of entries appears as 0, it means that the number per 10,000 families is less than 0.5. On the other hand, a real absence of entries for an item is indicated by a dash.

Table C - IV (Summary)
Production and Other Receipts in kind during one month.

Commodity class	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Class A - Sub-total	4903	559570	3243	79082
Class 1 - Sub-total	1284	168225	225	10895
Class 2 - Sub-total	2330	90090	452	5986
Class 3 - Sub-total	2937	63045	1586	11476
Class 5 - Sub-total	4558	67408	349	3919
Class 6 - Sub-total	25	1691	19	95
Class 7 - Sub-total	888	60777	403	6659
Class 8 - Sub-total	86	621	7	69
Class 9 - Sub-total	82	1645	10	121
Class 10 - Sub-total	17	813	8	588
Unclassified	221	14879	60	1269
Total	17181	1028264	6812	120109

N. B. :—All selected households were asked about their production and other receipts in kind, such as owner share, remunerations in kind, wages in kind, etc. during one month (defined to be of four weeks) immediately preceding the day of visit. The above is a summary tabulation. The classes refer to the commodity classification full details of which appear in subsequent tables. Details of "other receipts" appear in Table C-IV-A. Commodity class 4 comprises of Livestock and is not covered by this table. The number of entries refers to the number of schedules in which the item appeared.

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Table C-IV (Details)

Production and Other Receipts in kind during the month.

Commodity Classes A and I	Production		Other receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Paddy	1597	328667	1150	38585
Wheat	152	22841	268	6848
Jowar	604	56477	505	12671
Bajri	549	45061	199	4290
Minor Millets	542	35074	321	4427
Barley	12	716	107	1188
Maize	251	19876	227	4862
Other Cereals	24	600	16	189
Gram	197	18217	149	1752
Arhar	110	8058	48	571
Other Pulses	865	84988	268	8804
CLASS A SUB-TOTAL	4908	559570	3248	79082
Groundnut	343	76096	79	4803
Linseed	65	4771	12	502
Mustard	79	3662	18	288
Coconut	107	3566	19	65
Other O.lseeds	282	7778	43	644
Sugarcane	120	17182	9	888
Cotton	210	40400	40	4127
Jute	57	7525	2	58
Tobacco	48	7086	5	44
Tea, Coffee	10	117	1	1
Other drugs.	18	92	2	30
CLASS I-SUB-TOTAL	1284	168225	225	10895

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Table C-IV (Details) Continued.

Production and Other Receipts in kind during the month.

Commodity Classes 2 and 8	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Potatoes	105	4701	21	363
Other roots and tubers	140	5873	21	126
Brinjals	47	588	1	2
Vegetables	658	5262	164	555
Plantains	74	1862	10	14
Other fruits	87	342	4	10
Chillies	278	20670	62	1100
Other spices	70	12484	13	178
Stalk of crops	812	85107	127	8449
Cultivated green fodder	63	2642	8	27
Other products of agriculture	46	1559	26	162
CLASS 2-SUB TOTAL	2380	90090	452	5986
Green grass	482	22223	126	3065
Hay	590	25781	72	1827
Other un-cultivated fodder	87	2280	49	260
Fire wood	1720	12847	1284	6517
Charcoal	2	3	11	56
Timber	3	37	24	148
Other wood in the round	26	174	1	17
Lac	6	105	-	-
Honey	-	-	11	57
Game	2	28	-	-
Other forest products	19	67	8	29
CLASS 8 SUB-TOTAL	2987	68045	1536	11476

Table C-IV (Details) Continued

Production and Other Receipts in kind during the month.

Commodity Classes 5 and 6	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Milk	1715	48870	68	1260
Eggs	274	1845	5	9
Mutton	96	1478	18	146
Other meat	2	80	8	6
Farm yard manure	1719	9464	87	882
Raw wool	88	2544	-	-
Hides, skins and furs	8	82	2	19
Bones, horns	1	8	1	28
Fish-Fresh	81	858	49	1489
Fishery products	-	-	1	5
Other Livestock products	684	8284	120	580
CLASS 5 SUB-TOTAL	4558	67408	849	8919
Coal	-	-	-	-
Iron-ore	1	8	1	6
Other metals	-	-	-	-
Petroleum and Gas	-	-	1	61
Stone	0	2	-	-
Clay	2	555	-	-
Sand	-	-	-	-
Mica	-	-	-	-
Salt	-	-	18	18
Saline substances	-	-	-	-
Non-metallic mineral products	92	1126	4	15
CLASS 6 SUB-TOTAL	92	1691	19	95

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Table C-IV Details (Continued)
Production and other Receipts in kind during the month.

Commodity classes 7 and 8	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Rice (husked)	170	80741	217	4288
- Pulses	8	88	1	8
Cereal and pulse flour	4	59	25	842
Vegetable oil	22	557	40	150
- Butter, Ghee, cheese	462	9662	21	654
- Hydrogenated oil	1	86	2	29
- Gur	167	19508	71	1266
- Sugar	2	112	1	4
Tinned fruits and vegetable	-	-	-	-
- Tinned Fish and Meat	-	-	-	-
Processed food stuffs	2	86	25	278
CLASS 7 SUB-TOTAL	888	60777	408	6659
Cotton ginned and				
- Pressed	1	1	0	1
Cotton fabric	8	142	2	56
Other fibres processed	8	82	8	8
- Wood worked	7	144	-	-
- Leather tanned	-	-	-	-
Toddy and country liquors	1	62	2	4
Ice and Aerated water	-	-	-	-
- Bidi	8	160	-	-
- Tobacco	-	-	-	-
- Processed rubber	-	-	-	-
- Other Processed material	18	80	-	-
CLASS 8 - SUB-TOTAL	86	621	7	69

Table C-IV (Details) Continued
Production and Other Receipts in kind during the month.

Commodity Class 9 and 10	Production		Other receipts	
	No. of entries	Value in rupees	No. of entries	Value in Rupees
Cotton Textiles	18	978	7	88
Other Textiles	1	14	-	-
Clothes and Textile Goods	1	4	1	26
Wood products	1	27	-	-
Furniture	-	-	1	2
Paper Products	-	-	-	-
Printed materials	-	-	-	-
Leather footwear	18	491	1	5
Other leather products	8	181	-	-
Rubber products	-	-	-	-
Other manufactured products	-	-	-	-
CLASS 9-SUB-TOTAL	82	1645	10	121
Chemical fertilizers	-	-	-	-
Medical and Pharmaceu- tical	1	2	2	25
Other chemical products	2	108	-	-
Products of mineral oils	-	-	5	12
Other non-metallic mine- rals processed	-	-	1	494
Basic metals	2	88	-	-
Metal products	4	61	0	7
Non-electrical machinery	-	-	-	-
Electrical machinery	8	54	-	-
Transport equipment	-	-	-	-
Others	-	-	-	-
CLASS 10-SUB-TOTAL	17	818	8	589

Table C-V (Summary)
Sales and Other Disposals in kind during one month.

Commodity Class	Sales		Other disposals	
	No. of entries	Values in Rupees	No. of entries	Value in Rupees
Class A-Sub-total	1246	75198	8933	100940
Class 1-Sub-total	667	106264	406	11872
Class 2-Sub-total	551	88646	426	10888
Class 3-Sub-total	186	5598	288	7805
Class 4-Sub-total	417	18792	161	2036
Class 5-Sub-total	84	981	81	416
Class 6-Sub-total	481	19869	251	14748
Class 7-Sub-total	86	2798	16	855
Class 8-Sub-total	86	1705	12	298
Class 9-Sub-total	17	1658	16	488
Unclassified	110	4226	77	2881
Total	3781	270180	5617	151717

N. B.:— All selected households were asked about their sales and other disposals in kind, such as, owner share, remunerations paid in kind, wages paid in kind, etc. during one month (defined to be of four weeks) immediately preceding the day of visit. The above is a summary tabulation. The classes refer to the commodity classification, full details of which appear in subsequent tables. Details of "other disposals" appear in table C-V-A. Commodity class 4 comprises of Live-stock and is not covered by this table. The number of entries refers to the number of schedules in which the item appeared.

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Table C-V (Details)
Sales and Other Disposals in kind during the month.

Commodity Class A and 1	Sales		Other Disposals	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Paddy	585	48010	1897	51886
Wheat	52	2961	319	11018
Jowar	188	7226	518	10525
Bajri	71	2791	258	4809
Minor Millets	102	2608	318	4128
Barley	18	265	216	3865
Maize	51	1677	281	4845
Other Cereals	89	408	27	828
Gram	49	3895	272	5640
Arhar	11	620	12	199
Other Pulses	140	5282	325	3707
CLASS A SUB-TOTAL	1246	75198	3988	100940
Ground-nut	175	40005	56	3091
Linseed	27	1859	41	328
Mustard	58	1899	180	724
Coconut	88	1330	8	58
Other Oilseeds	84	5667	98	858
Sugarcane	65	11283	32	2450
Cotton	118	17657	24	1068
Jute	69	21676	15	3196
Tobacco	24	4982	9	84
Tea, Coffee	3	22	1	20
Other drugs	6	484	2	15
CLASS 1-SUB-TOTAL	667	106264	406	11872

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Table C-V (Details) Continued
Sales and Other Disposals in kind during the month.

Commodity Classes 2 and 8	Sales		Other Disposals	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Potatoes	55	8588	21	818
Other roots and tubers	51	2886	22	880
Brinjals	22	821	2	10
Vegetables	118	2180	89	222
Plantains	58	1472	1	20
Other fruits	18	290	4	14
Chillies	105	12023	49	1111
Other spices	85	11523	18	242
Stalk of crops	42	2500	189	5791
Cultivated green fodder	7	171	45	2054
Other products of agriculture	45	1692	86	776
CLASS 2-SUB-TOTAL	551	88646	426	10888
Green grass	28	2775	112	4294
Hay	48	1005	188	2468
Other un-cultivated fodder	-	-	2	868
Fire-wood	62	902	84	172
Char coal	-	-	-	-
Timber	1	22	0	0
Other wood in the round	26	573	-	-
Lac	13	218	-	-
Honey	6	81	1	2
Game	2	28	-	-
Other forest products	5	44	1	1
CLASS 3-SUB-TOTAL	186	5598	288	7805

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Table C - V (Details) Continued
Sales and Other Disposals in kind during the month

Commodity Classes 5 and 6	Sales		Other Disposals	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Milk	266	6975	44	1088
Eggs	70	811	1	1
Mutton	5	408	18	275
Other meat	8	98	-	-
Farm-yard manure	10	87	76	448
Raw wool	24	4574	-	-
Hides, skins and furs	8	228	1	189
Bones, horns	2	28	1	12
Fish-fresh	22	1067	6	40
Fishery products	-	-	1	1
Other livestock products	7	21	18	42
CLASS 5 SUB-TOTAL	417	18792	161	2086
Coal	-	-	1	2
Iron-ore	4	58	1	10
Other metals	-	-	5	248
Petroleum and Gas	-	-	-	-
Stone	0	2	-	-
Clay	8	21	1	8
Sand	-	-	-	-
Mica	-	-	-	-
Salt	-	-	11	28
Saline substances	-	-	-	-
Non-metallic mineral products	27	850	12	125
Class 6 - SUB-TOTAL	84	981	81	416

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Table C - V (Details) Continued
Sales and Other Disposals in kind during the month

Commodity Classes 7 and 8.	Sales		Other Disposals	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Rice (husked)	115	8853	149	12654
Pulses	4	76	1	14
Cereal and Pulse flour	4	41	5	159
Vegetable oil	4	180	15	188
Butter, Ghee, cheese	251	5076	17	818
Hydrogenated oil	-	-	-	-
Gur	100	10051	54	1190
Sugar	-	-	2	50
Tinned fruits and vegetables	-	-	-	-
Tinned fish and meat	-	-	-	-
Processed foodstuffs	8	92	8	175
CLASS 7 - SUB-TOTAL	481	19869	251	14748
Cotton ginned and pressed	1	1809	-	-
Cotton fabric	8	101	1	5
Other fibres processed	9	107	8	71
Wood worked	10	117	1	9
Leather tanned	5	542	-	-
Toddy and country liquors	8	868	-	-
Ice and Aerated water	-	-	-	-
Bidi	4	251	2	285
Tobacco	-	-	-	-
Processed rubber	-	-	-	-
Other processed material	1	8	4	85
CLASS 8 - SUB-TOTAL	86	2798	16	855

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Table C-IV (Details)

Production and Other Receipts in kind during the month.

Commodity Classes A and I	Production		Other receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Paddy	1597	828667	1150	88585
Wheat	152	22841	268	6848
Jowar	604	56477	505	12671
Bajri	549	45061	199	4290
Minor Millets	542	85074	821	4427
Barley	12	716	107	1188
Maize	251	19876	227	4862
Other Cereals	24	600	16	189
Gram	197	18217	149	1752
Arhar	110	8058	48	571
Other Pulses	865	84988	268	8804
CLASS A SUB-TOTAL	4908	559570	8248	79082
Groundnut	848	76096	79	4808
Linseed	65	4771	12	502
Mustard	79	8662	18	288
Coconut	107	8566	19	65
Other O. seeds	282	7778	48	644
Sugarcane	120	17182	9	888
Cotton	210	40400	40	4127
Jute	57	7525	2	58
Tobacco	48	7086	5	44
Tea, Coffee	10	117	1	1
Other drugs.	18	92	2	80
CLASS I-SUB-TOTAL	1284	168225	225	10895

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Table C-IV (Details) Continued.
Production and Other Receipts in kind during the month.

Commodity Classes 2 and 8	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Potatoes	105	4701	21	363
Other roots and tubers	140	5878	21	126
Brinjals	47	588	1	2
Vegetables	658	5262	164	555
Plantains	74	1862	10	14
Other fruits	87	342	4	10
Chillies	278	20670	62	1100
Other spices	70	12484	18	178
Stalk of crops	812	85107	127	8449
Cultivated green fodder	68	2642	8	27
Other products of agriculture	46	1559	26	162
CLASS 2-SUB TOTAL	2880	90090	452	5986
Green grass	482	22228	126	3065
Hay	590	25781	72	1827
Other un-cultivated fodder	87	2280	49	260
Fire wood	1720	12847	1284	6517
Charcoal	2	8	11	56
Timber	3	87	24	148
Other wood in the round	26	174	1	17
Lac	6	105	-	-
Honey	-	-	11	57
Game	2	28	-	-
Other forest products	19	67	8	29
CLASS 8 SUB-TOTAL	2987	68045	1586	11476

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Table C-V (Details) Continued
Sales and Other Disposals in kind during the month.

Commodity Classes 9 and 10	Sales		Other Disposals	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Cotton Textiles	14	660	7	159
Other Textiles	4	88	-	-
Clothes and Textile goods	2	100	-	-
Wood products	2	859	-	-
Furnishers	-	-	2	86
Paper products	-	-	-	-
Printed materials	-	-	-	-
Leather foot ware	12	487	8	48
Other leather products	1	85	-	-
Rubber products	-	-	-	-
Other manufactured products	1	26	-	-
CLASS 9 SUB-TOTAL	86	1705	12	298
Chemical fertilizers	4	18	1	5
Medical and Pharmaceutical-	-	-	8	11
Other Chemical products	-	-	8	28
Products of mineral oils	-	-	-	-
Other non-metallic minerals processed	1	988	-	-
Basic metals	-	-	1	88
Metal products	6	57	8	14
Non-electrical machinery	1	156	1	282
Electrical machinery	2	875	4	80
Transport equipment	-	-	-	-
Others	8	64	-	-
Class 10 - SUB-TOTAL	17	1658	16	488

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Table C-IV-A

Details of other Receipts in kind, appearing in C-IV.

Nature of Receipt	No. of entries	Value in Rupees
Owner share in kind	557	32768
Remuneration to hereditary and artisan services	511	12768
Wages in kind	2414	88288
Material contributions from landlords, etc.	852	7899
Other receipts in kind	2478	28471
Total	6812	120109

Table C-V-A

Details of Disposals in kind, appearing in C-V.

Nature of Disposal	No. of entries	Value in Rupees
Owner share in kind	407	28688
Remuneration to hereditary and artisan services	748	9482
Wages in kind	1191	82919
Material contributions to tenants etc.	252	18261
Used as raw materials in production	1588	44092
Physical destruction	79	2900
Barter	952	9678
Other disposals in kind	400	10802
Total	5817	151717

Table C-VI
Purchase and Sale of Livestock during one month.

Livestock	Purchase		Sale	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Bull	47	6866	28	2721
Bullock	209	44780	120	18728
Cow	87	6681	86	1888
Calves	85	1884	24	1110
He-buffalo	86	4501	16	1168
She-buffalo	82	16998	84	6554
Calves	16	861	16	807
Sheep	16	454	25	881
Goat	55	2218	47	894
Pig	2	66	9	228
Horse	10	1889	8	280
Donkey	1	14	1	189
Mule	—	—	—	—
Camel	12	5540	2	764
Other animals	2	158	1	67
Ducks	5	11	1	1
Hens	64	251	24	106
Other poultry and birds	7	14	2	5
Total	686	92021	384	86876

N. B.—Except in the cases of sheep, goat, pig, ducks, hens and other poultry, the number of entries is equivalent to the number of animals involved in the purchase or sale. For the sheep, etc. the number of entries refers only to the number of schedules in which the item appeared. As the purchase or sales of these animals were recorded in groups, the number of entries is not equal to the number of animals involved, which in general would be larger than the number of entries.

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Table C-VI-A

Details of Purchases and Sales appearing in C-VI.

Purchases from or Sale to	Purchases		Sales	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Producer / Consumer	364	42665	242	25576
Trader	198	30440	109	8081
Others	6	760	11	1915
Unspecified	123	12156	22	804
Total	686	92021	384	36876

Table C-VI-(B)

Other Receipts and Disposals of Livestock:

RECEIPTS			DISPOSALS		
Nature of Receipts	No. of entries	Value in Rupees	Nature of	No. of entries	Value in Rupees
Births	704	10160	Slaughter	178	2685
Gift	49	1314	Deaths	507	32800
Otherwise received	39	2094	Gift	28	1108
			Otherwise disposed	42	2888
TOTAL	796	28567	TOTAL	745	39481

N. B.— All receipts and disposals have been valued at average purchase prices of the respective animals as appearing in Table B-VI.

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Table C-IV (Details)

Production and Other Receipts in kind during the month.

Commodity Classes A and 1	Production		Other receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Paddy	1597	328667	1150	88585
Wheat	152	22841	268	6848
Jowar	604	56477	505	12671
Bajri	549	45061	199	4290
Minor Millets	542	85074	821	4427
Barley	12	716	107	1188
Maize	251	19876	227	4862
Other Cereals	24	600	16	189
Gram	197	18217	149	1752
Arhar	110	8058	48	571
Other Pulses	865	84988	268	8804
CLASS A SUB-TOTAL	4908	559570	8248	79082
Groundnut	848	76096	79	4808
Linseed	65	4771	12	502
Mustard	79	8662	18	288
Coconut	107	8566	19	65
Other O.lseeds	282	7778	48	644
Sugarcane	120	17182	9	888
Cotton	210	40400	40	4127
Jute	57	7525	2	58
Tobacco	48	7086	5	44
Tea, Coffee	10	117	1	1
Other drugs.	18	92	2	80
CLASS I-SUB-TOTAL	1284	168225	225	10895

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Table C-IV (Details) Continued.
Production and Other Receipts in kind during the month.

Commodity Classes 2 and 8	Production		Other Receipts	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Potatoes	105	4701	21	363
Other roots and tubers	140	5878	21	126
Brinjals	47	588	1	2
Vegetables	658	5262	164	555
Plantains	74	1862	10	14
Other fruits	87	342	4	10
Chillies	278	20670	62	1100
Other spices	70	12484	18	178
Stalk of crops	812	85107	127	8449
Cultivated green fodder	68	2642	8	27
Other products of agriculture	46	1559	26	162
CLASS 2-SUB TOTAL	2880	90090	452	5986
Green grass	482	22228	126	3065
Hay	590	25781	72	1827
Other un-cultivated fodder	87	2280	49	260
Fire wood	1720	12847	1284	6517
Charcoal	2	8	11	56
Timber	3	87	24	148
Other wood in the round	26	174	1	17
Lac	6	105	-	-
Honey	-	-	11	57
Game	2	28	-	-
Other forest products	19	67	8	29
CLASS 8 SUB-TOTAL	2987	68045	1586	11476

Table BC-VI

Inventory of Livestock as in the day of Visit and Reported numbers of Slaughter and Deaths during the month.

Kind of animal	No. of animals enumerated in Schedule B, Block VI	Slaughter and Deaths during one month (four weeks) as given in Schedule C, Block VI	
		Slaughter (No. of animals)	Deaths (No. of animals)
1 Bull	580	-	7
2 Bullock	10155	5	56
3 Cows	8720	0	77
4 Calves	5518	-	74
5 He-buffalo	1155	-	18
6 She-buffalo	3681	3	28
7 Calves	2079	2	59
8 Sheep	9452	12	33
9 Goat	5891	28	51
10 Pig	496	11	2
11 Horse	219	-	3
12 Donkey	163	-	6
13 Mule	14	-	-
14 Camel	96	-	2
15 Other animals	190	-	2
16 Ducks	296	1	-
17 Hens	5985	91	35
18 Other Poultry & birds	418	-	8
Total	55103	159	466

N. B.—This and the following three tables are based on the actual reported numbers of animals in Schedule B-VI, and reported numbers of slaughter and deaths in Schedule C-VI, by the 9201 households interviewed. No weighting of any kind is involved.

Table BC-VI-1.1
Age Distributions of Animals and of Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals as enumerated in schedule B, Block VI			Slaughter & Deaths during one month (four weeks) as given in Schedule C, Block VI		
	Bulls & Bullocks	Cows	Calves	Bulls & Bullocks	Cows	Calves
Below 1	-	-	1268	-	-	47
1-	-	-	2070	-	-	18
2-	-	-	2082	-	-	9
3-	1010	935	-	5	8	-
4-	1005	1185	-	2	10	-
5-	1164	1223	-	8	10	-
6-	1457	1318	-	5	10	-
7-	971	795	-	2	6	-
8-	1898	1046	-	3	11	-
9 & above	8541	2153	-	38	32	-
Unspecified	189	115	98	5	1	-
Total	10785	8720	5618	68	88	74

Table BC-VI-1.2

Age Distributions of Animals and Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals as enumerated in schedule B, Block VI			Slaughter and Deaths during one month (four weeks) as given in schedule C, Block VI		
	He-buffaloes	She-buffaloes	Calves	He-buffaloes	She-buffaloes	Calves
Below 1	-	-	612	-	-	87
1-	-	-	748	-	-	15
2-	-	-	698	-	-	9
3-	173	387	-	3	3	-
4-	148	367	-	1	2	-
5-	114	443	-	4	1	-
6-	176	554	-	1	5	-
7-	109	376	-	-	2	-
8-	128	461	-	3	4	-
9 & above	288	1044	-	4	12	-
Unspecified	19	39	26	2	2	-
Total	1155	3681	2079	18	31	61

Table BC-VI-1.8

Age Distribution of Animals and Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals, as enumerated in Schedule B, Block VI			Slaughter and Deaths during one month (four weeks) as given in Schedule C, Block VI		
	Horses	Donkeys & Mules	Camels	Horses	Donkeys & Mules	Camels
Below 1	8	3	4	-	1	-
1-	13	5	4	-	1	-
2-	21	8	3	-	-	-
3-	22	9	5	-	-	-
4-	17	28	10	1	-	-
5-	31	22	12	-	2	-
6-	14	13	11	1	-	-
7-	14	13	4	-	1	1
8-	19	13	8	-	-	-
9 & above	53	31	35	1	1	1
Unspecified	7	32	-	-	-	-
Total	219	177	96	3	6	2

Table C-VII

Cash Receipts during one month from (i) Sale of Capital Assets and (ii) Returns received in the form of rentals, interest, dividends, etc.

Item	Sale Proceeds		Returns Received	
	No. of entries	Value in Rs.	No. of entries	Value in Rs.
Land	87	21468	47	2148
Residential Buildings	9	816	14	842
Other Buildings	3	26	18	120
Livestock (capital)	847	89145	8	128
Farm Implements	24	1380	18	524
Other machinery	7	866	4	147
Bullion, etc.	80	6425	4	478
Shares, deposits, etc.	12	1728	6	246
Insurance, etc.	5	587	—	—
Loan (recovery)	68	4378	49	2991
Fresh borrowings	738	66254	76	7008
Other assets	41	3087	6	85
Total	1416	146050	240	14712

N. B. :—All selected households were asked about their cash receipts during one month (defined to be of four weeks) immediately preceding the day of visit, from liquidation of capital assets and creating of new liabilities and also as returns received in the form of rentals, interest, dividends, etc. The number of entries refers to the number of schedules in which the items appeared.

Table C-VII A

Details of Sales appearing in C-VII

Sale to	No. of entries	Value in Rupees
Consumer/Producer	408	52152
Trader	339	33260
Other	15	2261
Unspecified	659	58868
Total	1416	146050

Table C-VIII

Cash Outlay during one month on (i) Purchase of Capital Assets and (ii) Returns paid in the form of rentals, interest, dividends, etc.

Items	Purchase		Returns paid	
	No. of entries	Value in Rupees	No. of entries	Value in Rupee
Land	146	29190	201	6406
Residential buildings	23	2231	40	474
Other buildings	18	2126	10	182
Livestock (capital)	555	91695	26	1745
Farm implements	326	10592	24	988
Other machinery	112	18149	6	98
Bullion, etc.	139	14904	6	224
Shares, deposits, etc.	29	2411	2	86
Insurance, etc.	47	536	4	84
Loan (repayment)	247	31710	181	5529
Fresh lendings	105	9653	11	728
Other assets	42	10872	3	998
Total	1789	224069	514	16764

N. B. — All selected households were asked about their cash outlay during one month (defined to be of four weeks) immediately preceding the day of visit, on formation of new assets and liquidation of liabilities and also on returns paid in the form of rentals, interest, dividends, etc. The number of entries refers to the number of schedules in which the items appeared.

Table C— VIII A

Details of Purchases appearing in C-VIII.

Purchase from	No. of entries	Value in Rupees
Consumer / Producer	518	72798
Trader	674	81920
Other	284	7896
Unspecified	818	61455
Total	1789	224069

Table BC-VI

Inventory of Livestock as in the day of Visit and Reported numbers of Slaughter and Deaths during the month.

Kind of animal	No. of animals enumerated in Schedule B, Block VI	Slaughter and Deaths during one month (four weeks) as given in Schedule C, Block VI	
		Slaughter (No. of animals)	Deaths (No. of animals)
1 Bull	580	-	7
2 Bullock	10155	5	56
3 Cows	8720	0	77
4 Calves	5518	-	74
5 He-buffalo	1155	-	18
6 She-buffalo	3681	8	28
7 Calves	2079	2	59
8 Sheep	9452	12	38
9 Goat	5891	28	51
10 Pig	496	11	2
11 Horse	219	-	3
12 Donkey	163	-	6
13 Mule	14	-	-
14 Camel	96	-	2
15 Other animals	190	-	2
16 Ducks	296	1	-
17 Hens	5985	91	35
18 Other Poultry & birds	418	-	8
Total	55103	159	466

N. B.—This and the following three tables are based on the actual reported numbers of animals in Schedule B-VI, and reported numbers of slaughter and deaths in Schedule C-VI, by the 9201 households interviewed. No weighting of any kind is involved.

Table BC-VI-1.1
Age Distributions of Animals and of Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals as enumerated in schedule B, Block VI			Slaughter & Deaths during one month (four weeks) as given in Schedule C, Block VI		
	Bulls & Bullocks	Cows	Calves	Bulls & Bullocks	Cows	Calves
Below 1	-	-	1268	-	-	47
1-	-	-	2070	-	-	18
2-	-	-	2082	-	-	9
3-	1010	935	-	5	3	-
4-	1005	1185	-	2	10	-
5-	1164	1223	-	3	10	-
6-	1457	1818	-	5	10	-
7-	971	795	-	2	6	-
8-	1898	1046	-	3	11	-
9 & above	3541	2153	-	88	82	-
Unspecified	189	115	98	5	1	-
Total	10735	8720	5618	68	88	74

Table BC-VI-1.2

Age Distributions of Animals and Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals as enumerated in schedule B, Block VI			Slaughter and Deaths during one month (four weeks) as given in schedule C, Block VI		
	He-buffaloes	She-buffaloes	Calves	He-buffaloes	She-buffaloes	Calves
Below 1	-	-	612	-	-	87
1-	-	-	748	-	-	15
2-	-	-	698	-	-	9
3-	173	387	-	3	3	-
4-	148	367	-	1	2	-
5-	114	443	-	4	1	-
6-	176	554	-	1	5	-
7-	109	376	-	-	2	-
8-	128	461	-	3	4	-
9 & above	288	1044	-	4	12	-
Unspecified	19	39	26	2	2	-
Total	1155	3681	2079	18	31	61

Table BC-VI-1.8

Age Distribution of Animals and Slaughter and Deaths appearing in Table BC-VI.

Age in years	No. of animals, as enumerated in Schedule B, Block VI			Slaughter and Deaths during one month (four weeks) as given in Schedule C, Block VI		
	Horses	Donkeys & Mules	Camels	Horses	Donkeys & Mules	Camels
Below 1	8	3	4	-	1	-
1-	13	5	4	-	1	-
2-	21	8	3	-	-	-
3-	22	9	5	-	-	-
4-	17	28	10	1	-	-
5-	31	22	12	-	2	-
6-	14	13	11	1	-	-
7-	14	13	4	-	1	1
8-	19	13	8	-	-	-
9 & above	53	31	35	1	1	1
Unspecified	7	32	-	-	-	-
Total	219	177	96	3	6	2

Table C-VII

Cash Receipts during one month from (i) Sale of Capital Assets and (ii) Returns received in the form of rentals, interest, dividends, etc.

Item	Sale Proceeds		Returns Received	
	No. of entries	Value in Rs.	No. of entries	Value in Rs.
Land	87	21468	47	2148
Residential Buildings	9	816	14	842
Other Buildings	3	26	18	120
Livestock (capital)	847	89145	8	128
Farm Implements	24	1380	18	524
Other machinery	7	866	4	147
Bullion, etc.	80	6425	4	478
Shares, deposits, etc.	12	1728	6	246
Insurance, etc.	5	587	—	—
Loan (recovery)	68	4373	49	2991
Fresh borrowings	738	66254	76	7008
Other assets	41	3037	6	85
Total	1416	146050	240	14712

N. B. :—All selected households were asked about their cash receipts during one month (defined to be of four weeks) immediately preceding the day of visit, from liquidation of capital assets and creating of new liabilities and also as returns received in the form of rentals, interest, dividends, etc. The number of entries refers to the number of schedules in which the items appeared.

Table C-VII A

Details of Sales appearing in C-VII

Sale to	No. of entries	Value in Rupees
Consumer/Producer	408	52152
Trader	389	33260
Other	15	2261
Unspecified	659	58868
Total	1416	146050

Table C-VIII

Cash Outlay during one month on (i) Purchase of Capital Assets and (ii) Returns paid in the form of rentals, interest, dividends, etc.

Items	Purchase		Returns paid	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Land	146	29190	201	6406
Residential buildings	23	2231	40	474
Other buildings	18	2126	10	182
Livestock (capital)	555	91695	26	1745
Farm implements	326	10592	24	268
Other machinery	112	18149	6	98
Bullion, etc.	139	14904	6	224
Shares, deposits, etc.	29	2411	2	86
Insurance, etc.	47	536	4	54
Loan (repayment)	247	31710	181	5523
Fresh lendings	105	9653	11	723
Other assets	42	10872	3	966
Total	1789	224069	514	16764

N. B. — All selected households were asked about their cash outlay during one month (defined to be of four weeks) immediately preceding the day of visit, on formation of new assets and liquidation of liabilities and also on returns paid in the form of rentals, interest, dividends, etc. The number of entries refers to the number of schedules in which the items appeared.

Table C— VIII A

Details of Purchases appearing in C-VIII.

Purchase from	No. of entries	Value in Rupees
Consumer / Producer	518	72798
Trader	674	81920
Other	284	7896
Unspecified	318	61455
Total	1789	224069

Table C-IX

Expenditure during one month on purchase of raw materials for farm, forest and livestock production.

Code Nos.	Commodity.	No. of entries	Expenditure in Rupees
A0	Paddy	58	1274
A1	Wheat	204	6464
A2	Jowar	82	1672
A3	Bajri	22	157
A4	Minor Millets	18	158
A5	Barley	112	1544
A6	Maize	7	96
A7	Other cereals	8	87
A8	Gram	273	6527
A9	Arhar	5	150
AA	Other Pulses	282	6442
10	Groundnut	11	484
11	Linseed	21	166
12	Mustard	50	761
14	Other oilseeds	120	8742
15	Sugarcane	8	481
16	Cotton	14	219
17	Jute	18	127
1A	Other drugs	205	5759
20	Potatoes	52	2118
21	Other roots and tubers	65	908
28	Vegetables	59	875

Table C-IX (continued).

Expenditure during one month on purchase of raw materials for farm, forest and livestock production.

Code Nos.	Commodity	No. of entries	Expenditure in Rupees
25	Other fruits	3	22
27	Other spices	17	312
28	Stalk of crops	479	12202
29	Cultivated green fodder	9	126
2A	Other products of agriculture	576	11699
80	Green grass	150	4905
31	Hay	183	4610
33	Fuel wood	4	50
35	Timber	6	111
36	Other wood in the round	18	88
3A	Other forest products	1	27
50	Milk	2	3
54	Farmyard manure	180	5098
56	Hides, skins and furs	4	29
59	Fishery products	2	16
5A	Other livestock products	5	30
64	Stone	2	12
68	Salt	272	949
69	Saline substances	2	9
70	Rice (husked)	1	2
72	Cereal and pulse flour	6	179
73	Vegetable oil	82	782

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Table C-IX (Contd)

Expenditure during one month on purchase of raw materials for form, forest and livestock production.

Code Numbers	Commodity	No. of entries	Expenditure in Rupees
74	Butter, Ghee, Cheese	10	206
75	Hydrogenated oil	2	110
76	Gur	14	66
77	Sugar	1	20
7A	Processed food stuffs	1	10
81	Cotton fabric	2	6
82	Other fibres processed	39	154
88	Wood worked	1	2
8A	Other processed material	16	127
92	Clothes and textile goods	1	11
98	Wood products	3	91
98	Other leather products	1	123
9A	Other manufactured products	1	11
00	Chemical fertilizers	39	1108
01	Medical and Pharmaceutical	2	61
02	Other chemical Products	3	44
03	Products of Mineral Oils	2	816
05	Basic metals	3	96
06	Metal products	8	70
	Unclassified	74	1459
Total		8921	85948

(195)

Table C - X

Expenditure during one month on purchase of raw materials for non-farm production.

Item	Commodity	No. of entries	Expenditure in Rupees
A0	Paddy	9	160
A1	Wheat	1	81
A2	Jowar	12	8
A3	Bajri	2	8
A4	Minor Millets	20	2
A5	Gram	2	40
AA	Other Pulses	1	9
10	Groundnut	1	8
11	Linseed	3	24
12	Mustard	5	128
13	Coconut	2	9
14	Other oilseeds	3	208
15	Sugar-cane	1	502
16	Cotton	6	132
18	Tobacco	2	84
19	Tea, coffec	1	11
1A	Other drugs	2	40
23	Vegetables	1	68
27	Other spices	2	7
28	Stalk of crops	2	34
2A	Other products of agriculture	3	161
30	Green Grss	3	42

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Table C-X Contd.

Expenditure during one month on purchase of raw materials for non-farm production.

Code Numbers	Commodity	No. of entries	Expenditure in Rupees
81	Hay	1	24
83	Fuel wood	7	95
84	Char coal	5	88
85	Timber	8	208
86	Other wood in round	19	159
8A	Other forest products	3	28
50	Milk	1	26
54	Farm yard manure	5	44
50	Hides, skins and furs	31	1814
5A	Other livestock products	1	9
60	Coal	7	76
61	Iron ore	2	108
62	Other metals	6	98
63	Petroleum and Gas.	1	58
64	Stone	1	16
65	Clay	1	4
66	Sand	1	2
68	Salt	2	3
6A	Non-metallic mineral products	7	53
70	Rice (husked)	1	14
72	Cereal and pulse flour	3	80
73	Vegetable oil	11	178
76	Gur	2	26

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Table No. C-X Contd

Expenditure during one month on purchase of raw materials for non-farm production.

Code Nos.	Commodity	No. of entries	Expenditure in Rupees
77	Sugar	8	181
7A	Processed food stuffs	1	5
81	Cotton fabric	56	927
82	Other fibres processed	10	276
84	Leather tanned	1	58
90	Cotton textiles	4	622
91	Other textiles	1	3
98	Other leather products	1	18
00	Chemical fertilizers	2	8
01	Medical and Pharmaceutical	1	1
02	Other chemical products	21	98
03	Products of Mineral oils	2	294
04	Other non-metallic minerals processed	1	198
05	Basic metals	1	35
06	Metal products	15	230
0A	Others	1	2
	Unclassified	19	278
Total		320	8151

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Table C-XI

Cash Receipts during one month.

Table C-XI
Cash Receipts during one month.

Item	No. of entries	Cash receipts in Rs.
By liquidating assets and creating liabilities	1280	146050
Returns on capital assets	217	14718
Cash contributions from landlords, cosharer etc.	156	9280
By sale of farm, forest and livestock products	2442	250119
By sale of other products	228	20064
Income from maintenance and repair services	90	1788
Income from transport services	153	4898
Income from storage and incidental services	54	682
As sales commission	72	3471
Income from other professions and services	887	27079
Salaries and wages earned within the village	8256	105249
Net earnings brought home from outside	728	18372
Pensions and compensation	61	1271
Remittances received	241	15058
Other cash receipts	287	8581
Total	10017	626075

(199)

Table C-XII

Cash Expenditure during one month.

Item	No. of entries	Cash expenditure in Rupees
On creating assets and clearing liabilities	1442	224069
Return paid on capital assets	472	16764
Cash contributions to tenants, cosharers, etc.	188	5625
Raw material purchases for farm Production	2240	86240
Raw material purchases for other Production	257	8148
Maintenance and repair of capital assets	357	8198
On transport of finished products	108	1480
Storage and incidental marketing costs	54	1566
Sales commission	68	445
Other marketing costs	371	9586
Salaries and wages paid to male labour	1498	68420
Salaries and wages paid to female labour	687	30613
Salaries and wages paid to child labour	167	2865
Remittance made out	188	7846
Other cash expenditure	610	18578
Total	8687	490488

(200)

Table C-XIII
Household Expenditure during one week.

Item	No. of entries	Expenditure in Rupees
Rice	2725	14542
Wheat grain and flour	1318	5940
Milletts	1587	9843
Other cereals grain and flour	914	5572
Arhar seed and pulse	1710	2388
Gram seed pluse and flour	1191	1917
Other pulse and pulse seed	1592	2142
Coconut and Kopra	1182	870
Groundnut and seed	342	200
Other nuts and oil seeds	308	394
Mustard oil	2864	2878
Groudnut oil	2696	2928
Coconut oil	2900	1869
Linseed oil	580	544
Other edible oils	1054	1195
Vanaspati	225	475
Mutton (sheep and goat)	1281	1972
Poultry and birds	71	164
Fresh fish	1178	1095
Dry fish	859	570
Eggs	218	158
Other meats	191	280

(201)

Table C-XIII Continued
Household Expenditure during one week.

Item	No. of entries	Expenditure in Rupees
Milk	1465	2074
Ghee and Butter	1050	3186
Other milk products	384	252
Vegetable	5129	3983
Fruits	1038	570
Salt	7688	2663
Chillies dry and powder	5870	4013
Other spices	4792	2244
Sugar	1900	2948
Gur (cane)	4071	5887
Other sugars	377	425
Tea	2597	1450
Coffee	360	256
Other beverages	39	45
Prepared food and drinks	495	562
Other food materials	295	428
Pan Supari etc.	3313	2067
Tobacco (chewing)	3604	1846
Tobacco in all forms for smoking	4600	3279
Liquors and wines	467	1185
Other intoxicants	275	461
Rationed articles not included elsewhere	46	165
Total	76840	95626

(803)

Table C-XIV

Household Expenditure during one month.

Item	No. of entries	Expenditure in Rupees
Firewood	1186	5771
Charcoal	102	418
Kerosene	5861	9677
Other fuel and light	528	1470
Men's clothing	8869	89644
Women's clothing	2740	38919
Children's clothing	2248	14889
Footwear	1814	9984
Soap	2151	8452
Hair oils	948	1772
Other toilets	259	425
Books, periodicals and education	567	8511
Medicines and medical services	1897	16258
Domestic and personal services	668	9910
Entertainment	787	8448
Travelling	1948	12957
Household utensils and furniture	904	6015
Gifts, donations and subscriptions	686	8784
Cash payment made in ceremonies	792	10009
Other domestic capital expenditure	857	7757
Other household expenditure	1549	14728
Total	80296	214788

Table C-IX-A & C-X-A
Details of Purchases appearing in C-IX and C-X

Purchase from	C-IX		C-X	
	No. of entries	Value in rupees	No. of entries	Value in Rupees
Producer	1184	81926	69	1987
Trader	2267	45648	226	5441
Other	100	4124	6	98
Unspecified	420	4250	19	625
Total	3921	85948	320	8151

Table C-XIII-A & C-XIV-A
Details of Purchases appearing in C-XIII and C-XIV

Purchase from	C-XIII		C-XIV	
	No. of entries	Value in Rupees	No. of entries	Value in Rupees
Producer	9098	22026	1625	11817
Trader	28685	69942	20228	147808
Other	68	527	124	728
Nominal transactions (Gifts, donations and other similar cash payments)	-	-	1478	18798
Unspecified	38989	8131	6841	40647
Total	76840	95626	30296	214788

VII. AFTERMATH

1. On the 21st January, 1951, Prof. Gadgil personally handed over to Mr. P. C. Bhattacharya and Prof. Mahalanobis copies of a note briefly outlining his views about the National Sample Survey. The note is reproduced below:—

1. We are not getting or are not likely to get in the immediate future, through the National Sample Survey, as at present conducted, information which is reliable enough for the purpose for which it is intended to be used.
2. The main reasons for this are :—
 - (a) The agency employed is not familiar enough with rural conditions;
 - (b) the programme of work, even in the Poona Schedule does not enable it to establish contacts in the proper way with the respondents;
 - (c) adequate provision has not been made for training and supervision.
3. It is also doubtful whether on many aspects sought to be covered, information can really be obtained in India by a random survey. Further, too many aspects have been considered in the survey. The ambitious coverage of the present schedules has thus largely helped to defeat the objective of the survey. Beginning with a very small number of simple items might have yielded different results.
4. Therefore, if Government wants to maintain activity in the field and incur expenditure, the whole plan should best be thought out afresh. Last year there was no time for doing this in a proper manner. This has created difficulties which should be attempted to be resolved immediately.
5. A beginning should be made with defining clearly the objectives of the Union Government in the matter of collection of social and economic data. I would define them in the following way :—
 - (a) the coordination of all the activities of Central Ministries and State Governments in the collection of statistics from the point of view of data required for framing social and economic policy;
 - (b) the planning and conduct of enquiries in specific regions and for filling specific gaps in information;

(c) evolution of an All India Sample or Samples for collection of over-all data for directly obtaining data for the Central Government and checking data collected by Ministries and States.

6. The objectives should be followed up in the priority given above.

7. It is assumed that 5 (a) is being attempted already.

8. In relation to 5 (b) and (c) it is necessary to set up formally a Central Committee which contains representatives of all the following elements (a) Central Ministries (b) State Bureaus and (c) Non-official agencies.

9. The programme under 5 (b) should be immediately framed in relation to gaps in analysis and information glaringly brought to the notice of the National Income Committee in its work.

10. They are of two types : (1) relating to certain sections of economic life, such as, handicraft and small scale industry, trade, areas and crop-acres in certain regions, house ownership, etc. and (2) certain important relations, activities, break-downs, such as, consumer expenditure, non-monetary section of economic life, rural-urban division, capital formation, etc.

11. The programme of work for covering these fields should be put together immediately under the guidance of the Committee indicated above. This work should not be attempted to be done in one uniform way by one central agency or by a staff centrally recruited, but as a series of related but separate bits entrusted to single ministries, State Bureaus and competent non-official agencies.

12. Objective 5 (c) is best aimed at after and not before the others are attained. Its attainment requires very careful planning and full co-operation of all agencies. In case, however, it is decided to carry on with the National Sample as it is, then at least its coverage should be drastically curtailed, so that only such questions will be asked in it, the reliability of replies to which could be easily checked by the present type of investigator. The survey would in such a case attempt to gather information about such things as visible present aspects rather than about operations of the past.

13. The above remarks have nothing to do with merits or otherwise of the sampling technique and the sampling design, except that I feel that, even in this respect at the initiation of a large scheme by the Centre, discussion and cooperation from varied interests should have been invited.

2. In the following is the copy of a letter dated 31st January, 1952 from Prof. Mahalanobis in reply to the above note.

No. 969/SU/51,

17, Curzon Lane,

New Delhi, 81st January, 51.

Dear Gadgil,

I am in agreement with much of the views expressed in the note which you gave me in New Delhi on the 21st January (and which, I understand, is a copy of a note you had sent to P. C. Bhattacharya).

2. I entirely agree with you about the need of formulating clearly the policy of the Government of India in the field of statistics. I agree broadly with the objectives mentioned by you. These are, however, highly inter-related, and I believe the best plan would be to tackle them simultaneously. I am also in favour of setting up a Statistical Committee (containing representatives of Central Ministries, State Governments, and non-official agencies) for advising Government in statistical matters.

3. As regards the N. S. S., I agree with you that some of the investigators may not yet have enough familiarity with rural conditions. Our experience has been that adequate familiarity can be acquired only through actual work. I also agree that more training is needed. But here also our experience has been that adequate training can be given only in the course of the actual surveys.

4. I also agree that the programme of work requires to be modified. As you are aware, I advocated a very rapid survey in the first round for two reasons. First, to enable the field machinery being quickly set up by establishing contacts with the whole group of sample villages. Secondly, to get some idea of the total volume of work that could be reasonably expected from the field investigators under actual working conditions in different parts of the country.

5. I agree that the N. S. S. was set in operation in a very short time. But, as you are aware, the National Income Committee recommended the use of sampling methods in March, 1950. We then had full discussions regarding the general plan and programme of work in Poona in April and early July, and again in New Delhi at the end of July and the end of August. In addition, Poona and Calcutta workers and the N. I. Unit had technical discussions in Calcutta in May and June. Try-outs on a fairly large scale were made for 2 or 3 months. It was on the basis of such trials and detailed discussions that the programme for the first round was settled—it is true, with a good deal of compromise between different points of view—at the end of August, 1950. Since then, I am not aware of any new evidence having become available to throw doubt on the general validity or possibilities of large scale sample surveys.

6. As regards the reliability of the results of the N. S. S., it is too early to say any thing definite, but I do not see any

reasons for serious misgivings. Information for about 500 (out of 1800) villages has been received in Calcutta. Error calculations will not be possible until at least a complete sub-sample of about 750 villages becomes available. Provisional (and necessarily fragmentary) calculations in Calcutta have not, however, revealed any alarming characteristics so far.

7. I do not know how far the work has progressed in regard to the villages under the control of the Poona Institute. These are, I believe, about a hundred in number against about the same number under the control of the Indian Statistical Institute and about 1600 in charge of S. P. Sinha. Impressions based on the hundred Poona villages may not necessarily be true of the remaining 1700 villages. In any case, a careful comparison of the results in the three groups is necessary before any general conclusions can be reached.

8. There are also wider considerations. Even if the results of the first round do not turn out to be reliable, no conclusions can be drawn about the possibilities of the N. S. S. It is widely recognized that a large scale survey (like all large scale production) requires a period of "breaking in". The first round is never looked upon as a definitive enquiry by itself. In the N.S.S. actual field work started on the 10th October, 1950, and it was the end of November before all the investigators got into their positions. The N. S. S. has been thus in operation for barely two months. The information from the villages is flowing in smoothly. Detailed scrutiny is naturally showing up defects, but so far there has been no signs of a break down. I have experience of many large scale surveys; I find that the N. S. S. is functioning better than I had expected.

9. There are clear indications that the experience gained in the first round would enable the schedules and the programme being revised on scientific lines. I am confident that the N.S.S. would operate far more efficiently during the second round of 8 or 4 months beginning roughly from March or April. This would still leave time for further improvements in the third round before the first year of survey is completed in October or November, 1951. From the second year, the N. S. S. should supply results sufficiently reliable for many practical purposes. In this situation it seems to be both rational and prudent to proceed with the sampling work for another year, and then judge possibilities on the basis of actual results.

Your sincerely,
Sd/-P. C. MAHALANOBIS.

8. On 10th February, 1951, Prof. Gadgil addressed the following to Prof. Mahalanobis further clarifying the points at issue.

10th February, 1951.

My dear Mahalanobis,

Many thanks for your letter dated 31st January, 1951. I welcome greatly this exchange of ideas because it helps to clarify the underlying issues and may assist in the determination of policy.

I shall not go over the large ground again regarding which there is agreement between us but shall take up merely points of difference of opinion.

It would, however, be useful in view of para 5 of your letter to set down the stages of the development of the N. S. S. last year. The National Income Committee recorded no opinion regarding the N.S.S. and merely drew attention of Government to the desirability of filling certain important gaps in information by field surveys on a sampling basis. When we met in April I made it clear that I was not conversant with problems of setting up an organisation like the N. S. S. and indicated certain doubts and preferences and also that if we were expected to come in we should be allowed to develop work largely along our own lines. In subsequent conferences and conversations the desire to get something done, now that Government had sanctioned the scheme, had an important influence and I consented to a try-out during the year. I put all this down merely to indicate that what I am suggesting now is not recently thought out and that our participation in the scheme last year should not prejudice the consideration of points of view which, as the record will show, we have been pressing forward all the time. In these circumstances, I considered it necessary for me to communicate to Government and yourself what I felt to be the needs of the situation and the lessons of experience.

The main difference of opinion between us centres round two issues. The first is the quality of the information that is coming to us. I do not share your view that mere statistical examination of any mass of data collected by such methods as those followed in the N. S. S. will enable one to judge adequately of the reliability or otherwise of original responses. The main sources of unreliability that we apprehend are not through wild, extravagant or entirely unreal replies being given by the respondents. We do not also expect a large measure of direct opposition or non-cooperation. What from our experience is most likely to happen is that large numbers who overtly cooperate will conceal specific personal details and will give plausible replies not likely to arouse any suspicions. Secondly, from the side of the investigator there is the possibility that instead of visiting sample families he may fill in plausible figures in the light of his experience of other families in the way in which the Patwari is alleged to fill in crop acreages. We feel that these are the two sources of the largest possible wrong information and they cannot be detected or remedied by a central examination of

the statistical returns. Our apprehensions in this regard are based on experience of actual investigational work and the reports of our fieldmen who are supervising the work. In recent years, circumstances have become specially difficult for such investigations; we find that the existence of a system of procurement and rationing makes it progressively difficult to gather reliable details regarding food production, consumption and stocks; in the same way our difficulties in this State in the matter of collecting information regarding rural indebtedness have increased notably since the passing of the Bombay Money-lenders' Act. Similar considerations affect many phases of rural life today. So far as I am aware no other agency has a staff of fieldmen drawn from rural areas and trained for years in this work as we have and I feel that it is highly unlikely that our estimates of reliability based not on examination of data on tabulation but on continuous reports from the supervising and collecting agency in the field could be found as exaggerated or as being relevant only to the districts in which we are conducting the survey. Moreover, the sources of unreliability in the data being what they are I do not see the possibility of improving the quality of the information by a mere continuation of the fieldwork in its present form.

The second point of our difference of opinion is regarding priorities. You consider that all the three objectives set out by me should be achieved simultaneously, whereas I feel that it is useless to attempt the third without having secured considerable progress in one and two. I suppose views on this matter depend substantially on what one expects the N. S. S. to do. So far as I can judge the N. S. S. at best, can yield fairly reliable information regarding certain National aggregates. By themselves these National aggregates cannot form the basis for policy formation. For policy formation you require, not so much the National aggregates, but much more detailed information concerning specific regions and activities and a fairly clear idea of the actual operations of specific parts of the economic system. When you have gathered a fair amount of such specific information the National aggregates may help you to build an overall realistic frame-work which will give meaning to National Income and Accounts; but as long as the detailed information is not available, National aggregates by themselves would prove of little use for policy formation or for judging of its implications. Even this is on the assumption that the information regarding aggregates that the N. S. S. yields would be fairly reliable. However, I doubt whether it is possible in the absence of attainment of first and second objectives to get sufficiently reliable information through such an agency as the present N. S. S.

In all these matters of priorities one must balance the cost involved as against the results achieved. I am convinced that co-ordinating and strengthening the work of primary field agencies is a crying need of the present and I feel that the Centre

with some grants-in-aid and adequate supervision and advice could do great deal in this regard. I have before me the example, this year, of the Bombay Bureau whose programmes have been drastically curtailed because of the difficulties of the State Government. One of its projects was directly concerned with training an agency for permanent posting in the old unsurveyed areas. The N. S. S. I consider to be a superstructure and a fairly costly one as the Indian finances go. One cannot obtain any real advantage from it or afford its luxury until the basic supporting units are fully strengthened. As you have often stated our different attitudes towards the N. S. S. stem from our different positions. As a Statistician you are, I suppose, fascinated by the large technical problems which are involved in setting it up and working it and you desire perhaps to achieve what much richer countries have barely attempted. I look at the N. S. S. from the point of the results it achieves and the basic information for policy formation that it can yield; also, as an economist I am concerned with the means and ends ratio.

I do not know that any thing is to be gained by further discussing the points at issue between us. I also realise that there is some force in your argument against wasting through abrupt closure of the N. S. S., the large expenditure incurred on setting it up this year; and the government is likely to be specially impressed with this argument. In case therefore, government decides to continue the organization in some shape or another, it appears to me that it is urgent to revise its form. You too agree that the programme of work requires to be modified. In fact in your last paragraph you envisage the possibility of revising schedules and programme every three or four months. Incidentally, I might note that under the existing plan there is some kind of a tentative programme for the villages of the Poona series only. I am not aware of any kind of programme for second, third or fourth visits to the other villages. You will agree, therefore that there is need for an overall reconstruction. I should advise the following steps before work is started for the next year: (i) A clear definition of possibilities and objectives of the N. S. S. should be as far as possible made. (ii) For dealing with the large organisational and technical problems connected with the planning and conduct of the N. S. S. Government should set up a small central advisory committee composed of the elements indicated in my earlier note. (iii) There should be no insistence on maintaining the N. S. S. necessarily in its present form and in every area irrespective of the costs and difficulties. This means that I suggest that all areas in which it has been found difficult to organise effectively N. S. S. agencies and all investigational personnel who are obviously unsuitable should be dropped. (iv) The field of enquiry common to the whole country should be reduced to a small ground which can be covered fairly reliably by relatively unexperienced and untrained fieldmen. As indicated in the first note this should be confined largely to visible phenomena. I do not agree with the view that because an

agency is established in a place or is visiting a person the more questions are asked and the wider is the field of enquiry, the better and more economical it is. There are in our experience distinct limits to what an external untrained agency can collect information about and what an average sample respondent will stand from an unknown enquirer. (v) Room might be found for such variations of sampling procedures as those suggested in our notes last year, as for instance, for choosing the agriculturists and non-agriculturists in the sample of households. The procedure adopted last year in this regard, for instance, appears to be unsuitable both for definition and analysis. (vi) While narrowing drastically the scope of the general enquiry, I would advise enriching it in specific respects in certain regions. The enrichment, I suggest, would take two forms: (a) concentration of effort in certain regions in specific respects with a view to bringing them in line with other regions in respect of basic statistical information and thus filling in regional gaps in all-India statistics at present existing. Such for instance are the crop acreages and forest extension in unsurveyed areas and a good deal of basic information relating to agriculture, livestock and industry in many of the merged States and newly formed Unions. (b) Detailed studies of specific economic activities in which information is specially lacking today. Such studies need not be spread over the whole of India, but should be confined to regions where the particular activities are known to be concentrated. Such for instance are many aspects of livestock production, of miscellaneous agricultural production other than that of the staple crops, forest exploitation, fishing, a number of cottage industries, rural and urban trading, rural transport, etc. Further, as the information to be collected in such studies will of necessity be much more detailed, it would be advisable to modify the sampling procedures particularly in respect of their randomness. In fact, strictly random procedures of sampling should not be employed unless there is reason to believe that the ultimate units are reasonably uniform in their responses to the questionnaire posed. With any detailed enquiry this condition is difficult to be satisfied.

These proposals may lead to collection of information from which the national aggregates cannot be directly computed without trouble. But such reorientation of the enquiries would lead to an enrichment of existing materials which would be much more significant and more lasting in value.

I hope what I have said above will convince you that I have no desire to be obstructive or non-cooperative. It would merely be difficult for me to cooperate if the objectives and methods of the N. S. S. are such as I could not honestly justify and approve.

It now transpires that I shall be out of India between the middle of February and the beginning of June and shall not be able to carry on these discussions further. However, I have had

the fullest discussions with Dandekar and he knows how I desire the Institute to act in specific contingencies.

Yours sincerely,
Sd/- D. R. GADGIL.

Soon after the receipt of the above letter, Prof. Mahalanobis invited Mr. Dandekar for joint discussions on the National Sample Survey. In the following are the minutes of their discussions held on 22nd and 23rd February, 1951.

At the invitation of Prof. P. C. Mahalanobis, Mr. V. M. Dandekar of the Gokhale Institute of Politics and Economics, Poona reached Calcutta on Monday, the 19th February, 1951, and participated in the discussions on the National Sample Survey schedules and programme of work in the Indian Statistical Institute. At most of the discussions, Mr. William Hurwitz of the U. S. Bureau of the Census was present. Prof. Mahalanobis and Mr. Dandekar had a short general talk on the afternoon of the 19th February. On the 20th and 21st February, Mr. Dandekar participated in the group discussions which Mr. Hurwitz and the Institute staff were having in regard to the revision of the N. S. S. schedules.

2. On the 22nd February Prof. Mahalanobis met the technical group with a view to reaching final decisions regarding the revised schedules to be utilised in the next round of the N. S. S. due to begin in April. Besides Mr. William Hurwitz and Mr. V. M. Dandekar, Mr. C. R. Rao, Mr. S. B. Sen, Dr. R. K. Mukherjee and other members of the Institute technical staff were present.

3. Prof. Mahalanobis (who owing to pressure of other work, was unable to attend the preliminary discussions) stated that two different schedules (called the Poona and Calcutta schedules) were used in the first round of the NSS. Before reaching final decision about the revised schedules, it was necessary to settle certain matters of broad policy about the participation of the Poona Institute. He mentioned that Prof. D. R. Gadgil, in his letter of the 10th February, 1951, had raised certain issues regarding the statistical programme of the Government of India, and had expressed certain doubts about the advisability of continuing the NSS in its present form. Prof. Mahalanobis did not agree with Prof. Gadgil in every point. Prof. Mahalanobis was in favour of continuing the NSS, and he would submit his views to Government in due course. In the meantime, assuming that Government decided to continue the NSS, he wanted to know from Mr. Dandekar what were the possibilities of the Poona Institute cooperating with the project. Prof. Mahalanobis thought that it might be convenient to consider the NSS as consisting of two different portions. One might be called the "sample" or the estimating part and the other the "non-sample" or the non-estimating one. Object of the

estimating part was to furnish a continuing stream of information to Government. The object of the non-estimating part was to conduct intensive special investigations with a view to improving the technical methods to be used on a large-scale in the estimating surveys. Considering first the sample or estimating part, he thought it desirable to use one uniform set of schedules all over India and to tabulate and process the collected material through one central agency.

4. Mr. Hurwitz enquired why there should be any need for separate schedules and separate tabulations. Mr. Dandekar while explaining the conditions under which two sets of schedules were used last year, stated that the two schedules were being tabulated separately and Government had approved of this arrangement.

5. Prof. Mahalanobis stated that the the decision to use two schedules (Poona and Calcutta) was reached as a matter of compromise immediately before his departure from India at the end of August, 1950. At that time there was no suggestion of separate tabulation. Some time later, when he was still out of India, he received from Government a copy of Prof. Gadgil's letter proposing separate tabulation of the Calcutta and Poona schedules. He immediately wrote to Government stating that he was opposed to such separate tabulation. In his view the only justification for using the Poona and Calcutta schedules was the possibility of assessing the respective advantages and disadvantages of the two schedules.

6. Mr. Dandekar stated that in his view it was not possible to compare the Poona and Calcutta schedules on the ground that they referred to two different periods of enquiry and also to two different sets of villages. He also could not see why there should be any difficulty in comparing the results, if the schedules were tabulated at different places.

7. Prof. Mahalanobis was unable to agree. He thought that valid statistical comparisons were possible, but such comparisons could only be made through data being processed and the results being studied by the same group of workers. If a comparative study was not possible, then one or the other set of schedules need scarcely be tabulated at all. He further mentioned that after his return to India he discussed the matter with Government and it was arranged that the tabulation of both Calcutta and Poona schedules would be done in Calcutta. Duplicate copies of the Poona schedules were, however, being prepared in Calcutta and sent to the Poona Institute for such special studies as the Poona Institute thought proper.

8. Mr. Dandekar stated that his understanding of the existing arrangements for tabulation was entirely different. He understood that the Poona Institute was alone responsible for the tabulation of the Poona Schedules and in view of Prof. Maha-

lanobis's view in this matter he would get the position clarified from Government.

9. Prof. Mahalanobis said that as far as he knew the position stated by him was in accordance with Government decision. As regards future arrangements, Prof. Mahalanobis was opposed to any separation of the tabulation work. He was also opposed to the use of two entirely different sets of schedules (with the exception of such variations of particular schedules as might be used for purposes of comparison in a properly integrated design of experimentation).

10. Coming back to the "sample" or estimating part of the NSS, Prof. Mahalanobis enquired what Mr. Dandekar thought were the possibilities of the Poona Institute cooperating in this part of the enquiry.

11. Mr. Dandekar explained that though his Institute had somewhat different conception of priorities in a statistical programme of the Central Government it did not mean that the Poona Institute would not cooperate if the Government decided otherwise. He said that he was in agreement with Prof. Mahalanobis that in the sample or estimating portion of the NSS, one uniform set of schedules should be used and that the collected material should be centrally tabulated and analysed. As to the stages and levels at which the Poona Institute could possibly cooperate he thought that the Poona Institute could possibly cooperate and would certainly assist in finalising the questionnaire schedules. Next he pointed out, was the question whether the Poona Institute would accept this year, as it did last year, administrative responsibility of the NSS in the region with which it was familiar. That he thought would be difficult.

12. Prof. Mahalanobis thought that this was not important and other arrangements could be made if the Poona Institute was unable to accept any administrative responsibility for the field work in the estimating portion in the Poona area.

13. Mr. Dandekar agreed that the tabulation and analysis of the estimating portion should be done through one central agency, but stated that the Poona Institute could not undertake the responsibility.

14. Prof. Mahalanobis next enquired to what extent the Poona Institute could cooperate in the special studies. He thought, for instance, that after the general tabulation was done centrally, it might be possible to make available the original records or portions therefrom to the Poona Institute for further analysis.

15. Mr. Dandekar thought that as the tabulations were to be done mechanically, having once transferred the material to punch cards, it would be uneconomic to handle the original records any more. He thought that the Poona Institute could, if necessary, request the central tabulating agency to produce any extra tabulations for its use.

16. Prof. Mahalanobis thought that this should certainly be possible. It should also be possible to supply duplicate sets of punched cards to Poona Institute.

17. Mr. Dandekar pointed out that even though a duplicate set of punched cards were furnished, other tabulating equipment could not be had at short notice and for a short period. Therefore, in case it was thought desirable that the Poona Institute should participate in tabulation and analysis, he thought it necessary for the tabulation programme to be so arranged as to enable the Poona Institute to maintain a unit of mechanical tabulation. That would also enable, he said, the Institute to expand its activities as a centre of statistical training and research.

18. Prof. Mahalanobis said that there was great dearth of technical personnel in the country; and he sincerely desired that the Poona Institute should develop its activities. He had kept the possibility of bringing in non-official agencies from the very beginning; and it was on his recommendation that Government had sanctioned grants to the Poona Institute and the Delhi School of Economics for special investigations. He requested Mr. Dandekar to make definite proposals about work which the Poona Institute would undertake.

19. Mr. Dandekar suggested that even though one uniform set of schedules were agreed upon, these would cover a number of subjects such as, for instance, consumer expenditure, land utilization, cost of production of agricultural commodities, rural trading, etc. It should not be impossible in that case to handle tabulation, analysis, and other technical matters relating to certain subjects at Calcutta and those relating to others at Poona. The Poona Institute, he said, was particularly interested in matters such as economics of certain agricultural crops, rural trading, etc. and would be willing to cooperate on this basis.

20. Prof. Mahalanobis thought over the matter but felt some difficulty in agreeing to any kind of division of responsibility in the operational and estimating portion of the NSS. He felt this would not be advisable in the larger interests of the country. He thought, however, that it should be possible for the Poona Institute to participate in the non-estimating part of the NSS project and make valuable contributions by undertaking special studies.

21. Mr. Dandekar stated that the non-sample part of the NSS project admirably suited the resources and mode of working of the Poona Institute and that, therefore, his Institute would gladly cooperate in this part of the NSS. In particular the Poona Institute could undertake the entire responsibility of one single non-sample scheme under NSS, as for instance economics of production of specific agricultural commodities such

as tobacco, groundnut, etc. studies in fisheries, forest exploitation, etc. Such studies would be non-sample in the sense that they would not be spread over the whole country. They could nevertheless be worked in more than one centre in India. In such cases, the actual field work at a centre falling within the region familiar to the Institute could be done by the field staff of the Institute. Elsewhere, suitable field agency would have to be provided for within the NSS project. He emphasized that in relation to such a scheme, the Poona Institute would insist on having the entire technical responsibility from beginning to end.

22. Prof. Mahalanobis was in complete agreement in principle to the Poona Institute participating in special investigations. It was decided that he and Mr. Dandekar would discuss the matter further the next day. The whole group including Mr. Dandekar then proceeded to consider the detailed proposals for the revision of the NSS schedules. (Notes on this part of the discussion on purely technical matters are omitted).

23. On the 23rd February, 1951, Prof. Mahalanobis and Mr. Dandekar continued their discussion regarding the participation of the Poona Institute in the NSS project. Before going into details, Prof. Mahalanobis thought it desirable to consider the over-all position. It was clear that the NSS should include two different types of activities which were closely connected but would be operated separately. One was the large-scale sample or estimating operation the object of which would be to supply Government with a continuing stream of information relating to economic and social factors covering the whole country. The other was the non-estimating special investigation or research type of work the primary object of which would be to improve the technical methods of collecting information in the large-scale surveys. He thought that probably this was a kind of division which Prof. Gadgil had in his mind. The Calcutta and the Poona Institutes, with their different historical background and experience, had apparently divergent views in certain matters. Prof. Mahalanobis thought that the best plan might be for a clear separation of the large-scale sampling and estimating portion of the NSS from the non-estimating and special investigations of an intensive type.

24. Mr. Dandekar agreed that such separation would probably be the best arrangement.

25. Prof. Mahalanobis thought that the agency entrusted with the sampling or estimating part of the work should also have the ultimate responsibility for making final decisions regarding the schedules and programme of work and the changes to be made therein from time to time. As regards special investigations, these obviously must have reference to the needs of the large-scale sampling work. The general type of the special investiga-

tions would, therefore, have to be decided by mutual agreement; but, once very broad decisions were made, the agencies entrusted with the special investigations must have full powers to settle the technical methods and other details. The two wings (large-scale and sampling and non-estimating special investigations) should work in close collaboration. Prof. Mahalanobis did not know at the moment what would be the organizational set up of the NSS in case Government decided to continue it. For convenience of reference, he would call the unit responsible for the large-scale or estimating part of the work as the Operational Agency (which need not necessarily have any connection with the Calcutta Institute). He also visualized the Calcutta, Poona and Delhi (and if possible, other non-official) Institutes participating in the non-estimating special investigations. These Institutes should offer their advice to the Operational Agency and freely participate in the technical discussions about the schedules and programme of work of the large-scale surveys; but the final decisions in such matters should rest with the Operational Agency itself. On the other hand, technical personnel of the Operational Agency should offer their advice and participate in the discussions relating to the programme of work of the special investigations; and there should be joint discussions between the technical personnel of the different Institutes in the same matter. Within a very broad frame-work of agreement about general aims and types of work, each Institute should, however, have full freedom to settle its own programme of work. There should also be fullest collaboration and joint discussions on the results both of the large-scale surveys and of the special investigations. The arrangement visualized above would offer the fullest scope for exchange of views and experience at the technical level, and yet would not require complete agreement being reached in all the details. In the case of conflicting views, no group would be required to share the responsibility in the decisions made by any other group in respect of its own programme of work.

26. Mr. Dandekar expressed his agreement with the above views subject to certain views expressed by Prof. Gadgil in his letter of the 10th February, 1951. Prof. Mahalanobis, then asked what Mr. Dandekar thought should be the nature of the non-estimating special investigations which the Poona Institute could undertake in the immediate future.

27. Mr. Dandekar thought that as to the general nature of non-sample studies, Prof. Gadgil's letter was pretty clear, and it appeared to him that Prof. Gadgil's conception of the non-sample part was somewhat different from that of Prof. Mahalanobis. According to Prof. Gadgil's conception the non-sample part should be by far the most important part in the NSS. But that he thought was a more general issue and he was not competent to judge it. On the other hand, he could say something about the nature and the size of a non-sample special study which the Poona Institute could possibly handle as part of the NSS.

He thought he could rather illustrate the point. He said that the Poona Institute had a field staff of 7 investigators. As this was a part the permanent staff of the Institute, he pointed out there was continuous investigational activity in the Institute. Next year for instance, he proposed to make a special study of the fisheries on the West coast between Bombay and Goa. It would be very useful, he thought, if similar studies were made on the east coast and also in inland waters. The Institute would be glad to undertake all technical responsibility if the field agency were available. He thought that this should be possible as a non-sample activity in the NSS. To give another instance, he said, he intended to conduct an enquiry into cost of production of tobacco in the Bombay South. It should be possible, he thought, to organize similar enquiries in four other tobacco growing centres in India, as a special study under NSS. In that event, again his Institute would be prepared to accept all technical responsibility.

28. In general, the proposal he intended to make was that studies similar to those currently conducted by the Poona Institute within its region of activity, with the help of its own staff, should be organized in 4 or 5 more centres in India, with the field agency of the NSS and the technical assistance of the Poona Institute. In terms of the staff, this meant that a field staff of about 25 investigators and 5 inspectors would have to be made available full-time for special studies directed by the Poona Institute. The financial implications would be as under :-

Salaries and allowance of field staff (25 investigators and 5 inspectors)	Rs. 75,000.
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29. Prof. Mahalanobis thought that out of a total budget of twenty-five lakhs of rupees it would be difficult to set apart one and a half lakh rupees for non-estimating special investigations at Poona Institute alone. He enquired what was the level of operations at the Poona Institute exclusive of the NSS work.

30. Mr. Dandekar replied that the Poona Institute had been working for several years on a total budget of about Rs. 45,000. They had a permanent field staff of about 7 investigators who had been engaged in intensive rural studies for a long time.

81. In this situation, Prof. Mahalanobis said, it would be possible for the Poona Institute to do valuable work with a grant of Rs. 50,000 (which had been provided in the budget for the current year) for special investigations in connection with the National Sample Survey. He could recommend the continuation of the existing grant of Rs. 50,000 out of the NSS budget.

82. Mr. Dandekar pointed out that the special studies which he was proposing were on a different footing than the one which the Poona Institute was currently handling under NSS. The current study was being worked entirely by the field staff of the Poona Institute, and was confined to the region of the Institute's activities. The special studies now being proposed were to be handled mostly by the field agency of the NSS and therefore only about half of the indicated expenditure would be directly spent by the Poona Institute.

83. Prof. Mahalanobis enquired what was meant by the collection of data by the field agency of the NSS.

Mr. Dandekar replied that about 25 investigators would be earmarked for the Poona programme, but would work under the administrative control of the NSS central field agency.

85. Prof. Mahalanobis observed that this would mean that the work would be done without the detailed supervision of the Poona Institute, and in this case the special knowledge and experience of the Poona Institute would be no longer available. He did not see any advantage in this plan.

86. Mr. Dandekar explained that if no more than Rs. 50,000 could be made available for special studies to be done by the Poona Institute, they would be necessarily confined to a small region in which the Institute were active. The essential idea in the Poona Institute handling certain special studies under NSS, he pointed out, was to try in other parts of the country the investigational methods developed by the Institute. Their object also was to develop more integrated studies of certain parts of the economy and of certain economic activities. It was necessary for this purpose that such studies were not confined to a single region, but that they should be simultaneously carried out at at least 4 or 5 centres in the country.

87. While appreciating the above point of view, Prof. Mahalanobis did not think he could recommend special studies on this scale within the present budget for the NSS. He pointed out that at earlier discussions every one, including Mr. Dandekar, agreed that the NSS should be extended to urban areas for which additional money would be required. Prof. Mahalanobis would, of course, be glad if Government agrees to provide a further grant for special investigations of the above type at the Poona Institute. He would submit the notes of the present discussions to Government for decision but he was naturally unable to say anything on his own responsibility at this stage.

88. Under the circumstances, Mr. Dandekar regretted that the Poona Institute could not possibly do much either in the sample or in the non-sample part of the NSS.

Sd/- P. C. MAHALANOBIS.
24th February, 1951.

Sd/- V. M. DANDEKAR.
24th February, 1951.
Calcutta 24th February, 1951.

Concluding the above discussions, Mr. Dandekar returned to Poona on 26th February. Next day he received the following letter from Prof. Mahalanobis.

Indian Statistical Institute,
204, Barrackpore Trunk Road,
Calcutta, 25/26 February, 1951.

No. c8787/1149.

My dear Dandekar,

Reading through the notes on the discussions we had in Calcutta on the 22nd and 23rd February, it strikes me that phrases like "the sample or estimating" and "the non-sample or non-estimating" portions of the NSS were not very happy and might be somewhat misleading to laymen. Thinking it over, it seems to me that the following equivalent terms would be more suitable :—

"Sample" or "estimating" portion of the NSS : we clearly had in view the all-India or Union Estimates.

2. "Non-sample" or non-estimating" portion of the NSS : there were two somewhat different concepts. I was speaking all along of special investigations in the sense of high precision methodological researches the aim of which would be to improve the technique for the collection or processing of the data required for the Union estimates. I believe while Gadgil and you did not exclude methodological researches you had something else also in view, namely localized estimates not pertaining to the Union but either to smaller geographical regions or particular sectors of the national economy. It may be better to distinguish between the two by using two phrases, say, (a) methodological researches on one hand, and (b) local or non-Union surveys and estimates.

2. If you agree, it will be desirable to revise the notes on discussions by changing the "sample and estimating" portion to "Union estimates and surveys;" and the "non-sample and non-estimating portion" to either (a) "methodological investigation and researches" or (b) "local and non-Union or particular surveys" in accordance with the actual context of the discussion.

3. I shall try to revise (or rather translate) the notes as explained above. You may also do the same independently.

We shall then have a duplicated (but non-random) set, and it should be possible to reach an agreed text without difficulty.

I am leaving Calcutta tonight. Please send your reply to 17, Curzon Lane, New Delhi,

Many thanks for taking all this trouble to come to Calcutta and participate in the hectic discussions.

With kind regards,

Yours sincerely,
Sd/- P. C. MAHALANOBIS.

6. The following is the letter from Mr. Dandekar to Prof. Mahalanobis written in reply to the above.

1st March, 1951.

My dear Professor,

Thank you for your letter of the 26th instant. I agree with you that phrases "like sample or estimating" and "the non-sample or non-estimating" portions of the NSS appearing in the notes of our discussions, were not very happy and that they might be somewhat misleading to laymen. As you will note a distinction on somewhat similar lines was also indicated by Prof. Gadgil in his letter of the 10th February. Please refer to page 5 where he lays down the steps he considers advisable before work is started for the next year. In clause (iv) there he refers to the "field of enquiry common to the whole country" which in his view should be reduced to a small ground. You will agree that this corresponds to what we, in our discussions, have referred to as "sample" or "estimating" portions of the NSS. If I have understood you correctly, you seemed to be of the opinion that a budget of Rs. 25,00,000 was an irreducible minimum for this part of the enquiry. In fact you suggested that in case it was proposed to extend the NSS to urban areas, additional money would be required.

2. Coming to the other part, namely, "non-sample" or "non-estimating" portion, I agree with you that we should distinguish under this head, two broad types, namely, (a) methodological researches and (b) local or non-Union Surveys and estimates. As you have stated, you were all along speaking of special investigations in the sense (a) and you had apparently little of (b) in mind. It is in this restricted sense that you refer to "non-sample" part of the NSS in paras (8), (20) and (25) of notes of our discussion. As you know it was rather late that we discovered that we were using the term with different connotations and that as I pointed out in para (27) of our discussion, Prof. Gadgil's conception of the "non-sample" portion was somewhat different from yours. Prof. Gadgil in his letter of 10th February, actually does not refer to the special investigations in the sense

of "high precision methodological researches the aim of which would be to improve the technique for the collection or processing of the data required for the Union estimates." There was however no intention to neglect this aspect of the problem and there should be little objection in principle to incorporate in the NSS some amount of research work on these lines. However, as you pointed out, size of this type of work should be small relative to the main enquiry. In fact as you suggested, not more than Rs. 1,00,000 out of the present budget should be allocated to this type of work. If, I had realised earlier that you were using the term "non-sample" part, in this restricted sense, I should have agreed with you entirely in this respect. In fact I would even further restrict the size of such researches in the earlier stages of development of NSS.

3. Under non-sample part of NSS, while you had in mind little of (b), namely, "local and non-Union or particular surveys" Prof. Gadgil has laid great stress on this aspect of NSS. Please refer to clause (vi) on page 6 of his letter of 10th February. Here he divides such special studies into two categories: (a) concentration of effort in certain regions in specific respects with a view to filling in regional gaps in all India statistics at present existing. I had no opportunity to discuss with you this category of studies, as our discussion was confined to what the Poona Institute could do in case Government decided to continue NSS. Here is a category of statistical investigations which, in our opinion, should be handled neither by the agency of the Central Government nor by non-official academic institutions, but by the agencies of the respective State Governments. As Prof. Gadgil points out on page 5 of this letter, all that the Centre should do in this respect is to give grants-in-aid coupled with adequate supervision and technical advice.

4. The second category of special studies which Prof. Gadgil refers to under clause (vi) on page 6 of his letter, is (b) detailed studies of specific economic activities in which information is specially lacking to-day, conducted in regions where the particular activities are known to be concentrated. Prof. Gadgil attaches great importance to this category of studies and believes that it is here that the non-official academic institutions should usefully participate. It is with this category in mind that I made specific proposals as to the manner in which the Poona Institute could participate in the NSS programme. My proposals and the consequent discussion are contained in para (27) onwards of the notes of your discussions. As you know we disagreed as to the relative size and importance of such studies in the NSS programme and as to the agencies that should handle such studies. I shall be glad to learn that the disagreement was due to our not having distinguished the non-sample portion of NSS into three distinct categories as they appear now.

5. In order to make matters simpler for "laymen" I propose the following terminology.

NATIONAL SAMPLE SURVEY.**PART I.**

- (A) Nationwide surveys with a view to obtaining estimates of national aggregates ;
- (B) Methodological investigations and researches with a view to improving I-A.

PART II.

- (A) Regional surveys with a view to filling in regional gaps in existing national statistics,
- (B) Special investigations with a view to studying actual operations of specific parts of the economic system or problems relating to specific economic activities.

As you are aware, Prof. Gadgil insists (please refer to clause (i) on page 5 of his letter dated 10th February) that before work is started for the next year, it is necessary to make, as far as possible, a clear definition of the possibilities and objectives of the NSS. I think that the division of NSS into two parts of two sections each, as suggested above, would facilitate considerably the making of such a definition.

6. I have no objection to revising the notes of our discussion in the light of these distinctions, if you think that desirable. Such revision could of course be only in the nature of clarification and I was thinking that it might perhaps serve the purpose if we append these two letters, yours of 25th and this one of mine, to the notes of our discussion at Calcutta. That will surely save some of your valuable time. In case, however, you think it advisable to revise the notes, I am sure, you will allow the contents of this latter to be incorporated as part of the discussions.

With regards,

Yours sincerely,
Sd/- V. M. DANDEKAR.

7. This was the last in the series. Since then we heard nothing in respect of the National Sample Survey either from Prof. P. C. Mahalanobis or from the Government. On 31st March, 1951 our association with the National Sample Survey ceased automatically except, of course, our responsibility to tabulate the data collected upto 31st March, 1951 on the basis of the Poona Schedules.

N.B.—In the first week of July 1952, when this Report was submitted to the Government of India, a copy was sent to Prof. Mahalanobis at Calcutta. Soon after, Prof. Mahalanobis happened to be in Poona ; while in Poona, he explained that the reason why he could not communicate further in the matter was that soon after the receipt of Mr. Dandekar's letter, he had left India and was abroad for a considerable time. This note has been put in at the suggestion of Prof. Mahalanobis.

as tobacco, groundnut, etc. studies in fisheries, forest exploitation, etc. Such studies would be non-sample in the sense that they would not be spread over the whole country. They could nevertheless be worked in more than one centre in India. In such cases, the actual field work at a centre falling within the region familiar to the Institute could be done by the field staff of the Institute. Elsewhere, suitable field agency would have to be provided for within the NSS project. He emphasized that in relation to such a scheme, the Poona Institute would insist on having the entire technical responsibility from beginning to end.

22. Prof. Mahalanobis was in complete agreement in principle to the Poona Institute participating in special investigations. It was decided that he and Mr. Dandekar would discuss the matter further the next day. The whole group including Mr. Dandekar then proceeded to consider the detailed proposals for the revision of the NSS schedules. (Notes on this part of the discussion on purely technical matters are omitted).

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He thought he could rather illustrate the point. He said that the Poona Institute had a field staff of 7 investigators. As this was a part the permanent staff of the Institute, he pointed out there was continuous investigational activity in the Institute. Next year for instance, he proposed to make a special study of the fisheries on the West coast between Bombay and Goa. It would be very useful, he thought, if similar studies were made on the east coast and also in inland waters. The Institute would be glad to undertake all technical responsibility if the field agency were available. He thought that this should be possible as a non-sample activity in the NSS. To give another instance, he said, he intended to conduct an enquiry into cost of production of tobacco in the Bombay South. It should be possible, he thought, to organize similar enquiries in four other tobacco growing centres in India, as a special study under NSS. In that event, again his Institute would be prepared to accept all technical responsibility.

28. In general, the proposal he intended to make was that studies similar to those currently conducted by the Poona Institute within its region of activity, with the help of its own staff, should be organized in 4 or 5 more centres in India, with the field agency of the NSS and the technical assistance of the Poona Institute. In terms of the staff, this meant that a field staff of about 25 investigators and 5 inspectors would have to be made available full-time for special studies directed by the Poona Institute. The financial implications would be as under :-

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29. Prof. Mahalanobis thought that out of a total budget of twenty-five lakhs of rupees it would be difficult to set apart one and a half lakh rupees for non-estimating special investigations at Poona Institute alone. He enquired what was the level of operations at the Poona Institute exclusive of the NSS work.

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	Rs. 1,50,000.

29. Prof. Mahalanobis thought that out of a total budget of twenty-five lakhs of rupees it would be difficult to set apart one and a half lakh rupees for non-estimating special investigations at Poona Institute alone. He enquired what was the level of operations at the Poona Institute exclusive of the NSS work.

30. Mr. Dandekar replied that the Poona Institute had been working for several years on a total budget of about Rs. 45,000. They had a permanent field staff of about 7 investigators who had been engaged in intensive rural studies for a long time.

81. In this situation, Prof. Mahalanobis said, it would be possible for the Poona Institute to do valuable work with a grant of Rs. 50,000 (which had been provided in the budget for the current year) for special investigations in connection with the National Sample Survey. He could recommend the continuation of the existing grant of Rs. 50,000 out of the NSS budget.

82. Mr. Dandekar pointed out that the special studies which he was proposing were on a different footing than the one which the Poona Institute was currently handling under NSS. The current study was being worked entirely by the field staff of the Poona Institute, and was confined to the region of the Institute's activities. The special studies now being proposed were to be handled mostly by the field agency of the NSS and therefore only about half of the indicated expenditure would be directly spent by the Poona Institute.

83. Prof. Mahalanobis enquired what was meant by the collection of data by the field agency of the NSS.

Mr. Dandekar replied that about 25 investigators would be earmarked for the Poona programme, but would work under the administrative control of the NSS central field agency.

85. Prof. Mahalanobis observed that this would mean that the work would be done without the detailed supervision of the Poona Institute, and in this case the special knowledge and experience of the Poona Institute would be no longer available. He did not see any advantage in this plan.

86. Mr. Dandekar explained that if no more than Rs. 50,000 could be made available for special studies to be done by the Poona Institute, they would be necessarily confined to a small region in which the Institute were active. The essential idea in the Poona Institute handling certain special studies under NSS, he pointed out, was to try in other parts of the country the investigational methods developed by the Institute. Their object also was to develop more integrated studies of certain parts of the economy and of certain economic activities. It was necessary for this purpose that such studies were not confined to a single region, but that they should be simultaneously carried out at at least 4 or 5 centres in the country.

87. While appreciating the above point of view, Prof. Mahalanobis did not think he could recommend special studies on this scale within the present budget for the NSS. He pointed out that at earlier discussions every one, including Mr. Dandekar, agreed that the NSS should be extended to urban areas for which additional money would be required. Prof. Mahalanobis would, of course, be glad if Government agrees to provide a further grant for special investigations of the above type at the Poona Institute. He would submit the notes of the present discussions to Government for decision but he was naturally unable to say anything on his own responsibility at this stage.

88. Under the circumstances, Mr. Dandekar regretted that the Poona Institute could not possibly do much either in the sample or in the non-sample part of the NSS.

Sd/- P. C. MAHALANOBIS.
24th February, 1951.

Sd/- V. M. DANDEKAR.
24th February, 1951.
Calcutta 24th February, 1951.

Concluding the above discussions, Mr. Dandekar returned to Poona on 26th February. Next day he received the following letter from Prof. Mahalanobis.

Indian Statistical Institute,
204, Barrackpore Trunk Road,
Calcutta, 25/26 February, 1951.

No. c6787/1140.

My dear Dandekar,

Reading through the notes on the discussions we had in Calcutta on the 22nd and 23rd February, it strikes me that phrases like "the sample or estimating" and "the non-sample or non-estimating" portions of the NSS were not very happy and might be somewhat misleading to laymen. Thinking it over, it seems to me that the following equivalent terms would be more suitable :—

"Sample" or "estimating" portion of the NSS : we clearly had in view the all-India or Union Estimates.

2. "Non-sample" or non-estimating" portion of the NSS: there were two somewhat different concepts. I was speaking all along of special investigations in the sense of high precision methodological researches the aim of which would be to improve the technique for the collection or processing of the data required for the Union estimates. I believe while Gadgil and you did not exclude methodological researches you had something else also in view, namely localized estimates not pertaining to the Union but either to smaller geographical regions or particular sectors of the national economy. It may be better to distinguish between the two by using two phrases, say, (a) methodological researches on one hand, and (b) local or non-Union surveys and estimates.

2. If you agree, it will be desirable to revise the notes on discussions by changing the "sample and estimating" portion to "Union estimates and surveys," and the "non-sample and non-estimating portion" to either (a) "methodological investigation and researches" or (b) "local and non-Union or particular surveys" in accordance with the actual context of the discussion.

3. I shall try to revise (or rather translate) the notes as explained above. You may also do the same independently.

We shall then have a duplicated (but non-random) set, and it should be possible to reach an agreed text without difficulty.

I am leaving Culcutta tonight. Please send your reply to 17, Curzon Lane, New Delhi,

Many thanks for taking all this trouble to come to Calcutta and participate in the hectic discussions.

With kind regards,

Yours sincerely,
Sd/- P. C. MAHALANOBIS.

6. The following is the letter from Mr. Dandekar to Prof. Mahalanobis written in reply to the above.

1st March, 1951.

My dear Professor,

Thank you for your letter of the 26th instant. I agree with you that phrases "like sample or estimating" and "the non-sample or non-estimating" portions of the NSS appearing in the notes of our discussions, were not very happy and that they might be somewhat misleading to laymen. As you will note a distinction on somewhat similar lines was also indicated by Prof. Gadgil in his letter of the 10th February. Please refer to page 5 where he lays down the steps he considers advisable before work is started for the next year. In clause (iv) there he refers to the "field of enquiry common to the whole country" which in his view should be reduced to a small ground. You will agree that this corresponds to what we, in our discussions, have referred to as "sample" or "estimating" portions of the NSS. If I have understood you correctly, you seemed to be of the opinion that a budget of Rs. 25,00,000 was an irreducible minimum for this part of the enquiry. In fact you suggested that in case it was proposed to extend the NSS to urban areas, additional money would be required.

2. Coming to the other part, namely, "non-sample" or "non-estimating" portion, I agree with you that we should distinguish under this head, two broad types, namely, (a) methodological researches and (b) local or non-Union Surveys and estimates. As you have stated, you were all along speaking of special investigations in the sense (a) and you had apparently little of (b) in mind. It is in this restricted sense that you refer to "non-sample" part of the NSS in paras (8), (28) and (25) of notes of our discussion. As you know it was rather late that we discovered that we were using the term with different connotations and that as I pointed out in para (27) of our discussion, Prof. Gadgil's conception of the "non-sample" portion was somewhat different from yours. Prof. Gadgil in his letter of 10th February, actually does not refer to the special investigations in the sense

of "high precision methodological researches the aim of which would be to improve the technique for the collection or processing of the data required for the Union estimates." There was however no intention to neglect this aspect of the problem and there should be little objection in principle to incorporate in the NSS some amount of research work on these lines. However, as you pointed out, size of this type of work should be small relative to the main enquiry. In fact as you suggested, not more than Rs. 1,00,000 out of the present budget should be allocated to this type of work. If, I had realised earlier that you were using the term "non-sample" part, in this restricted sense, I should have agreed with you entirely in this respect. In fact I would even further restrict the size of such researches in the earlier stages of development of NSS.

8. Under non-sample part of NSS, while you had in mind little of (b), namely, "local and non-Union or particular surveys" Prof. Gadgil has laid great stress on this aspect of NSS. Please refer to clause (vi) on page 6 of his letter of 10th February. Here he divides such special studies into two categories: (a) concentration of effort in certain regions in specific respects with a view to filling in regional gaps in all India statistics at present existing. I had no opportunity to discuss with you this category of studies, as our discussion was confined to what the Poona Institute could do in case Government decided to continue NSS. Here is a category of statistical investigations which, in our opinion, should be handled neither by the agency of the Central Government nor by non-official academic institutions, but by the agencies of the respective State Governments. As Prof. Gadgil points out on page 5 of this letter, all that the Centre should do in this respect is to give grants-in-aid coupled with adequate supervision and technical advice.

4. The second category of special studies which Prof. Gadgil refers to under clause (vi) on page 6 of his letter, is (b) detailed studies of specific economic activities in which information is specially lacking to-day, conducted in regions where the particular activities are known to be concentrated. Prof. Gadgil attaches great importance to this category of studies and believes that it is here that the non-official academic institutions should usefully participate. It is with this category in mind that I made specific proposals as to the manner in which the Poona Institute could participate in the NSS programme. My proposals and the consequent discussion are contained in para (27) onwards of the notes of your discussions. As you know we disagreed as to the relative size and importance of such studies in the NSS programme and as to the agencies that should handle such studies. I shall be glad to learn that the disagreement was due to our not having distinguished the non-sample portion of NSS into three distinct categories as they appear now.

5. In order to make matters simpler for "laymen" - I propose the following terminology.

NATIONAL SAMPLE SURVEY.

PART I.

- (A) Nationwide surveys with a view to obtaining estimates of national aggregates ;
- (B) Methodological investigations and researches with a view to improving I-A.

PART II.

- (A) Regional surveys with a view to filling in regional gaps in existing national statistics,
- (B) Special investigations with a view to studying actual operations of specific parts of the economic system or problems relating to specific economic activities.

As you are aware, Prof. Gadgil insists (please refer to clause (i) on page 5 of his letter dated 10th February) that before work is started for the next year, it is necessary to make, as far as possible, a clear definition of the possibilities and objectives of the NSS. I think that the division of NSS into two parts of two sections each, as suggested above, would facilitate considerably the making of such a definition.

6. I have no objection to revising the notes of our discussion in the light of these distinctions, if you think that desirable. Such revision could of course be only in the nature of clarification and I was thinking that it might perhaps serve the purpose if we append these two letters, yours of 25th and this one of mine, to the notes of our discussion at Calcutta. That will surely save some of your valuable time. In case, however, you think it advisable to revise the notes, I am sure, you will allow the contents of this letter to be incorporated as part of the discussions.

With regards,

Yours sincerely,
Sd/- V. M. DANDEKAR.

7. This was the last in the series. Since then we heard nothing in respect of the National Sample Survey either from Prof. P. C. Mahalanobis or from the Government. On 31st March, 1951 our association with the National Sample Survey ceased automatically except, of course, our responsibility to tabulate the data collected upto 31st March, 1951 on the basis of the Poona Schedules.

N.B.—In the first week of July 1952, when this Report was submitted to the Government of India, a copy was sent to Prof. Mahalanobis at Calcutta. Soon after, Prof. Mahalanobis happened to be in Poona ; while in Poona, he explained that the reason why he could not communicate further in the matter was that soon after the receipt of Mr. Dandekar's letter, he had left India and was abroad for a considerable time. This note has been put in at the suggestion of Prof. Mahalanobis.

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