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**REPORT ON THE PROJECT METHOD &
PRACTICE OF FARM ACCOUNTS
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REPORT ON THE PROJECT

METHOD AND PRACTICE OF FARM ACCOUNTS

Gokhale Institute of Politics and Economics,

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Chapter I

OPERATION OF THE PROJECT

1.1 The Institute undertook in April, 1955 the project "Method And Practice of Farm Accounts" with the object of obtaining ^{to bring} farm cost data through sons of farmers, ^{in maintaining} ~~assessing the quality of the data so obtained and exploring the possibilities of popularising the keeping of farm accounts.~~ ^{farm accounts} ~~changing the currency~~ ^{same. Another} The project is ^{was} a pilot study ~~approved and~~ financed by The Indian Council of Agricultural Research.

1.2 The data ^{were} ~~was~~ required to be recorded in the prescribed forms. Consequently, in order to facilitate the recording work, the necessary instruction, supervision and guidance ^{were} ~~was~~ to be provided by the Institute. It was expected that the programme of Instruction and Supervision would enable the Institute not only to evolve an account book suitable for keeping by the farmers themselves but also to develop techniques of imparting instruction in its use.

1.3 Geographical Coverage :- ~~At the time~~ ^{For} this project was undertaken, the Institute had already ^{in three} selected six districts, ^{of former Bombay State} vis. Nasik, North Satara and Karwar, ^{from two districts} ~~from~~ ^{of former} Bombay State, Buldana and Wardha ^{from Madhya Pradesh State} and ^{one district} Osmanabad ^{of former} from Hyderabad State, ^{now all these} ~~for the work of the~~ six districts belong to the present Bombay State.

Agro-Economic Research Unit of the Institute. The same six districts were chosen for this project. In fact, the intention then was to launch this project in the same six centres chosen by the Agro-Economic Research Unit for its work. The choice of common centres was favoured because of certain advantages to be derived thereby. Thus, while the Research Assistant in-charge of this project could supervise and guide the work only during his periodic visits to the selected centres, in the intervening period supervision and guidance could be provided by the Research Assistant in-charge of the centre of the Agronomic Research Unit and the permanent Field Investigator of the Institute stationed locally to collect data for the Agro-Economic Unit. Further, during any temporary absence of the Agricultural Instructor in-charge of this project, his charge would be handed over to the permanent Investigator working in the Agro-Economic Unit, thus eliminating the need to maintain reserve field staff. Besides the data collected during this project could, if necessary, be utilised for the reports of the Agro-Economic Research Unit in respect of those centres which are common. In fact, the project had been budgeted on the assumption that the centres would be common.

1.4 Plan of Work :- According to our original plan of work, the selection of centres, recruitment and

training of agricultural instructors for providing instruction, supervision and guidance, selection of candidates for recording farm cost data, supplying of account books, providing instruction, supervision and guidance in recording data and finally the purchase, at the end of the year by the Institute of the account books satisfactorily maintained, were to follow in that order the choice of districts. ~~The details of how the plan worked out are given in the~~

1.5 Recruitment of Agricultural Instructors :- The project had first been submitted to the Indian Council of Agricultural Research in July, 1954. However, later, at the instance of the I.C.A.R. a revised draft giving state-wise break-up of the budget was submitted in January, 1955 and was accorded sanction on 30th May, 1955. In the meanwhile, it had been decided by the Institute to obtain on deputation basis the services of six senior primary school teachers to work as Agricultural Instructors. Consequently on 9th April, 1955, the Institute took up this matter with the Director of Education, Bombay State and the Directors of Public Instruction of Madhya Pradesh and Hyderabad States. Except in the case of Hyderabad, where the Director of Public Instruction referred the matter to the State Government, we were advised to approach directly the local educational authorities. Immediately thereafter, on 23rd April,

1955, we approached the Chairmen of the District School Boards of Nasik, North Satara and Karwar and the Janapad Sabhas of Buldana and Wardha districts. The District School Board, North Satara and the Janapad Sabha of Buldana moved immediately in the matter so that the teacher deputed by them joined us in the first week of May, 1955. The Janapad Sabha of Wardha district, inspite of moving in the matter quite early, could not depute any body immediately. This was primarily due to a misunderstanding that the deputed teacher would have to stay in Poona for a whole year and the consequent refusal of teachers to go on deputation. By the time the misunderstanding was cleared and a teacher was deputed, it was nearly middle of June. In the case of the District School Boards of Nasik and Karwar, as they had placed the matter before a meeting of the Board, scheduled to be held in the last week of May, the teacher could only be deputed by June, 1955. In the case of the Osmanabad district in Hyderabad State, inspite of the matter being referred to the State Government, the decision to depute a teacher was taken in time to enable him to join the Institute before the end of the first week of June, 1955. The actual dates of joining of the different teachers have been indicated in Table No. 1.1.

1.6 Terms and Conditions of Service of Agricultural Instructors :- The School Boards in the Bombay State

Table No. 1.1

Name of the Agricultural Instructor	District	Centre	Date of joining the Institute	Date of commencement of work at the centre
Sutar, M.R.	Nasik	Osar	8.6.1955	16.6.1955 ⁰
Deshmukh, M.G.	North Satara	Khatav	5.5.1955	8.6.1955 /
Bandi, G.D.	Karwar	Chendiye	1.6.1955	22.6.1955 -
Kshirsagar, R.B.	Buldana	Deulghat	1.5.1955	13.6.1955 /
Wazarkar, M.J.	Wardha	Anji Mothi	12.6.1955	18.6.1955 ⁰
Telang, G.H.	Osmanabad	Ter	3.6.1955	19.6.1955 -

transferred the services of their teacher to the Institute on "Foreign Service Conditions" as prescribed in Chapter VI of the Bombay Civil Service Rules Manual Vol. No. 1, as amended from time to time. The more important of these conditions were that

(1) The Institute should give the teacher pay and allowance at the rate to which he was entitled at the time of deputation and any increment to which he may be entitled from the time it fell due. The Institute should also pay the teacher any special pay or allowance that he was enjoying at the time of deputation. Hence

allowances for looking after such work as that of the village postmaster and of the gram panchayat, which, some of the deputed teachers were enjoying at the time of deputation, had to be paid to them.

(ii) The Institute should accept responsibility for transit pay and travelling allowances of the teacher for the journey to and from the original post.

(iii) The Institute should pay leave salary contribution at 12-1/2 per cent and provident fund at 6-1/4 per cent of the basic pay.

(iv) The Institute should pay deputation allowance at Rs. 20 per month and travelling allowance and daily allowance at rates prescribed by the Bombay Civil Service Rules. However, later, at the suggestion of the Institute, the School Boards agreed that the deputation allowance should be paid at 20 per cent of the basic pay and not at Rs. 20/- per month. They also agreed that the travelling and daily allowances should be governed by the Institute Rules and not by the Bombay Civil Service Rules. The same terms and conditions of service were offered to the teachers from the other States and they were readily accepted. It may, however, be noted that as the teacher from Hyderabad State was not contributing to the State Provident Fund, the Institute was not required to contribute towards provident fund in his case.

1.7 The Training of Agricultural Instructors :- The training of teachers in keeping of farm accounts comprised of acquainting them with the various schedules employed by the Institute in its farm business surveys from time to time and associating them with the compilation of farm accounts from the farm business survey data which was then being compiled and tabulated at the Institute. Besides every item in the day book and the ledger employed in this project was fully discussed with them and detailed instructions were issued to them for filling the day book and the ledger. Further, towards the close of the training period, a few specimen books were got filled by them and the entries in the day book and their postings in the ledger were carefully scrutinised to satisfy ourselves that they had a working knowledge of farm accounts. We had originally planned to give a full month's training to each selected teacher. However, as some of them joined late and the field work had to commence at least by the end of June, 1955, we were obliged to curtail the period of training of some of the teachers. In fact, as may be seen from Table No. 1.1, in two cases the period of training was as short as a week and in another, it extended to only a fortnight.

1.8 The selection of centres :- Our original plan of having common centres for this and the Agro-Economic Unit was later abandoned in view of the fact that the selected

teacher had served for a considerable length of time in certain parts of the district and enjoyed in those parts the respect and confidence of the people. It was, therefore, felt that if he was allowed a choice of his centre, he would select a village where he could work most effectively. However, the teachers were required to select only villages having first grade primary schools, that is, those teaching up to seventh standard. A list of the selected centres has been given in Table No. 1.1. It should, however, be noted that the abandonment of our original plan deprived us of certain advantages referred to earlier in paragraph No. 1.3.

1.9 Selection of Candidates :- Originally we had planned to confine the selection of candidates for recording data to only students of cultivating classes studying in sixth and seventh standards. However, as the number of such candidates willing to maintain accounts was very small, we were obliged to extend the scope of our selection. This we did by extending it first to students of cultivating classes studying in standards higher than seventh and then to students studying in standards lower than sixth. Later, it was extended to students of non-cultivating classes who were willing to maintain accounts of their neighbouring cultivator and lastly, to non-students who were cultivators willing to keep accounts of their own farms. In Table No. 1.2,

we have indicated the number of candidates of each of these categories selected initially for recording data.

Table No. 1.2

Centre	Total number of books maintained initially	Number of account books maintained by		
		Non-students in respect of family holding	Students in respect of family holding	Students in respect of cultivated holding of neighbouring cultivator
Khatav	129	11	118	-
Chendiye	125	27	83	15
Deulghat	155	26	56	73
Ter	69	35	27	7
Total	478	99	284	95

It may be seen from that table that nearly 80 per cent of the total books in force, were maintained by students. Of the total number of students participating in this project about 75 per cent belonged to cultivating classes and kept the accounts of their family holding. The remaining 25 per cent students belonged to non-cultivating classes and kept the accounts of their neighbour's holding. All participating students of Khatav centre belonged to cultivating classes. In the case of Chendiye

and Ter centres, 80 per cent or more of the participating students belonged to that class. Only in the case of Deulghat centre was their percentage low, about 44 per cent. Considering the students as a class, it may be seen that except in the case of Ter centre, where because of the hostility of other local teachers, the response of students was poor, they formed about 80 per cent or more of the total number of candidates participating in the project at the different centres. Their percentage in the total number of candidates participating in the project at Ter centre was as low as 44. It is also interesting to note that about 25 per cent of the non-students were teachers belonging to cultivating classes who maintained accounts of their family farm. Their percentage in the total number of non-students was much larger in the case of Deulghat and Chendiye centres.

1.10 In spite of the extension of the scope of selection of candidates in the different directions indicated in paragraph No. 1.9, the number of candidates in the selected centres, willing to maintain accounts was so inadequate that it became necessary to extend the project to other neighbouring villages having first-grade primary schools. This can clearly be seen from Table No. 1.3 where we have indicated for each centre the total number of books in force at the head-quarter village.

Table No. 1.3

Centre	Total No. of books maintained initially	Of which maintained at	
		the head-quarter village	Other villages
Khatav	129	21	108
Cendiye	125	49	76
Deulghat	155	34	121
Ter	69	25	44
Total	478	129	349

1.11 Supplying of account books etc. :- The Institute provided to every candidate participating in this project a set of account books, a copy of instructions for recording data in them and the necessary number of pencils and rubbers. The books of accounts employed were of loose leaf, the leaves being held together by a piece of string passing through punched holes at one side. The employment of a loose-leaf account book was an advantage as it facilitated the insertion and removal of pages at will. This facility was, however, abused by the candidates who found it convenient to keep the account books at home and carry only the relevant pages to the school. This practice resulted in soiling, folding and sometimes

even in the mutilation of the pages so taken out and often led to their misplacement or loss.

1.12 The programme of training in farm accounts :-

Each centre with its selected neighbouring villages was placed in charge of a senior primary school teacher designated as Agricultural Instructor and recruited and trained in the manner indicated in 1.5 and 1.7 above. The Agricultural Instructor was required to stay in one of the selected villages and to visit each of the selected villages at least once every week. In order to facilitate the inspection of the work of the Agricultural Instructor by the Institute staff, each of the selected villages was assigned a particular day of the week and the Agricultural Instructor was required to visit that village every week on that day only. During his weekly visits to the villages, the Agricultural Instructor initiated the candidates in keeping their farm accounts by means of tutorials of 2-3 hours duration. The occasion was also utilised by the agricultural instructor for discussing the difficulties raised by the candidates and the errors in recording data revealed by a scrutiny of the account books by the Agricultural Instructor. The rest of his time was employed by the Agricultural Instructor in scrutinising the books of accounts maintained by the candidates. In fact the Agricultural Instructor was required to scrutinise each book at least once every month.

The work of the Agricultural Instructors was supervised and checked by a Senior Field Inspector of the institute and a Research Assistant attached to this project, by means of periodic visits.

1.13 Purchase of account books :- In order to induce the candidates to participate in this project and to maintain accounts of their family farm, we announced at the outset that every account book satisfactorily completed would be purchased at the price of Rs. 25/- per account book.

1.14 The launching of the Project :- At the outset at each centre meetings of teachers, students and cultivators were organised to explain to them the objects of the project and to seek their support to it. A few copies of the books of accounts and instructions were also distributed for perusal amongst those who evinced some interest in the project. It was also announced at these meetings that every account book satisfactorily completed would be purchased by the Institute at the end of the year at a price of Rs. 25/- per book. Further, it was announced that all students willing to participate in the project should give their names either to their class teacher or to the Agricultural Instructor. Later, the Agricultural Instructor met individually the local teachers as also the cultivators whose sons expressed a willingness to keep accounts of their family farm.

He also supplied to each student participating in this project a set of account books, a copy of instructions etc. for writing them.

1.15 Progress of work during the first quarter :- The scheme was launched by selecting the villages and the candidates in the manner indicated in paragraphs 1.8, 1.9 and 1.10. The list of selected villages, their distance from the head-quarter village and the number of books in force at each village, etc. are indicated in Table No. 1.4. The number of account books maintained by different categories of candidates participating in this Project has been indicated in Table No. 1.5. We have also given another table (Table No. 1.6) indicating the number of books of accounts maintained by candidates of different educational status.

1.16 From Table No. 1.5 it is obvious that the work load of the Agricultural Instructors must have been quite heavy initially. In fact that was our reaction when we first received the list of selected villages and the candidates at each of those villages. However, we did not favour, at that time, any reduction in the number of candidates as we anticipated that a number of them would drop out of this project in due course and that consequently the number of candidates will go down automatically. Nevertheless, we were opposed to the selec-

Table No. ~~44~~ ^{1-6.4}

Boundary area

Khatav Centre			Chendiye centre			Deulghat centre			Ter centre						
Village	(1)	(2)	(3)	Village	(1)	(2)	(3)	Village	(1)	(2)	(3)	Village	(1)	(2)	(3)
Khatav	-	21'	1	Chendiye	-	49	44	Deulghat	-	34	25'	Ter	-	25	2
Pusegaon	4	30'	10	Todur	1	23	22	Sawargaon	20	35	24'	Wagholi	20	11	1
Jakhangaon	3	11'	8	Amadalli	3	17	15	Dhad	22	21	18'	Watwadi	5	13	2
Katgun	3	24'	-	Arage	3	22	11	Dahid	10	29	24'	Upale	15	20	-
Khatgun	3	15'	-	Binage	4	14	11	Dudha	22	14	11'				
Bidal	21	10'	-					Padli	10	22	15'				
Daruj	3	5'	-												
Gondvale (K)27		8'	-												
Gondvale (B)24		5'	-												
		129	19			125	103			155	117			69	9

(1) Distance of the village from H.Q. in miles.

(2) No. of books originally in force.

(3) No. of books accepted and paid for.

U.P. area

Kheysa centre		Ghatampur centre	
(1)	(2)	(1)	(2)
Kheysa	-	12	8
Katiyara	3	12	10
Harbaspur	1	9	9
Hazipur	3	8	11
		41	38

Table 1.5

Centre	Name of the village	Total No. of books originally in force	Of which maintained by		
			<u>Nonstudents</u> Of owned holding	<u>Students</u> Of owned holding	Of other's holding
KHATAV	Khatav	21	2	19	-
	Pusegaon	30	2	28	-
	Jakhangaon	11	2	9	-
	Katgun	24	2	22	-
	Khatgun	15	2	13	-
	Bidal	10	-	10	-
	Daruj	5	1	4	-
	Gondvale (K)	8	-	8	-
	Gondavale (B)	5	-	5	-
		<u>129</u>	<u>11</u>	<u>118</u>	<u>-</u>
CHENDIYE	Chendiye	49	4	40	5
	Todur	23	1	12	10
	Amdalli	17	7	10	-
	Arage	22	9	13	-
	Binage	14	6	8	-
			<u>125</u>	<u>27</u>	<u>83</u>
DEULGHAT	Deulghat	34	7	12	15
	Sawargaon	35	8	19	8
	Dhad	21	2	6	13
	Dahid	29	3	5	21
	Dudha	14	2	5	7
	Padli	22	4	9	9
			<u>155</u>	<u>26</u>	<u>56</u>
TER	Ter	25	13	7	5
	Wagholi	11	10	1	-
	Watwad	13	2	9	2
	Uple	20	10	10	-
		<u>69</u>	<u>35</u>	<u>27</u>	<u>7</u>

Table No. 1.6

Centre	Name of the village	Total	Educational status		
			1	2	3
KHATAV	Khatav	21	-	14	7
	Pusegaon	30	-	14	16
	Jakhangaon	11	1	8	2
	Katgun	24	1	18	5
	Khatgun	15	-	11	4
	Bidal	10	-	9	1
	Daruj	5	-	-	5
	Gondvale (K)	8	-	8	-
	Gondvale (B)	5	-	5	-
		<u>129</u>	<u>2</u>	<u>87</u>	<u>40</u>
CHENDIYE	Chendiye	49	7	35	7
	Todur	23	-	5	18
	Amadalli	17	3	7	7
	Arage	22	6	6	10
	Binage	14	2	6	6
			<u>125</u>	<u>18</u>	<u>59</u>
DEULGHAT	Deulghat	34	2	23	9
	Sawargaon	35	5	17	13
	Dhad	21	-	15	6
	Dahid	29	-	17	12
	Dudha	14	5	9	-
	Padli	22	1	16	5
			<u>155</u>	<u>13</u>	<u>97</u>
TER	Ter	25	7	8	10
	Wagholi	11	1	9	1
	Watwad	13	-	5	8
	Upale	20	1	17	2
			<u>69</u>	<u>9</u>	<u>39</u>

This classification should have been in respect of students only.

1. Studying in a standard lower than sixth
2. Studying in sixth or seventh standards.
3. Studying in standards higher than seventh

-tion of far off villages as that would heavily tax the energies of the agricultural instructors. Hence, as far as possible, we confined the operation of the scheme only to the villages lying in the neighbourhood of the head-quarter village.

1.17 After the candidates were selected, they were initiated in keeping farm accounts in the manner indicated in paragraph 1.12 and thereafter they began to keep accounts. The accounts so kept were inspected both by the Agricultural Instructor and the Research Assistant attached to this project. During one of his early visits the Research Assistant, verified the data recorded in a few books by a house to house visit and found that some of the data recorded in a few books was bogus. Consequently instructions were issued to the Agricultural Instructors for verifying the data recorded by trainees by periodic visits to the houses of candidates recording data. The inspection of the account books by the Institute staff also revealed that the area and land revenue figures recorded by the candidates were in-accurate. Consequently, the Agricultural Instructor was required to record them after referring to the village records. The instructions were also revised from time to time, whenever it was found, in the light of actual experience that they were either defective, inadequate or completely absent. The ^{fresh} first instructions were conveyed to the candidates through the agricultural instructors.

1.18 ^{Soon} ~~Spm~~ after the launching of this project the Agricultural Inspector ^{Instructor} in-charge of the centre in Nasik district fell ill and proceeded on a fortnight's leave, which he later extended to 45 days. Besides even after such a long leave his health was indifferent and he was not in a condition to work. Consequently, in view of the continued ill health of the agricultural instructor and the absence of any reserve staff to replace him, we decided to close down that centre and to discontinue the deputa-tion of the teacher in charge with effect from 1.10.1955.

1.19 Progress of work during the second quarter :- In the early part of the second quarter, it was observed that while the day book was being kept regularly, the ledger had been neglected. Consequently greater attention was paid to the recording of data in the ledger. In particular, an attempt was made to ascertain and record in respect of each cultivator whose accounts were being kept, the family position regarding assets and liabilities and the stocks of food grain and fodder. Special efforts were also made to ascertain and record the terms and conditions of service of the annual and monthly farm servants as this ^{are} data ^{were} ~~was~~ essential for evaluating domestic labour.

1.20 There were now signs that the initial enthusiasm was on the wane and that many of the candidates were

finding the task of recording data, day after day, more onerous and irksome than they had thought it to be. In fact some of them ceased to record data and preferred dropping out of the project. To others, who were still hesitating, the approaching terminal examination was a good excuse and they also promptly ceased to record data on the ground that they must devote all their time in preparing themselves for the examination. The Divali vacation which followed the terminal examination made matters worse. For, while some students left the village during the vacation, others were disinclined to record data during the vacation. Consequently, there was a sharp fall in the number of candidates continuing to record data.

1.21 Closure of centre in Wardha district :- At about this time in Wardha district where one of our centres was located, the cotton crop which is the principal commercial crop of this tract, had failed and this resulted in mounting public apathy to maintaining accounts. In fact, the Agricultural Instructor in-charge of that centre reported that on account of lack of local response and cooperation, it was not possible for him to make satisfactory progress. Further, a scrutiny of the account books by our Field Inspector revealed that the accounts were not being maintained satisfactorily. Hence the centre was closed and the deputation of the teacher was discontinued with effect from 31st December, 1955.

1.22 Of the remaining four centres, real progress had been achieved at only two centres viz. Chendiye and Deulghat. This was largely due to the fact that the Agricultural Instructors had succeeded in interesting the local teachers in different villages, in the project. Consequently, the local teachers not only encouraged the students to keep accounts but even supervised and guided their work. Besides some of them set an example to the trainees by keeping accounts of their family holding regularly.

1.23 Progress of work during the third quarter :- By now the project was in operation for more than six months. The candidates were now well conversant with the recording of data and were familiar with the Day Book and the Ledger. The Agricultural Instructor could therefore pay more and more attention to the inspection of the books of accounts. The Agricultural Instructors had been asked to communicate to the Institute the types of errors that they came across during their inspection of books. The Institute undertook to communicate to each Agricultural Instructor, the types of mistakes that occurred at the other centres, so that, they may guard themselves against the occurrence of such mistakes. The Institute also followed for the purpose of coordination, the practice of communicating to each agricultural instructor the difficulties raised by the others and

and the solutions suggested by the Institute thereto.

1.24 Rectification of Errors :- During the course of their inspection, the Agricultural Instructors came up against a large number of errors in recording. However, on account of the very limited time at their disposal, it was not possible for them to correct the mistakes themselves. Hence the practice of drawing the attention of the candidates to the error committed by him and suggesting the method of rectification was followed, the actual rectification being left to be done by the candidate himself. The candidates, however, often failed to carry out these instructions and consequently in some cases the errors remained unrectified.

1.25 Besides, at about this time, at two of the centres, namely, Khatav and Ter, the number of books regularly kept began to decline sharply due to the approaching annual examination. Our efforts to induce the students to devote at least some time to keeping their accounts were not very successful. For, we failed to arrest the decline in the number of books regularly kept, though we succeeded in retarding to some extent the rate of decline in the number of such books. At this stage, it was open to us to close down these two centres, if we so desired. However, any closing of the centre at such a late stage would have discouraged and disappointed those who were

keeping the accounts satisfactorily. Hence we decided against the closure of these two centres.

1.26 Progress of work during the last quarter :- The work of posting the entries from the day book to the ledger was now in progress. The work was, however, proceeding very slowly as ^athe number of computational errors were discovered in the day book and they had to be corrected before posting the entries from the day book in the ledger. Hence, in order to expedite the posting of entries in the ledger, the Agricultural Instructors took upon themselves the task of rectifying the computational errors in the day book. This work, however, proved to be quite heavy and the Agricultural Instructors, therefore, had to strive their utmost to discharge their duties satisfactorily. In the case of Chendiye and Deulghat centres in particular, as a result of the very large number of candidates, this work proved to be extremely heavy inspite of the co-operation of a number of local teachers who voluntarily and honorarily associated themselves with the Agricultural Instructor in his work. Hence, it was decided to provide additional assistance to the Agricultural Instructors of these two centres, to cope up with their work. In ^upersuance of this decision, the Agricultural Instructors were allowed to recruit locally additional teachers to help them in their work.

1.27 Winding up of the field work :- As the term of deputation of all the teachers recruited to work as Agricultural Instructors was due to expire, it was decided to stop the recording of data by 30th April. This, it was felt, would enable the Agricultural Instructors to collect all the books of accounts and return to Poona with them by the middle of May. After their arrival in Poona, they were required to sort out the incomplete and the completed books. In the case of the incomplete books, they were required to prepare a list of candidates who kept them, indicating against each the reason why the book remained incomplete. In the case of completed books they were required to prepare a list of cultivators whose accounts were kept, indicating against each, the name, age, education and relationship to the cultivator and the postal address of the candidate who kept his accounts. This was necessary to identify the candidates at the time of the payment of purchase price for the book satisfactorily maintained by them. The Agricultural Instructors were also required to go through all the account books of their centre at least once and to correct any errors that come to their notice. The deputation of all the teachers except the one in charge of Deulghat centre was discontinued with effect from 31st May, 1956 and they were relieved early enough to allow them some joining time to resume their original post. The services

of the teacher in charge of Deulghat centre were continued for another month as some ledger work had remained incomplete and he expressed his willingness to finish the work if continued for a month. ^{His} ~~This~~ deputation period was therefore extended by a month in consultation with the Chikali Janapadsabha, Buldana.

1.28 Of the four centres which were operated till the end, in two, namely, Khatav and Ter, the scheme failed, partially in the case of the former and completely in the case of the latter. The failure of the centre at Ter was chiefly due to ineffective training, supervision and guidance of the candidates. The ineffectiveness of the training programme was due to a variety of causes. For instance, the teacher in charge of this centre was young and inexperienced. He had received only a fortnight's training in farm accounts. Besides, he was not giving his undivided attention to the work as he had to appear for his degree examination that year and was devoting part of his time to his own studies. Further, the selected villages were far away from each other and the transport facilities were inadequate and were available only in the fair weather. Consequently in the rainy season it became difficult and sometimes impossible to ~~give~~ ^{pay a} weekly visit to each of the selected villages. Consequently, the tutions conducted for a duration of 2 to 3 hours at an interval of a fortnight or a month.

was inadequate to teach the candidates. Further, a large number of candidates at this centre happened to be non-students, so that they had to be contacted individually. Hence, it was not possible to meet all candidates during each visit. Besides giving individual tutitions entailed considerable amount of time, leaving little leisure to the Agricultural Instructor for inspecting the books of accounts. The situation would have improved a little if the Agricultural Instructor had succeeded in winning the cooperation of the teachers in the various local schools. However, his decision to quit the teaching profession and the fact that he was appearing for a degree examination stood in the way of his winning the sympathy and cooperation of other teachers. The cumulative effect of all these was a failure to arouse enthusiasm among the candidates and to train them.

1.29 Reasons for the failure of the project at Khatav centre :- Here again the failure of the project ~~can~~ may be traced to a variety of causes the principal among them being the existence of a strong political agitation in which the students were active participants, selection of a large number of immature students and students studying in lower standards, selection of a large number of villages which necessitated considerable touring and positive hostility of the other teachers. The political

agitation was in connection with the re-organisation of states and it diverted the attention ^{of} ~~to~~ students to such an extent that they neglected both their studies and the keeping of accounts. Consequently, very few senior students were willing to participate in this project, forcing the Agricultural Instructor to select students of standards lower than sixth, who were generally young and immature. However, he could not afford the extra time and care necessary to train immature students with the result that a majority of them dropped out of our project. The selection of a large number of villages, meant waste of time in transit and left little time for the agricultural instructor either to train the candidates or to supervise their work. This however was sought to be remedied by closing down our work in some of the out-lying villages. The agricultural instructor had obtained the active support and cooperation of the teachers initially, by promising them that he would recommend to the Institute that part of the purchase of Rs. 25/- per book be given to the teacher supervising the keeping of those books. He also assured them that the Institute would readily agree to such an arrangement. However when we came to ^{his} ~~know~~ ^{its notice} ~~about~~ it, sometime in July, 1955, ^{the Institute} we stated categorically that the entire purchase price of Rs. 25/- per book would be given to the student recording the data and that no part of it would under any

circumstances be given to the other teachers. This invoked the ire of the teachers who felt that they were duped and thereafter they always remained hostile to the Agricultural Instructor as also to the project.

1.30 The over-all coverage of the project :- In the four centres where the project was in operation till the end, in all 478 books of accounts were originally in force. Of these, only 273 were completely written. Of these only 244 were written satisfactorily. In Table 1.7 we have furnished details of these, centre-wise.

Table No. 1.7

Centre	Total No. of books originally in force	Of which		
		remaining incomplete	completed but not accepted	accepted and paid for
Khatav	129	109 84/100	1	19
Chendiye	125	22 18/100	-	103
Deulghat	155	38 24/100	-	117
Ter	69	36 5/100	28	5
Total	478	205	29	244

1.31 The fact that as many as 205 (more than 40 per cent) books of accounts remained incomplete is enough evidence

of the tremendous waste of effort of both students and teachers which should, in future, be avoided as far as possible. We have therefore analysed the reasons for the same and presented them in Table No. 1.8. In that table, the reasons have been classified under three heads as A, B and C. Under the head 'A' we have brought together all those cases where the candidate inspite of his eagerness and efforts to keep accounts was unable to do so. This was due to either the refusal of the cultivator to furnish data for recording, or inadequate supervision and guidance resulting either from the villages being far off or because of the total number of candidates per teacher being too large. This was also due to the candidates being too immature to keep accounts correctly, or because they lost or misplaced the account books after having maintained them for sometime or as in a few cases because of the accounting work being heavy due to the large scale farm operations. Of the causes listed under the head 'B' the first three are instances of candidates having involuntarily ceased to record data because of migration or sickness while the last two represent cases of deliberate stoppage of recording. Of the causes recorded under category C, the first two are clear cases of mischief and may be treated for the purpose of our analysis as cases of deliberate stoppage of work. In the last we have indicated cases of non-students whose hand-

-writing was so illegible that we had to advise them to stop recording data.

1.32 It may be seen from Table No. 1.8 that of the 205 books of accounts, 100 were discontinued because the candidates were unable to keep the accounts, 17 because the candidates concerned were sick or had migrated, 84 because they deliberately stopped recording and in 4 cases because of the illegible handwriting. Thus it is clear that except in 84 cases where the candidates deliberately stopped keeping accounts, the stoppage of work was either involuntary or a result of the inability of the candidates to keep accounts, causes most of which are remediable. It would therefore be possible in any future enquiry to prevent the wastage of effort to a very considerable extent by remedying these latter causes.

1.33 Remedies for preventing waste of efforts :- Waste of effort arising out of selection of immature candidates and those who misplace or lose account books or have an illegible hand can be prevented by prescribing minimum age and educational status for the selection of candidates. Similarly prescription of a ceiling on holdings, to be selected for accounting, would eliminate cases of unwieldy accounting work. Similarly non-availability of guidance may be remedied by prescribing

To Dept. acc'ts Dept. Co. office

2.6.2
Table No. 1.8

Reason for the incompleteness of the books of accounts.

Name of the centre

Khatav Chendiye Deulghat Ter All centres

A. INABILITY TO WRITE

1. Non-availability of data	1	-	1	8	10
2. Non-availability of guidance	23	4	3	2	32
3. Books of accounts were lost	4	1	2	7	14
4. Immaturity of the recorder	34	1	1	-	36
5. Record work is unwieldy	4	-	2	2	8

B. NON-RECORDING OF DATA

6. Migration - permanent	-	2	5	2	9
7. Migration - temporary	-	2	3	1	6
8. Sickness	-	-	1	1	2
9. Pressure of studies	17	-	2	-	19
10. Unwillingness to write	24	9	12	8	53

C. FORBIDDEN TO WRITE

11. Recording false data	2	2	2	2	8
12. Non-compliance with instructions	-	1	1	2	4
13. Illegible hand	-	-	3	1	4

Total

109 22 38 36 205

an upper limit to the number of villages and the candidates under the charge of each Agricultural Instructor and by maintaining reserve staff to take over the charge of an Agricultural Instructor in cases of long leave. The involuntary stoppage of work by candidates, during the periods of their sickness or temporary absence, may be prevented by arranging, for recording of data during their temporary absence. The refusal of cultivators to furnish data and of candidates to record data are cases which cannot be remedied. However, an attempt may be made to minimise their incidence by a more cautious selection.

1.34 Besides these 205 books which remained incomplete, there were 29 others which though complete were not accepted on the ground that the recording was unsatisfactory. In fact, in every one of these cases, the ledger had not at all been maintained; the farm work done by members of the family noted in their record of daily work was also found to be at variance with the record of farm work by members of the family noted operationwise. Besides some vital information or other was found to be missing from each of these account books. Hence, they were regarded as written unsatisfactorily.

1.35 All the 29 books rejected as unsatisfactorily recorded, belonged with one exception to the Ter centre. Of these 28, 12 had been recorded by non-students and 16

by students, one of the latter being in respect of another man's holding. Of the 12 non-students, 5 had studied upto 4th standard and the rest upto sixth or seventh standard. Of the 16 students 9 were studying in sixth or seventh standards and the rest in standards higher than seventh. The other rejected book was of Khatav centre and was maintained by a student studying in a standard higher than seventh.

1.36 The failure of these 29 candidates to record data satisfactorily is also an evidence of the lack of effective supervision and guidance, the reasons for which have already been referred to in paragraph 1.28.

1.37 The remaining 244 books of accounts were found to have been satisfactorily maintained and were purchased at a price of Rs. 25/- per book of account. The distribution of these books of accounts by centres and by the categories of candidates maintaining them has been given in Table No. 1.9. The education status of the students and the non-students who kept these accounts has been indicated separately in Table No. 1.10. It may be seen from these tables that one sixth of the accepted books had been maintained by non-students and one-twelfth by student studying in standards lower than sixth.

1.38 We may now examine which of the two agencies

2.6.2
Table No. 4.9

Centre	Total No. of account books accepted and paid for	Of which maintained by		
		<i>in respect of</i> Non-students of owned holding	Students of owned holding	<i>in respect of</i> other's holding
Khatav	19	2	17	-
Chendiye	103	18	70	15
Deulghat	117	19	40	58
Ter	5	2	3	-
Total	244	41	130	73

2-6-43
Table No. 1-10

Centre	Total No. of account books accepted and paid for	Of which maintained by												
		Non-students						Students						
		Below sixth std.		Sixth and seventh std.		Above seventh std.		Below sixth std.		Sixth and seventh std.		Above seventh std.		
Khatav	129	19	-	-	5	2	6	-	2	-	82	4	34	13
Chendiye	125	103	6	3	7	3	14	12	12	9	52	46	34	30
Deulghat	155	117	5	2	4	1	17	16	8	5	93	69	28	24
Ter	69	5	9	1	18	-	8	1	-	-	21	1	13	2
Total	478	244	20	6	34	6	45	29	22	14	248	120	109	69

- 11 -

student and non-student, employed in recording data proved to be more efficient. The relevant data has been presented in Table No. 1.11. It may be seen that 41 per cent of the non-students and 53 per cent of the students succeeded in keeping the accounts satisfactorily. However, of the 99 non-students originally participating in the project, 24 were teachers and all of them had satisfactorily kept their accounts. Hence, if we consider non-students other than teachers, only 17 books out of 75, that is less than 23 per cent books, originally kept by them were accepted as satisfactorily maintained. Of the 24 teachers satisfactorily keeping their accounts 8 were from Chendiye centre and 16 from Deulghat centre. Consequently, in Chendiye and Deulghat centres, 53 and 30 per cent respectively of the non-students (other than teachers) had maintained their accounts satisfactorily while in the case of the students the corresponding percentages were 87 and 76 respectively. The smaller percentage of successes amongst students of Khatau and Ter centres reflect the general failure. But it should be remembered that the failure amongst the students was much higher on account of the hostility of the teachers to the scheme in the case of the former and non-cooperation in the case of the latter. For due to admonishings by the teachers that the students should mind their studies rather than waste time writing accounts, many

refused to write accounts on the pretext of pressure of studies and others just refused to write as is evident for the Khatav centre from Table No. 1.8. Hence barring the cases of Khatav and Ter centres which represented abnormal conditions, it may be seen that students proved to be a better agency than non-students other than teachers.

1.39 We shall now examine whether the proportion of students keeping satisfactory accounts was larger amongst students of higher standards. We would normally expect it to be so because the students of higher standards are as a class more mature on account of their higher age and have better grasp on account of their higher educational status than the students of lower standards. This is borne out by the figures in Table No. 1.12. However, the differences are not as large as one would expect them to be particularly if we notice the figures of Deulghat and Chendiye, the two most successful centres. Perhaps by the time a student reaches the sixth standard, he is mature enough to learn accounting. The success of the somewhat high proportion of students in standards lower than sixth, may possibly be due to the fact that only the more ^{intelligent} precocious of the students of lower standards had been selected and special attention was being given to them.

2.6.57
4
Table No. 1-11

Centre	No. of books originally in force	Of which maintained by		Of which accepted and paid for		No. of accepted books as % of the books originally in force	
		Non-students	Students	Non-students	Students	Non-students	Students
Khatav	129	11	118	2	17	18	15
Chendiye	125	27	98	18	85	67	87
Deulghat	155	26	129	19	98	73	76
Ter	69	35	34	2	3	6	9
Total	478	99	379	41	203	41	53

R.

1.40 In the schedules employed in this project no special provision had been made for recording the age of the recorder as we intended to obtain the data through sons of farmers and there was provision for noting the age of all members of the family. Consequently in the case of non-students and students maintaining accounts of a family other than their own, the age was not known. Hence an analysis of the success and failure of the scheme ^{for} of different age groups ^{of candidates} is not possible.

1.41 We shall now review the main causes which led to the success or failure of the project. It is clear from the foregoing that success and failure both hinge on the choice of candidates and the effectiveness of supervision and guidance provided. We have seen that the relaxing of our earlier condition that only students and that too only those studying in sixth and seventh standards should be selected, resulted in the selection of non-students and immature students thus increasing the workload of the agricultural instructor and making effective supervision and guidance difficult. We have also seen that in view of the large number of candidates and the number and distances of selected villages from the headquarter village, it was difficult if not impossible for one individual to supervise and guide effectively unaided. Hence the cooperation of the other local teachers became strategic in that it meant more effective

2-6.6
Table No. 1-42

Centre	Number of books originally maintained by students			Of which accepted and paid for			Percentage of accepted books to the total		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Khatav	2	82	34	-	4	13	-	5	38
Chendiye	12	52	34	9	46	30	75	88	88
Deulghat	8	93	28	5	69	24	63	74	86
Ter	-	21	13	-	1	2	-	5	15
Total	22	248	109	14	120	69	64	48	63

- (1) Studying in standards lower than sixth.
 (2) Studying in sixth and seventh standards
 (3) Studying in standards higher than seventh.

supervision and hence the success of the project. In fact, it may be noted that the success of Chendiye and Deulghat centres was largely due to the cooperation of the other local teachers and the failure of the Khatav and Ter centres due to their hostility in the one case and their non-cooperation in the other. It should also be noted that additional assistance had to be given by the Institute to the Agricultural Instructors of Chendiye and Deulghat centres in the later stages.

1.42 Cost of the project :- The total cost of the project amounted to approximately Rs. 35,000/- so that the cost per book of account satisfactorily completed works out to a little less than Rs. 150/-. This includes the purchase price of Rs. 25/- per book. It may further be noted that this cost compares favourably with the cost of the 'Farm Management Scheme' Madhya Pradesh which works out at about Rs. 300/- per book of account.

1.43 Attitude of candidates :- In spite of our explaining the object of this project and emphasising the need for reliable farm cost data, the candidates were very sceptic of the utility of this project. Consequently, they had no genuine interest in the keeping of farm accounts. They often felt and expressed the view that this project yielded no direct benefit to them beyond a payment of Rs. 25/-. They further felt that Rs. 25/- was a

niggardly sum, compared to all the trouble that they took in recording data. In fact, their participation in this project was largely due to the influence of the Agricultural Instructor who was usually a senior teacher honoured and respected in the village. In view of this and the comparative failure of the agency of non-students other than teachers, to record data satisfactorily, in spite of the financial incentive however inadequate and the supervision and guidance provided to them, it appears doubtful whether these students who have received training in the keeping of farm accounts would continue to keep accounts of their farms after their schooling is over, when neither supervision and guidance nor financial incentive is available.

Chapter II

COLLECTION OF DATA

2.1 The account books employed :- The farm cost data was required to be recorded in the prescribed forms, designed by the Institute and known as a day book and a ledger. The day book and the ledger employed in this project were the same as those employed in the "Farm Management Scheme, Madhya Pradesh" and are similar in content to the account books currently employed at the various farm management research centres in India. A copy of each of the day book and the ledger has been appended to this report.

2.2 Instructions for keeping the accounts :- Detailed and comprehensive instructions for filling the day book and the ledger had been prepared and printed. A copy of these instructions had been supplied to every candidate participating in this project. These instructions were further supplemented by the instructions from the Agricultural Instructor posted at each centre and the staff of the Institute visiting the villages periodically for inspection of the books of accounts. Besides, the Agricultural Instructors were required to communicate to the Institute any problems or difficulties not covered by the printed instructions, in order to obtain fresh instructions to be passed on to the candidates. Circulars

of such fresh instructions were sent to the Agricultural Instructors of all the centres for their guidance.

2.3 Cultivated holding :- The accounts were to be maintained in respect of the cultivated holdings of the families of selected candidates. For the purpose of accounting a cultivated holding was defined as -

"All land directly farmed by one person either by his own labour or with the assistance of members of his household or hired employees." In cases, where, some area was jointly farmed by two or more persons, each of the person so farming jointly, was presumed to farm that much of the jointly cultivated area as was proportionate to his share in the cultivation expenses of the jointly farmed area".

2.4 Period of accounting :- The period of accounting was to be a year from 1st of June to 31st of May and in this particular case the year 1955-56. It may, however, be noted that data regarding the operations carried out and expenditure incurred prior to the accounting year but in respect of the crops grown during the accounting year, were enquired into and recorded.

2.5 The sources of information :- The main source of our information was the cultivator. However, as he was

unable to furnish accurate data regarding area and land revenue of the various plots in his possession whether as owner or as tenant, it had to be obtained from the village records. It should also be noted that the majority of the candidates were sons of cultivators who maintained accounts of their family holding. As such, they had the advantage of personal observation and occasionally of participant observation.

2.6 Recording of data :- Two agencies, namely, students and non-students had been employed for recording data obtained from cultivators. The students may further be sub-divided into two categories as those maintaining accounts of their family holding and those maintaining the accounts of their neighbour's holding. The non-students consisted mainly of cultivators who desired to maintain their own accounts and teachers belonging to cultivating families who also desired to keep the accounts of their family holding. Even in the case of data obtained from the village records by the Agricultural Instructors, the actual recording was done by the student or the non-student as the case may be. Only in a few cases where it was found that the cultivators were reluctant to divulge their debt position to their sons, the Agricultural Instructor obtained such data himself and recorded ~~it~~^{them}, at the end of the year, when the books

of accounts were submitted to the Institute by the candidates writing the accounts.

2.7 Instruction and guidance in recording :- Instruction and guidance in recording data was provided to the candidates mainly through the Agricultural Instructors specially appointed for that purpose. Even the instructions issued by the visiting staff of the Institute were passed on to the students through this channel only.

2.8 Scrutiny of data :- The books of accounts kept by the candidates were inspected regularly by the Agricultural Instructors and periodically by the staff of the Institute sent out on inspection tour. Any errors revealed by such an inspection and the the methods of rectifying the same were indicated individually to the candidates concerned. Besides, these were later discussed during the tutorials conducted by the Agricultural Instructor, with a view to prevent the recurrence of similar mistakes by other candidates. Besides, as stated earlier, these errors were communicated to the Agricultural Instructors of other Centres as well.

2.9 Verification of the data :- Originally, there was no intention of verifying the data collected, because of an implicit faith in the integrity of the students. However, during a routine inspection by the staff of the
Institute

it was discovered that the data recorded was in some cases false. Consequently, the Agricultural Instructors verified the data, by paying a house to house visit, to ascertain the facts through an interview with the parents of the students keeping accounts.

2.10 Relative advantages and disadvantages of collecting data through students and through trained investigators:-

There are two principal methods of obtaining farm cost data, namely employing of trained investigators to record data and inducing cultivators to record the data. The former method has been tried and found to be costly; the latter needs to be explored yet. This project is a step in that direction, in that we are exploring the possibility of obtaining such data recorded by a member of the cultivator's family who is studying at the village school. It is therefore necessary to compare the two methods, particularly, with reference to the collecting of data, the recording of data, the reliability of the data collected, cost of collecting data and the possibility of the continued use of the same agency, for collecting and recording data.

2.11 Collection of data :- Compared to the trained investigators, the students who were keeping accounts of their own families, were in a better position to obtain data from the cultivator. For, being members of the family

they had an easier access to information as also the additional advantage of personal observations and occasionally of participant observation. Besides, they had access to data even during the temporary absence or sickness of the cultivator. Whereas, at such periods, the trained investigator would usually find it difficult to obtain data. As regards the obtaining of information from the village records, the trained investigator was at an advantage. For, as a result of his official status he had an easy access to the village records. The data from the record was, therefore, obtained in this project by the Agricultural Instructors and not ^{by} the trainees who would have found it difficult to obtain.

2.12 Recording of data :- So far as recording of data was concerned the trained investigator was at an advantage in that he usually had better training, education as well as experience of such work. On the other hand the selected candidates comprised of a number of immature students as also students studying in lower standards. Besides, these candidates did not receive as intensive a training as the investigators. Hence they were inferior agents so far as recording of data was concerned. But, there is no reason to believe that selected students would be inferior to the trained investigators if the selection is confined to students of higher standards only and the programme of training is intensified.

2.13 Regularity in keeping accounts :- A trained investigator, being a salaried employee, is under an obligation to keep the accounts regularly and may be compelled to keep accounts regularly. The students were under no such obligation to keep accounts. Nor had they any strong incentive to work save a small reward of Rs. 25/- per book of account kept satisfactorily. Hence they were prone to neglect the accounts work. In fact, there were a large number of instances of students not writing the accounts on holidays, at the time of examination and during the vacation period. There were in addition, instances of students having altogether ceased to write their accounts. There were also a few instances of recording of bogus data and of refusal to comply with the instructions issued. Yet it may be recorded that a majority of those who persevered served till the end, voluntarily, had done a good job.

2.14 Cost of collecting data :- In this respect the agency of students must be reckoned as immensely superior to that of trained investigators, for, the cost of collection of data, when the former agency is employed, is known to be less than half that when the latter agency is used.

2.15 Continuity of the agency employed :- The trained investigators being a paid agency may be employed year after year to collect data in respect of a selected group of holdings. However, it is doubtful whether data can be obtained in respect of a selected group of holdings

year after year, by employing the agency of students, unless of course the students are required to maintain the accounts of specific holdings. Similarly it would be difficult to make the same set of students keep accounts year after year, unless a more attractive system of incentives is adopted. Any way under the existing circumstances it must be stated that the agency of trained investigators is undoubtedly a superior one so far as the continuity of field operations is concerned.

2.16 Students keeping accounts of holdings other than their own :- The students keeping accounts of holdings other than their own, while they suffer from all the disadvantages of the agency of students, do not possess one of their principal advantages, namely, the advantage of personal observation, as they are not members of the family whose accounts they are keeping.

2.17 The Non-students :- The non-students as a class were found to be older and more mature. Besides, being cultivators, they had an insight into the farm business. However, we found that the non-students being cultivators were heavily pre-occupied with their farm ^{work} and that gradually a large number of them dropped out of the scheme so that, ultimately, only a few cultivators were found to have kept the accounts till the end. However, the non-students also comprised a few non-cultivators every one

of whom was found to have kept his accounts regularly and satisfactorily. However, these non-cultivators happen to be local teachers belonging to cultivating families.

2.18 We shall now examine the conditions of work of students and their merits and demerits as an agency for collection and recording of data.

2.19 Conditions of work of students :- Apart from their studies the students were generally found engaged in work both on and off the farm; as such, the accounting work was an additional burden to them. Besides as many of them were immature and were studying in standards lower than sixth, the accounting work weighed still more heavily on them taxing their brain as also their time and energy. Besides, recording data day after day, without any relief, became monotonous and irksome. The thought that they had to keep accounts even on days when they had a holiday or examination at the school was repugnant to them. Besides they got little encouragement from their parents who sometimes refused to furnish them information and often showered abuses on them for asking details of work done by them when they had just returned exhausted after a hard day's toil. Besides the students were unable to comprehend the utility of the keeping of accounts and had little incentive for work save a small award of Rs. 25/- announced to be paid as purchase price for each book satisfactorily completed.

2.20 Demerits of employing students as an agency for collecting and recording of data :- As the schools open only by the middle of June, it is not possible to commence the work earlier than that date if the agency of students is to be employed. Besides there would be gaps in data, as, often, no data was recorded on holidays, examination days, during the vacations and on days when the candidates absented themselves from the school which was quite often. Further, as many of them were immature and were studying in lower standards, they failed to grasp easily the procedure of recording data. This necessitated greater attention to training and close and constant supervision and guidance. Besides majority of them did not possess pencils and rubbers and had to be supplied with them. These again they often lost or misplaced. Some of them also lost or misplaced the pages from the account books and sometimes the account book itself after having written the same. There were also instances of bad hand making inspection of books a hard and trying job.

2.21 Merits of students as an agency for collecting and recording of data :- The students as an agency had ^{two} ~~to~~ distinctive merits. Thus they had an easy access to data and advantages of personal observation and occasionally of participant observation. They could also easily be brought together in a class for the purpose of instruction

and guidance. Besides they were amenable to control by the teachers who could easily get the work done from them.

2.22 Conditions of work of Agricultural Instructors :-

We shall now examine the conditions of work of Agricultural Instructors and their merits and demerits as an agency for providing instruction, supervision and guidance. The Agricultural Instructors had been allowed to choose for themselves their centre of work. Consequently they chose villages where they commanded respect and obedience from the students and were assured of the cooperation of the parents. They however, did not often succeed in winning the sympathy and cooperation of other teachers working in the primary schools of selected villages. In fact, they had to work in some cases without the sympathy and cooperation of the other teachers and in one instance, in the face of positive and active hostility from them. Besides, throughout the year they had to work under heavy pressure. The heavy workload was a result of a number of causes listed below :-

(1) The selection of a large number of villages distant from the headquarters and inadequately served by transport facilities resulted in considerable personal inconvenience and hardship to the Agricultural Instructors as also in considerable waste of time in ^{moving} ~~moving~~ from village to village.

(2) The selection of non-students and the frequent absence of students from schools prevented the Agricultural Instructors from meeting all the students jointly in a class and consequently compelled them to move from house to house for imparting instructions. This again led to considerable waste of time.

(3) The selection of students of low age groups studying in lower standards meant greater attention to instruction and closer and constant supervision and guidance. It also meant more numerous computational errors on the part of the students and hence meant heavy correction work for the Agricultural Instructors.

(4) Every long leave enjoyed by the Agricultural Instructor resulted in the staggering of work as there was no provision for reserve staff to take charge during the leave period of the Agricultural Instructors.

(5) The large number of books initially in force meant heavy work.

(6) As the students were unable to furnish correct figures of area and land revenue of the various plots comprising the selected cultivated holdings, Agricultural Instructors had to obtain the relevant data from the village records.

(7) The Agricultural Instructors were obliged to pay

a house to house visit in order to verify the accuracy of the data recorded.

(8) Though his responsibility was merely to instruct, scrutinise and indicate the errors committed and the mode of rectifying them, he was often obliged to rectify the mistakes himself.

Thus, the teachers were obliged to reconcile themselves to heavy and continuous work all the year round without any long break or vacation. This they found to be quite difficult. In particular they came to dislike the heavy and continuous touring work. For, it involved long and strenuous walks to which they were unaccustomed. They also had an apathy for calling on students at their homes and thought it to be derogatory. In spite of all this, it must be stated, that they had advantages, advantages both of an educational background and of a teaching experience. Besides they enjoyed the confidence of the local people and were in a position to command respect and obedience from the students. Besides as a result of their long period of service in the selected villages they had a fairly good knowledge of the local conditions.

2.23 Types of Errors :- During the course of the collection of data, the books of accounts were inspected from time to time, not only by the Agricultural Instructors, but also by the Field Inspector of the Institute and

the Research Assistant in charge of this project. These periodic inspections revealed a variety of errors which apart from being of interest in themselves were worth studying. Such a study was necessary to determine their effect on the validity of the data collected and the ways and means of avoiding them as also of rectifying them once they are committed. In the following we propose to study the types, origin and nature of errors, manner of their identification, possibility and mode of rectification and the effect if they are left unrectified. For the purpose of our analysis we have classified and presented the errors so discovered under four heads as follows :-

1. Computational Errors.
2. Errors in posting or transferring entries.
3. Recorded data found to be bogus.
4. Errors resulting in non-reporting, under-reporting or erroneous reporting of facts.

In the following they have been discussed in that order.

2.24 Computational Errors :- The inspection of the books of accounts revealed the existence of numerous computational errors. These errors are partly a result of the negligence of students and partly of their inability to compute correctly. Such errors though easy to identify, require enormous time to correct. For, they are numerous and both ^{the} ~~in~~/original and the transfer entries have to be

corrected. Such errors in so far as they are due to the inability of students to compute, may be minimised by prescribing minimum standards for the selection of students. Such errors can be rectified, any time they are discovered.

2.25 Errors in posting :- These too were very much apparent and were revealed at every inspection. Such errors are the result of the lack of familiarity with the schedules and instructions which may be due to either inadequate training facilities or immaturity or negligence of the candidates. Such errors can be rectified at any time they are discovered and may be minimised by selecting better candidates and by providing effecting training and guidance.

2.26 Recording of bonus data :- These errors were the result of a deliberate under-reporting or non-reporting of facts. They were really instances of incomplete recording of data rather than of recording of false data. Thus there were several instances of certain items such as the number of members of the family engaged in agriculture, the number of annual farm servants, the heads of plough cattle owned and the number of crops raised, (being deliberately under reported to reduce the workload as, for each of these a detailed daily account was required to be kept.) There were also two instances where the students

had deliberately failed to report the agricultural machinery owned by their family for a similar reason. Such errors were first discovered accidentally by the staff of the Institute, during the course of a routine inspection of account books. Consequently the Agricultural Instructors were required to pay a house to house visit to verify the data recorded by the candidates. This check up revealed that such errors were few and were invariably found in the case of large holdings where the keeping of genuine accounts was an unwieldy task. The recurrence of such errors may be avoided in future by prescribing a ceiling on the size of holdings to be selected and by providing for verification of data. Such errors can be set right only if they are few and are discovered at a very early stage of the enquiry. Whereas, if they are discovered late, the only remedy left would be discontinuing the keeping of accounts. This was resorted to in several cases as is seen from Table No. 18.

2.27 Errors resulting in non-reporting under-reporting or erroneous reporting of facts :- Under this category we have brought together only those mistakes which were committed unintentionally. The non-reporting, under-reporting or erroneous reporting may be due to lack of comprehensiveness of schedules and instructions misinterpretation of schedules and instructions, negli-

gence of students and non-cooperation or deliberate misreporting by parents. In the following we have discussed in detail the various types of errors which fall under each of these categories.

2.28 Errors arising due to (lack of comprehensiveness) of Schedules :- Community work carried out in the interest of the farm such as construction or repair of bunds for preventing the on-rush of the sea, has not been recorded in Schedule No. 1 of the day book as there was no provision in the Schedules for recording such community work. The evidence that such work had been carried out was available in Schedule No. 3 of the day book wherein was recorded the daily work of all members of the family engaged in agriculture. This error could be rectified by recording ~~in~~ details of work so carried out in Schedule No. 1 of the day book. The work was treated as classified farm work chargeable to a specific crop, in this case, paddy, as that was the only crop grown in that area. The error was detected at a very early stage of the project and was rectified immediately. But it could have been corrected even if it had been discovered after the field work was completed as details of work carried out was available in Schedule No. 3 of the day book.

2.29 Another error resulting from lack of comprehensiveness of the schedule is the recording as purchased, of the raw material borrowed for use in the process of

production. This was because, there was no provision in the schedules for recording borrowed material. The evidence that the purchases were really borrowings was available on Schedule No. 13 of the day book wherein are to be recorded all purchases of raw materials used in production. Here the students had added a footnote indicating that certain transaction recorded there as purchases were really instances of borrowing. This error though easy to correct was not corrected as it in no way affected the cost of production. It should, therefore, be noted that the raw materials used in the process of production shown as purchased also comprise the borrowings of such material.

2.30 In Schedule No. 12 of the day book we had provided for recording the production and disposal of all livestock products other than dung, dung cakes, manure and wool which were to be recorded directly in the ledger. The exclusion of these items from the day book, it was found, resulted in the under-estimation of the production of these. However, it is not possible to correct the error as it is not possible to estimate the quantities produced.

2.31 Lack of comprehensiveness of Schedules and the Instructions was also responsible for the non-reporting of non-agricultural incomes. The error was discovered too late to correct. Consequently, we have no data

regarding the size of the non-agricultural incomes of the selected cultivators.

Errors resulting from lack of comprehensiveness of the instructions

2.32 As we felt that the word supervision was self-explanatory, we had not ^{specified} special types of work to be recorded under this category. However, we discovered at a very early stage of the enquiry that a variety of work such as inspection of embankments of paddy fields during rainy season, guarding of crops from the fowl during the day and from ~~old~~^{wild} beasts and thieves at night, had been recorded under the category supervision while the actual work of supervision exercised was merged, in most cases with the work of the operation which was supervised. Thereafter, these various categories of work were indicated separately. It would not have been possible to correct this error if it had not been discovered at a very early stage of the enquiry.

2.33 We had provided in our schedules for recording domestic, hired and exchange labour only. Consequently when during the course of the field work we came across instances of labour hours obtained gratis, we instructed that such hours of work be recorded in the column provided for recording labour hours received on Exchange basis, and they were so recorded. Therefore, it is now

not possible to distinguish hours of work obtained gratis from those obtained on exchange basis. As a result, it is also not possible for us now to compare whether the labour hours received in exchange and given in exchange balance. Farm work done by the visiting relatives of the farm family is an instance of labour received gratis.

2.34 It may also be observed that hours of work done by members of the family to bring about permanent improvement of the land have not been recorded. In view of our previous experience of this type of work we presume that this might be a case of under-reporting. This means that capital formation in agriculture is being under-estimated and the role of family labour in capital formation in agriculture is not being brought out. The commission of an error of this nature is largely due to a strong human tendency to under-report such work. Nevertheless the chances of commission of such errors may be minimised by suitably modifying the schedules and instructions, to permit specific enquiry and recording of such work at a definite interval of time, say a month.

2.35 The hours of work of casual labour not employed for any specific work have not been treated as farm-work and have therefore not been recorded in Schedule 2 of the day book. This was largely due to the absence

of any instructions in this behalf. The error results in a slight under-estimation of farm costs and does not lend itself to correction post hoc. Hence it has remained uncorrected.

2.36 We had provided for recording the daily work of annual farm servants in the employment of selected cultivators. However, the instructions did not specify that this applied to monthly farm servants as well. Consequently the record of daily work of monthly farm servants was not being kept at the beginning. This was brought to our notice by the Agricultural Instructors, in the very first week of the launching of the survey. Consequently, instructions were issued to record the daily work of the monthly farm servants also on Schedule 3 of the day book and thereafter their work was also recorded daily.

2.37 The column headed 'other work' in Schedule 3 of the day book was meant to record hours of gainful employment other than those for which specific columns had been provided for. However, the recording of domestic work in this column had been specifically forbidden. Yet, not only was domestic work repeatedly recorded in this column, but also certain types of farm work and work in respect of livestock was also noted. Besides an immense variety of other work was also recorded. A sample of

these has been classified and enumerated in statement No. 2.1 appended to this chapter. Errors of this type may be minimised by defining 'Other work' and preparing a list of the various types of work that should be recorded under this category and supplying a copy of the same to every candidate recording data. The error was easy to correct particularly as the nature of work had been specified. Hence all such errors were corrected. However, as such errors were numerous, we found that the correction work was heavy and time consuming.

2.38 In a number of cases where the record of daily work kept on Schedule No. 3 of the day book indicated the collection of grass, fuel, manure, fencing material etc. *the corresponding receipts of grass, fuel, manure, fencing material etc.* were found not to have been recorded. The error could not be corrected as it was not possible to estimate the quantities of material so obtained. However, at the time of tabulation, whenever it became necessary to take into account the material so obtained, their value derived by evaluating the hours of work employed to collect them, was taken into account.

2.39 Recording of credit purchases led to certain errors resulting in double counting of purchases. This was due partly to lack of comprehensiveness of the schedules and partly to lack of instructions regarding the recording of credit transactions. The double counting resulted because the purchases were recorded once at the time

they were made and again when the credit was extinguished by a cash payment. This came to our notice as a result of an enquiry set afoot by us to ascertain how such transactions had been recorded, after one of the Agricultural Instructors raised the problem of recording credit transactions. The error was corrected at the tabulation stage, by eliminating the transactions recording cash payments for extinguishing the credit obtained earlier.

2.40 On page 31 of the ledger where initial stocks were required to be recorded, in the absence of specific instructions, a large variety of farm produce as also of consumer goods including jams and pickles preserved or purchased and stored for consumption, were found recorded. This could have been avoided by giving instructions as to the commodities, stocks of which need be recorded.

Errors resulting from mis-interpretation of instructions

2.41 Instructions had been issued that overhead expenses should be recorded on Schedule 1 of the day book as unclassified farm work chargeable to the farm business as a whole. However, the trainees failed to distinguish between joint costs and overhead costs and consequently costs which were joint in respect of only some of the crops grown were also recorded as unclassified farm work

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chargeable to the entire farm business. The error was discovered at the tabulation stage and was corrected by a proper allocation of the joint costs as between the different crops in respect of which the expenditure had been jointly incurred. The error if it had not been discovered would have affected the relative costs of the various crops grown.

2.42 We have already seen how 'other work' was recorded on Schedule 3 of the day book. However, because of a misinterpretation of instructions the hours of 'other work' have been under reported. The instructions were that in respect of each member of the family engaged in agriculture the actual hours of work should be recorded and if the hours of work fell short of 8 hours, then the trainee should account for the balance of time. For the purpose of this definition 'work' included 'other work' also. However, the Agricultural Instructors interpreted it as excluding 'other work'. Consequently 'other work' even when it was carried out, was recorded only on those days when work other than 'other work' fell short of 8 hours and then also only to that extent or to the extent of actual work whichever was less. This practice, which came to our notice during the inspection of books and was confirmed by subsequent enquiry, invariably results in an under-estimation of the hours of 'other work'. The error cannot be corrected

post hoc but may be avoided by making the instructions more explicit, in this respect.

2.43 An inspection of Schedule No. 6 of the day book revealed that in a number of cases the difference between the gross and net yield as on the harvest day was much less ^{than} that the aggregate of the disposals in kind recorded as made at the harvest time. The internal evidence pointed out the fact that the figures of both the gross and the net yield were correct. It was also found that the aggregate of the disposals in kind recorded as made at the harvest time exceeded the difference between the gross and net yield as on the harvest day because certain payments in kind such as share rent made not at the harvest time but sometime later had been entered as paid at the time of the harvest. Errors of this type were corrected at the tabulation stage by indicating separately the payments in kind made at the harvest time and later.

2.44 In recording the hours of grazing on Schedule 11 of the day book instead of recording the actual hours of grazing, the trainees recorded the actual hours of grazing multiplied by the number of heads of cattle grazed. Consequently the recorded hours of grazing were quite numerous. Hence, the matter was investigated and the fact, noted above, was brought out. The error

was consequently corrected by dividing the hours of grazing by the corresponding number of heads of cattle.

2.45 On page 23 of the ledger where we consolidated the costs cropwise, instead of recording the costs cropwise, the trainees of Deulghat centre had recorded them plotwise. This was clearly due to a misinterpretation of our instructions by the Agricultural Instructor, in charge of that centre. The error was, however, discovered at a very early stage and was immediately corrected when the error was brought to the notice of the Agricultural Instructor by the Research Assistant attached to the project.

Errors arising on account of negligence of the candidates recording data

2.46 The candidates had on occasions failed to record an operation in respect of a specific crop. However, such errors were promptly corrected as we had taken precautions against the occurrence of such errors. Lists of various types of operations necessary for each crop grown in that region had been prepared and the recorded operations were checked with reference to those in the list. If any operation was not found to be recorded the reasons for the same were enquired into and if it was merely a case of forgetfulness or negligence in recording the error was corrected.

2.47 The area operated was also often wrongly recorded.

This could clearly be seen from the fact that in a number of cases this area was in excess of the cropped area. Besides, sometimes, the area was not at all specified or even when only part of the area had been operated the whole area was indicated as operated. Errors of this type could not be corrected.

2.48 In respect of certain field operations in which human and bullock labour are usually combined in a fixed proportion, it was found, in several instances, that the human and bullock hours recorded were not in any such proportion. In some cases this was undoubtedly due to the inclusion, in human labour, of the hours of supervision in respect of that operation. In others, it was due to the erroneous recording of hours of work. The books of accounts which abounded in such cases of erroneous recording of hours were not admitted for tabulation. However, if in a book of accounts there were only a few stray cases of such erroneous recording of hours of work, the errors were corrected by estimating the hours of work on the basis of data available in other books of accounts, in respect of the operation in question.

2.49 There were several instances of wages paid to hired labour not having been recorded in Schedule No.2 and wages received not having been recorded in Schedule No. 3 of the day book. The missing value of wages paid

or received was estimated on the basis of other data available, at the tabulation stage.

2.50 During the field work, hours of work of a few non-adults had been recorded as adult hours due to an erroneous recording of their age on Schedule No. 3 of the day book. The error was discovered at the tabulation stage and was corrected.

2.51 There were a few instances of cases of work recorded on such non-existent days as 30th of February or 31st of April. An enquiry revealed that these were not instances of recording of bogus data. What had happened was that the trainees being unaware of the total number of days in an English month continued to record data of successive days on the lines provided for succeeding dates till 31st, irrespective of the number of days in that month. Such errors may be avoided in future by instructing the Agricultural Instructors to inform the candidates towards the end of each month of the total number of days in that month and to score out in advance the non-existent dates from the record sheet where all the 31 days are recorded for a month. Such errors were few. Nevertheless they have not been corrected as that would have practically meant rewriting of Schedule Nos. 3 and 4 of the days book and as they did not in any way affect any of the tables which we were preparing.

2.52 Often it was found that the record of farm work done by members of the cultivators family and noted operation-wise on Schedule No. 1 of the day book did not tally with the record of farm work noted on Schedule No. 3 but according to members of the family engaged in cultivation. In such cases the record on Schedule No. 1 was treated as correct and that on Schedule No. 3 was corrected, thus reconciling the record of work noted on Schedules Nos. 1 and 3. Such a correction was made where the errors were few. If however, they were found to be numerous, then the book was not admitted for tabulation.

2.53 On Schedule 11 of the day book, inspite of our instructions that milch cattle should be taken as milch cattle and their young-stock, the trainees had, in the beginning, recorded in that category either only cows in milk or all milch cattle but not their young stock. This error, however, was noticed at the stage of collection of data and was, therefore, corrected at that stage only.

2.54 The temporary migration of members of the family had not been recorded on page 2 of the ledger, even though evidence to this effect was available on Schedule 3 of the day book where the recording of daily work had been ^{stopped} on the ground that, that person had migrated. Such errors were corrected at the tabulation stage.

2.55 Non-recording of the date of payment in kind on Schedule 6 of the day book led to some difficulty in the determination of gross and net yield. The difficulty was circumvented by verifying the figures of gross and net yield, at the stage of collection of data.

2.56 While recording the sale transactions on Schedule 8 of the day books details necessary to distinguish the sale of previous year's produce from current year's, had not been recorded. The error cannot be corrected post hoc.

2.57 There were a few instances where the quantities of other receipts and disposals in kind had been recorded in Schedule Nos. 9 and 10 but the nature of such receipts and disposals had not been specified. The error was discovered at the time of scrutiny prior to tabulation, when it was not possible to correct it.

2.58 There was also some evidence that the expenditure on maintenance and repairs of agricultural implements and machinery had not been recorded on pages 9 and 10 of the ledger. Thus the "baluta" payments had not been reported nor had any expenditure either cash or kind been reported for repair of implements and machinery thus indicating the under-reporting of this item. Here again there was no way of rectifying the error and hence it remained uncorrected. Consequently the cost of maintenance

of implements and machinery and hence the cost of production of crops have been under-estimated to that extent.

2.59 Causes of Errors :- Errors other than those resulting from negligence of candidates or arising from lack of comprehensiveness of Schedules and instructions, may be presumed to be the result partly of lack of intensive supervision and guidance and partly of the inability of the candidates to grasp easily the method of recording data. The latter was really a consequence of the selection of students of lower age group and those studying in standards lower than sixth. In fact we have already demonstrated in Chapter I that the performance of students of sixth or higher standards was better than that of students studying in standards lower than sixth. It may also be seen from Table No. 1.8 that the cases where the accounts were ceased to be kept due to the immaturity of the candidates were quite numerous.

2.60 Incompleteness of the data :- Apart from the fact that it contained a number of errors, the data collected was often incomplete. The incompleteness of the data was either the result of non-recording of data or of loss or misplacement of the filled in pages of the account books. The non-recording of data may be due to the delayed launching of the scheme or temporary

stoppage of work by the students due to sickness, temporary migration, holidays and long vacations or due to pressure of work at the examination time. Such stoppage of work may be prevented by making arrangements for recording of data during the temporary absence of the students. The necessary arrangements to be made have been discussed in detail in the next chapter. The loss of recorded data due to loss or misplacement of filled-in pages may be prevented by insisting on the account books being kept in the school and by not permitting the students to remove the pages from the day book.

2.61 Certain difficulties in recording data :- During the course of the field work we came up against a number of difficulties in recording data. Thus sometimes we found that the data was not available at all. For instance, when certain farm operations were got done on contract basis, the actual hours of work involved in carrying out the operation could not be obtained. Similarly, it was not possible for some of the students to obtain from their parents data regarding the debt position of the family. This difficulty however was circumvented by the Agricultural Instructors who collected this data personally in those cases. Again, there were other difficulties such as the availability of data in such a form that it could not be recorded in the prescribed form. For instance, in the case of loans we had provided

for noting principal and interest repaid, separately, whereas in the case of tagavi loans given by the State Government the instalments of repayments consisted of principal and interest and they could not be separated. Similarly in the case of fodder consumed by livestock, often, only the total quantity consumed was reported and its break up as consumed by plough and milch cattle could not be obtained. There were also other difficulties such as those relating to the recording of credit transactions and of land revenue and rent when they are definitely known to have not been paid. The difficulties regarding rent and land revenue were circumvented by adding a foot-note to the cash account indicating the amount of revenue rent and land revenue and the fact that they have not been paid.

2.62 Response to the day book :- We may conclude our account of the collection of data by reviewing the response to the day book and the ledger. The response to the day book, in particular, may be considered as good. Considering now the response to the various schedules comprising the day book it may be stated that the response to all schedules except 5, 9, 10 and 14 was good. In Schedule 1 all farm work had been recorded with this exception that a few stray cases of community work done in the interest of farm and domestic labour employed to bring about permanent improvement of land had not been recorded. In

Schedule 2 all labour hired for farm work had been recorded. However, details of casual labour employed for no specific work have not been recorded on this Schedule. On Schedule 3 is kept the record of daily work of members of the family engaged in cultivation and on Schedule 4 the record of daily work of owned plough cattle. The response to both these schedules was satisfactory, though some errors have been committed in recording 'other work' and in entering the column 'classified farm work'. Schedule 5 was meant to record the daily work of agricultural machinery such as tractors, and pumping sets. There were a few cultivators owning pumps in our sample. But inspite of repeated instructions to fill this Schedule, every one of them failed to do so. The response to Schedule No. 6 was good though there were a few instances of the date of payment not being recorded or of payments made subsequent to the harvest being recorded as made on the threshing floor and on the day of the harvest. On Schedule 7 are noted details of baluta payments made on the threshing floor. The response to this schedule was particularly satisfactory. In Schedule 8 are noted sales of farm produce. However, the sales of current year's produce had not been distinguished from previous year's produce. Besides there was some evidence that the sales may have been under reported, for the total of initial stocks and production was found

to be much larger than the aggregate of sales, other disposals in kind, and the final stock in the case of even cotton, which is usually neither purchased by cultivators nor consumed at home in any large quantities. Schedules Nos. 9 and 10 were meant for recording other receipts and disposals in kind. There was little response to these two schedules and in the case of even the few entries that had been made the nature of receipt or disposal in kind had not been recorded. Schedule 11 was a weekly record of changes in livestock position and feed and fodder consumed. Excepting a few errors in recording the changes in the livestock position and the changes in the quantity of feed and fodder consumed as a result of change in livestock position, the recording as also the response was quite good. Schedule 12 is a weekly record of production and disposal of livestock produce. Here too the response was quite good. However there was some evidence that the production and sale of poultry produce was being under-reported. For instance, the figure of average production of eggs appeared to be very much lower than that we had obtained in some of our earlier investigations, indicating the possibility of under-reporting. In Schedule 13 which was meant to record raw materials purchased for use in farm production, purchases of seed, manure, feed, fodder, etc. had been generally correctly noted. The particulars of raw materials used in production recorded in Schedule No. 1

of the day book confirm this view. Schedule No. 14 which was meant to record cash expenditure, is the most neglected of the Schedules. In fact, numerous items of cash income and expenditure are known to have remained completely un-reported. Even expenditure on items like rent and land revenue was most frequently left un-recorded. Schedule No. 15 which is the last schedule in the day book, is meant to record domestic expenditure. The trainees were specially enthusiastic about this account and have recorded regularly even the smallest of transactions involving cash or credit purchase.

2.63 Response to the ledger :- Provision had been made for recording certain essential data directly in the ledger. Such data pertained to members of the family (page 2) permanent farm servants and terms and conditions of their service (pages 2 and 4), owned and leased in land (pages 5 and 6) property and financial assets (page 7), livestock, agricultural implements and machinery owned (pages 13, 9 and 10 respectively), the debt position (page 8), crops raised on operated area (pages 21 and 22), and initial and final stocks of farm produce including fodder (pages 31 and 32). The response to these items was generally good, though there were a few instances of non-reporting of some of these items. Thus in a few cases the value of property and agricul-

-tural implements had not been recorded. There were also instances of non-recording of the terms and conditions of service of permanent farm servants and rent, both receivable and payable. There were also several instances of non-recording of the value at the end of the year of the various assets such as buildings, livestock, implements and machinery. (The most numerous cases of non-reporting were, however, those of stocks of farm produce at the end of the year.) There were also a few instances in which the debt position as at the end of the year had not been indicated. In addition to the essential data noted directly, there was provision in the ledger for recording in a summary form the large volume of data already recorded in the day book. After the completion of the field work, it was observed that in a large number of cases the data from the day book had not been transferred to the ledger. In the cases where the data from the day book had been posted in the ledger, it was found that such posting was either incomplete or unsatisfactory. In only a few cases was the posting both complete and correct, though that too was in respect of certain items only. This was so in the case of seed, manure and gross yield of crops (page 23). Of the field operations, particularly of only the early ones had been posted in the ledger. Particulars of other farm expenses such as rent, land

revenue and other taxes, repairs to real estate, tool and implements, hire charges of agricultural machinery, interest on crop loans, etc. had not been posted (pages 27 and 28), in the ledger. Similarly purchases and sales of livestock, implements and machinery and real estate had not been posted (pages 12, 9 and 10, 11 respectively) in the ledger. Changes in the inventory of livestock also had not been indicated in the ledger (page 14) in most of the cases. Consumption of feed and fodder and work done by members of the family, farm servants and owned plough cattle were found frequently posted in the ledger. But this posting was invariably incomplete, particulars of fodder and feed consumed in the last four months of the year and the work done by family members, farm servants and owned plough cattle in the last two or three months of the year not having been recorded. Besides, a number of accounts such as the income and expenditure accounts of plough cattle, milch cattle and other livestock (pages 18, 19 and 20) and commodity and fodder accounts (pages 31 and 32) and a number of statements such as the consolidated cropwise statements of field operations (page 25), seed, manure and other material utilised (page 26), composition of cost, per acre and per unit costs (page 29) and the statements of farm accounts (page 30) and of family income and expenditure (page 33), which had to be prepared on

the basis of data recorded in the day book had been left unprepared. Thus it may be seen that barring the essential data, the recording of the ledger was generally unsatisfactory. This was due partly to the negligence of candidates and partly to the lack of enthusiasm of the Agricultural Instructors. The negligence of the students was largely an expression of their desire to avoid work. The Agricultural Instructors on the other hand were aware of the large number of computational errors in the day book and, therefore, knew that even if they got the ledgers written, they will have to be re-written after the scrutiny of the day books. Hence, their lack of enthusiasm. Eventually, the scrutiny of the day book revealed numerous computational errors necessitating the rewriting of the ledger.

APPENDIX STATEMENT NO. 21

referred in in 4.2.4(b)

Types of work recorded under the category "Other Work" in Schedule No. 3 of the day book.

I. Non-agricultural work :-

1. Running a grocery.
2. Working as village headman.
3. Working as village accountant.
4. Working as inferior village servant.
5. Working as an artisan.

II. Marketing of farm produce :-

1. Processing of agricultural produce for the purpose of marketing.
2. Transport of agricultural produce.
3. Marketing of agricultural produce.

III. Useful household work :-

1. Hunting small game and fowl for consumption
2. Catching fish for domestic consumption
3. Collecting forest produce for consumption
4. Collecting wood.
5. Cutting wood.
6. Processing of agricultural produce for consumption.
7. Stitching clothes.
8. Repairing the house.
9. Shopping.

IV. Work in respect of livestock :-

1. Collecting grass from the forest.

Continued.

IV. Work in respect of livestock (continued)

2. Stacking of hay.
3. Repairing cattle shed.
4. Transport of hay, fodder, etc.
5. Searching cattle which have strayed.

V. Work in respect of Implements:-

1. Repairs to cart.
2. Repairs to Implements.
3. Purchase of raw material for manufacturing a cart.
4. Rope making.

VI. Social and Community Work :-

1. Free contribution of labour for constructing and approach road
2. Free carting of earth for road work
3. Attending meetings of Gram Panchayat, cooperative society, etc.
4. Campaigning in connection with Panchayat election.
5. Worked as pall bearer.
6. Attended on the Mamlatdar during his camp in the village.
7. Accompanied a party organised to search a thief.

VII. Miscellaneous work:-

1. Attending the court.
2. Attending marriage and other social functions.
3. Attending on educational course.
4. Pursuit of a hobby.
5. Recreation such as attending drama, Kirtan, etc.
6. Fetching medicine.

Chapter III

TABULATION AND ANALYSIS

3.1 Out of 478 books of accounts returned to the Institute on the completion of the field work, 205 were incomplete. On each of these 205 books, the reason for the failure to keep accounts had been noted by the Agricultural Instructor concerned. The data regarding reasons for ceasing to keep accounts presented earlier in Table No. 1.8, has been compiled on the basis of these notings, duly verified. Beyond this, little use has been made of the data recorded in these books of accounts.

3.2 Scrutinisation of the account books :- The 273 completed books of accounts submitted to the Institute were subjected to a detailed and exhaustive scrutiny, before being admitted for tabulation. The scrutiny revealed that 29 of these books had not been satisfactorily kept. Consequently only the remaining 244 satisfactorily kept books of accounts were finally admitted for tabulation.

3.3 Scrutinisation of the ledger :- Only the essential data recorded in the ledger and specified in para 2.63, was scrutinised. The scrutiny revealed a few cases, both of non-recording of such data and of the recorded

data not being genuine. The books of accounts in which this was found to be so, were regarded as not kept satisfactorily and were not admitted for tabulation. There were also a few instances where the current value or the value at the end of the year of the property and financial assets, livestock, implements and machinery owned and the stocks of fodder and other farm produce had not been recorded. In such cases the missing values were estimated on the basis of other available data and the books in which they were found, were thereafter admitted for tabulation. Besides, in certain cases, it was found that land revenue, rent and remuneration payable to permanent farm servants had not been specified. In such cases also the amounts of land revenue rent and remuneration payable to permanent farm servants were estimated on the basis of other data available and thereafter the books were admitted for tabulation. As regards the data to be transferred from the day book to the ledger, it was found that such data had either not been posted in the ledger or if posted was usually incomplete or unsatisfactory. Besides, the scrutiny of the day book had revealed that many of the entries in the day book, already posted in the ledger, had been wrongly computed. Hence, it was decided not to scrutinise the other data recorded in the ledger. Instead, the ledger was ^{re-}written on the basis of the now corrected day book.

3.4 Scrutiny of the day book :- The scrutiny of the day book was commenced by ascertaining whether the record of daily work for the duration of the survey period, had been kept in respect of every member of the family regularly working on the family farm, every permanent farm servant employed and every head of owned cattle engaged in farm work. It was also ascertained, in respect of each crop whether all the field operations had been carried out or not and if not why? Further, in respect of every operation carried out, it was ascertained whether particulars of the labour hours, wages paid and raw material utilised if any had been recorded. Besides, it was verified whether the entries had been made in the appropriate schedules and columns and whether they had been transferred to their respective schedules and columns if they were so required to be transferred. For instance wages paid in cash to hired farm labour is first recorded in Schedule No. 2 and is later transferred to Schedule No. 14 of the day book. In addition to this the data recorded in the day book was checked for internal consistency. The scrutiny of the day book revealed a number of errors of the kind described earlier in Chapter II. The errors were either those which had not been located during the course of the field work or those which while they had been located had remained uncorrected as a result of the

failure on the part of candidates to carry out instructions for rectification issued by the Agricultural Instructors. The errors were rectified in the manner indicated earlier. The scrutiny also revealed some cases where the data was internally inconsistent. Such cases were as far as possible corrected in the light of other available data. However, where it was not possible to correct and the nature or extent of the inconsistency was such as to vitiate materially the value of the data collected, the books of accounts concerned were not admitted for tabulation.

3.5 Checking of data for internal consistency :-

The day book was scrutinised in considerable detail with a view to check internal consistency of data and to rectify the inconsistencies, if any. It was hoped that this would also incidentally determine the extent of defective reporting if any. We have indicated below the checks employed to test internal consistency and the mode of rectification of the inconsistencies revealed thereby.

(1) In the case of farm operations involving the use of human and bullock labour in a fixed proportion, the fact, whether the recorded human and bullock hours were in any such proportion was ascertained. There were only a few instances of imbalance between human and

bullock hours and these too, it was found, were the result of inclusion, in the recorded human hours, of the time spent in transit and in supervision. It was not possible, in such cases, to ascertain the actual hours of human labour employed in carrying out the operation and as such our check could not be applied.

(ii) Whether the aggregate of the ^{net} ~~net~~ yield and the total disposals in kind recorded ⁱⁿ ~~in~~ Schedule No.6 of the day book was equal to the gross yield, in respect of each crop raised ^{was ascertained.} In a large number of cases, it was found that the former was in excess of the latter. This disagreement, it was found, was due to the fact that the net yield was, yield net of disposals at the harvest time, whereas the recorded disposals included payments in kind made long after the harvest. The matter was set right by indicating separately the payments in kind made at the harvest time and later.

(iii) Whenever there was some internal evidence that a change had occurred in the livestock position of the family, whether such change had been recorded in the relevant schedule (Schedule No. 11) of the day book was ascertained and the necessary change was incorporated ^{if} ~~if~~ it had not already been so incorporated.

(iv) A major test employed to determine the internal consistency and the reliability of the data was to check whether the hours of farm-work by members of

the family and the monthly and annual farm servants as recorded on Schedule Nos. 1 and 3 of the day book were in agreement. If in any book, such cases of disagreement were found to be very few, then the facts recorded in Schedule No. 1 were taken as correct and Schedule No. 3 was corrected accordingly. Whereas, if such cases were numerous, the data was regarded as untrustworthy and the book was consequently not admitted for tabulation.

(v) The bullock hours recorded in Schedule No. 1 and 4 of the day book were similarly scrutinised and corrected.

(vi) The hours of work ^{of} ~~by~~ agricultural implements and machinery ^{are} ~~is~~ also to be similarly scrutinised by comparing ^{the} hours of machine work recorded ⁱⁿ ~~on~~ Schedule Nos. 1 and 5. However, as Schedule No. 5 was found to be unwritten, we could not employ this check.

(vii) Whenever Schedule No. 3 indicated that members of the farm family were engaged in collecting grass, fuel, manure, fencing material, etc. whether such receipts of grass, fuel, manure, fencing material, etc. were recorded in the appropriate schedule (Schedule No. 10) was verified. In many cases it was found that such receipts had not at all been recorded. However, as it was not possible ^{to} estimate the volume of such receipts

we could not correct the error. Similarly there were instances of purchases and sales of agricultural produce not being reported even though there was clear internal evidence that the farmer had visited the market for such a purpose. However, as it was not possible to estimate the volume of such purchases or sales, nothing could be done in such cases also.

(viii) Whenever there was a change in the quantity of feed and fodder consumed by livestock as a result of a change in the livestock position, whether such change in the feed and fodder consumption had been indicated in Schedule No. 11 was verified. If no such change had been incorporated, the change was incorporated by substituting for the original figures, the estimated figures of consumption.

(ix) Whether rent receivable and payable, recorded in pages 5 and 6 of the ledger, had been actually received and paid respectively, was verified. Similarly whether payment of land revenue had been recorded or not was also verified.

(x) Whether payment of baluta, as recorded in Schedule Nos. 6 and 7 were in agreement was ascertained. In case of disagreement, the particulars recorded in Schedule No. 7 was regarded as correct and Schedule No. 6 was rectified accordingly.

3.6 Indications of defective reporting :- Checking

of the day book for internal consistency revealed defective reporting in respect of a number of items.

We have noted below the items which, we believe, have been defectively reported and the indications that led us to believe that those items were defectively reported.

(i) Births of livestock :- Whenever Schedule No. 12 indicated an addition to the cows or buffaloes in milk, during the survey period, and there was clear proof that this was not a result of acquisition of a cow or buffaloes in milk, whether by purchase or otherwise, and Schedule No. 11 did not indicate any birth, it was regarded as an indication of non-reporting of birth and the necessary correction was made in Schedule No. 11.

(ii) Purchases and other receipts of livestock :- In cases, where Schedule No. 4 indicated the acquisition of plough cattle or Schedule No. 12 indicated the acquisition of cows or buffaloes in milk, if such acquisitions had not been indicated in schedule No. 11 as by way of purchase or otherwise, we presumed a case of non-reporting of purchases or other receipts of livestock. In such cases the ^{exact} nature of receipt was determined in the light of any other evidence available and the necessary correction was made in Schedule No. 11.

(iii) Deaths, sales and sending away of plough cattle for grazing :- Whenever the recording of daily

work of plough cattle ceased, the reason for the same was noted in Schedule No. 4. Where the reason so noted was the death, sale or sending away of the animal for grazing and the corresponding change in livestock position had not been indicated in Schedule No. 11 it was regarded as a case of non-reporting of death, sale or sending away for grazing, as the case may be and the necessary changes were incorporated in Schedule No. 11 to correct the same.

(iv) Feed and fodder consumed by livestock :-

Whenever there had occurred a change in the livestock position which was bound to result in a change in the quantity of feed and fodder consumed and no such change had been recorded in the feed or fodder consumed and no such change had been recorded in the feed or fodder consumed, it was regarded as a case of erroneous reporting of feed and fodder consumed and the necessary correction was made in the light of changes in the livestock position.

(v) Receipts and payments of rent :- In cases where rent was receivable or payable as indicated by ledger pages 5 and 6 and the receipt or payment of such rent has not been recorded in Schedule No. 6, if receivable or payable in kind and in Schedule No. 14, if receivable or payable in cash, then it was regarded

as an indication of non-reporting of rent receivable or payable. However, in the absence of any information as to whether the rent receivable has actually been received or not and the rent payable has actually been paid or not, it is not possible to do anything in the matter. However, while computing the farm costs, the rent payable has been presumed to have been paid and while computing the total income of the cultivator, the rent receivable has been presumed to have been received.

(vi) Land revenue :- Every case in which the payment of land revenue had not been recorded even when payable, was regarded as a case of non-reporting of payment of land revenue. Here too, for the purpose of computing farm costs, the land revenue was presumed to have been paid.

(vii) Expenditure on repairs to embankments :- In the case of Chendiye centre, which was a rice tract where keeping of the embankments of rice fields in a state of good repair was a prime necessity, every case where neither hours of work nor expenditure had been reported on the maintenance of such embankments, was regarded as a case of non-reporting of such hours of work or expenditure. However, these could not be estimated and hence nothing was done.

(viii) Expenditure on fencing :- Similarly, in

the case of Deulghat centre, which was in a cotton tract where fencing the cotton fields with twigs and branches of babul trees was a common practice, every case where neither hours of work nor expenditure had been reported on fencing, was regarded as a case of non-reporting of expenditure on fencing. Such expenditure could not be estimated. Hence no attempt was made at correction of the same.

(ix) Receipt of grass, fuel, fencing material etc. collected :- Whenever record of daily work as noted on Schedule No. 3 indicated collection of grass, fuel, manure, fencing material, etc. and their receipt had not been recorded on Schedule No. 10, it was regarded as a case of under-reporting of receipt of such material. Such receipts, too, could not be estimated. However, it was possible to estimate the value of the material so collected by imputing value to the labour hours employed in collecting them. Hence, wherever necessary the estimated value of the material collected was used.

(x) Livestock products :- Production of dung, dung cakes, manure, wool and eggs was found not to have been recorded in some cases where livestock as also sheep and poultry were owned. No estimation of these was possible, particularly as the production of these had not been reported in any of the other book of account.

(xi) Non-agricultural income and expenditure :-

Every case in which a family had not reported non-agricultural income even when one or more of its members were engaged full time in a non-agricultural occupation or service, was regarded as a case of non-reporting of non-agricultural income. Similarly every case in which a family had not reported any expenditure whatever in connection with a non-agricultural occupation in which one or more of its members were actually engaged, ~~as~~ was regarded as a case of non-reporting of non-agricultural expenditure. In such cases neither the income nor the expenditure on account of such non-agricultural occupation, business or service could be estimated.

3.7 The extent of underreporting :- The evidence examined by us indicated that the extent of under-reporting varied considerably from centre to centre, in respect of the same item. We shall, therefore, discuss the extent of under-reporting of the various items separately for each centre. We shall, however, confine our observations to only two centres, Deulghat and Chendiye, where 117 and 103 completed books of accounts had been kept respectively.

(1) Deulghat Centre :- There was no indication of under-reporting of purchases, sales, deaths or of sending away for grazing, of livestock. Birth of livestock was, however, found not to have been reported in 4 cases out of 29. Out of 34 cases of change

in the consumption of feed and fodder resulting from changes in the livestock position in 8 such change had not been reported. As regards fencing, 76 families out of 117 did not report either hours of work or expenditure on fencing. Considering now the payment of land revenue, there was not even a single instance of recording of payment of land revenue. In the case of rent, in 9 cases out of 38 its payment had not been reported. As regards receipt of rent, there was only one instance where rent was receivable and in that case the receipt of rent had been recorded. Non-agricultural incomes had not been reported in 26 cases out of 32. Expenditure in connection with non-agricultural business or occupation had not been recorded even in a single case even though as many as 32 families had one or more of their members engaged in such occupations or business.

(2) Chendiye centre :- While there was no indication of under-reporting of purchases and sales of livestock, there was some indication of under-reporting of births, deaths and sending away of livestock for grazing. Births of livestock had not been reported in 7 cases out of 23, deaths in 6 cases out of 22, and sending away of cattle for grazing in 4 cases out of 23. Further of the 36 cases where a change had occurred in the feed and fodder consumed by livestock, in 7

such change had not been recorded. Considering rent, receipts of rent had not been recorded in 15 cases out of 33 and payments in 38 cases out of 98. The payment of land revenue had not been recorded in any of the books. In 15 cases out of 103, neither hours of work, nor expenditure had been reported in keeping the embankments of rice fields in a state of good repair. Further out of 103 families 46 have not reported the receipts of fuel and 99 the receipt of grass even though every one of them had collected, free, from the forest, both ^{fuel} ~~fuel~~ and grass. Considering non-agricultural incomes, of the 49 families having such income 24 have not reported it. Besides none of these 49 families had reported any expenditure in connection with the non-agricultural business or occupation in which one or more of its members were engaged. Considering, now, both the centres it may be observed that income from certain livestock products such as dung, dung cakes, manure, wool and eggs had also not been reported. But it was not possible to determine the extent of such under-reporting. Similarly, there was evidence of under-reporting of expenditure on items of domestic consumption though the extent of such under reporting could not be determined.

3.8 Under-reporting of income data :- The evidence available, also confirmed the general finding common

to similar investigations carried out earlier, that the overall income is usually under-reported. This was seen from the fact, that the over-all expenditure of the family was in excess of the aggregate income of the family from all sources including borrowing. This was true of a large number of families big and small alike.

3.9 Limitations of the data collected :- The scrutiny of the day book has revealed certain limitations of the data. In the following we have set out the nature of such limitations with regard to data in respect of which such limitations prevail.

Limitations of data collected

3.10 Area under crop :- In the case of mixed crops the details necessary for allocating the cropped area as between the different crops grown had not been recorded. Though the actual quantities of seed of the various crops sown had been recorded, the fact that it was a case of mixed sowing or of row crop had not been indicated; nor had the number of rows of the various crops, if a row crop, been indicated. Nevertheless, because of our knowledge of local conditions we were able to determine the acreage under different crops in a mixed crop. The non-recording of the necessary details was ^{primarily} ~~primary~~ due to the absence of provision in the

day book as also in the ledger for recording these details.

3.11 Area operated :- There was some evidence that the area recorded as operated was not necessarily correct. In fact, often, the area so recorded exceeded the area under the crop and sometimes even the geographical area of the plot concerned. Consequently, in cases where the area recorded as operated was less than the cropped area, it was not possible to say definitely whether this was a case of erroneous recording of operated area or of a genuine operation carried out in respect of only part of the area.

3.12 Implements used :- For any specific operation requiring the use of implements or machinery, whether the implements or machinery used was owned or hired had not been recorded as there was no provision for recording the same. Consequently in cases where the cultivator did not own implements it was not possible to determine whether the implement or machinery used had been hired or obtained gratis, unless the same had been specified. In view of the fact that the payment of hire charges of implements and machinery also tends to be under-reported, it appears that there is no possibility of determining the extent of such under-reporting.

3.13 Operational time :- Hours of work recorded

operation-wise are consolidated hours comprising operational time and time spent in transit and in supervision. If it is possible to distinguish the operational time, it would facilitate a study of the economy in operational time due to size of plot and the employment potential of various crops. Similarly the time spent in transit, if it could be determined would facilitate the study of fragmentation of holding and the time spent in supervision if it could be so distinguished, would indicate the increase in cost due to this element. However, the operational time, the time spent in transit, and the time spent in supervision, had not been noted separately. Hence the type of analysis indicated above cannot be carried out-

3.14 Exchange labour :- Hours of farm work done by relatives temporarily staying with the family should be treated as hours of labour obtained gratis and should be distinguished from both domestic and exchange labour hours. However, they have been recorded in Schedule No.1 as labour hours obtained on exchange basis. Consequently, it is now, not possible to determine the extent of such labour hours; nor is it possible to distinguish it from labour hours obtained on exchange basis. The latter, further makes difficult the comparison of labour hours given and obtained on exchange basis.

3.15 Work got done on contract basis :- In the case

of operations got done on contract basis, it was not possible to ascertain the actual hours of work. Hence estimated hours of work have been noted in such cases.

3.16 Wages paid weekly or fortnightly :- Instructions had been issued that in cases where the wages are paid once a week or a fortnight, receipt of wages should be indicated only on the day on which they are actually received. Wages had, therefore, not been recorded daily. However, as in some cases the candidates failed to note the receipt of wages later when it was actually received, the amount so received had to be estimated for the purpose of recording.

3.17 "Baluta"^{*} payments :- Payments by way of "baluta" made at the harvest time to various balutedars[†] are indicated separately in Schedule No. 7. However, in the case of payments made to "balutedars" at any other time, the type of "balutedar" to whom such payment is made is not indicated as there is no provision to do so in Schedule No. 9 where they are recorded. Consequently, in such cases, it is not possible to distinguish payments made to balutedars whose services are essential to cultivation and those whose services are not.

3.18 Gross yield of cotton :- It was found that in the selected villages it was not the practice to weigh

* Baluta - Customary payment to hereditary village artisans.
† Balutedars - Hereditary village artisans.

cotton as soon as it was picked. In fact, cotton was weighed, usually, only at the time of sale. Besides, cotton was stored in bulk and not in containers of any standard size as in the case of jawar and groundnut. Consequently, the yield recorded in Schedule No. 6 as and when cotton was picked is only an estimated weight of the actual pickings.

3.19 Gainful employment :- Gainful employment had been defined as work which resulted in either a receipt of an income or a saving of an expenditure. In Schedule No. 3 of the day book, hours of gainful employment of member of the family and permanent farm servants engaged in cultivation were to be recorded. The hours of work were to be recorded in five categories as farm work, work in respect of livestock, wage work, work on exchange basis and any other work. The hours of gainful employment were to be recorded every day and if such hours of employment were less than 8 hours on any day, how the remaining time was utilised on that day was also to be recorded. However, due to misinterpretation of the word 'gainful employment', 'other work' done was recorded only on those days when the aggregate hours of work of all the other four categories was less than 8 hours and to the extent of the difference only, even though the actual hours of 'other work' were more.

3.20 Classified and unclassified farm work :- In

Schedule No. 3 of the day book two columns, headed classified and unclassified farm work, had been provided for recording farm work. Work in the nature of overhead expense only was to be recorded in the latter column; all other work was to be recorded in the column "classified farm work". The candidates however failed to distinguish work in the nature of joint cost from work in the nature of an overhead expense and consequently recorded in the column "unclassified farm work", work in the nature of overhead expense as also work in the nature of joint cost.

3.21 Definitions employed :- Certain definitions necessary for the recording of data had been evolved before the commencement of the field work. In the light of the field experience it is deemed necessary to elaborate or modify some of these. In the following is a discussion of the definitions and the modifications or elaborations if any deemed necessary therein.

3.22 Cultivated holding :- Cultivated holding had been defined as all land, directly farmed by one person either by his own labour or with the assistance of members of his household or hired employees. Consequently, in cases where some area was jointly farmed by two or more persons and one of them had been selected for study, there was some difficulty regarding the determination of the area cultivated by him. In such cases, each of the joint

cultivators was presumed to cultivate that much of the jointly cultivated area as was proportionate to his share in the cultivation expenses of the jointly cultivated area. Consequently, for the purpose of accounting, the expenditure incurred in respect of and the income derived from, the jointly cultivated area by each of the joint cultivators were treated as in respect of that much of the jointly cultivated area which he was presumed to cultivate.

3.23 Year of accounting :- Though the accounting year had been defined as a period of twelve months commencing from June and ending with May, particulars of all operations carried out prior to the accounting year but in respect of crops grown during that period, had been recorded. Particulars regarding operations carried out prior to the accounting year had been ascertained for this purpose by interviewing the cultivators concerned. The data so collected is not for that reason, any the less reliable. For, the experience of the Institute in this respect indicates that the farmers know how much time they required to plough their fields and remember distinctly, how many times they have ploughed a particular field in a given year, at least till the time of sowing in that year. At the same time, this practice is quite economic as it eliminates the need to keep accounts from the time the preparatory tillage is

commenced, which may be as early as April or even earlier. Further, the recording of pre-tillage operations as and when they are carried out would have created the problem of noting the crop in respect of which these operations are carried out, particularly as the decision regarding the crop to be grown may not have been taken, then or if taken, may be subject to a last minute change at the time of sowing. The practice of recording carried out prior to the accounting year but in respect of crops grown during that period, may therefore, be seen to be of some advantage.

3.24 Farm work :- Farm work had been defined so as to cover current agricultural operations, work to bring about permanent improvement of the farm and processing and transport of farm produce for the purpose of marketing, only. In particular, the work of collecting grass, fencing material, manure, etc. was specifically excluded from the definition of farm work. However, during the course of the field work, the prevalence of a peculiar system of cultivation, came to be noticed in a village in Karwar district. Under this system, a number of cultivators came together to bring coastal land under paddy cultivation, by bunding off the sea-water. The land thus reclaimed was parcelled out and distributed among these cultivators, for individual cultivation. But the maintenance and repairs of the main bund and

the subsidiary bunds remained a joint responsibility. Consequently, whenever there was a breach in any of the bunds, all these cultivators came together to repair it. Hours of such work have also been treated as hours of farm work.

3.25 Supervision :- In the absence of a definition, various types of work such as, guarding of crops against birds, beasts and thieves and patrolling the embankments of paddy fields, in the rainy season, to prevent them from being breached, had been recorded under the category supervision. At the same time, the actual hours of supervision of each operation had been added to the hours spent in carrying out that operation and in transit in connection with that operation and the hours of work so consolidated had been indicated as the hours of work in respect of each operation. Hence, "supervision" should be defined and the hours of supervision should be indicated separately operation-wise. In this connection "supervision" may be defined as meaning supervision of farm work being carried out by means of hired labour.

3.26 Operational time :- Operational time had been defined so as to cover the time spent in carrying out the operation, the time spent in supervising the operation and the time spent in transit in connection with

the operation. It is however preferable to define operational time so as to exclude from it the time spent ⁱⁿ ~~on~~ supervising the operation, the time spent in supervision being indicated separately, operation-wise.

3.27 Engaged in cultivation :- Every person, whether member of the family or a permanent farm servant, engaged in the cultivation of the family farm, regularly as against casually, was deemed to be engaged in cultivation.

3.28 Permanent farm servants :- All monthly and annual servants "engaged in cultivation" of the holding of the farm family employing them were defined as permanent farm servants.

3.29 Record of daily work :- Record of daily work was kept all the year round in respect of members of the family engaged in cultivation and permanent farm servants. In respect of members of the family and monthly and annual servants working only casually on the farm, the record of daily work was kept in respect of only those months during which they had worked on the farm.

3.30 Adult :- All persons aged 13 or more had been defined as adults and the hours of work done by them had been evaluated as adult labour hours. This has resulted in a slight overestimation of the monetary value of such labour as in some of the selected villages adult wage

was paid only to those persons who had attained or crossed the age of 15. This may be avoided in future, if necessary, by defining the adult age separately for each of the selected villages. However, such a procedure is likely to affect the comparability of the hours of work of the different villages.

3.31 Joint costs and overhead costs :- In the absence of definitions the candidates had mistaken joint costs for overhead costs and had consequently recorded both of them in the column meant for recording overhead costs only. Hence, it is necessary to define clearly both these terms. The joint costs may be defined as costs incurred in respect of specific crops jointly produced. The overhead costs may be defined as costs incurred not in respect of any specific crop but in respect of the farm as a whole.

3.32 Classified and unclassified farm work :- Farm work in the nature of overhead cost had been defined as unclassified farm work and all other farm work had been defined as classified farm work, for the purpose of recording data in Schedule Nos. 3 and 4.

3.33 Other work :- For the purpose of Schedule Nos. 3 and 4 other work had been defined as gainful employment other than that for recording which other specific columns had been provided in Schedule No. 3. In spite of this de-

-finition, it was found that non-gainful employment had been recorded in the column provided for recording other work. In order to avoid such an error, a list of the types of work falling in this category may, preferably, be prepared as a guide to the types of work falling in this category.

3.34 Work in respect of livestock :- Hours of human labour utilised in tending cattle, transporting cattle feed and fodder, stacking hay, repairing cattle-shed etc. were defined as hours of work in respect of livestock. This definition was later extended to cover human labour hours in cases where it is customary to hire man and beasts together. In such cases the labour hours were charged to the livestock account and the wages jointly received by man and beasts, were credited to the same account.

3.35 During the course of tabulation, it became necessary to evaluate certain physical quantities in monetary terms. // In the following is a discussion of the problems involved in the evaluation of the physical quantities in monetary terms.

3.36 Evaluation of grass, fuel, fencing material, etc. collected free :- In cases, where grass, fuel, fencing material, etc. had been collected by employing domestic labour, the problem, at what rate such material should be

charged to the farm business or the livestock account as the case may be, arose, (Such material may be charged either at the prevailing market prices or at the value of domestic labour utilised in acquiring them.) The former method appears to be preferable to the latter. Nevertheless the latter method was adopted as the quantities of material so collected had not been recorded and the labour hours employed were available.

3.37 Evaluation of gross yield :- Gross yield may be evaluated by determining its monetary value at harvest price or by adding to the value of actual sales, the value of the balance of stock at the harvest prices. The latter procedure appears to be nearer to reality. We have, however, adopted the former procedure.

3.38 (Evaluation) of domestic human labour :- There are two methods of evaluating such labour, which are commonly employed. In one, the labour hours required for different operations are evaluated at the prevailing wage rates for those operations. In the other, total hours of work are evaluated on the basis of average annual payment made to permanent farm servants. The first method suffers from three disadvantages. Thus it may not be possible to evaluate labour utilised for specific operations if it is not customary to employ hired labour for those operations e.g. supervision, patrolling of em-

-bankments during the rainy season, guarding of crops etc. Similarly, it may not be possible to evaluate certain categories of labour such as child labour, if it is not the practice to hire such labour. Lastly this method is likely to result in an overestimation of the monetary value of family labour. Hence this method was not favoured. Even when data regarding hours of work and remuneration of annual farm servants are available, such data may be used in two different ways for evaluating family labour. Thus the total family labour may be expressed as adult labour units, each such unit being valued at the average of annual remuneration of a permanent farm servant. However, the conversion of family labour into adult labour units is not easy. In particular, conversion of hours of farm work done casually by members of the family into adult labour units becomes a difficult and complex problem. Hence this method, too, was not adopted. The other method was to calculate the average per hour wage paid to a permanent farm servant and to evaluate the hours of farm work done by members of the family at that rate. Where data were available regarding the monthly farm servants, and the remuneration paid to them varied from month to month it was possible to calculate average wages rate per month for the different months, in addition to the average per hour wage rate for the year. In such cases, it would be preferable to evaluate the family labour employed in different

months, at the average monthly wage rate for those months. Though data regarding monthly farm servants, were available, the method of evaluating family labour at a monthly wage rate was not adopted. Instead an average per hour wage rate calculated on an annual basis was adopted. This was because the remuneration did not vary from month to month in respect of the same farm servant, and the permanent farm servants included both the monthly and annual farm servants. The average wage rate was arrived at by dividing the total remuneration comprising of the value of cash and kind payments made and the perquisites provided, by the total hours of work put in by such permanent farm servants. Though this method may be very useful in a tract where the practice of employing permanent farm servants is widespread, it is of doubtful utility in a tract where it is not common to employ permanent farm servants. In such cases it may be preferable to evaluate the family labour at prevailing rates of wages for hired labour for different operations. Nevertheless, in the case of Chendiye centre, for the sake of uniformity, we evaluated the family labour at an average per hour wage rate paid to a permanent farm ^{servant} labour, even though it was not the common practice at that centre, to employ permanent farm servants. In fact only 5 out of the 103 cultivators studied employed permanent farm servants and the total number of servants so employed was only 7.

3.39 Evaluation of bullock labour :- Bullock labour, too, may be evaluated operationwise at the prevailing rates of wages. However, this method was not favoured as it was found that the hired bullock labour formed a very small proportion of the total bullock hours. Consequently bullock labour was evaluated on the basis of the cost of maintenance of bullocks. The cost of maintenance comprised of the value of feed and fodder consumed, the charges for human labour employed for attending an cattle, depreciation charges and other expenditure incurred in respect of bullocks. Against these costs, credit was taken for income received from dung, dung cakes, manure, hire charges, carting charges and other income from or value of non-farm work done by bullocks. The maintenance cost net of these incomes was treated as the cost of bullock labour employed for farm work and a per hour wage rate was derived from it for evaluating hours of bullock labour utilised for farm work.

3.40 Short-comings of this method of evaluation :- It may be noted that credit is given to the bullock account for dung, dung cakes and manure whereas the hours of human labour employed in selling dung cakes, digging compost pits and collecting material such as dung, dry leaves, etc. for preparing manure, are not charged to the bullock account. Similarly, in all cases where man and bullocks are jointly hired out, the total wages jointly earned are

credited to the livestock account. In view of this, it appears that the per hour wage rate for bullocks computed by this method is likely to be slightly lower than it should be.

3.41 Cost of cultivation per acre :- On the basis of data collected for this project, general cost of cultivation per acre has been calculated for various size groups of cultivated holdings. Similarly cost of cultivation per acre has been calculated in respect of major crops of the selected tracts. Thus per acre cost of cultivation has been computed in respect of cotton and Jowar in the case of Deulghat centre and paddy in the case of Chendiye centre. These costs have also been calculated separately for all the size groups of cultivated holdings. At the same time, the break up of the cost into its various elements has also been indicated. The various elements composing the cost of cultivation are seed, manure, human and bullock labour, land revenue, other taxes, rent, interest and other expenses such as repairs to implements. In the following are given details regarding the various elements of costs and the manner of their evaluation:-

(i) Seed :- While calculating the cost of cultivation per acre in respect of major crops, if such crops were found inter-sown with other crops, then in determining the cost of seed, the seeds of all the crops so

inter-sown have been taken into account. In evaluating the seed sown, purchased seed have been evaluated at actual purchase price and all other seed whether borrowed, home-grown or received as contribution from the landlord or co-sharer, have been evaluated at the prevailing market rates.

(ii) Manure :- Manure was also similarly evaluated, the purchased manure being valued at price paid and all other manure being valued at the prevailing market rates.

(iii) Human labour :- The hired labour was valued at actual wages paid and the domestic labour and labour obtained gratis or on exchange basis, were all valued in the manner indicated in paragraph 3.38 for evaluating domestic human labour. For the purpose of such evaluation female and child hours were treated as equivalent to 0.75 and 0.50 man hours respectively.

(iv) Bullock labour :- The hired labour was valued at actual wages paid and domestic labour and labour obtained gratis or on exchange basis were all evaluated in the manner indicated in paragraph 3.39 for evaluating domestic bullock labour.

(v) Land revenue and other taxes :- These were charged as cost whenever they were known to be payable, irrespective of whether they were paid or not. The total amount of land revenue and other taxes payable in res-

-pect of the entire holding was distributed between the different crops in proportion to the area under them.

(vi) Rent :- Similarly, rent payable was charged as cost irrespective of whether it was paid or not. Where rent was paid in kind, the produce so given was valued at harvest price. In the case of owner cultivated land, rent was imputed at the average cash rent per acre payable in respect of leased in land. The rent payable was charged to the crops in respect of which rent was paid.

(vii) Interest charges :- Interest on the capital value of livestock and agricultural implements and machinery owned, was calculated at 4 per cent per annum and was charged to the farm business as an overhead expense.

(viii) Other expenses :- In this category were included charges for minor repairs to bunds, irrigational channels, wells and other permanent improvements on the farm, charges for repairs to agricultural implements and machinery, charges for interest on crop loans and other borrowings to meet current farm expenses, charges for material and other than seed and manure, used in the farm business and any other expenditure chargeable to farm business. Like interest, other expenses were also treated as overhead expenses and were distributed over the different crops in proportion to the value of their yield.

3.42 Cost of production of milk per unit :- In calculating cost of production of milk, it is necessary to take into account certain practices prevailing in regard to the production of milk. It was observed at the time of this investigation that in most cases 25 to 50 per cent of the milk produced was not drawn but was allowed to be fed to the calves. It was also not uncommon to allow the calves to be fed on the entire milk produced, without drawing any of it. Hence it is necessary to treat the milk and the calves as joint products. Consequently, the total cost of production of milk may be arrived at by deducting from the total cost of maintenance of milch cattle and their young stock, the increment in the value of calves during the year. Alternately, the cost of maintenance of milch cattle and their young stock may be divided between milk and calves in proportion to the value of milk produced and the increment in the value of calves during the year. However, as a result of non-recording of the value of calves at the beginning and at the end of the year in some cases, it was not possible to determine the increment in the value of calves during the year. Hence, none of the two methods referred to above could be employed to determine the total cost of production of milk. Consequently, the cost of production of milk per unit has not been calculated.

3.43 Tables prepared :- On the basis of data collected

during this project, a number of basic tables indicating the type of data available have been prepared. Such tables have been prepared in respect of Deulghat and Chendiye centres only, a separate set of tables being prepared for each of those two centres. The tables of Deulghat centre are based on the accounts of 117 cultivators kept satisfactorily and those of Chendiye centre are based on ^{the} accounts of 103 cultivators kept satisfactorily. Thus data in 220 of the 244 satisfactorily kept books of accounts have been presented in these tables. The tables have been appended to this report.

Chapter IV

MODIFICATIONS SUGGESTED

4.1 In the light of the experience gathered during this project, the following modifications are suggested regarding the plan of work as also the selection of villages and candidates, the recruitment of teachers to function as Agricultural Instructors, programme of instruction in farm accounts, collection and recording of farm cost data and its supervision and the schedules and instructions used in this project. In suggesting these modifications, the very limited objectives of this project, the employment of a local agency for collecting data and the need to minimise the burden of a daily record, have all been fully taken into account.

4.2 Modifications in the plan of work :- The plan of work adopted in this scheme has not proved very useful. It may, therefore, be better to select teachers from fullfledged primary schools and secondary schools, who in their spare time, may instruct a limited number of students studying in their class, in farm accounts and supervise and guide them in keeping the accounts of their family holding. In the following, modifications, necessary for adopting such a plan of work, have been suggested.

4.3 Selection of villages :- Only villages having

secondary schools should be selected as it is proposed to select students of sixth or higher standards, to recruit part-time Agricultural Instructors and to limit the area of operation of such Agricultural Instructors to their school and to the classes that they are teaching.

4.4 Recruitment of Agricultural Instructors :- As it is proposed to limit the area of operation of the Agricultural Instructors to their school and to their class, it may not be possible to provide enough work for a full-time Agricultural Instructor. Besides, obtaining on deputation the services of a senior full-time teacher, entails protracted correspondence regarding the terms and conditions of service and results in unnecessary delay. In order to avoid this, it is proposed to recruit part-time Agricultural Instructors. This may be done by persuading teachers, teaching sixth or higher classes in a full fledged primary school or a secondary school, to participate in this project in their spare time. The teachers may be required to instruct in farm accounts, a limited number of students, studying in the classes taught by them at the school and supervise and guide them in keeping the accounts of their family holding. Approval of the educational authorities concerned should be obtained for such an arrangement, and an assurance should be sought from them that the teachers so participating in the project would not

be transferred during the period of investigation. Obtaining the approval of the educational authorities for such an arrangement would not be difficult as there are a number of instances of teachers having been permitted to work on salary, in their spare time, as village post masters, secretaries of village Panchayats, etc. The fact that the teachers would be required to look after only a limited number of books will also facilitate the obtaining of the approval of the educational authorities to such an arrangement.

4.5 Remuneration of the teachers :- The selected teachers should be paid on a piece rate, a fixed amount per book per month being paid. In order to induce the teachers, to provide effective supervision and guidance and to ensure that they see to the regular and satisfactory keeping of accounts, it is suggested that no payments be made to them, in respect of books which cease to be kept, as from the day they ceased to be kept. Further any payments made to the teacher in respect of the books so ceased to be kept be recovered from him. At the same time, if all the books of accounts initially under the supervision of a teacher are satisfactorily kept till the end of the year, then a special incentive bonus should be given to that teacher.

4.6 Selection of candidates :- The selection should be confined only to students studying in sixth or higher standards in a primary or a secondary school. Preference should, however, be given to the selection of students coming from cultivating classes.

4.7 Programme of instruction in farm accounts :- Normally, an Agricultural Instructor should not be allowed to take more than ten to fifteen candidates. Further, he should only be allowed to take students from a class which he is teaching. For, in that case he would be able to exercise greater authority over the selected candidates. The candidates so selected should be initiated in keeping farm accounts through tutorials of about 45 minute's duration, conducted at the school on every working day, just before or after the working hours as is found convenient.

4.8 Collection of data :- Information which has to be obtained from the village records should be collected by the Agricultural Instructor and all other information should be obtained by the candidates either by personal observation or by interviewing their parents every day. However, information regarding such things as the indebtedness of the family which sometimes parents hesitate to furnish to their young sons, should be obtained by the Agricultural Instructors who should make a note of it and record it in the books of accounts. The Agricultural Instructor should also verify at the commencement of the investigation whether particulars regarding members of the family, permanent farm servants engaged in cultivation owned plough cattle and agricultural machinery etc. are correctly recorded.

4.9 Recording of data :- The account books should be kept at the school and no student should be allowed to take them home. This will ensure that no book or page will be lost or misplaced. Besides the students should be required to write the account books at the school, during the tutorial period. This practice will not only ensure regular keeping of accounts but will also minimise the commission of errors as the candidates, whenever they are doubtful as to when a particular entry is to be recorded, can easily approach the Agricultural Instructor. Even during the period of long vacations, the Agricultural Instructor should arrange to meet the students regularly either at the school or at his house but preferably at school. If it is found that some of the students have temporarily gone out of the village during the vacation, some of those students who are still staying in the village be ^{permitted} required to visit the houses of their absent colleagues every day to collect data and record it. Such services may be rewarded by a small cash reward. Similar arrangements should be made, if for any reason, such as sickness, a candidate is unable to keep accounts for some length of time. However, such an arrangement may not be possible at the time of examination when all candidates are likely to be anxious to study. At that time, therefore, the Agricultural instructor should assume the responsibility of keeping the accounts of those students who are

unwilling to keep accounts during the period of examination. During the short holidays the candidates should be required to note the farm operations carried out if any, in a note book supplied to them and then make entries in the account books, on the next working day, at the school. If, however, it is felt that arrangements suggested for keeping the accounts, during the temporary absence of candidates, encourages such absence, then the amount of cash reward paid for keeping the accounts during such absence, be deducted from the reward of Rs.25/- payable in respect of that book, if satisfactorily kept for a whole year. For, this might help to discourage such absence.

4.10 Arrangements for instruction, supervision and guidance :- Availability of a large number of candidates for selection, resulting from selection of villages having a secondary school and the limiting of the number of candidates, that an Agricultural Instructor can take, to 10 or 15, will ensure the recruitment of two or more Agricultural Instructors from each of the selected villages. Consequently if one of the Agricultural Instructors falls sick or goes away on leave, the other should be asked to take his charge, during such period. However, the teacher taking over the charge, should be paid for the extra-work done by him, pro rata, the amount so paid being deducted later from the remuneration payable to

the Agricultural Instructor whose charge he had taken over. Such an arrangement will eliminate the need to maintain reserve staff.

Modifications in Schedules and Instructions

4.11 Ledger :- During the course of our investigation we found that the ledger taxed heavily the time and energy of the candidates trying to write them. Many a student failed to grasp why particular types of entries were to be posted in particular pages of the ledger. Besides even those who posted the ledger correctly, did so, only by following mechanically the instructions and there was little evidence that they had grasped the inter-relationship of the various schedules. Besides, in view of the large number of computational errors committed in the day book, the entries posted in the ledger, even though posted correctly, needed verification and correction, if the original entry in the day book was found to be wrongly computed. Besides a number of posting errors had also been discovered. In addition, it was known that the ledger, not being a book of daily record was not being attended to, ^{partially} daily. There is also the fact that the ledger has been so designed that many of its pages cannot be filled till the field-work is completed e.g. the per hour wage rate to be employed for imputing the value of domestic labour, human and bullock, can be derived

only after the field-work is completed. In view of these and the fact that the ledger could be prepared at the head-office on the basis of the data recorded in the day book, it is proposed to drop the ledger altogether.

However, the ledger contains certain data, recorded directly in it. Thus particulars regarding members of the family, permanent farm servants employed, owned and cultivated holdings, crops raised, inventory of assets and liabilities, inventory of livestock and agricultural implements and machinery and the initial and final stocks of farm produce, used to be recorded only in the ledger. Consequently page Nos. 2, 4, (5, 6, 7, 8, 9),-10, 13, 21,-22,-23, 31 and 32 of the ledger where these particulars are to be recorded may be transferred from the ledger to the day book. Thereafter, the ledger need not be kept.

4.12 Record of daily work :- Record of daily work was being kept in respect of members of the family engaged in cultivation, permanent farm servants and owned plough cattle and agricultural machinery. Such record, was very useful as a check to farm work done by these and noted operationwise in Schedule No. 1 of the day book. However, it did not serve any other useful purpose. In fact, it was not useful even for the purpose of the employment analysis, as the data recorded was not complete. For, the record of daily work had been kept in

neither
respect of, ~~not~~ every member of the family, nor ~~in respect~~
~~of~~ every member of the family engaged in agricul-
ture, nor ~~in respect of~~ every member of the family work-
ing on the family holding, but only in respect of members
of the family working regularly on the family holding.
Similarly, daily record had been kept in respect of only
those permanent farm servants and those owned bullocks,
that were working regularly on the family holding. Yet
this work represented nearly three-fourths of the total
recording work. It is therefore suggested that such
daily record need not be kept, in future. Consequently
^{account kept.} Schedule Nos. 3, 4 and 5 of the day book may be deleted.
While this will considerably relieve the burden of work
of both the candidates and the Agricultural Instructors,
it will also deprive us of a useful ^{check} ~~choice~~ to the hours
of farm work noted operationwise in Schedule No. 1.
Consequently the discontinuation of such daily record
should be followed by a more rigorous inspection of the
day book and by a verification of the data recorded
therein, from time to time, by occasional visits to the
farm or by an occasional interview with the parents of
the candidates.

4.13 Recording of receipts and disposals in kind :-

In the day book, as at present constituted, provision
has been made for recording receipts and disposals in
kind in Schedule Nos. 9 and 10, both. However, receipts

and payments in the nature of wages or baluta ^{are only} to be recorded in Schedule No. 9, all other receipts and disposals in kind being recorded in Schedule No. 10. The candidates, it was found, had failed to take note of this distinction between the two Schedules and had entered in them receipts and payments in kind indiscriminately. The repetition of this error may be avoided if all the receipts are brought together in one schedule and all disposals in another. Consequently, it is suggested that all receipts should be recorded in Schedule No. 9 and all disposals in Schedule No. 10 and that the two schedules should be modified for this purpose. It is further suggested that specific columns should be provided for recording the receipts of various nature in Schedule No. 9 and disposals of various nature in Schedule No. 10.

4.14 Recording of credit transactions :- It has already been seen that there was no provision in ~~our~~^{the} schedules for recording credit transactions. It is, therefore, ^{we} proposed to add a schedule for recording all borrowings and lendings of seed, fodder, etc.

4.15 Fodder account :- ^{altogether,} If ~~the ledger is~~ deleted together, it is necessary to add to the day book a fodder account in which are recorded on the receipt side, production, purchases and other receipts and on the payment side,

sales and other disposals. This should be a monthly record and at the end of every month it should be ascertained that the disposals to-date are less than the receipts to-date. If not, the matter may be investigated and the correct position indicated. This will also reduce considerably the under-reporting of fodder receipts.

4.16 Expenditure on domestic consumption :- In the schedules as at present constituted domestic expenditure is recorded in Schedule No. 15 of the day book. However, in that Schedule while the quantities consumed out of home-grown produce are recorded as and when they are consumed, the quantities purchased and consumed are not^{so} recorded. Instead all purchases of consumption goods are recorded on the day of purchase irrespective of whether the articles purchased were consumed or not. Hence, unless the initial and final stocks of every item of consumption are recorded it becomes difficult ~~tar~~ or even impossible to arrive at even the annual family consumption. Further even if stocks at the beginning and at the end of the year are noted, it is not possible to determine the actual quantities consumed during the different months. Hence, if it is thought desirable to have details of domestic consumption, another schedule may be designed and added to the day book, provision being made in this new Schedule for recording the weekly

consumption of specific items of domestic consumption. If such a schedule is designed and added to the day book, then the existing Schedule No. 15 should be modified so as to provide for recording only the cash purchases of items of domestic consumption as and when they are purchased. If however the recording of consumption data is deemed unnecessary for this project such new Schedule need not be designed for recording consumption data. Besides in that case, even the existing Schedule No. 15 should be dropped.

4.17 Recording of livestock products :- We have already noted that production and disposal of livestock products other than dung, dung cakes, manure and wool are to be noted in Schedule No. 12 of the day book. At that time, we had provided for noting these in the ledger. Since it is proposed to delete the ledger, it is now necessary to record these other items also ⁱⁿ ~~an~~ Schedule No. 12 of the day book. Provision should therefore be made in Schedule No. 12 for recording these items also.

4.18 Modification in instructions :- In the case of the other Schedules following modifications in the instructions are suggested.

Modifications in the instructions

4.19 Record of farm work :- Farm work done by domestic

than the harvest time be recorded in the new Schedule No. 10 provided for that purpose.

4.21 Payments of baluta :- So far details of only the baluta payments made on the threshing floor were to be recorded on Schedule No. 7 of the day book. It is now suggested that all payments made to balutedars irrespective of when they were made should be recorded in Schedule No. 7 of the day book. Consequently baluta payments would not be recorded as other disposals in the new Schedule No. 10.

4.22 Recording of cash transactions :- In future, in Schedule No. 14 of the day book only receipts and payments in connection with farm business, should be recorded. However, a list of the various types of receipts and payments falling in this category should be prepared and furnished to the candidate to guide them, as to the type of receipts and payments falling in this category.

4.23 Cost of the modified project :- As a result of the very limited coverage of data and the modification adopted in the method of payment to the Agricultural Instructors, the cost composition of the modified project is likely to be different from that of the project conducted by the Institute. It is also likely that the cost of the modified project is not comparable either

and hired labour was noted operationwise in Schedules Nos. 1 and 2 respectively. The operations carried out were to be recorded in the chronological order. We, now, further suggest that a separate page should be allotted to each crop so as to facilitate later, the scrutiny as also the consolidation of farm operations, crop-wise. It is also suggested that community work done in the interest of the farm should be recorded as farm work. Similarly, additional instructions necessary to minimise the types of errors indicated in Chapter II and the modifications in definitions suggested in Chapter III should also be incorporated into the instructions.

4.20 Other disposals in kind made at the harvest time:-
Only payments in kind, made at the harvest time were to be recorded on Schedule No. 6 of the day book. However, we found during the course of our investigation that even payments in kind made, not at the harvest time, but, much later, were often recorded in Schedule No. 6. This is perhaps due to the fact that in Schedule No. 6 specific columns had been provided for recording payments in kind such as rent, baluta, wages, etc. while in Schedule Nos. 9 and 10 there was no such provision. It is therefore suggested that a foot-note be added to Schedule No. 6 of the day book, to the effect that disposals in kind such as rent, baluta, etc. if made later

than the harvest time be recorded in the new Schedule No. 10 provided for that purpose.

4.21 Payments of baluta :- So far details of only the baluta payments made on the threshing floor were to be recorded on Schedule No. 7 of the day book. It is now suggested that all payments made to balutedars irrespective of when they were made should be recorded in Schedule No. 7 of the day book. Consequently baluta payments would not be recorded as other disposals in the new Schedule No. 10.

4.22 Recording of cash transactions :- In future, in Schedule No. 14 of the day book only receipts and payments in connection with farm business, should be recorded. However, a list of the various types of receipts and payments falling in this category should be prepared and furnished to the candidate to guide them, as to the type of receipts and payments falling in this category.

4.23 Cost of the modified project :- As a result of the very limited coverage of data and the modification adopted in the method of payment to the Agricultural Instructors, the cost composition of the modified project is likely to be different from that of the project conducted by the Institute. It is also likely that the cost of the modified project is not comparable either

to that of the project conducted by the Institute or to that of the "Farm Management Scheme, Madhya Pradesh". The cost of the modified project is expected to work out at approximately Rs. 140/- per book which, it may be noted, is only slightly less than Rs. 150/- the approximate cost of the original project. The estimated cost of Rs. 140/- per book will consist of Rs. 24/- on account of salary and allowances of the Research Assistant attached to the Scheme, Rs. 44/- on account of salary and allowances of the Field Inspector and the payments to part-time Agricultural Instructors, Rs. 12/- on account of the travelling allowance of the Research Assistant and the Field Inspector, Rs. 5/- on account of printing and stationery, Rs. 25/- on account of tabulation, Rs. 5/- on account of contingencies and Rs. 25/- as reward for keeping the account book satisfactorily. For the purpose of estimating the costs, it has been assumed that a Research Assistant carrying a consolidated salary of Rs. 300/- p.m. and a Field Inspector carrying a consolidated salary of Rs. 250/- p.m. would be appointed for every 150 books of accounts and that the part-time Agricultural Instructors would be paid at the rate of Rs. 2/- per month per book satisfactorily completed. Further, in view of the deletion of the ledger, the cost of printing, stationery and tabulation, have been scaled down. The expenditure on travelling allowance and contingencies have been

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estimated to increase, the former in view of the more frequent visits to the selected villages, by the Research Assistant and the Field Inspector, necessary to exercise effective supervision and control and the latter due to the suggested incentive bonus to part-time Agricultural Instructors.

Table IA - Distribution of farm families, members of farm families and permanent farm servants

(Centre Deulghat)

Size of cultivated holding in acres	Total No. of families	Members of farm families			Number of farm servants	
		Total	Males	Females		Children
- 5	13	75	26	21	28	3
5 - 10	29	189	62	56	71	6
10 - 15	22	153	57	45	51	6
15 - 20	17	97	33	30	34	14
20 - 30	18	129	40	39	50	20
30 - 40	11	91	30	33	28	13
40 - 50	5	56	18	17	21	7
50 -	2	19	6	6	7	4
Total	117	809	272	247	290	73

Table No. IB - Distribution of farm families, members of farm families and permanent farm servants

(Centre Chendiye)

Size of cultivated holding in acres	Total No. of families	Members of farm families			Number of farm servants	
		Total	Males	Females		Children
- 2	13	69	26	17	26	-
2 - 3	27	157	47	50	60	-
3 - 4	19	123	39	38	46	1
4 - 5	9	58	25	16	17	1
5 - 10	30	252	81	80	91	3
10 - 15	2	16	6	5	5	1
15 -	3	35	14	10	11	1
Total	103	710	238	216	256	7

Table No. 4A - Distribution of farm families by the size of their owned and cultivated holdings

(Centre Deulghat)

(No. of ^{Families} persons)

Size of cultivated holding in acres	No. of owned holdings	Size of owned holding in acres								Total No. of families
		-5	5-10	10-15	15-20	20-30	30-40	40-50	50-	
- 5	-	12	1	-	-	-	-	-	-	13
5 - 10	3	4	20	2	-	-	-	-	-	29
10 - 15	2	1	3	15	1	-	-	-	-	22
15 - 20	-	1	3	4	6	3	-	-	-	17
20 - 30	2	1	1	2	2	10	-	-	-	18
30 - 40	-	1	3	-	-	-	5	1	1	11
40 - 50	-	-	2	-	-	2	-	1	-	5
50 -	-	-	-	-	-	1	-	-	1	2
Total	7	20	33	23	9	16	5	2	2	117

Table No. 4B - Distribution of farm families by the size of their owned and cultivated holdings
(Centre Chendiye)

Size of cultivated holding in acres	No. of owned holdings	Size of owned holding in acres							Total No. of families
		-2	2-3	3-4	4-5	5-10	10-15	15-	
- 2	3	8	-	-	1	-	1	-	13
2 - 3	7	12	5	1	-	-	2	-	27
3 - 4	3	12	1	-	1	2	-	-	19
4 - 5	4	2	1	1	-	-	-	1	9
5 - 10	5	7	3	3	1	10	-	1	30
10 - 15	1	-	-	-	-	1	-	-	2
15 -	-	-	-	-	-	2	1	-	3
Total	23	41	10	5	3	15	4	2	103

Table No. 5A - Distribution of cultivated area and its composition

(Centre Deulghat)

(Area in acres)

Size of cultivated holding in acres	No. of families	Cultivated area			Total
		Owned	Leased in for cash rent	Leased in for share rent	
- 5	13	46.4	-	-	46.4
5 - 10	29	180.3	20.8	22.9	224.0
10 - 15	22	226.4	17.0	30.5	273.9
15- 20	17	254.1	30.0	6.5	290.6
20 - 30	18	313.5	5.9	105.6	425.0
30 - 40	11	258.2	69.4	47.4	375.0
40 - 50	5	93.2	34.4	86.2	213.8
50 -	2	142.8	-	48.0	190.8
Total	117	1514.9	177.5	347.1	2039.5

Table No. 5A.1 - Distribution of cultivated area and its composition

(Centre Deulghat)

(Percentage)

Size of cultivated holding in acres	No. of families	Total cultivated area in acres	Cultivated area			Total
			Owned land	Leased in for cash rent	Leased in for share rent	
- 5	13	46.4	100.0	-	-	100.0
5 - 10	29	224.0	80.5	9.3	10.2	100.0
10 - 15	22	273.9	82.7	6.2	11.1	100.0
15 - 20	17	290.6	87.5	10.3	2.2	100.0
20 - 30	18	425.0	73.8	1.4	24.8	100.0
30 - 40	11	375.0	69.0	18.4	12.6	100.0
40 - 50	5	213.8	43.6	16.1	40.3	100.0
50 -	2	190.8	74.8	-	25.2	100.0
Total	117	2039.5	74.3	8.7	17.0	100.0

Table No. 5B - Distribution of cultivated area and its composition.

(Centre Chendiye)

(Area in acres)

Size of cultivated holding in acres	No. of families	Cultivated area					Total
		Owred	Leased in for cash rent (acres)	Leased in for share rent (acres)	Leased in for rent fixed in kind (acres)	Leased in some other terms	
- 2	13	6.3	2.5	4.3	2.4	2.5	18.0
2 - 3	27	24.9	10.1	19.8	8.2	4.3	67.3
3 - 4	19	15.2	7.0	32.3	5.3	5.1	64.9
4 - 5	9	11.9	6.1	11.5	4.4	5.5	39.4
5 - 10	30	87.7	14.6	70.9	12.2	9.9	195.3
10 - 15	2	5.3	-	17.0	-	-	22.3
15 -	3	23.0	5.2	4.7	2.4	17.2	52.5
Total	103	174.3	45.5	160.5	34.9	44.5	459.7

Table No. 5B.1 - Distribution of cultivated area and its composition

(Centre Chendiye)

(Percentage)

Size of cultivated holding in acres	No. of families	Total cultivated area in acres	Cultivated area					Total
			Owned	Leased in for cash rent	Leased in for share rent	Leased in for rent fixed in kind	Leased in on some other terms	
- 2	13	18.0	35.0	13.9	23.9	13.3	13.9	100.0
2- 3	27	67.3	37.0	15.0	29.4	12.2	6.4	100.0
3- 4	19	64.9	23.4	10.8	49.8	8.2	7.8	100.0
4- 5	9	39.4	30.2	15.5	29.2	11.2	13.9	100.0
5-10	30	195.3	44.9	7.5	36.3	6.2	5.1	100.0
10-15	2	22.3	23.8	-	76.2	-	-	100.0
15-	3	52.5	43.8	9.9	8.9	4.6	32.8	100.0
Total	103	459.7	37.9	9.9	34.9	7.6	9.7	100.0

Table No. 7B - Area under different crops

(Centre Chendiye)

(Area in acres)

Size of cultivated holding	No. of families	Paddy	Sugar-cane	Coco-nut	Pulses	Vegetables	Others	Total
- 2	13	14.77	0.25	2.79	0.25	0.04	†	18.10
2 - 3	27	49.20	1.05	10.04	2.03	0.43	-	62.75
3 - 4	19	53.06	1.07	5.04	0.40	-	1.10	60.67
4 - 5	9	31.01	0.75	3.71	0.80	0.50	-	36.77
5 - 10	30	145.79	2.41	17.78	2.19	1.63	0.60	170.40
10 - 15	2	11.62	0.25	0.80	0.50	0.10	-	13.27
15 -	3	38.73	0.20	1.39	-	-	-	40.32
Total	103	344.18	5.98	41.55	6.17	2.70	1.70	402.28

Table No. 7B.1 - Area under different crops

(Centre Chendiye)

(Percentage)

Size of cultivated holding in acres	No. of families	Gross cropped area in acres	Paddy	Sugar-cane	Coco-nut	Pulses	Vegetables	Others	Total
- 2	13	18.10	81.6	1.4	15.4	1.4	0.2	-	100.0
2 - 3	27	62.75	78.4	1.7	16.0	3.2	0.7	-	100.0
3 - 4	19	60.67	87.4	1.8	8.3	0.7	-	1.8	100.0
4 - 5	9	36.77	84.3	2.0	10.1	2.2	1.4	-	100.0
5 - 10	30	170.40	85.6	1.4	10.4	1.3	1.0	0.3	100.0
10 - 15	2	13.27	87.6	1.9	6.0	3.8	0.7	-	100.0
15 -	3	40.32	96.1	0.5	3.4	-	-	-	100.0
Total	103	402.28	85.6	1.5	10.3	1.5	0.7	0.4	100.0

Table No. 12A - No. of families owning ploughs, harrows and carts

(Centre Deulghat)

(No. of families)

Size of cultivated holding in acres	Total No. of families	Number of families owning ploughs and harrows				Number of families owning carts				Total No. of carts
		Owning ploughs only	Owning harrows only	Owning both	Owning neither	No. of carts owned				
						0	1	2	3	
- 5	13	1	7	-	5	11	1	-	1	4
5 - 10	29	3	13	1	12	15	14	-	-	14
10 - 15	22	4	11	2	5	12	10	-	-	10
15 - 20	17	4	6	1	6	5	12	-	-	12
20 - 30	18	5	2	8	3	4	14	-	-	14
30 - 40	11	3	4	3	1	-	11	-	-	11
40 - 50	5	1	1	3	-	-	4	-	1	7
50 -	2	-	-	2	-	-	1	-	1	4
Total	117	21	44	20	32	47	67	-	3	76

**Table No. 12B - No. of families owning ploughs and carts
(Centre Chendiye) (No. of families)**

Size of cultivated holding in acres	No. of families	No. of families owning	
		Ploughs	Cart
- 2	13	12	-
2 - 3	27	27	-
3 - 4	19	18	2
4 - 5	9	9	-
5 -10	30	29	2
10 -15	2	2	-
15 -	3	3	-
Total	103	100	4

Table No. 13A - Indebtedness of farm families

(Centre Deulghat)

Size of cultivated holding in acres	No. of families	No. of indebted families	Total value of debt in Rs.	Indebtedness in Rupees	
				Per family	Per indebted family
- 5	13	11	3069	236.1	279.0
5 - 10	29	14	5406	186.4	386.1
10 - 15	22	11	4635	210.7	421.4
15 - 20	17	15	4244	249.6	282.9
20 - 30	18	11	7096	394.2	645.1
30 - 40	11	10	3865	351.4	386.5
40 - 50	5	2	670	134.0	335.0
50 -	2	2	362	181.0	181.0
Total	117	76	29347	250.8	386.1

Table No. 13B - Indebtedness of farm families

(Centre Chendiya)

Size of cultivated holding in acres	No. of families	No. of indebted families	Total value of debt in Rupees	Indebtedness in Rupees	
				Per family	Per indebted family
- 2	13	11	8400	646.2	763.6
2 - 3	27	21	6952	257.5	331.0
3 - 4	19	14	6010	316.3	429.3
4 - 5	9	6	1780	197.8	296.7
5 - 10	30	22	11454	381.8	520.6
10 - 15	2	2	1031	515.5	515.5
15 -	3	2	6090	2030.0	3045.0
Total	103	78	41717	405.0	534.8

Table No. 14A - Distribution of the total income of the farm families and its composition

(Centre Deulghat)

(Income in Rs.)

Size of cultivated holding in acres	No. of families	Income from farm	Income from dairy products	Wages earned		Other agricultural incomes	Non-agricultural income	Total income
				By Human labour	By Bullock labour			
- 5	13	4021	245	1388	40	-	-	5694
5 - 10	29	17335	1556	1724	87	359	-	21061
10 - 15	22	18285	1521	1062	174	274	-	21316
15 - 20	17	20380	2172	158	146	-	-	22856
20 - 30	18	23494	1889	318	36	47	-	25784
30 - 40	11	18869	452	47	-	-	-	19368
40 - 50	5	12440	2011	59	-	-	-	14510
50 -	2	5884	262	-	-	-	-	6146
Total	117	120708	10108	4756	483	680	-	136735

Table No. 14A.1 - Distribution of the total income of farm families and its composition

(Centre Deulghat)

(Percentages)

Size of cultivated holding in acres	No. of families	Total income in Rs.	Income from farm	Income from dairy products	Wages earned		Other agricultural income	Non-agricultural income	Total income
					By human labour	By Bullock labour			
- 5	13	5694	70.6	4.3	24.4	0.7	-	-	100.0
5 - 10	29	21061	82.3	7.4	8.2	0.4	1.7	-	100.0
10 - 15	22	21316	85.8	7.1	5.0	0.8	1.3	-	100.0
15 - 20	17	22856	89.2	9.5	0.7	0.6	-	-	100.0
20 - 30	18	25784	91.1	7.3	1.2	0.1	0.2	-	100.0
30 - 40	11	19368	97.4	2.3	0.2	-	-	-	100.0
40 - 50	5	14510	85.7	13.9	0.4	-	-	-	100.0
50 -	2	6146	95.7	4.3	-	-	-	-	100.0
Total	117	136735	88.3	7.4	3.5	0.3	0.5	-	100.0

Ann. 14B - Distribution of the total income of the farm families and its composition

(Centre Chendiye)

(Income in Rupees)

Size of cultivated holding in acres	No. of families	Income from farm	Income from dairy products	Wages earned		Other agricultural income	Non-agricultural income	Total income
				By human labour	By bullock labour			
- 2	13	3687	260	868	48	751	2665	8279
2 - 3	27	12608	1298	2343	50	1243	1176	18718
3 - 4	19	9156	707	1845	326	675	938	13647
4 - 5	9	6855	516	1142	-	206	223	8942
5 - 10	30	25851	887	2055	318	704	3064	32879
10 - 15	2	1528	-	-	-	94	260	1882
15 -	3	3197	242	-	-	494	350	4283
Total	103	62882	3910	8253	742	4167	8676	88630

Table No. 14B.1 - Distribution of the total income of the farm families and its composition
(Centre Chendiye) (Percentages)

Size of cultivated holding in acres	No. of families	Total income Rs.	Income from farm	Income from dairy products	Wages earned		Other agricultural income	Non-agricultural income	Total income
					By human labour	By bullock labour			
- 2	13	8279	44.5	3.1	10.5	0.6	9.1	32.2	100.0
2 - 3	27	18718	67.4	6.9	12.5	0.3	6.6	6.3	100.0
3 - 4	19	13647	67.1	5.2	13.5	2.4	4.9	6.9	100.0
4 - 5	9	8942	76.6	5.8	12.8	-	2.3	2.5	100.0
5 - 10	30	32879	78.6	2.7	6.3	1.0	2.1	9.3	100.0
10 - 15	2	1882	81.2	-	-	-	5.0	13.8	100.0
15 -	3	4283	74.6	5.7	-	-	11.5	8.2	100.0
Total	103	88630	71.0	4.4	9.3	0.8	4.7	9.8	100.0

Table No. 16B - Human and bullock hours of farm work per acre and their value.

(Centre Chendiye)

Size of cultivated holding in acres	No. of families	Gross cropped area in acres	No. of labour hours per acre				Cost of labour per acre in Rs.			
			Hired		Domestic		Hired*	Domestic		Total labour cost per acre
			Human	Bull-ock	Human	Bull-ock		Human	Bullock	
- 2	13	18.1	33.6	33	76.3	17.5	43.3	51.1	58.0	152.4
2 - 3	27	62.7	25.8	2.5	75.6	14.9	33.2	50.7	49.3	133.2
3 - 4	19	60.7	20.1	0.8	75.5	19.7	23.7	50.6	65.1	139.4
4 - 5	9	36.8	14.0	1.1	79.1	17.8	15.8	53.0	59.1	127.9
5 - 10	30	170.4	13.7	1.4	72.9	17.5	18.9	48.8	58.0	125.7
10 - 15	2	13.3	13.0	-	104.9	28.7	15.7	70.3	95.1	181.1
15 -	3	40.3	11.3	-	36.7	14.5	11.7	24.6	47.9	84.2
Total	103	402.3	17.2	2.3	71.9	17.6	21.8	48.2	58.0	128.0

* Figures of payments made to human and bullock labour are not available seperately.

Table 17A - Income from and expenditure on plough cattle.

(Centre Deulihat)

(Rupees)

Size of cultivated holding in acres	No. of families	No. of plough cattle	Receipts from			Expenditure on			Total
			Dung, dungcakes and manure	Carting and other wage work	Total	Feed and fodder	Attendance	Other items	
- 5	13	9	101	40	141	650	377	-	1027
5 - 10	29	48	514	87	601	2003	1871	-	3874
10 - 15	22	49	506	62	568	1571	1872	2	3445
15 - 20	17	54	525	146	671	1964	1240	2	3206
20 - 30	18	66	730	10	740	2659	2012	-	4671
30 - 40	11	44	514	-	514	2678	1100	-	3778
40 - 50	5	28	292	-	292	857	660	-	1517
50 -	2	13	152	-	152	692	179	-	871
Total	117	311	3334	345	3679	13074	9311	4	22389

from

Table No. 17B - Details of income and expenditure on plough cattle

(Centre Chendiye)

(Rupees)

Size of cultivated holding in acres	No. of families	No. of plough cattle	Receipts from			Expenditure on			Total
			Dung dungcake and manure	Carting and other wage work	Total	Feed and fodder	Attendance	Other items	
- 2	13	17	453	58	511	1222	571	-	1793
2 - 3	27	53	1612	10	1622	3752	2132	-	5884
3 - 4	19	43	1662	418	2080	4849	1928	12	6789
4 - 5	9	22	890	-	890	2048	780	-	2828
5 - 10	30	103	3524	593	4117	9144	4167	23	13334
10 - 15	2	12	429	-	429	512	307	-	819
15 -	3	12	316	-	316	1450	411	-	1861
Total	103	263	8886	1079	9965	22977	10296	35	33308

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Table No. 18A - Changes in the assets position of the farm families during 1955-56

(Centre Deulghat)

(Rupees)

Assets	Value of assets					Final Value
	Initial value	Purchase	Other increase	Sales	Other decrease	
Land	1,45,675	63	-	-	-	1,45,738
Building	1,49,050	-	-	-	-	1,49,050
Plough cattle	32,965	3,292	-	3,107	360	32,790
Milch Cattle	14,195	392	69	130	259	14,269
Other livestock	706	-	10	115	-	601
Agricultural implements	21,469	62	-	2	67	21,462
Other assets	9,099	116	-	-	-	9,215
Total	3,73,159	3,925	79	3,354	686	3,73,123

Table No. 18B - Changes in the assets position of farm families during 1955-56

(Centre Chendiye)

(Rupees)

Assets	Value in Rupees					
	Initial value	Purchases	Other increase	Sales	Other decrease	Final value
Land	184748.8	-	-	-	-	184748
Building	105991	-	-	-	-	105991
Plough cattle	14310	1092	-	50	455	14897
Milch Cattle	8824	476	-	-	120	9180
Other livestock	432	3	-	5	9	421
Agricultural implements	9380	728	-	3	70	10035
Other Assets	6872	2	-	-	25	6849
Total	330557	2301	58	58 679	679	332121

Table No. 19A - Domestic and hired labour employed to bring about permanent improvement of land
(Centre Deulghat) (Percentages)

Size of cultivated holding in acres	No. of families	Cultivated area in acres	Value of improvement brought about (Rs.)		Percentage of the value of improvement brought about				Total
			Total	Per acre	Human labour	Bullock labour	Material used		
					1	2	1	2	
- 5	13	46.4	28.0	0.60	100.0	-	-	-	100.0
5 - 10	29	224.0	25.7	0.11	100.0	-	+	-	100.0
10 - 15	22	273.9	20.0	0.07	76.5	-	23.5	-	100.0
15 - 20	17	290.6	168.8	0.58	30.1	69.9	-	-	100.0
20 - 30	18	425.0	-	-	-	-	-	-	-
30 - 40	11	375.0	117.3	0.31	56.0	-	44.0	-	100.0
40 - 50	5	213.8	42.1	0.20	76.2	23.8	-	-	100.0
50 -	2	190.8	-	-	-	-	-	-	-
Total	117	2039.5	401.9	0.20	54.1	31.9	14.0	-	100.0

1 - Domestic

2 - Hired

Table No. 19B - Domestic and hired labour employed to bring about permanent improvement of land
(Centre Chendiye) (Percentages)

Size of cultivated holding in acres	No. of families	Cultivated area in acres	Value of improvement brought about (Rs.)		Percentage of the value of improvement brought about					
			Total	Per acre	Human labour		Bullock labour		Material used	Total
					1	2	1	2		
- 2	13	18.0	0.5	0.03	100.0	-	-	-	-	100.0
2 - 3	27	67.3	37.6	0.56	29.0	-	-	-	71.0	100.0
3 - 4	19	64.9	400.9 118.9	1.83	7.5	11.8	-	-	80.7	100.0
4 - 5	9	39.4	0.9	0.02	100.0	-	-	-	-	100.0
5 - 10	30	195.3	147.3	0.75	26.9	51.7	-	-	21.4	100.0
10 - 15	2	22.3	174.9	7.84	4.5	-	-	-	95.5	100.0
15 -	3	52.5	141.4	2.69	100.0	-	-	-	-	100.0
Total	103	459.7	621.5	1.35	33.8	14.5	-	-	51.7	100.0

1 - Domestic
2 - Hired.

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