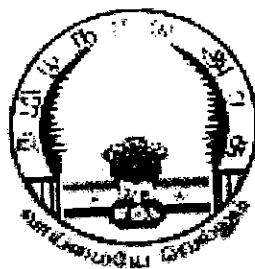


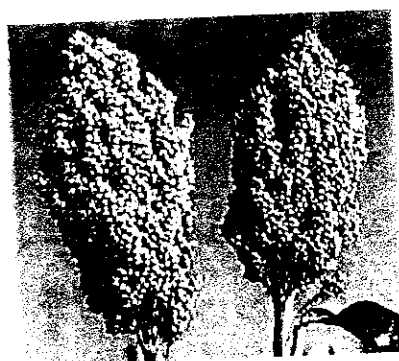
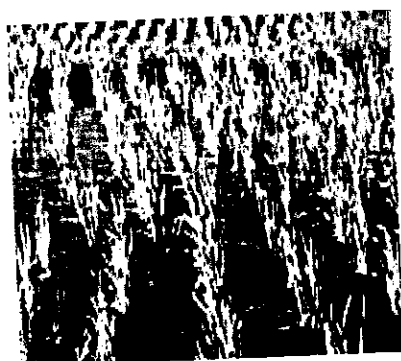
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IMPROVEMENT OF CROP STATISTICS 2014-15

TAMIL NADU



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PREFACE

The Scheme for "Improvement of Crop Statistics" was launched in 1973 -74 as a joint effort of the NSSO, Government of India and Department of Economics and Statistics of the State Government. Improvement of Crop Statistics is one of the components of "Improvement of Agricultural Statistics ". It is implemented in Tamil Nadu as a centrally sponsored scheme. The objective of the scheme is to locate the deficiencies in the system of Crop area and yield statistics by exercising technical supervision over the primary field work. It is for suggesting remedial measures to improve the system towards achieving overall improvement of agricultural statistics.

The objectives, design, plan of work, estimation procedure etc are presented in this report together with analytical study of the results obtained as a result of the execution of the scheme during 2014-15.

The efforts put forth by the field officials of the National Sample Survey Organization and the Department of Economics and Statistics in data collection, tabulation, analysis and preparation of the report deserve appreciation.

Suggestions for further improvement of this report are welcome.

Place :Chennai-6

Sd/-V. IRAI ANBU

Date : 04.05.2016

Principal Secretary/Commissioner.

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1.INTRODUCTION

1.1 GENESIS OF THE SURVEY

The official statistics on area under various crops are recorded at village level in Tamil Nadu by the Village Administrative Officers (V.A.O). But quite often the area statistics thus compiled are either found to be incomplete or inaccurate, the reason attributed thereto being, that the Village Administrative Officers are engaged in the preparation of village accounts mainly for the purpose of the collection of land revenue and other taxes at the village level. The need was, therefore, felt for an element of supervision that could be undertaken on a scientific basis over the primary work of area enumeration done by the Village Administrative Officers. However, as the supervision of the collection of accurate area statistics over a vast area is a voluminous work requiring a net work of personnel, other ways were to be attempted to correct the deficiency. With this objective, a working group on agricultural statistics, set up by the Governing Council of National Sample Survey Organization, made certain recommendations in March 1973 about the need for strengthening the supervision of field work relating to both crop-area and yield statistics. Based on those recommendations, a scheme known as 'Improvement of Crop Statistics' was first implemented in Tamil Nadu, as per G.O.Ms.No.310 (Statistics) Forests & Fisheries Department, dated: 21st March 1975 and continued thereafter. At present, the Department of Economics and Statistics is implementing this scheme in Tamil Nadu, in collaboration with the National Sample Survey Organization, Government of India.

1.2 FINANCIAL ASSISTANCE AND IMPLEMENTATION

The scheme was initially implemented as a centrally sponsored scheme fully funded by the Ministry of Agriculture and Irrigation, Government of India. From the year 1975-76, the expenditure was equally shared by the central and state governments on a 50:50 basis. Again from the year 2007-08, Government of India has fully funded ~~for~~ this scheme. From the year 2003-04, centrally sponsored schemes, such as; i) TRS, ii) ICS, iii) CES on F&V have been merged and brought under one umbrella namely "Improvement of Agricultural Statistics" as its components. Implementation and monitoring of the scheme are the same. The technical guidance both for organizing the sample check on area enumeration and supervision of crop cutting experiments is provided by the National Sample Survey ^{Office} ~~Organization~~ (FOD), Government of India, Faridabad. At state level, the execution and administration of the scheme are under the control of Principal Secretary / Commissioner, Department of Economics and Statistics, Tamil Nadu.

1.3 OBJECTIVE

The main objective of the scheme is to attempt jointly by the National Sample Survey ^{Office} Organization (NSSO) and the State Agricultural Statistics Authority (SASA) to undertake about sample checks over the primary field work done by VAO's and to effect improvements in the quality of primary data in respect of both crop-area and yield estimation surveys in the State. The scheme is further expected to provide the basis for determining the precise lines on which the improvement in the crop estimation system would require to be effected.

1.4 COVERAGE

Every year, 520 villages from Timely Reporting Scheme (TRS) villages for sample check on area enumeration and 1560 experiments from General Crop Estimation Survey (GCES) for supervision of crop cutting experiments are selected for this scheme. From that, 50 percent of villages and experiments are being allotted for National Sample Survey ^{Office} Organization and the remaining 50 percent for State Agricultural Statistics Authority (SASA) for supervising area enumeration and yield estimation.

1.5 SURVEY DESIGN

A) SAMPLE CHECK ON AREA ENUMERATION (A.S -1.0)

The design adopted is multi-stage random sampling method without replacement by which two sets of non-overlapping sample villages are selected on a matching basis (i.e.) 260 villages for the National Sample Survey Organization (FOD) staff and 260 villages for the state statistical staff in all the districts of Tamil Nadu.

Under each one of the sample villages which are selected for Improvement of Crop Statistics, four clusters each consisting of five survey / sub-division numbers are selected on random basis for area supervision by applying circular systematic sampling method. A taluk or a group of contiguous taluks in each district constitute a stratum during each fasli year.

B) SUPERVISION OF CROP CUTTING EXPERIMENTS (A.S - 2.0)

It is mainly intended to check the quality of crop cutting experiments both at harvest and post-harvest stages. A matching sample of 780 experiments have been selected for supervision each by the state staff and the National Sample Survey ^{Office} Organization staff by simple random sampling technique without replacement from the list of General Crop Estimation Survey villages.

C) PAGE TOTALING OF KHASRA REGISTER (A.S -1.1)

The details of land use as per aggregation done and reported by the Village Administrative Officer to the higher authorities and as checked from adangal for the village as a whole by the supervisor will be recorded in A.S-1.1 schedule by the supervisor concerned.

1.6 TRAINING

At the commencement of each fasli year, all the field functionaries engaged under the scheme are being imparted training for two days at the district level, first day earmarked for theoretical aspects and the next day for field training.

2. PLAN OF WORK DURING 2014-15

2.1 COVERAGE

The plan of work are as follows:

- (i) Carrying out sample checks on enumeration of area done by the Village Administrative Officers in the selected villages during each season.
- (ii) Exercising supervision of crop cutting experiments in a sub-sample of villages selected from the General Crop Estimation Survey villages.
- (iii) Checking the page totals of adangal (done by the Village Administrative Officers) in the sample villages at the end of each agricultural year.

2.2 PHASES

With regard to the sample check on area enumeration, four clusters at five survey / sub-division numbers per cluster were selected in each of the sample villages and the particulars of land utilisations in respect of those clusters were physically verified by the supervisors during each of the following phases every year.

Phase -I ----- July – October.

Phase -II ----- November – January.

Phase -III ----- February & March.

Under this scheme, the supervisory officers were required to verify the entries made in the adangals by the village administrative officers and report them in schedule A.S-1.0 along with their findings. This process is continued for all the three phases every year.

2.3 SUPERVISION

The supervision of crop cutting experiments on the principal food and non-food crops viz., Paddy – kar / kuruvai / sornavari, samba / thaladi / pishanam, navarai / kodai and Kharif as well as Rabi crops of Jowar, Bajra, Ragi, Groundnut, Cotton, Sugarcane, Gingelly, Maize, Blackgram and Greengram were undertaken in the villages selected to carry out inspection at harvest / post harvest stages. Particulars relating to yield data and other ancillary items such as variety of seeds, (High yielding variety or otherwise) sources of irrigation, application of manure, fertilizers and pesticides, etc. were gathered and furnished in Schedule A.S-2.0.

2.4 AREA CHECKING

Schedule A.S-1.1 is designed to study the discrepancies between the figures

- (i) as aggregated by the patwari
- (ii) as reported by patwari to higher authorities, and
- (iii) as checked by the supervisors in respect of the area under the crops / crop mixtures / non-crop utilisations.

The assistant superintendent / state supervisor is to sum the area figures separately for each season for the crop / crop mixtures / non-crop uses page by page and attach them to the schedule. Working sheet has been provided to facilitate the page totaling of area figures.

3. ESTIMATION PROCEDURE

3.1 PREPARATION OF QUICK ESTIMATES OF "AVERAGE YIELD RATE" - PROCEDURE, TIME SCHEDULE, UTILITY ETC.

The primary responsibility for the collection of area and production of crops vests with the state government. The yield rates of principal crops are estimated under General Crop Estimation Surveys (GCES) through crop cutting experiments conducted by the state agencies. The crop cutting experiments consists of (i) location and marking of an experimental plot of specified size in a field selected on the basis of random sampling, (ii) harvesting and threshing of its produce, and (iii) recording the weight of the clean and dry or wet produce. The design adopted for the survey is multi-stage random sampling, community development blocks as strata, villages within a stratum as first stage units of sampling, fields within each selected village as second stage sampling units and experimental plot of a specified shape and size as the ultimate unit of sampling.

The National Sample Survey ^{Office} Organization (NSSO) has the overall responsibility of assisting the states in developing suitable survey techniques for obtaining reliable and timely estimates. Under the Improvement of Crop Statistics scheme, the Central i.e., NSSO staff and the SASA staff supervise the crop cutting experiments, conducted by state primary workers, in a sub-sample of GCES experiments. The schedule A.S-2.0 is used for recording the observations of the supervisory staff on crop cutting experiments. The entire filled-in central and state A.S-2.0 schedules are sent to NSSO (FOD), Faridabad and to Department of Economics and Statistics from the field functionaries for the analysis and estimation of yield rates.

Cut-off dates are fixed for the receipt of schedules (both area enumeration and supervision of crop cutting experiments) in respect of central as well as state samples separately. Similarly, due dates are also fixed to send the final tables to NSSO (FOD), Faridabad.

SAMPLE CHECK ON AREA ENUMERATION

The estimates of area will be worked out for each category of crop (i) high yielding – irrigated, (ii) high yielding – un-irrigated, (iii) local-irrigated, (iv) local - un-irrigated. The estimates of % standard error (SE) will be worked out and given for the total estimated area under the crop for the state as a whole. Stratum-wise estimates of area under each category will be obtained as under:

$$\hat{Y}_i = \frac{N_i}{n_i} \sum_{j=1}^{n_i} \left[\frac{H_{ij} \times a_{ij}}{S_{ij}} \right]$$

Where,

- \hat{Y}_i = Estimated Area under a crop in the i^{th} Stratum,
- a_{ij} = Total area under a crop in the selected clusters of survey numbers in j^{th} village of i^{th} stratum,
- S_{ij} = Number of selected survey/serial numbers in the j^{th} sample in the i^{th} stratum,
- H_{ij} = Highest serial number in j^{th} sample village in the i^{th} stratum,
- n_i = Number of sample villages analysed in the i^{th} stratum and
- N_i = Total number of revenue villages in the i^{th} stratum.

The estimates of area thus obtained for each stratum in a district is added to get the estimate of area at district level (Y_d) and the total of district level estimate gives the state level estimate of area (\hat{Y}).

The % standard error of the estimate of area at state level is obtained as follows:

$$\% \text{ SE} = \frac{\text{S.E. of the estimate}}{\text{estimate}} \times 100$$

Where standard error is the square root of the state level variance, which is the sum of variance of the district level estimates.

SUPERVISION OF CROP CUTTING EXPERIMENTS

On the basis of the data collected through schedule A.S-2.0, estimates of yield rates of the principal crops along with its % standard error are prepared and sent to NSSO. The procedure followed to obtain such estimate at state level is as follows:

(i) Calculate the yield rate for the crop at district level in terms of green weight in grams/plot (\bar{Y}_{ig}) which is a simple average of sample plot yield and is given by,

$$\bar{Y}_{ig} = \frac{\sum_{j=1}^{m_i} \sum_{k=1}^{n_{ij}} Y_{ijk}}{n_i}$$

Where,

\bar{Y}_{ig} = average yield rate for the crop at district level in terms of green weight in grams per plot.

Y_{ijk} = plot yield in gms. in the k^{th} experimental plot of j^{th} sample village in the i^{th} district.

n_{ij} = number of experiments analysed in the j^{th} sample village of the i^{th} district.

n_i = number of experiments analysed in the i^{th} district, given by: -

$$\sum_{j=1}^{m_i} n_{ij}$$

m_i = number of sample villages in which experiments are analysed in the i^{th} district

(ii) Calculate the conversion factor to convert the yield rate of green weight in grams/plot to yield rate in kg/hect. Conversion Factor (CF) is to be worked out by making use of the drage ratio at state level for the previous year and the plot size. For crop paddy also use the recovery ratio of rice from paddy.

(iii) The estimate of yield rate in kg/hect at district level

$$(\bar{Y}_i) \text{ is given by, } \bar{Y}_i = Y_{ig} \times CF$$

The average yield rate in kg/hect at state level (\bar{Y}), which is given by

$$\bar{Y} = \frac{\sum_{i=1}^d a_i \times \bar{Y}_i}{\sum_{i=1}^d a_i}$$

Where,

a_i = area under the crop in the i^{th} district during the previous year.

d = no. of districts in the state.

The percentage standard error of the yield rate is given by

$$\frac{(\text{Standard error of the estimate})}{\text{estimate}} \times 100$$

The variance of the estimated yield rate is given by

$$V(\bar{Y}) = \frac{\left\{ F \sum_{i=1}^d \frac{a_i^2}{n_i} + (E - F) \sum_{i=1}^d \frac{a_i^2 \sum_{j=1}^{m_i} n_{ij}^2}{\lambda_i n_i^2} \right\}}{\left\{ \sum_{i=1}^d a_i \right\}^2}$$

Where $V(\bar{Y})$ = Estimated variance of the estimate of average yield at state level

$$\lambda_i = \frac{n_i^2 - \sum_{j=1}^{m_i} n_{ij}^2}{n_i(m_i - 1)}$$

E = mean square between villages for the state

$$E = \frac{\sum_{i=1}^d \left[\sum_{j=1}^{m_i} \frac{\left(\sum_{k=1}^{n_{ij}} y_{ijk} \right)^2}{n_{ij}} - \frac{\left(\sum_{j=1}^{m_i} \sum_{k=1}^{n_{ij}} y_{ijk} \right)^2}{n_i} \right]}{\sum_{i=1}^d (m_i - 1)}$$

F = mean square of yield within villages, which is given by

$$F = \frac{\sum_{i=1}^d \left[\sum_{j=1}^{m_i} \sum_{k=1}^{n_{ij}} Y_{ijk}^2 - \sum_{j=1}^{m_i} \frac{\left(\sum_{k=1}^{n_{ij}} Y_{ijk} \right)^2}{n_{ij}} \right]}{\sum_{i=1}^d (n_i - m_i)}$$

This variance is multiplied by CF^2 to obtain the variance of the estimates in terms of kg/hect.

$$\sqrt{V(\bar{Y})}$$

The standard Error (SE) is given by, SE = $\sqrt{V(\bar{Y})}$ and the percentage standard error of the yield rate is given by $\% SE (\bar{Y}) = \frac{\sqrt{V(\bar{Y})}}{\bar{y}} \times 100$

Crops for which pre-stratification in planning of experiments under ICS has been adopted according to the corresponding pre-stratification under CES in the state, the estimates of yield rate and its percentage standard error is prepared separately for each category of a crop. The estimates for different categories at state level is then combined as under:

Let \bar{Y}_1 be estimated average yield rate for 1st category.

\bar{Y}_2 be estimated average yield rate for 2nd category.

A_1 to the area under the crop in the state for 1st category.

A_2 to the area under the crop in the state for 2nd category.

Then the combined estimate of yield rate is given by

$$\bar{Y}_{(1+2)} = \frac{\bar{Y}_1 A_1 + \bar{Y}_2 A_2}{A_1 + A_2}$$

And the estimate of its variance is given by

$$V \left[(\bar{Y})_{1+2} \right] = P_1^2 Var (\bar{Y}_1) + P_2^2 Var (\bar{Y}_2)$$

Where $P_1 = \frac{A_1}{A_1 + A_2}$ & $P_2 = \frac{A_2}{A_1 + A_2}$

$V (\bar{Y}_1)$ = the estimate of variance of Ist category.

$V (\bar{Y}_2)$ = the estimate of variance of IInd category.

The estimate of yield rate and its percentage standard error is prepared separately for central and state samples and these estimates are then pooled together as:

Let \bar{Y}_c & \bar{Y}_s be the estimated average yield rate for central and state sample respectively.

And V_c & V_s be the estimate of variance for central and state sample respectively.

Calculate

$$e_c = \frac{1}{V_c} \quad \text{and} \quad e_s = \frac{1}{V_s}$$

The pooled estimate of yield rate is given by

$$\bar{Y}_p = \frac{e_c \bar{Y}_c + e_s \bar{Y}_s}{e_c + e_s}$$

And an estimate of its variance is given by

$$V (\bar{Y}_p) = \frac{1}{e_c + e_s}$$

4. RESULTS OF THE SURVEY

A. AREA STATISTICS

4.1 Table - 1 shows the details of receipt of schedules as A.S.1.0, 1.1 and 2.0 during the years 2013-14 and 2014-15 and their response in respect of the receipt of schedules were 100 % during the year 2014-15. It is observed that overall 95.5% of A.S.1.0 schedules were received within the cut off date during this year. With regard to schedule A.S.1.1, 93% of schedules for state sample were received within cut off date. As far as A.S-2.0 concerned 90% of schedules were received within the cut off date.

4.2 The phase-wise total no. of schedules received with 'A' entries (entries made by the supervisor) and 'B' entries (entries made by the primary worker i.e., VAO in the village records) during the year 2013-14 and 2014-15 were analyzed in Table – 2 and found that all the schedules were received with both the entries.

4.3 Table - 3 provides the detail regarding the up-dation of village maps, their availability and usability. It may be seen that maps are usable and more than 20 years old in all the 520 villages planned for pooled sample.

4.4 The villages selected for the sample check on area enumeration during the year 2014-15 has been classified according to geographical area and shown in Table – 4. It is observed from the table of pooled samples that out of 520 villages analysed, only 19 villages (3.65 %) possessed the lowest geographical area of up to 50 hectares, while 17 villages (3.27%) had the highest geographical area extending more than 3000 hectares each. It may be seen from the table that a maximum number of 124 villages (23.85%) fell within a group of which the geographical area ranged between 1001 and 3000 hectares.

4.5 Details of the work load of the V.A.O's were measured in terms of villages in their respective jurisdiction. Average workload of VAO's in terms of survey / sub-survey numbers and geographical area for the years 2014-15 and 2013-14 are shown in Table - 5. It is evident that the average workload of the Village Administrative Officers in terms of villages as well as survey numbers / geographical area are reasonable.

4.6 The particulars of completion of girdawari by Village Administrative Officers for the years 2014-15 and 2013-14 are furnished in Table - 6. On comparison of the position of timely completion of area enumeration work during 2014-15 with that of previous year, it is observed that the timely completion of area enumeration work was found to be of the order of 100% for Phase-I, Phase-II and Phase-III.

4.7 Information on the workload of Village Administrative Officers were measured in terms of number of villages allotted per V.A.O is given in Table - 7. It is observed that 97.8% of the V.A.O's had 1-5 villages in their jurisdiction. But only 2.1 % of Village Administrative Officers covering 6-10 villages range.

4.8 SUBMISSION OF TRS STATEMENTS

The details of submission of TRS statements during 2014-15 and 2013-14 are presented in Table - 8. It reveals that TRS statements were submitted in time which accounts for 100% of villages in Phase-I, II and III respectively during the year 2014-15. The corresponding figures of submission of TRS statements in time for 2013-14 were 100%, for Phase-I, Phase-II and Phase-III respectively.

4.9 RECORDING OF AREA UNDER DIFFERENT CROPS IN ADANGAL

During the course of sample check on area enumeration under various crops carried out in the selected survey / sub-division numbers in the sample villages and the corresponding entries made in the adangal maintained by the village administrative officers, several errors have been noticed. The number of serial / survey numbers under different type of errors for the years 2014-15 and 2013-14 are furnished in Table - 9. The sample checks reveal that only ³⁰79%, ⁸⁹75% and ⁷⁸79% of survey numbers of crop area reported by supervisor and Patwari tallied in Phase-I, Phase-II and Phase-III respectively for the year 2014-15 as against ⁸⁵89%, ⁸⁵89% and 75% in the corresponding phases of the previous year.

4.10 Table 10 and 11 deals with crop wise comparison of entries made by Supervisor and patwari of crop areas as per irrigation and seed variety in Phase-I, Phase-II and Phase-III for the year 2014-15.

4.11 ESTIMATION OF AREA

The area reported by primary worker in the adangal form is the basis for TRS as well as final estimates of crop areas. The Improvement of Crop Statistics analysis enables to judge the deviation in estimates of area under different crops based on area reported by supervisor and the primary workers. The crop wise estimates of area under 8 principal crops are furnished in Table - 12.

4.12 PAGE TOTALING OF KHASRA REGISTER (A.S-1.1)

The estimated area based on the village papers as checked by the supervisors and as recorded by the Village Administrative Officers in adangal for various crops for the year as a whole are furnished in Table - 13. It may be seen that there is only minor difference between the estimated area of different crops.

4.13 YIELD CHECK AT HARVEST STAGE(A.S-2.0)

Apart from the Sample check on area, the supervisor is present during the conduct of crop cutting experiments. He ensures that the extent of the primary workers adhere to the prescribed procedures and mistakes if any, are corrected on the spot. For this purpose, a sample of 780 crop cutting experiments covering 11 principal crops, viz. Paddy, Jowar, Bajra, Ragi, Cotton, Groundnut, Sugarcane, Gingelly, Maize, Blackgram and greengram were selected for intensive supervision separately by central and state staff for the year 2014-15.

The programme envisages locating an experimental plot for harvesting and weighing the produce of specified area in randomly chosen survey numbers and villages. The agricultural officers are conducting the experiments. Sample check on crop cutting experiments are carried out in the sub-sample of General crop estimation survey villages by the Central and State staff with a view to assess the extent to which the methodology, techniques and procedures prescribed for the conduct of crop cutting experiments are adopted and practices in the field conditions. Conduct of crop cutting experiments on objective basis is a complex task and as such it is imperative that primary workers assigned with the task to receive adequate training. Such training to primary workers is organized by the Department of Economics and Statistics at the beginning of each agricultural year.

4.14 In the field programme of sample check on crop cutting experiments, special emphasis has been given to ensure that technical personnel are invariably present at the harvest stage to observe the techniques and procedures adopted by the primary workers and provide support and guidance wherever necessary. The extent of participation at harvest stage is evident from the information presented in Table - 14. It may be seen that 99 % of experiments were checked by the supervisors at harvest stage under the pooled sample.

4.15 Estimates of yield rates of the principal crops based on sample check on crop cutting experiments along with percentage standard error are presented in Table - 15.

4.16 Generally, villages are substituted for the reason, viz., crop not sown, crop harvested with out intimation etc., The number of experiments for which no substitution was not made for sampling units at village and field level are presented in Table - 16 for the year 2014-15 and 2013-14.

4.17 Particulars gathered during the visit of the technical personnel are used to assess the extent to which the procedural guidelines prescribed for the conduct of crop cutting experiments are observed by the state primary workers. The type of deviation from prescribed procedures for conducting crop-cutting experiments of state primary workers is summarized in Table - 17.

4.18 SUPPLY & USE OF EQUIPMENT'S

Position of supply and use of equipments such as tapes, balances, set of weights and pegs are furnished in Table - 18. The usage of equipment like tapes, balances, weight and pegs while conducting the crop cutting experiment in 2014-15 were 99.8%, 99.8%, 99.8% and 93.2%.

4.19 DELEGATION OF WORK BY PRIMARY WORKERS

Number of experiments conducted by primary worker and delegated workers are furnished in Table-19 for the year 2014-15. All the 1556 experiment were conducted by trained workers.

5.UTILITY OF THE SCHEME

The sample checks reveal that the field work done at primary level are intended to effect improvement in the quality of primary data in respect of both enumeration of crop area and crop estimation survey. This factor helps both Central and State Governments in planning agricultural policies and programme with accuracy.

TABLE 1
RECEIPT OF SCHEDULES

Year	Schedules	Season	Sample	No. of villages / experiments planned	No. of villages / experiments for which schedules received			
					by cut off date	%	after cut off date	%
2014-15	A.S.1.0 (Villages)	Phase - I	Central	260	257	99	3	1
			State	260	254	98	6	2
			Pooled	520	511	98	9	2
		Phase -II	Central	260	249	96	11	4
			State	260	233	90	27	10
			Pooled	520	482	93	38	7
		Phase -III	Central	260	256	98	4	2
			State	260	241	93	19	7
			Pooled	520	497	96	23	4
	A.S.1.1 (Villages)	Whole year	Central *	--	--	--	--	--
			State	260	243	93	17	7
			Pooled	260	243	93	17	7
	A.S.2.0 (Expt)	Whole Year	Central	780	768	98	12	2
			State	780	634	81	146	19
			Pooled	1560	1402	90	161	10
2013-14	A.S.1.0 (Villages)	Phase - I	Central	260	258	99	2	1
			State	260	255	98	5	2
			Pooled	520	513	99	7	1
		Phase -II	Central	260	247	95	13	5
			State	260	231	89	29	11
			Pooled	520	478	92	42	8
		Phase -III	Central	260	257	99	3	1
			State	260	192	74	68	26
			Pooled	520	449	86	71	14
	A.S.1.1 (Villages)	Whole year	Central *	--	--	--	--	--
			State	260	201	77	59	23
			Pooled	260	201	77	59	23
	A.S.2.0 (Expt)	Whole Year	Central	780	768	98	12	2
			State	780	634	81	146	19
			Pooled	1560	1402	90	158	10

Note :

* - The field work of A.S-1.1 Schedules has been suspended for central sample till further order as per the NSSO, Faridabad (Lr.No:A-0013 / Workload / ICS / 2008-AS, dated:08.12.2008)

TABLE 2
RESPONSE IN SAMPLE CHECK ON ENUMERATION OF AREA

Season	Sample	Number of villages planned			Total number of schedules received			Number of schedules analysed						Total			
		2014-15	2013-14		2014-15	2013-14		With 'A&B' entries together		With 'A&B' entries separately		With 'A' entries only					
Phase -I	Central	260	260	✓	260	260		260	✓	260	0	0	0	0	260	✓	260
	State	260	260	✓	260	260	✓	260	✓	260	0	0	0	0	260	✓	260
	Pooled	520	520		520	520		520		520	0	0	0	0	520		520
Phase -II	Central	260	260	✓	260	260		260	✓	260	0	0	0	0	260	✓	260
	State	260	260	✓	260	260	✓	260	✓	260	0	0	0	0	260	✓	260
	Pooled	520	520	✓	520	520	✓	520	✓	520	0	0	0	0	520	✓	520
Phase -III	Central	260	260		260	260		260		260	0	0	0	0	260		260
	State	260	260		260	260		260		260	0	0	0	0	260		260
	Pooled	520	520		520	520		520		520	0	0	0	0	520		520
-Supervisor																	

A -Supervisor
B - Patwari

TABLE 3
INFORMATION REGARDING UPDATION OF VILLAGE MAPS AND THEIR USABILITY

	No. of villages where information available			
	2014-15			
	Number of years since updated			
	Central	State	Pooled	Percentage to pooled sample
(1) Total No. of villages analysed	260	260	520	100
(a) 1-5	0	0	0	0.0
(b) 6-10	0	0	0	0.0
(c) 11-20	0	0	0	0.0
(d) more than 20 years	260	260	520	100
(e) information not available	0	0	0	0.0
(2) Availability of maps with patwari				
(a) maps available	260	260	520	100
(i) usable maps	260	260	520	100
(ii) unusable maps	0	0	0	0.0
(b) maps not available	0	0	0	0.0

TABLE 4

BI-VARIATE FREQUENCY DISTRIBUTION OF SAMPLE VILLAGES COVERED BY THE SCHEME DURING THE YEAR 2014-15
 ACCORDING TO TOTAL NUMBER OF SURVEY /SUB-DIVISION NUMBERS AND GEOGRAPHICAL AREA
 (Pooled Sample)

Class interval of Serial / Survey Numbers (code)	Class intervals of Geographical Area(ha)										Not Reported	Total	Percentage to selected villages
	up to 50	51 -100	101-200	201-400	401-600	601-800	801-1000	1001-3000	above 3000				
1 - 200	11	4	3	1	0	0	0	0	0	0	0	19	3.65 /
201 - 400	0	7	8	1	1	0	0	0	0	0	0	17	3.27 /
401-600	2	5	10	8	0	0	0	2	0	0	0	27	5.19 /
601 - 800	1	4	10	16	5	0	0	4	1	0	0	41	7.88
801 - 1000	0	1	7	12	2	2	2	1	0	0	0	27	5.19
1001-5000	5	2	13	64	66	56	34	82	10	0	0	332	63.85
More than 5000	0	0	1	1	6	3	5	35	6	0	0	57	10.96
Information not reported	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Total	19	23	52	103	80	61	41	124	17	0	0	520	100.00
Percentage	3.65	4.42	10.00	19.81	15.38	11.73	7.88	23.85	3.27	0.00	0.00	100.00	100.00

TABLE 5
WORKLOAD OF VILLAGE ADMINISTRATIVE OFFICERS IN THE SELECTED VILLAGES

Sample	Average number of villages allotted per patwari				Average workload per patwari in the selected villages in terms of			
	Total		Trs		No. of survey / sub-survey numbers		Geographical area (in hec.)	
Year	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14
Central	2	2	1	1	2542	2409	877	802
State	2	2	1	1	2512	2354	931	1639
Pooled	2	2	1	1	2527	2382	904	1220

TABLE 6
TIMELINESS IN COMPLETION OF TRS AREA ENUMERATION

		No. of villages where girdawari completed																
Year	Sample	Phase-I					Phase-II					Phase-III						
		In time	Late	Partially completed	Not yet started	Total	In time	Late	Partially completed	Not yet started	Total	In time	Late	Partially completed	Not yet started	Total		
2014-15	Central	260	260	0	0	260	260	0	0	260	260	0	0	260	260	0	0	260
	State	260	260	0	0	260	260	0	0	260	260	0	0	260	260	0	0	260
	Pooled	520	520	0	0	520	520	0	0	520	520	0	0	520	520	0	0	520
2013-14	Central	260	260	0	0	260	260	0	0	260	260	0	0	260	260	0	0	260
	State	260	260	0	0	260	260	0	0	260	260	0	0	260	260	0	0	260
	Pooled	520	520	0	0	520	520	0	0	520	520	0	0	520	520	0	0	520

TABLE 7

**FREQUENCY DISTRIBUTION OF PATWARI OF THE SELECTED VILLAGES ACCORDING TO TOTAL
NUMBER OF VILLAGES ALLOTTED FOR THE YEAR 2014-15**

(Pooled Sample)					
Total			TRS		
Total number of villages allotted per patwari	Frequency	2014-15	Total number of villages allotted per patwari	Frequency	Percentage
1 to 5	509	97.88	1	490	94.24
6 to 10	11	2.12	2	27	5.19
11 to 15	0	0.00	3	2	0.38
Above 15	0	0.00	Above 3	1	0.19
Information not available	0	0.00	Information not available	0	0.00
Total	520	100.00	Total	520	100.00

TABLE 8
SUBMISSION OF TRS STATEMENT BY PATWARI

Year	Sample	Total no. of villages analysed	Phase-I			Phase-II			Phase-III		
			In time	%	Late	In time	%	Late	In time	%	Late
2014-15	Central	260	260	100	0	260	100	0	260	100	0
	State	260	260	100	0	260	100	0	260	100	0
	Pooled	520	520	100	0	520	100	0	520	100	0
2013-14	Central	260	260	100	0	260	100	0	260	100	0
	State	260	260	100	0	260	100	0	260	100	0
	Pooled	520	520	100	0	520	100	0	520	100	0

TABLE 9
DIFFERENT TYPES OF ERRORS OBSERVED IN RECORDING OF AREA

Year	Season	Sample	No. of villages reporting for all crop	No. of serial / survey numbers reporting crop	No error e 0	No. of serial / survey numbers with error					Total (e1 + e2+ e3)	%	
						Error			e 1	e 2			e 3
2014-15	Phase-I	Central	552	3497	2561	73	833	103	0	936	27		
		State	509	3158	2748	87	320	67	23	410	13		
		Pooled	1061	6655	5309	160	1153	170	23	1346	20		
	Phase-II	Central	197	906	375	41	196	37	298	531	59		
		State	242	1754	1643	94	86	6	19	111	6		
		Pooled	441	2660	2018	76	282	43	317	642	24		
	Phase-III	Central	37	115	86	75	13	3	13	29	25		
		State	88	311	294	95	15	2	0	17	5		
		Pooled	125	426	380	89	28	5	13	46	11		
	Cont...												

TABLE 9 (Concl.)
DIFFERENT TYPES OF ERRORS OBSERVED IN RECORDING OF AREA

Year	Season	Sample	No. of villages reporting for all crop	No. of serial / survey numbers reporting crop	No error e 0	%	No. of serial / survey numbers with error				Total (e1 + e2+ e3)	%
							e 1	e 2	e 3			
2013-14	Phase-I	Central	518	3884	2926	75	847	111	0	958	25	
		State	518	3403	2794	82	555	54	0	609	18	
		Pooled	1036	7287	5720	78	1402	165	0	1567	22	
	Phase-II	Central	187	744	617	83	93	34	0	127	17	
		State	190	847	752	89	77	18	0	95	11	
		Pooled	377	1591	1369	86	170	52	0	222	14	
	Phase-III	Central	60	211	136	64	66	9	0	75	36	
		State	73	286	237	83	47	2	0	49	17	
		Pooled	133	497	373	75	113	11	0	124	25	

e 0 : where the supervisor's and patwari's entries for the crop are identical

e 1 : where the supervisor reported the crop but patwari did not report

e 2 : where the supervisor did not report the crop but the patwari report it

e 3 : where the area under the crop reported by the supervisor and patwari differed

TABLE 10

CROPWISE COMPARISON OF ENTRIES BY SUPERVISOR AND PATWARI OF CROP AREAS AS PER IRRIGATION

Season	Year	Jowar										Ragi												
		Paddy					Bajra					Supervisor					Patwari							
		Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari	Supervisor	Patwari							
Phase-I	2014-15	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		1007	11	1018	1046	8	13	143	156	17	143	160	4	8	12	4	5	9	5	6	11	4	6	10
	2013-14	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		11	32	43	960	0	14	108	122	14	94	108	2	7	9	1	7	8	2	27	29	2	25	27
	2014-15	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		221	2	223	132	15	147	12	14	26	11	10	21	0	7	7	0	7	7	2	0	2	2	0
	2013-14	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		156	23	179	178	1	179	10	29	39	6	25	31	0	5	5	0	5	5	3	0	3	3	0	3
	2014-15	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		28	0	28	29	0	29	7	1	8	7	1	8	0	6	6	0	6	6	1	0	1	1	0	1
	2013-14	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total					
		24	0	24	34	0	34	4	2	6	0	2	2	0	0	0	0	0	0	1	0	1	1	0	1
Cont....																								

TABLE 10 (Concd)

CROPWISE COMPARISON OF ENTRIES BY SUPERVISOR AND PATWARI OF CROP AREAS AS PER IRRIGATION (In ha)

Season	Year	Cotton						Sugarcane						Groundnut						Cashewnut					
		Supervisor			Patwari			Supervisor			Patwari			Supervisor			Patwari			Supervisor			Patwari		
		Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total	Irrigated	Unirrigated	Total
Phase-I	2014-15	33	86	119	26	81	107	163	0	163	155	0	155	18	55	73	16	48	64	1	23	24	1	19	20
	2013-14	17	26	43	9	27	36	141	0	141	141	0	141	21	60	81	17	55	72	0	28	28	0	28	28
Phase-II	2014-15	8	3	11	5	4	9	15	0	15	14	0	14	27	2	29	22	2	24	0	4	4	0	4	4
	2013-14	6	3	9	0	3	3	13	0	13	12	0	12	30	2	32	25	3	28	0	14	14	0	14	14
Phase-III	2014-15	13	1	14	8	1	9	43	0	43	8	0	8	2	1	3	2	1	3	21	34	55	23	33	56
	2013-14	22	0	22	21	0	21	17	0	17	9	0	9	4	0	4	0	0	0	0	0	0	0	0	0

TABLE 11
CROP WISE COMPARISON OF ENTRIES BY SUPERVISOR ANO PATWARI OF CROP AREA AS PER SEED VARIETY

Season	Year	(in ha.)											
		Paddy						Jowar					
		2014-15			Patwari			Supervisor			Patwari		
		High yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total
Phase-I	2014-15	1007	11	1018	1033	21	1054	88	68	156	76	84	160
	2013-14	898	11	909	690	326	1016	71	51	122	61	47	108
Phase-II	2014-15	218	5	223	125	22	147	24	2	26	20	1	21
	2013-14	156	23	179	137	42	179	30	10	40	23	8	31
Phase-III	2014-15	28	0	28	29	0	29	8	0	8	8	0	8
	2013-14	24	0	24	25	9	34	4	2	6	2	0	2

Cont...

TABLE 11

CROP WISE COMPARISON OF ENTRIES BY SUPERVISOR AND PATWARI OF CROP AREA AS PER SEED VARIETY

		Bajra						Ragi						(in ha.)
Season	Year	Supervisor			Patwari			Supervisor			Patwari			Total
		High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total	
Phase-I	2014-15	10	12	22	7	2	9	9	2	11	5	5	10	
	2013-14	7	3	10	5	3	8	21	8	29	19	8	27	
Phase-II	2014-15	7	0	7	7	0	7	2	0	2	2	0	2	
	2013-14	5	0	5	5	0	5	3	0	3	3	0	3	
Phase-III	2014-15	6	0	6	6	0	6	1	0	1	1	0	1	
	2013-14	0	0	0	0	0	0	0	0	0	0	0	0	

Cont...

TABLE 11

CROP WISE COMPARISON OF ENTRIES BY SUPERVISOR AND PATWARI OF CROP AREA AS PER SEED VARIETY

Season	Year	Cotton						Sugarcane					
		Supervisor			Patwari			Supervisor			Patwari		
		High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total
Phase-I	2014-15	113	6	119	102	5	107	161	2	163	151	4	155
	2013-14	31	12	43	20	16	36	140	1	141	135	6	141
Phase-II	2014-15	10	1	11	8	1	9	15	0	15	14	0	14
	2013-14	8	1	9	2	1	3	13	0	13	10	1	11
Phase-III	2014-15	14	0	14	9	0	9	42	1	43	7	1	8
	2013-14	22	0	22	21	0	21	17	0	17	9	0	9
Cont...													

TABLE 11 *(Concl'd)*

CROP WISE COMPARISON OF ENTRIES BY SUPERVISOR AND PATWARI OF CROP AREA AS PER SEED VARIETY

(in ha.)

Season	Year	Groundnut						Cashewnut					
		Supervisor			Patwari			Supervisor			Patwari		
		High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total	High Yielding	Local	Total
Phase-I	2014-15	71	2	73	48	16	64	18	6	24	18	2	20
	2013-14	63	18	81	48	24	72	23	5	28	21	7	28
Phase-II	2014-15	29	0	29	15	9	24	4	0	4	4	0	4
	2013-14	24	8	32	19	9	28	14	0	14	14	0	14
Phase-III	2014-15	3	0	3	3	0	3	51	4	55	52	3	55
	2013-14	0	4	4	0	0	0	0	0	0	0	0	0

TABLE 12
ESTIMATED AREA UNDER DIFFERENT CROPS BASED ON THE DATA RECORDED BY THE SUPERVISOR / PATWARI

Season	Year	(In '00 ha)											
		Paddy		Jowar		Bajra		Ragi					
		% Variation		% Variation		% Variation		% Variation		% Variation			
		Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$
Phase-I	2014-15	4622	4686	1.4	777	788	1.4	99	97	-2.0	69	77	11.6
	2013-14	6249	6249	0.0	929	877	-5.6	61	48	-21.3	191	176	-7.9
Phase-II	2014-15	2031	1639	-19.3	125	105	-16.0	64	64	0.0	11	13	18.2
	2013-14	1166	1219	4.5	106	97	-8.5	49	49	0.0	18	31	72.2
Phase-III	2014-15	190	189	-0.5	31	29	-6.5	51	51	0.0	3	3	0.0
	2013-14	227	327	44.1	30	1	-96.7	0	0	0.0	9	9	0.0

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Cont...

Cont...

TABLE 12 (Concid)
ESTIMATED AREA UNDER DIFFERENT CROPS BASED ON THE DATA RECORDED BY THE SUPERVISOR / PATWARI

Season	Year	Cotton			Sugarcane			Groundnut			Cashewnut		
		% Variation			% Variation			% Variation			% Variation		
		Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$	Supervisor (a)	Patwari (b)	$\frac{b-a}{a} \times 100$
Phase-I	2014-15	933	906	-2.9 ✓	945	943	-0.2 ✓	452	480	6.2 ✓	370	225	-39.2 ✓
	2013-14	285	299	4.9 ✓	1533	1520	-0.8 ✓	643	607	-5.6 ✓	339	339	0 ✓
Phase-II	2014-15	54	63	16.7 ✓	96	97	1.0 ✓	231	252	9.1 ✓	42	42	0.0 ✓
	2013-14	64	29	-54.7 ✓	101	108	6.9 ✓	321	294	-8.4 ✓	459	459	0 ✓
Phase-III	2014-15	40	33	-17.5 ✓	279	62	-77.8 ✓	26	18	-30.8 ✓	0	0	0.0 ✓
	2013-14	128	198	54.7 ✓	155	42	-72.9 ✓	40	0	-100.0 ✓	3	3	0 ✓

TABLE 13
CROPWISE ESTIMATED AREA BASED ON SCHEDULE A.S.1.1 (PAGE TOTALLING OF KHASRA REGISTER - 2014-15) (State Sample)

Crop	(In ha)			Ratio of VAO's entries and that of Supervisors col.3 / col.2
	1	2	3	
Paddy		277770	278774	1.004
Jowar		57911	58023	1.002
Bajra		10918	11035	1.011
Ragi		19154	19333	1.009
Cotton		34316	34507	1.006
Sugarcane		115355	115844	1.004
Groundnut		67304	67525	1.003
Cashewnut		17465	17465	1.000

TABLE 14

CROPWISE NUMBER OF EXPERIMENTS PLANNED FOR CHECK AT HARVEST AND THE RESPONSE ACHIEVED (2014-15)

Crop	Central						State						Pooled					
	Checked			Checked			Checked			Checked			Checked			Checked		
	Planned	Harvest	Post harvest	Loss	Not report	Total	Planned	Harvest	Post harvest	Loss	Not report	Total	Planned	Harvest	Post harvest	Loss	Not report	Total
PADDY - KAR	60	57	3	0	0	60	60	60	0	0	0	60	120	117	3	0	0	120
PADDY - SAMBA	120	120	0	0	0	120	120	120	0	0	0	120	240	240	0	0	0	240
PADDY NAVARAI	40	40	0	0	0	40	40	40	0	0	0	40	80	80	0	0	0	80
JOWAR (R)	30	30	0	0	0	30	30	30	0	0	0	30	60	60	0	0	0	60
JOWAR (K)	30	30	0	0	0	30	30	30	0	0	0	30	60	60	0	0	0	60
BAJRA (R)	6	6	0	0	0	6	6	6	0	0	0	6	12	12	0	0	0	12
BAJRA (K)	34	34	0	0	0	34	34	34	0	0	0	34	68	68	0	0	0	68
RAGI(R)	22	22	0	0	0	22	22	22	0	0	0	22	44	44	0	0	0	44
RAGI(K)	18	18	0	0	0	18	18	18	0	0	0	18	36	36	0	0	0	36
COTTON(R)	32	32	0	0	0	32	32	30	0	2	0	32	64	62	0	2	0	64
COTTON(K)	68	68	0	0	0	68	68	66	0	0	0	68	136	136	0	0	0	136
GROUNDNUT(R)	40	40	0	0	0	40	40	40	0	0	0	40	80	60	0	0	0	80
GROUNDNUT(K)	60	60	0	0	0	60	60	60	0	0	0	60	120	120	0	0	0	120
SUGARCANE	50	50	0	0	0	50	50	50	0	0	0	50	100	100	0	0	0	100
GINGELLY(R)	26	26	0	0	0	26	26	26	0	0	0	26	52	52	0	0	0	52
GINGELLY(K)	24	24	0	0	0	24	24	22	0	2	0	24	48	46	0	2	0	48
MAIZE(R)	16	16	0	0	0	16	16	16	0	0	0	16	32	32	0	0	0	32
MAIZE(K)	24	24	0	0	0	24	24	24	0	0	0	24	48	46	0	0	0	48
BLACKGRAM(R)	28	28	0	0	0	28	28	28	0	0	0	28	56	56	0	0	0	56
BLACKGRAM(K)	12	12	0	0	0	12	12	12	0	0	0	12	24	24	0	0	0	24
GREENGRAM(R)	28	28	0	0	0	28	28	28	0	0	0	28	56	56	0	0	0	56
GREENGRAM(K)	12	12	0	0	0	12	12	12	0	0	0	12	24	24	0	0	0	24
Total	780	777	3	0	0	780	780	776	0	4	0	780	1560	1553	3	4	0	1560

Cont.

TABLE 14 (Concid.)

CROPWISE NUMBER OF EXPERIMENTS PLANNED FOR CHECK AT HARVEST AND THE RESPONSE ACHIEVED (2013-14)

Crop	Central					State					Pooled							
	Checked					Checked					Checked							
	Planned	Harvest	Post harvest	Loss	Not report	Total	Planned	Harvest	Post harvest	Loss	Not report	Total	Planned	Harvest	Post harvest	Loss	Not report	Total
Paddy - Kar / Kuruvai	60	60	0	0	0	60 #	60	60	0	0	0	60	120	120	0	0	0	120
Paddy - Samba	140	139	0	1	0	140	140	140	0	0	0	140	280	279	0	1	0	280
Paddy - Navarai	40	40	0	0	0	40	40	40	0	0	0	40	80	80	0	0	0	80
Jowar - I	30	30	0	0	0	30	30	30	0	0	0	30	60	60	0	0	0	60
Jowar - UI	30	30	0	0	0	30	30	30	0	0	0	30	60	60	0	0	0	60
Bajra - I	16	16	0	0	0	16	16	16	0	0	0	16	32	32	0	0	0	32
Bajra - UI	24	24	0	0	0	24	24	22	0	2	0	24	48	46	0	2	0	48
Ragi - I	22	22	0	0	0	22	22	22	0	0	0	22	44	44	0	0	0	44
Ragi - UI	18	16	0	0	0	18	16	18	0	0	0	18	36	36	0	0	0	36
Cotton - I	36	36	0	0	0	36	36	36	0	0	0	36	72	72	0	0	0	72
Cotton - UI	84	84	0	0	0	84	84	84	0	0	0	84	168	168	0	0	0	168
Groundnut - I	56	56	0	0	0	56	56	56	0	0	0	56	112	112	0	0	0	112
Groundnut - UI	84	64	0	0	0	84	84	84	0	0	0	84	168	168	0	0	0	168
Sugarcane	50	50	0	0	0	50	50	48	0	2	0	50	100	98	0	2	0	100
Gingelly (I)	26	26	0	0	0	26	26	26	0	0	0	26	52	52	0	0	0	52
Gingelly (UI)	24	16	0	8	0	24	24	16	0	6	0	24	48	32	0	16	0	46
Maize(I)	16	16	0	0	0	16	16	16	0	0	0	16	32	32	0	0	0	32
Maize(UI)	24	24	0	0	0	24	24	24	0	0	0	24	48	46	0	0	0	46
Total	760	771	0	9	0	760	780	766	0	12	0	780	1560	1539	0	21	0	1560

TABLE 15

CROP WISE ESTIMATES OF YIELD RATE (kg /hec) DURING THE YEAR 2014-15 WITH SAMPLING ERROR

Crop	Central				State				Pooled			
	No. of Experiments		Estimated yield rate	% Sampling error	No. of Experiments		Estimated yield rate	% Sampling error	No. of Experiments		Estimated yield rate	% Sampling error
	Planned	Analysed			Planned	Analysed			Planned	Analysed		
PADDY - KAR	60	57	5070.39	2.07	60	60	4522.78	2.57	120	117	4824.32	1.61
PADDY - SAMBA	120	120	4836.77	2.24	120	120	4037.75	2.74	240	240	4446.00	1.74
PADDY- NAVARAI	40	40	5580.01	2.32	40	40	4593.04	2.16	80	80	4958.86	1.59
JOWAR (R)	30	30	2315.36	9.15	30	30	1741.14	4.71	60	60	1816.02	4.21
JOWAR (K)	30	30	1916.42	5.05	30	30	1620.05	5.59	60	60	1758.41	3.76
BAJRA (R)	6	6	3991	4.41	6	6	4087.78	1.4	12	12	4078.58	1.33
BAJRA (K)	34	34	3249.36	6.36	34	34	3000.7	12.87	68	68	3194.07	5.7
RAGI(R)	22	22	3357.04	10.92	22	22	3897.08	4.72	44	44	3788.3	4.34
RAGI(K)	18	18	3382.33	10.26	18	18	3158.11	11.58	36	36	3276.01	7.68
COTTON (R) @	32	32	..	..	32	30	..	..	64	62	1596.98	2
COTTON(K) @	68	68	..	..	68	68	..	..	136	136	1638.26	2.58
GROUNDNUT(R)	40	40	3670.52	3.71	40	40	2532.95	7.34	80	80	3273.15	3.36
GROUNDNUT(K)	60	60	2770.99	4.37	60	60	2506.79	4.53	120	120	2630.59	3.15
SUGARCANE	50	50	119860.08	5.19	50	50	105280.62	1.95	100	100	106706.33	1.82
GINGELLY(R)	26	26	866.49	6.53	26	26	789.09	5.93	52	52	820.49	4.4
GINGELLY(K)	24	24	689.17	5.73	24	22	602.67	11.58	48	46	668.2	5.14
MAIZE(R)	16	16	6688.02	8.35	16	16	6409.98	7.86	32	32	6534.67	5.72
MAIZE(K)	24	24	7911.36	3.88	24	24	6302.05	2.41	48	48	6618.07	2.06
BLACKGRAM(R)	28	28	892.8	7.82	28	28	821.27	3.07	56	56	829.53	2.86
BLACKGRAM(K)	12	12	850.4	3.35	12	12	856.77	8.84	24	24	851.19	3.14
GREENGRAM(R)	28	28	885.99	7.52	28	28	719.86	12.82	56	56	829.06	6.52
GREENGRAM(K)	12	12	917.43	17.45	12	12	486.62	28.86	24	24	673.89	15.67

@ - Estimated yield rate and percentage SE have been worked out for pooled sample only

CROP WISE ESTIMATES OF YIELD RATE (kg /hec) DURING THE YEAR 2014-15

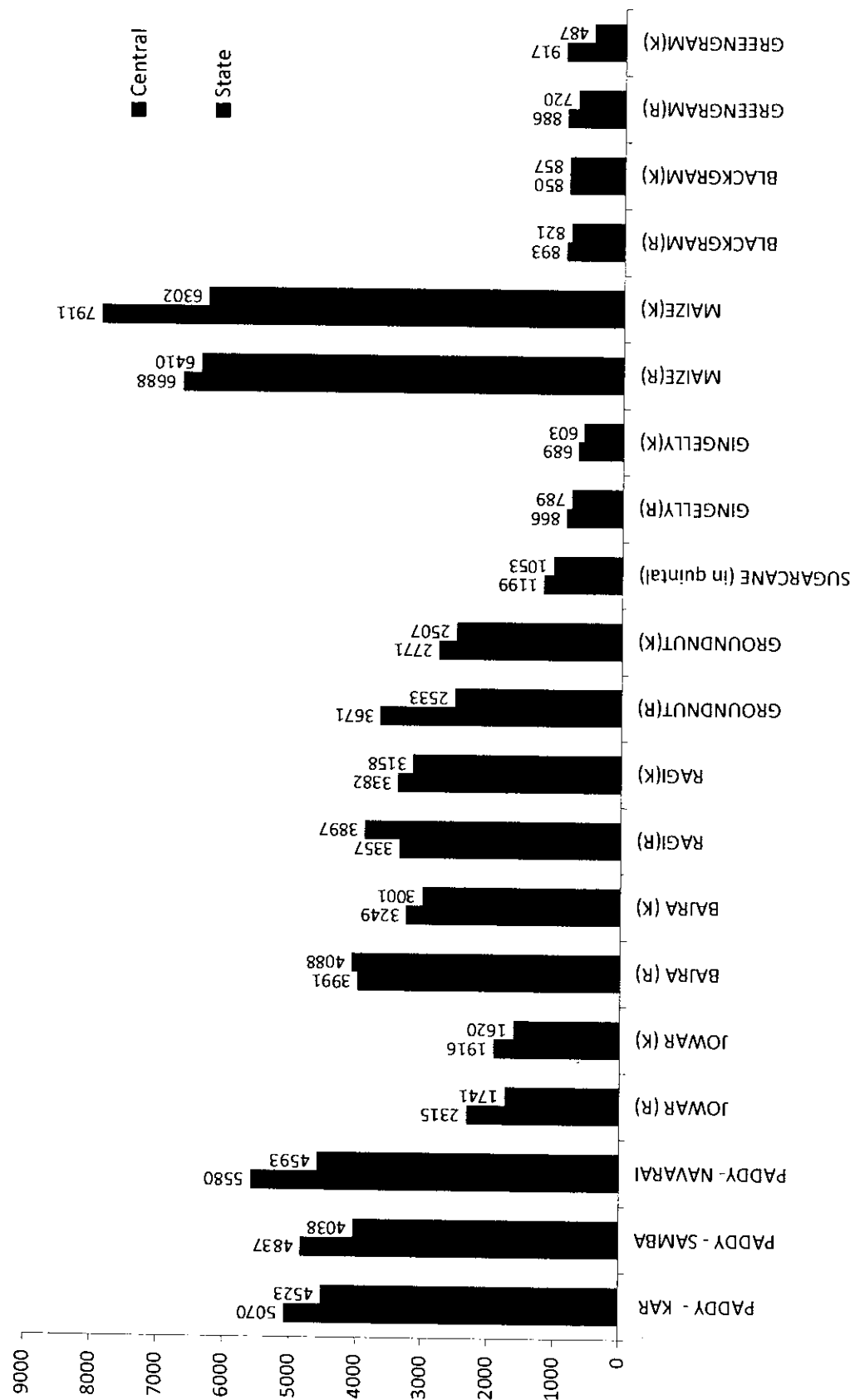


TABLE 16
NUMBER OF EXPERIMENTS FOR WHICH NO SUBSTITUTION WAS DONE

Year	Sample	Total no. of Experiments planned	No. of experiments for which no substitution was done	
			Experiments	Survey numbers
2014-15	Central	780	704	780
	State	780	705	776
	Pooled	1560	1409	1556
2013-14	Central	780	578	771
	State	780	638	768
	Pooled	1560	1216	1539

TABLE 17

CROPSWISE DISTRIBUTION OF EXPERIMENTS ACCORDING TO THE MISTAKES OBSERVED DURING THE YEAR 2014-15

CENTRAL

Crop	No. of Experiments checked at Harvest /Post Harvest	e0	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10	e11	e12	e13	e14	e15	e16
PADDY - KAR	60	6	0	0	0	19	0	54	3	0	2	1	0	0	0	0	0	0
PADDY - SAMBA	120	39	0	0	0	25	0	51	33	38	20	10	0	0	0	0	0	0
PADDY NAVARAI	40	2	0	0	0	28	0	32	0	0	0	0	0	0	0	0	0	0
JOWAR (R)	30	17	0	0	0	1	0	13	0	0	0	0	0	0	0	0	0	0
JOWAR (K)	30	12	0	0	0	1	0	18	0	0	0	0	0	0	0	0	0	0
BAJRA (R)	6	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
BAJRA (K)	34	18	0	0	0	1	0	16	0	0	0	1	0	0	0	0	0	0
RAGI (R)	22	8	0	0	0	4	0	10	0	0	0	0	0	0	0	0	0	0
RAGI (K)	18	12	0	0	0	0	0	6	0	0	1	0	0	0	0	0	0	0
COTTON (R)	32	16	0	0	0	1	0	16	0	0	2	0	0	0	0	0	0	0
COTTON (K)	68	35	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0
GROUNDNUT (R)	40	9	0	0	0	17	0	24	0	0	2	2	0	0	0	0	0	0
GROUNDNUT (K)	60	27	0	0	0	22	0	18	0	0	0	0	0	0	0	0	0	0
SUGARCANE	50	21	0	0	0	2	0	28	0	0	2	0	0	0	0	0	0	0
GINGELLY (R)	26	9	0	0	0	0	0	12	0	0	5	1	0	0	0	0	0	0
GINGELLY (K)	24	7	0	0	0	0	0	17	0	0	1	0	0	0	0	0	0	0
MAIZE (R)	16	8	0	0	0	0	0	4	8	0	0	0	0	0	0	0	0	0
MAIZE (K)	24	8	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0
BLACKGRAM (R)	28	12	0	0	0	0	0	15	0	0	3	0	0	0	0	0	0	0
BLACKGRAM (K)	12	4	0	0	0	0	0	8	0	0	1	0	0	0	0	0	0	0
GREENGRAM (R)	28	16	0	0	0	0	0	9	0	0	3	0	0	0	0	0	0	0
GREENGRAM (K)	12	5	0	0	0	0	0	7	0	0	1	1	0	0	0	0	0	0
Total	780	293	0	0	0	121	0	411	44	38	43	16	0	0	0	0	0	0

e0 = No. of experiments for which no mistakes observed

e1 = Error in selection of Survey / Sub Number

e2 = Error in selection of field within Survey / Sub Number

e3 = Error in reporting seed variety

e4 = Error in reporting seed rate

e5 = Error in reporting irrigation particular

e6 = Error in reporting application of fertilizers

e7 = Error in reporting application of manures

e8 = Error in reporting application of pesticides

e9 = Error in measurement of field

e10 = Error in checking random number for location of plots

e11 = Error in locating plot

e12 = Error in plot dimension

e13 = Error in weightage of produce.

e14 = Inadequate arrangement for storing the produce for drage

e15 = Error in reporting proportion of experimental crops in mixture / wrong reporting constituents in mixtures

e16 = Any one of the item missing

Cont...

TABLE 17
CROPWISE DISTRIBUTION OF EXPERIMENTS ACCORDING TO THE MISTAKES OBSERVED DURING THE YEAR 2014-15
STATE

Crop	No. of Experiments checked at Harvest/ Post Harvest	e0	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10	e11	e12	e13	e14	e15	e16
PADDY - KAR	60	46	0	0	0	0	0	0	8	0	0	7	0	0	0	0	0	0
PADDY - SAMBA	120	107	0	0	0	0	2	3	3	3	6	3	0	0	0	0	0	0
PADDY NAVARAI	40	1	0	0	0	0	40	37	0	0	5	0	0	0	0	0	0	0
JOWAR (R)	30	11	0	0	0	0	0	19	0	0	0	4	0	0	0	0	0	0
JOWAR (K)	30	11	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0
BAJRA (R)	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
BAJRA (K)	34	20	0	0	0	0	0	14	0	0	0	1	0	0	0	0	0	0
RAGI(R)	22	7	0	0	0	0	1	14	0	0	0	0	0	0	0	0	0	0
RAGI(K)	18	8	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
COTTON(R)	30	15	0	0	0	0	2	13	0	0	2	0	0	0	0	0	0	0
COTTON(K)	68	30	0	0	0	0	2	36	0	0	0	0	0	0	0	0	0	0
GROUNDNUT(R)	40	14	0	0	0	0	2	25	0	0	2	4	0	0	0	0	0	0
GROUNDNUT(K)	60	36	0	0	0	0	7	18	0	0	5	0	0	0	0	0	0	0
SUGARCANE	50	16	0	0	0	0	10	30	0	0	2	0	0	0	0	0	0	0
GINGELLY(R)	26	17	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0
GINGELLY(K)	22	6	0	0	0	0	0	16	0	0	4	0	0	0	0	0	0	0
MAIZE(R)	16	9	0	0	0	0	1	4	4	0	0	0	0	0	0	0	0	0
MAIZE(K)	24	4	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0
BLACKGRAM(R)	28	11	0	0	0	0	0	16	0	0	1	0	0	0	0	0	0	0
BLACKGRAM(K)	12	4	0	0	0	0	0	8	0	0	4	0	0	0	0	0	0	0
GREENGRAM(R)	28	19	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0
GREENGRAM(K)	12	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0
Total	776	398	0	0	0	0	67	340	7	3	38	12	0	0	0	0	0	0

e0 = No. of experiments for which no mistakes observed
e1 = Error in selection of Survey / Sub Number
e2 = Error in selection of field within Survey / Sub Number
e3 = Error in reporting seed variety
e4 = Error in reporting seed rate
e5 = Error in reporting irrigation particular
e6 = Error in reporting application of fertilizers
e7 = Error in reporting application of manures

e8 = Error in reporting ap
e9 = Error in measurement of field
e10 = Error in checking random number for location of plots
e11 = Error in locating plot
e12 = Error in plot dimension
e13 = Error in weightment of produce.
e14 = inadequate arrangement for storing the produce for diage
e15 = Error in reporting proportion of experimental crops in mixture / wrong reporting constituents in mixtures
e16 = Any one of the item missing

Cont...

TABLE 17
CROPSWISE DISTRIBUTION OF EXPERIMENTS ACCORDING TO THE MISTAKES OBSERVED DURING THE YEAR 2014-15

POOLED																		
Crop	No. of Experiments checked at Harvest / Post Harvest	e0	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10	e11	e12	e13	e14	e15	e16
PADDY - KAR	120	52	0	0	0	19	0	62	3	0	9	1	0	0	0	0	0	0
PADDY - SAMBA	240	146	0	0	0	27	0	54	36	41	26	13	0	0	0	0	0	0
PADDY NAVARAI	80	3	0	0	0	68	0	69	0	0	5	0	0	0	0	0	0	0
JOWAR (R)	60	28	0	0	0	1	0	32	0	0	0	4	0	0	0	0	0	0
JOWAR (K)	60	23	0	0	0	1	0	37	0	0	0	0	0	0	0	0	0	0
BAJRA (R)	12	2	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
BAJRA (K)	68	38	0	0	0	1	0	30	0	0	0	2	0	0	0	0	0	0
RAGI(R)	44	15	0	0	0	5	0	24	0	0	0	0	0	0	0	0	0	0
RAGI(K)	36	20	0	0	0	0	0	16	0	0	1	0	0	0	0	0	0	0
COTTON(R)	62	31	0	0	0	3	0	29	0	0	4	0	0	0	0	0	0	0
COTTON(K)	136	65	0	0	0	2	0	69	0	0	0	0	0	0	0	0	0	0
GROUNDNUT(R)	80	23	0	0	0	19	0	49	0	0	4	6	0	0	0	0	0	0
GROUNDNUT(K)	120	63	0	0	0	29	0	36	0	0	5	0	0	0	0	0	0	0
SUGARCANE	100	37	0	0	0	12	0	58	0	0	4	0	0	0	0	0	0	0
GINGELLY(R)	52	26	0	0	0	0	0	21	0	0	5	1	0	0	0	0	0	0
GINGELLY(K)	46	13	0	0	0	0	0	33	0	0	5	0	0	0	0	0	0	0
MAIZE(R)	32	17	0	0	0	1	0	8	12	0	0	0	0	0	0	0	0	0
MAIZE(K)	48	12	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0
BLACKGRAM(R)	56	23	0	0	0	0	0	31	0	0	4	0	0	0	0	0	0	0
BLACKGRAM(K)	24	8	0	0	0	0	0	16	0	0	5	0	0	0	0	0	0	0
GREENGRAM(R)	56	35	0	0	0	0	0	18	0	0	3	0	0	0	0	0	0	0
GREENGRAM(K)	24	11	0	0	0	0	0	13	0	0	1	1	0	0	0	0	0	0
Total	1556	691	0	0	0	188	0	751	51	41	81	28	0	0	0	0	0	0
e0 = No. of experiments for which no mistakes observed																		

e0 = No. of experiments for which no mistakes observed

e1 = Error in selection of Survey / Sub Number

e2 = Error in selection of field within Survey / Sub Number

e3 = Error in reporting seed variety

e4 = Error in reporting seed rate

e5 = Error in reporting irrigation particular

e6 = Error in reporting application of fertilizers

e7 = Error in reporting application of manures

e8 = Error in reporting application of pesticides

e9 = Error in measurement of field

e10 = Error in checking random number for location of plots

e11 = Error in locating plot

e12 = Error in plot dimension

e13 = Error in weightment of produce.

e14 = inadequate arrangement for storing the produce for diage

e15 = Error in reporting proportion of experimental crops in mixture / wrong reporting constituents in mixtures

e16 = Any one of the item missing

Cont...

TABLE 17 (Contd)
CROPWISE DISTRIBUTION OF EXPERIMENTS ACCORDING TO THE MISTAKES OBSERVED DURING THE YEAR 2013-14

		POOLED																
Crop	No. of Experiments checked at Harvest /Post Harvest	e0	e1	e2	e3	e4	e5	e6	e7	e8	e9	e10	e11	e12	e13	e14	e15	e16
Paddy - Kar / Kuruwai	120	50	0	0	0	31	0	59	46	38	13	2	0	0	0	0	0	0
Paddy - Samba	279	142	0	0	0	43	0	107	92	89	23	11	0	0	0	1	0	0
Paddy - Navarai	80	31	0	0	0	30	0	38	44	42	0	1	0	0	0	0	0	0
Jowar - I	60	36	0	0	0	1	0	18	18	5	0	1	0	0	0	0	0	0
Jowar - UI	60	46	0	0	0	1	0	10	8	1	2	0	0	0	0	1	0	0
Bajra - I	32	14	0	0	0	0	0	16	6	4	2	2	0	0	0	0	0	0
Bajra - UI	46	25	0	0	0	6	0	5	20	1	1	0	0	0	0	0	0	0
Ragi - I	44	26	0	0	0	8	0	12	13	9	2	0	0	0	0	0	0	0
Ragi - UI	36	26	0	0	0	0	0	0	0	0	7	0	0	0	0	0	3	0
Cotton - I	72	41	0	0	0	3	0	20	25	24	2	1	0	0	0	0	2	0
Cotton - UI	168	96	0	0	2	4	0	44	48	43	12	1	0	0	0	0	1	0
Groundnut - I	112	41	0	0	0	24	0	42	47	44	5	2	0	1	0	0	1	0
Groundnut - UI	168	102	0	0	0	24	0	21	37	17	8	7	0	0	0	0	9	0
Sugarcane	98	48	0	0	1	15	0	44	25	15	3	5	0	0	0	1	0	0
Gingelly (I)	52	40	0	0	0	3	0	6	0	8	3	2	0	0	0	0	4	0
Gingelly (UI)	32	25	0	0	0	2	0	3	1	0	0	2	0	0	0	0	1	0
Maize(I)	32	16	0	3	0	1	0	14	6	4	0	1	0	0	0	0	0	0
Maize(UI)	48	34	0	0	0	0	0	8	6	1	1	3	0	0	0	0	0	0
Total	1539	839	0	3	3	196	0	467	442	345	84	41	0	1	0	3	21	0
e0 = No. of experiments for which no mistakes observed		e8 = Error in reporting application of pesticides																
e1 = Error in selection of Survey / Sub Number		e9 = Error in measurement of field																
e2 = Error in selection of field within Survey / Sub Number		e10 =Error in checking random number for location of plots																
e3 = Error in reporting seed variety		e11=Error in locating plot																
e4 = Error in reporting seed rate		e12=Error in plot dimension																
e5 = Error in reporting irrigation particular		e13=Error in weightment of produce																
e6 = Error in reporting application of fertilizers		e14= inadequate arrangement for storing the produce for drnage																
e7 = Error in reporting application of manures		e15 =Error in reporting proportion of experimental crops in mixture / wrong reporting constituents in mixtures																
		e16 = Any one of the item missing																

e0 = No. of experiments for which no mistakes observed
 e1 = Error in selection of Survey / Sub Number
 e2 = Error in selection of field within Survey / Sub Number
 e3 = Error in reporting seed variety
 e4 = Error in reporting seed rate
 e5 = Error in reporting irrigation particular
 e6 = Error in reporting application of fertilizers
 e7 = Error in reporting application of manures

e8 = Error in reporting application of pesticides
 e9 = Error in measurement of field
 e10 = Error in checking random number for location of plots
 e11 = Error in locating plot
 e12 = Error in plot dimension
 e13 = Error in weighing of produce
 e14 = inadequate arrangement for storing the produce for drage
 e15 = Error in reporting proportion of experimental crops in mixture / wrong reporting constituents in mixtures
 e16 = Any one of the item missing

TABLE 18
YEAR-WISE POSITION OF SUPPLY AND USE OF CROP CUTTING EQUIPMENTS

Year	Sample	Equipments supplied						Equipments not supplied									
		Tape	%	Balance	%	Weights	%	Pegs	%	Tape	%	Balance	%	Weights	%	Pegs	%
2014-15	Central	777	100.00	777	100.00	777	100.00	701	90.22	0	0.00	0	0.00	0	0.00	79	10.17
	State	770	99.23	770	99.23	770	99.23	746	96.13	6	0.77	6	0.77	6	0.77	30	3.87
	Pooled	1550	99.81	1550	99.81	1550	99.81	1447	93.17	6	0.39	6	0.39	6	0.39	109	7.02
2013-14	Central	769	99.74	753	97.67	763	98.96	655	84.95	2	0.26	18	2.33	8	1.04	116	15.05
	State	742	96.61	742	96.61	742	96.61	742	96.61	26	3.39	26	3.39	26	3.39	26	3.39
	Pooled	1511	98.18	1495	97.14	1505	97.79	1397	90.77	28	1.82	44	2.86	34	2.21	142	9.23

TABLE 19

STATEMENT SHOWING THE DETAILS OF YEAR-WISE CROP CUTTING EXPERIMENTS CONDUCTED BY THE DESIGNATED PRIMARY WORKERS (TRAINED) AND DELEGATED WORKERS

Year	Sample	Total no. of Experiments checked at harvest and post harvest stage	No. of Experiments conducted by				
			Trained			Untrained	Total
			Non-designated equivalent / senior persons	Delegated workers (Junior)	Designated Persons (No change in primary workers)		
2014-15	Central	780	780	0	0	0	780
	State	776	776	0	0	0	776
	Pooled	1556	1556	0	0	0	1556
2013-14	Central	771	771	0	0	0	771
	State	768	768	0	0	0	768
	Pooled	1539	1539	0	0	0	1539