

Sri Lanka - Crop Estimating Survey on Paddy (Maha) - 1987

Department of Census and Statistics

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Identification

SURVEY ID NUMBER

LKA-DCS-CESP[M]-1987-v1.0

TITLE

Crop Estimating Survey on Paddy (Maha) - 1987

COUNTRY

Name	Country code
Sri Lanka	LKA

STUDY TYPE

Agricultural Survey [ag/oth]

SERIES INFORMATION

This survey was started in the year 1950. It is conducted in Yala and Maha seasons with a view to estimate the average yield of paddy and production by District. In a Maha season about 6000 and in a Yala season about 4000 experiments are being conducted for this survey and it is the only source to estimate the country's paddy production. The findings are essential to calculate various important figures such as volume of additional rice requirement of the country to be imported

This survey is carried out in each season of a cultivation year to collect the paddy extent under categories namely;

Asweddumized Extent
Sown Extent
Harvested Extent

Paddy extent is estimated on the basis of complete enumeration of paddy parcels in the county covering both Maha and Yala seasons.

All these variables are being collected through a form. The extent categories are again classified by type of irrigation namely;

Major Irrigation Schemes
Minor Irrigation Schemes
Rain-fed

ABSTRACT

Crop estimating survey on paddy which is popularly known as "Crop Cutting Survey" commenced in the year 1950. It is conducted in Maha and Yala season with a view to estimate the average yield of paddy and production by District. In a Maha season about 6,000 and in a Yala season about 4,000 experiments are being conducted for this survey and it is the only source to estimate the country's paddy production. Policy Planners are benefited by these data in numerous ways for taking the decisions such as volume of additional rice requirement of the country to be imported in time, evaluation of extension programs undertaken to uplift the average yields of paddy, pricing policies of rice, mobilization of stocks from one place to another and many more. Therefore, it is a great responsibility to estimate paddy production accurately and timely to fulfill the national requirement.

Field staff attached to each District has been entrusted with many responsibilities on various data collection activities and among them, method of data collection for crop cutting is different from the other surveys. This survey is associated with an objective approach; as such crop cutting officers should carry out experiments in the field by themselves. According to the standard procedure, the crop cutting officer must visit the selected paddy field and they should follow a number of steps such as; demarcate the specified plot of land equivalent to 16' ½" X 16' 1/2" (a paddy land of one perch of an acre), harvest the crop of the plot, thresh the grain, measure the grain using standard set of seers and finally report the results through the prescribed form CC3.

Special remarks - effective from 2005/2006 Maha Season

In order to perform these steps, Crop Cutting Officers should get the fullest co-operation from selected farmers. According to the available information, the whole process of conducting such an experiment takes around three hours. Also, all steps are

being performed manually in many occasions. It is obvious that the crop cutting is a laborious procedure at present. Considering the volume of work and practical difficulties which could affect negatively, it is a must to introduce an updated method in order to maintain the quality of data. Some of the suggestions to overcome this burden are as follows.

- (1) Reduce the volume and time of involvement of the officers
- (2) Introduce modern equipment to thresh the grain or assess the paddy yield of the plot.
- (3) Replace the current methodology with an alternative survey procedure.

As an initial step, the Agriculture Division of DCS in line with above suggestion noted in (1) a pilot survey has been conducted in Kegalle District in the 2005/06 Maha season. This was extended to Matara and Kurunegala Districts during the Maha 2007/08, by reducing the experimental plot size to half of that of the standard plot which is used at present. Now, the Agriculture Division is statistically testing the results of the pilot survey against the results of the standard survey conducted hitherto. If there is no significant difference between these two, the new plot size would be introduced in the near future.

Concepts, Definitions and Classifications associated with Crop Estimation of Paddy Survey

Seasons - In Sri Lanka there are two major cultivation seasons associated with two monsoons and they are known as Maha season and Yala Season.

Maha Season is the main season associated with North-east monsoons effective during September - April in the following year. When a particular crop is planted and harvested during this period is known to be Maha Crop.

Yala season is the secondary season which is associated with South-west monsoons effective during the period between May to September. When a particular crop is planted and harvested during this period is known to be Yala Crop.

Mode of Irrigation

There are three type of irrigations related with paddy cultivation. They are (1). Major Irrigation schemes (2). Minor Irrigation schemes (3). Rain-fed schemes.

Major Irrigation schemes defined to be an irrigated scheme of which water is fed to more than 200 acres otherwise it defines as a Minor Irrigation scheme.

Rain-fed is defined, if the cultivated extent is purely depending on rain water in absence of permanent water tank or reservoir.

Volume of Production is reported in Metric Tons.

Average Yield per acre or Hectare: An Indicator of productivity per area unit (2.471 acres = 1 hectare while 1 hectare is equal to 1,000 square meters) estimated through crop cutting survey. Average yield per acre is reported in Bushels while per hectare is reported in Kgs.

Average yield is expressed in terms of Paddy (grain with the husk form but not in Rice form)

Area Harvested refers to the gross area of which the harvest is gathered excluding the area damaged due to different causes.

Gross Area refers to the extent of which reported by enumerators or respondents based on cultivated extent estimated by seed rates but not based on cadastral surveys while Net Area refers to the extent evolved by deducting the extent set a part for bunds and ridges.

Production for a year should consider to be the sum of the production of Maha season and Yala season. For instance the production of the year 2005 is to be the sum of 2004/05 Maha season and Yala season of 2005.

KIND OF DATA

Sample survey data [ssd]

UNIT OF ANALYSIS

Paddy land Parcel 16 1/2" X 16 1/2", Where smaller experimental plot sizes are used in terraced fields, the actual length and breadth of these plots should be deducted.

Version

VERSION DESCRIPTION

V1.0: Full edited dataset, original version for internal DPD Use

VERSION DATE

2009-07-23

Scope

NOTES

Geographical information
 Paddy parcel information
 System of tenure
 Method of preparation of land
 Variety of seed
 Method of sowing
 Application of Fertilizer
 Weeding
 Insects/Fungus control
 Adverse affects on crop
 Yield

TOPICS

Topic	Vocabulary	URI
agricultural, forestry and rural industry [2.1]	CESSDA	Link

Coverage

GEOGRAPHIC COVERAGE

National Coverage

UNIVERSE

The survey covered a random sample from all the paddy lands in Sri Lanka

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
Department of Census and Statistics	Ministry of Finance and Planning

FUNDING AGENCY/SPONSOR

Name	Abbreviation
Government of Sri Lanka	GOSL

Sampling

SAMPLING PROCEDURE

Sampling Design: The sampling design adopted in the survey is a stratified multistage sampling method where DS Divisions were treated as strata and mode of irrigation schemes namely; Major, Minor, and Rain-fed as sub strata. Number of villages

to be selected for crop cutting experiments in each scheme is decided on the basis of the following proportions.

Acreage sown in the previous corresponding season Number of villages to be selected

< 500 Acres 3

500 - <1000 Acres 5

1000 - < 5000 Acres 10

5000 - < 10,000 Acres 15

10,000 - < 15,000 Acres 20

15,000 - < 20,000 Acres 25

20,000 Acres and above 30

Though the recommended design is such, considering the sampling variances occurred during the previous seasons, the number of experimental villages to be selected is being curtailed in order to keep the number of villages within a range of 3,000 for a Maha season and 2,000 for a Yala season in a year. Other reasons for such restrictions were related to practical aspects like cost of the survey and number of personnel that could be deployed to carry out crop cuttings.

In each selected village two crop cutting experiments are conducted. The whole procedure in conducting the experiment is stated in detail in the manual of Crop Cutting Experiments prepared by the Agriculture Division. At present the sample villages and the parcels are selected at random. However, prior to 1980, selection of villages as well as parcels was done at random with probability proportional to the area cultivated during the previous corresponding season with replacement. As the procedure was somewhat laborious and time consuming, it was replaced with the present system i.e. both stages at random. Sample villages are selected in the head office while the selections of parcels are done at the respective Districts.

Controlling of Non-sampling Errors: In view of the accuracy of the experimental results, a sample of 1/5 of selected villages are to be supervised by executive officers/District Heads identified from the District such as DS/GA, Divisional Secretary, Director/Deputy Director of Agriculture, Deputy Commissioners of Agrarian Development in addition to the Senior Staff of DCS attached to the District. Spot checks are to be performed by them by visiting the sample villages.

Estimation of Average Yield of Paddy

Average yield of paddy per acre/hectare by mode of irrigation and by District is being estimated through an objective survey which is popularly known as crop cutting survey on paddy. This has been initiated in 1950 and the methodology introduced by Dr. Koshal, Statistician of FAO (an Indian expert) under the assistance of FAO. From time to time some modifications have been introduced and the procedure is still in operation to estimate the paddy production in each season.

Data Collection

DATES OF DATA COLLECTION

Start	End
1986-10-01	1987-04-30

DATA COLLECTION MODE

Face-to-face [f2f]

SUPERVISION

"Agricultural Research and Production Assistants (ARPO) earlier known as "Govi Sevana Niyamakas" of Agrarian Development Department attached to Agrarian Service Centers do play the role of "Primary Reporters" to report the extent in P1 form which is parcel-wise enumeration of all paddy growing parcels.

They list out the area Asweddumized, Sown and Harvested in Maha and Yala seasons at village/Yaya, Tract/Kandam in the prescribed form. Here the "paddy parcel" is defined to be piece/plot of land cultivated by one individual farmer or group of farmers jointly surrounded by another paddy parcel cultivated by another individual farmer or group of farmers or any land cultivated with crops other than paddy or uncultivated land such as road, stream etc.

The paddy extent thus enumerated is summarized by Village/Yaya/Tract/Kandam and transferred to the form known as P2 which gives the aggregate extent under paddy by above categories and by irrigation modes at GN division level and by DS level. This form is prepared by the Range Statistical Officer attached to a particular DS. During the Yala season the sown and harvested extents are recorded while asweddumized extent is updated, only if there occurs a change.

However, it is to be noted that the Districts where ARPOs are not appointed, Grama Niladaris (GNN) are still acting as

primary reporters for the collection of paddy statistics as well as other agricultural statistics. This is specifically true for Northern and Eastern Provinces.

The aggregate extent prepared for DS level leads to the compilation of paddy extent at various higher levels such as District and All Island Level. It is important to note that the extent reported/listed in the P1 form is the "Gross Extent" since the extent of most of the paddy parcels are not based on any cadastral survey or measures, but reported extent are based on seed rates or traditional measurement or guesstimates as per the knowledge of respective farmers. This gross extent is ultimately converted to net-extent by applying correction factors which were determined at District level through a land measurement survey carried out by means of a sample of paddy parcels with the assistance of the Survey General Department in 1970s.

The list prepared by the primary reporters in the P1 form acts as the basis for the selection of sample of paddy parcels while the list of paddy growing villages compiled in the P2 form acts the basis to select villages for the National Crop Cutting Survey on Paddy conducted by the Agriculture and Environment Statistics Division of DCS.

DATA COLLECTION NOTES

Crop Cutting Officers: Once the list of villages are transmitted to the Statistics Branch of the respective District, the Head of the Division Deputy Director/Senior Statistician/Statistician has to identify the crop cutting officers who are to be suitable for conducting these experiments in the selected villages. Guideline is to choose them preferably out of the field officers attached to the respective DS Divisions who are related to the discipline of agriculture such as Agricultural Officers/Agricultural Instructors of the Ministry of Agriculture, Divisional Officers of Department of Agrarian Development, Colonization Officers, etc. in addition to the Range Statistical Officers of DCS. Range Statistical Officers should undertake at least three experiments in his range. The direction is to discuss this matter in the District Agriculture Committee Meeting (DAC) held once in a month chaired by District Secretary/Government Agent and then assign the villages in concurrence with the DS/GA

The Statistical officer (SO) or the Agriculture Instructor (AI) in the area visits the selected paddy land along with the farmer and cuts the crop in the demarcated area. The crop is measured in Seers then and there and the yield is recorded. Then in the same way yield for the other parcel is recorded. The crop collected for measuring is returned to the farmer. In addition to the yield recorded in this manner, other relevant information requested in the form C.C.3 has to be collected .

Ancillary Information: When crop cuttings are done in the field, in addition to sample fields selected for crop cuttings, an extra set of sample (four parcels) fields are selected to collect ancillary information related to the paddy crop viz. usage inputs, system of tenure, variety of seed, etc. Along with the final estimates on production and average yield the estimated extent related to the above characteristics are being disseminated.

DATA COLLECTORS

Questionnaires

QUESTIONNAIRES

The questionnaire is Form C.C.3 printed in Sinhala/English and Tamil/English languages. It has three parts.

Part I is about the geographical and Paddy land parcel information.

Part II includes System of tenure, Method of preparation of land, Variety of seed, Method of sowing, Application of Fertilizer, Weeding, Insecticides, Fungicides, Adverse affects on crop.

Part III Collects yield information.

In the questionnaire the above information is recorded for two parcels selected for the survey. The same Form C.C.3 is used to collect data for both Yala and Maha seasons. Maha Season falls during "North-east monsoon" from September to March in the following year. Yala season is effective during the period from May to end of August.

Data Appraisal

ESTIMATES OF SAMPLING ERROR

Formulae needed to calculate Avg. Yield & Variance for a given Stratum is available in the External Resource Section.

Access policy

CONTACTS

Name	Affiliation	Email	URL
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Agriculture and Environment Statistics Division	Department of Census and Statistics	agriculture@statistics.gov.lk	Link
Information Unit	Department of Census and Statistics	information@statistics.gov.lk	Link

CONFIDENTIALITY

Under the Statistical ordinance, micro data cannot be released with identifications for public use. Procedures are in place to ensure that information relating to any particular individual person, household or undertaking will be kept strictly confidential and will not be divulged to external parties. Information on individual or individual Household/establishment will not be divulged or published in such a form that will facilitate the identification of any particular person or establishment as the data have been collected under the Census/Statistical ordinance, according to which the information at individual level cannot be divulged and such information is strictly confidential.

ACCESS CONDITIONS

The dataset has been anonymized and is available as a Public Use Dataset. It is accessible to all for statistical and research purposes only, under the following terms and conditions:

1. The data and other materials will not be redistributed or sold to other individuals, institutions, or organizations without the written agreement.
2. The data will be used for statistical and scientific research purposes only. They will be used solely for reporting of aggregated information, and not for investigation of specific individuals or organizations.
3. No attempt will be made to re-identify respondents, and no use will be made of the identity of any person or establishment discovered inadvertently.
4. No attempt will be made to produce links among datasets provided by the Department or among data from the Department and other datasets that could identify individuals or organizations.
5. Any books, articles, conference papers, theses, dissertations, reports, or other publications that employ data obtained from the Department will cite the source of data in accordance with the Citation Requirement provided with each dataset.
6. An electronic copy of all reports and publications based on the requested data will be sent to the Department

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- Only the requests of Government Institutions, Recognized Universities, Students, and selected international agencies are entertained. However, the Data users are required to strictly adhere to the terms stipulated in the agreement form.
- All the data requests should be made to Director General (DG) of the DCS as the sole authority of releasing data is vested with the DG of the DCS. The DCS of Sri Lanka reserves sole right to approve or reject any data request made depending on the confidential nature of the data set and intended purpose of the study or analysis.
- Requests for micro data should be made through the agreement form designed by DCS for this purpose (Form D.R.1). The agreement form should be filled in triplicate and the Study/project proposal should accompany the filled agreement form. If requests are made for the micro data of more than one survey, a separate agreement should be signed.
- If the data request is from a student a letter from the respective Dept. Head/Dean/Supervisor, recommending the issue of data, should also be accompanied.
- If the request is approved only 25% of the data file is released at the first stage. The release of the total data file is considered only after reviewing the draft report prepared on the basis of the 25% sample data file.
- The released Data file should be used only for the specific study/Analysis mentioned in the agreement form and shall not

be used for any other purpose without the prior approval of the Director General of the DCS. Moreover, Copies of the micro-data file, obtained from the DCS, shall not be given to anyone else without the prior written approval of the Director General of the DCS.

- The draft report of the Study/Analysis should be submitted to the DCS and the concurrence of the DG of the DCS, should be obtained before publishing it. Once published, a copy of the final report should be submitted to the DCS.

[Department : The Department of Census and Statistics (DCS)]

Source : http://www.statistics.gov.lk/databases/data_dissemination/DataDissaPolicy_2007Oct26.pdf

CITATION REQUIREMENTS

Department of Census and Statistics, Crop Estimation Survey on Paddy [Maha] 1987, [CESP(M)1987], Version 1.0 of the internal use dataset July, 2009 provided by the National Data Archive, Data Processing Division, www.statistics.gov.lk"

ACCESS AUTHORITY

Name	Affiliation	Email	URL
Director General	Department of Census and Statistics	dgcensus@statistics.gov.lk	Link

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Metadata production

DDI DOCUMENT ID

DDI-LKA-DCS-CESP[M]-1987-v1.0

PRODUCERS

Name	Abbreviation	Affiliation	Role
Department of Census and Statistics	DCS	Ministry Of Finance and Planning	Conducting the survey

DATE OF METADATA PRODUCTION

2009-07-23

DDI DOCUMENT VERSION

Version 1.0 (2009)

Data Dictionary

Data file	Cases	Variables
1986_87maha	12296	28

Data file: 1986_87maha

Cases: 12296

Variables: 28

Variables

ID	Name	Label	Question
V135	SEASON	Season	
V136	YEAR	Year	
V137	BLANK	BLANK	
V138	DISTRICT	District	
V139	AGA	AGA Division	
V140	TYPE_OF_IRRIGATION	Type of irrigation	
V141	VILLAGE	Village code	
V142	PARCEL_NO	Parcel no	
V143	EXTENT_SOWN_A	Extent Sown in acres	
V144	EXTENT_SOWN_R	Extent Sown in Roods	
V145	EXTENT_SOWN_PERCHES	Extent Sown in Perches	
V146	NO_OF_LIYADDAS_IN_PARCEL	No of Liyaddas in Parcel	
V147	LENGTH_LIYADDA	Length of Liyadda	
V148	BREDTH_LIYADDA	Bredth of liyadda	
V149	TENURE	Tenure	
V150	PREPARATION_OF_LAND	Preparation of Land	
V151	VARIETY_OF_SEED	Variety of seed	Write the name or index of seed paddy and leave the box blank for official use.
V152	SOWING_METHOD	Sowing Method	
V153	FERTILIZER_APPLICATION	Fertilizer Application	Inquire from the cultivator the total quantity of fertilizer used in the parcel and give the quantity in Kg's.
V154	WT_OF_CHEM_FERT	Weight of Chemical Fertilizer	
V155	WTOFORG_FERT	Weight of Organic Fertilizer	
V156	WEEDING	Weeding	
V157	INSECTISIDES	Insecticides Used	
V158	FUNGICIDES	Fungicides Used	
V159	ADVERSE_AFFECTS	Adverse Affects	
V160	YIELD	Yield	
V161	RECNO	Record No	
V162	SERIAL	Serial No	

Total: 28

SEASON: Season**Data file: 1986_87maha****Overview**

Valid: 12296 Invalid: 0
 Type: Discrete Width: 1 Range: - Format: character

Questions and instructions

CATEGORIES

Value	Category	Cases	
2	Maha	12296	100%

Description

DEFINITION

Yala season is the secondary season which is associated with South-west monsoons effective during the period between May to September. When a particular crop is planted and harvested during this period is known to be Yala Crop.

YEAR: Year**Data file: 1986_87maha****Overview**

Valid: 12296 Invalid: 0 Minimum: 1986 Maximum: 1986 Mean: 1986 Standard deviation: 0
 Type: Continuous Decimal: 0 Width: 4 Range: 1986 - 1986 Format: Numeric

BLANK: BLANK**Data file: 1986_87maha****Overview**

Valid: 0 Invalid: 0
 Type: Discrete Width: 1 Range: - Format: character

DISTRICT: District**Data file: 1986_87maha****Overview**

Valid: 12296 Invalid: 0 Minimum: 1 Maximum: 27 Mean: 12.436 Standard deviation: 7.827
 Type: Continuous Decimal: 0 Width: 2 Range: 1 - 26 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
1	Colombo	304	2.5%
2	Gampaha	666	5.4%
3	Kalutara	656	5.3%
4	Galle	812	6.6%
5	Matara	746	6.1%
6	Ratnapura	638	5.2%
7	Kegalle	620	5%
8	Kurunegala	316	2.6%
9	Puttalam	182	1.5%
10	Kandy	910	7.4%
11	Matale	540	4.4%
12	Nuwara Eliya	374	3%
13	Badulla	680	5.5%
14	Moneragala	420	3.4%
15	Jaffna	386	3.1%
16	Kilinochchi	118	1%
17	Vavuniya	58	0.5%
18	Mullaitivu	96	0.8%
19	Mannar	346	2.8%
20	Anuradhapura	642	5.2%
21	Polonnaruwa	716	5.8%
22	Trincomalee	90	0.7%
23	Batticaloa	416	3.4%
24	Ampara	580	4.7%
25	Hambantota	464	3.8%
26	Udawalawa	200	1.6%
27	Mahaweli H	320	2.6%

AGA: AGA Division

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 1 Maximum: 19 Mean: 5.707 Standard deviation: 3.733
 Type: Continuous Decimal: 0 Width: 2 Range: 1 - 16 Format: Numeric

TYPE_OF_IRRIGATION: Type of irrigation

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 1 Maximum: 3 Mean: 2.086 Standard deviation: 0.854
 Type: Continuous Decimal: 0 Width: 1 Range: 1 - 3 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
1	Major	4000	32.5%
2	Minor	3236	26.3%
3	Rainfed	5060	41.2%

VILLAGE: Village code

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 0 Maximum: 46 Mean: 5.453 Standard deviation: 4.798
 Type: Continuous Decimal: 0 Width: 2 Range: 1 - 23 Format: Numeric

PARCEL_NO: Parcel no

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 1 Maximum: 2 Mean: 1.5 Standard deviation: 0.5
 Type: Continuous Decimal: 0 Width: 1 Range: 1 - 2 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
1	1	6148	50%
2	2	6148	50%

Description

DEFINITION

Parcel - Paddy land Parcel is the land demarcated for the operator to cultivate

EXTENT_SOWN_A: Extent Sown in acres

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 0 Maximum: 5 Mean: 0.00577 Standard deviation: 0.0877
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 9 Format: Numeric

EXTENT_SOWN_R: Extent Sown in Roods

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 0 Maximum: 9 Mean: 1.038 Standard deviation: 1.429
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 9 Format: Numeric

EXTENT_SOWN_PERCHES: Extent Sown in Perches

Data file: 1986_87maha

Overview

Valid: 12296 Invalid: 0 Minimum: 0 Maximum: 99 Mean: 28.756 Standard deviation: 26.042
 Type: Continuous Decimal: 0 Width: 2 Range: 0 - 99 Format: Numeric

NO_OF_LIYADDAS_IN_PARCEL: No of Liyaddas in Parcel

Data file: 1986_87maha

Overview

Valid: 5062 Invalid: 7234 Minimum: 1 Maximum: 99 Mean: 20.314 Standard deviation: 22.863
 Type: Continuous Decimal: 0 Width: 2 Range: 0 - 99 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	0	0%
1	1	198	3.9%
2	2	339	6.7%
3	3	330	6.5%
4	4	347	6.9%
5	5	276	5.5%
6	6	266	5.3%
7	7	196	3.9%
8	8	224	4.4%
9	9	167	3.3%
10	10	133	2.6%
11	11	102	2%

12	12	158	3.1%
13	13	88	1.7%
14	14	120	2.4%
15	15	103	2%
16	16	92	1.8%
17	17	62	1.2%
18	18	115	2.3%
19	19	50	1%
20	20	83	1.6%
21	21	58	1.2%
22	22	72	1.4%
23	23	47	0.9%
24	24	63	1.3%
25	25	45	0.9%
26	26	46	0.9%
27	27	35	0.7%
28	28	57	1.1%
29	29	21	0.4%
30	30	57	1.1%
31	31	23	0.5%
32	32	59	1.2%
33	33	17	0.3%
34	34	30	0.6%
35	35	39	0.8%
36	36	25	0.5%
37	37	14	0.3%
38	38	36	0.7%
39	39	12	0.2%
40	40	45	0.9%
41	41	20	0.4%
42	42	53	1.1%
43	43	19	0.4%
44	44	16	0.3%
45	45	27	0.5%
46	46	18	0.4%
47	47	14	0.3%
48	48	38	0.8%
49	49	12	0.2%
50	50	19	0.4%

51	51	12	0.2%
52	52	40	0.8%
53	53	15	0.3%
54	54	14	0.3%
55	55	20	0.4%
56	56	14	0.3%
57	57	18	0.4%
58	58	15	0.3%
59	59	7	0.1%
60	60	26	0.5%
61	61	10	0.2%
62	62	20	0.4%
63	63	9	0.2%
64	64	11	0.2%
65	65	16	0.3%
66	66	2	0%
67	67	13	0.3%
68	68	14	0.3%
69	69	6	0.1%
70	70	12	0.2%
72	72	14	0.3%
73	73	4	0.1%
74	74	12	0.2%
75	75	9	0.2%
76	76	11	0.2%
77	77	6	0.1%
78	78	11	0.2%
80	80	12	0.2%
81	81	5	0.1%
82	82	10	0.2%
83	83	4	0.1%
84	84	9	0.2%
85	85	6	0.1%
86	86	5	0.1%
87	87	6	0.1%
88	88	4	0.1%
89	89	2	0%
90	90	8	0.2%
91	91	4	0.1%

92	92	1	0%
94	94	2	0%
95	95	6	0.1%
96	96	6	0.1%
97	97	6	0.1%
99	99	96	1.9%

Description

DEFINITION

Liyadda - major block of cultivation in a parcel

LENGTH_LIYADDA: Length of Liyadda

Data file: 1986_87maha

Overview

Valid: 4541 Invalid: 7755 Minimum: 0 Maximum: 921 Mean: 71.119 Standard deviation: 43.863
Type: Continuous Decimal: 0 Width: 3 Range: 0 - 353 Format: Numeric

BREDTH_LIYADDA: Bredth of liyadda

Data file: 1986_87maha

Overview

Valid: 4541 Invalid: 7755 Minimum: 2 Maximum: 360 Mean: 43.745 Standard deviation: 27.152
Type: Continuous Decimal: 0 Width: 3 Range: 0 - 286 Format: Numeric

TENURE: Tenure

Data file: 1986_87maha

Overview

Valid: 12154 Invalid: 142 Minimum: 0 Maximum: 6 Mean: 1.49 Standard deviation: 0.848
Type: Continuous Decimal: 0 Width: 1 Range: 0 - 4 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	6	0%
1	Singly owned	8834	72.7%
2	Jointly owned	875	7.2%
3	Ande	2237	18.4%

4	Other	201	1.7%
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Description

DEFINITION

System of Tenure could be (1) Singly owned (2)Jointly owned including Thattumaru and Kattimaru. (3) Ande (4) Other

Thattumaru - An accepted cultivation system where a each person claiming ownership of a paddy field cultivates a predetermined area of the field in rotation.

Kattimaru - Cultivating different crops in different seasons.

Ande - Permitting a non-owner to cultivate the paddy field under the condition that the crop produced from that is shared between him and the owner.

PREPARATION_OF_LAND: Preparation of Land

Data file: 1986_87maha

Overview

Valid: 12153 Invalid: 143 Minimum: 0 Maximum: 7 Mean: 2.553 Standard deviation: 1.702
Type: Continuous Decimal: 0 Width: 1 Range: 0 - 7 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	40	0.3%
1	By Tractor	4332	35.6%
2	Buffalow ploughed	3333	27.4%
3	Buffalow mudded	702	5.8%
4	Mammotied	2374	19.5%
5	5	270	2.2%
6	6	639	5.3%
7	7	463	3.8%

Description

DEFINITION

Predominant method of preparation of land

VARIETY_OF_SEED: Variety of seed

Data file: 1986_87maha

Overview

Valid: 12155 Invalid: 141 Minimum: 0 Maximum: 3 Mean: 1.303 Standard deviation: 0.67
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 3 Format: Numeric

Questions and instructions

LITERAL QUESTION

Write the name or index of seed paddy and leave the box blank for official use.

SOWING_METHOD: Sowing Method

Data file: 1986_87maha

Overview

Valid: 12152 Invalid: 144 Minimum: 0 Maximum: 4 Mean: 1.579 Standard deviation: 0.884
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 4 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	10	0.1%
1	Broadcasting	8317	68.4%
2	Transplanted in rows	634	5.2%
3	Transplanted not in rows	3158	26%
4	Row seeded	33	0.3%

FERTILIZER_APPLICATION: Fertilizer Application

Data file: 1986_87maha

Overview

Valid: 12152 Invalid: 144 Minimum: 1 Maximum: 4 Mean: 1.264 Standard deviation: 0.781
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 4 Format: Numeric

Questions and instructions

LITERAL QUESTION

Inquire from the cultivator the total quantity of fertilizer used in the parcel and give the quantity in Kg's.

CATEGORIES

Value	Category	Cases	
0	0	0	0%
1	Chemical Only	10769	88.6%
2	Organic Only	267	2.2%

3	Both Chemical & Organic	412	3.4%
4	None	704	5.8%

WT_OF_CHEM_FERT: Weight of Chemical Fertilizer

Data file: 1986_87maha

Overview

Valid: 11182 Invalid: 1114 Minimum: 0 Maximum: 8000 Mean: 337.409 Standard deviation: 427.522
Type: Continuous Decimal: 0 Width: 4 Range: 0 - 5600 Format: Numeric

Description

DEFINITION

To be filled if Chemical fertilizer is applied (Weight of Chemical fertilizer kg)

WTOFORG_FERT: Weight of Organic Fertilizer

Data file: 1986_87maha

Overview

Valid: 679 Invalid: 11617 Minimum: 0 Maximum: 9999 Mean: 543.477 Standard deviation: 1097.419
Type: Continuous Decimal: 0 Width: 4 Range: 0 - 3600 Format: Numeric

Description

DEFINITION

To be filled if Organic fertilizer is applied (Weight of Organic fertilizer kg)

WEEDING: Weeding

Data file: 1986_87maha

Overview

Valid: 12153 Invalid: 143 Minimum: 1 Maximum: 4 Mean: 2.088 Standard deviation: 1.066
Type: Continuous Decimal: 0 Width: 1 Range: 0 - 4 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	0	0%
1	Hand weeding	4038	33.2%
2	Using weedisides	5381	44.3%
3	By the use of water	361	3%

4	No weeding	2373	19.5%
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INSECTISIDES: Insecticides Used

Data file: 1986_87maha

Overview

Valid: 12153 Invalid: 143 Minimum: 0 Maximum: 2 Mean: 1.399 Standard deviation: 0.492
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 2 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	12	0.1%
1	Used	7274	59.9%
2	Not used	4867	40%

FUNGICIDES: Fungicides Used

Data file: 1986_87maha

Overview

Valid: 12153 Invalid: 143 Minimum: 0 Maximum: 2 Mean: 1.791 Standard deviation: 0.415
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 2 Format: Numeric

Questions and instructions

CATEGORIES

Value	Category	Cases	
0	0	43	0.4%
1	Used	2454	20.2%
2	Not used	9656	79.5%

ADVERSE_AFFECTS: Adverse Affects

Data file: 1986_87maha

Overview

Valid: 12153 Invalid: 143 Minimum: 0 Maximum: 7 Mean: 6.221 Standard deviation: 0.811
 Type: Continuous Decimal: 0 Width: 1 Range: 0 - 7 Format: Numeric

Questions and instructions

QUESTION PRETEXT

Codes 1,2,3,4 or 5 should be encircled only if the parcel was severely affected and it was not harvested.

CATEGORIES

Value	Category	Cases	
0	0	22	0.2%
1	Seed fauilure	37	0.3%
2	Drought	167	1.4%
3	Flood	26	0.2%
4	Pests	18	0.1%
5	Other adverse factors	55	0.5%
6	Not affected	7991	65.8%
7	Slightly affected	3837	31.6%

YIELD: Yield

Data file: 1986_87maha

Overview

Valid: 4525 Invalid: 7771 Minimum: 0 Maximum: 96758 Mean: 14489.02 Standard deviation: 6564.703
 Type: Continuous Decimal: 0 Width: 5 Range: 8 - 80258 Format: Numeric

RECNO: Record No

Data file: 1986_87maha

Overview

Valid: 4526 Invalid: 7770 Minimum: 0 Maximum: 7102 Mean: 7021.309 Standard deviation: 191.182
 Type: Continuous Decimal: 0 Width: 4 Range: 0 - 9122 Format: Numeric

SERIAL: Serial No

Data file: 1986_87maha

Overview

Valid: 12292 Invalid: 0
 Type: Discrete Width: 3 Range: - Format: character

Questions and instructions

CATEGORIES

Value	Category	Cases	
-------	----------	-------	--

0		4	0%
001		48	0.4%
002		2	0%
003		6	0%
004		43	0.3%
005		10	0.1%
006		7	0.1%
007		39	0.3%
008		5	0%
009		7	0.1%
01		15	0.1%
010		35	0.3%
011		7	0.1%
012		7	0.1%
013		26	0.2%
014		4	0%
015		4	0%
016		20	0.2%
017		1	0%
018		6	0%
019		19	0.2%
02		430	3.5%
020		2	0%
021		3	0%
022		18	0.1%
023		7	0.1%
024		3	0%
025		13	0.1%
026		2	0%
027		4	0%
028		9	0.1%
029		7	0.1%
03		441	3.6%
030		1	0%
031		8	0.1%
032		3	0%
033		6	0%
034		9	0.1%
035		8	0.1%

036		1	0%
037		8	0.1%
038		7	0.1%
039		4	0%
04		47	0.4%
040		2	0%
041		3	0%
043		2	0%
044		2	0%
046		4	0%
048		5	0%
05		401	3.3%
051		2	0%
053		5	0%
054		3	0%
055		2	0%
056		2	0%
057		2	0%
058		1	0%
06		410	3.3%
060		4	0%
062		4	0%
063		1	0%
064		2	0%
066		2	0%
067		2	0%
07		71	0.6%
070		4	0%
08		378	3.1%
081		1	0%
082		1	0%
085		1	0%
086		1	0%
09		374	3%
091		1	0%
099		1	0%
10		68	0.6%
101		28	0.2%
102		7	0.1%

103		3	0%
104		42	0.3%
105		5	0%
106		8	0.1%
107		39	0.3%
108		3	0%
109		5	0%
11		348	2.8%
110		33	0.3%
111		2	0%
112		6	0%
113		32	0.3%
114		7	0.1%
115		9	0.1%
116		22	0.2%
117		3	0%
118		15	0.1%
119		22	0.2%
12		323	2.6%
120		4	0%
121		11	0.1%
122		16	0.1%
123		2	0%
124		4	0%
125		7	0.1%
126		3	0%
127		2	0%
128		10	0.1%
129		4	0%
13		78	0.6%
130		5	0%
131		16	0.1%
132		2	0%
134		11	0.1%
136		2	0%
137		1	0%
138		3	0%
139		2	0%
14		316	2.6%

140		8	0.1%
141		3	0%
142		2	0%
143		6	0%
144		1	0%
145		4	0%
146		2	0%
147		3	0%
148		3	0%
15		288	2.3%
151		2	0%
154		1	0%
16		77	0.6%
160		3	0%
161		2	0%
165		2	0%
167		1	0%
17		283	2.3%
171		1	0%
18		249	2%
189		1	0%
19		73	0.6%
193		1	0%
20		232	1.9%
201		54	0.4%
202		6	0%
203		1	0%
204		32	0.3%
205		6	0%
206		4	0%
207		36	0.3%
208		7	0.1%
209		8	0.1%
21		218	1.8%
210		31	0.3%
211		11	0.1%
212		5	0%
213		26	0.2%
214		6	0%

215		4	0%
216		25	0.2%
217		2	0%
218		7	0.1%
219		28	0.2%
22		66	0.5%
220		2	0%
221		5	0%
222		23	0.2%
223		4	0%
224		6	0%
225		17	0.1%
226		4	0%
227		2	0%
228		12	0.1%
229		4	0%
23		204	1.7%
231		13	0.1%
232		2	0%
233		1	0%
234		8	0.1%
235		2	0%
236		4	0%
237		4	0%
238		1	0%
239		2	0%
24		188	1.5%
240		4	0%
243		2	0%
244		3	0%
245		4	0%
246		4	0%
247		4	0%
249		1	0%
25		52	0.4%
253		2	0%
254		1	0%
257		1	0%
258		1	0%

26		162	1.3%
262		2	0%
264		1	0%
267		1	0%
268		2	0%
269		1	0%
27		159	1.3%
274		1	0%
278		2	0%
28		55	0.4%
29		130	1.1%
292		1	0%
296		1	0%
299		1	0%
3		2	0%
30		145	1.2%
301		45	0.4%
302		4	0%
303		2	0%
304		29	0.2%
305		8	0.1%
306		5	0%
307		43	0.3%
308		6	0%
309		4	0%
31		54	0.4%
310		21	0.2%
311		2	0%
312		2	0%
313		27	0.2%
314		4	0%
315		1	0%
316		31	0.3%
317		3	0%
318		6	0%
319		17	0.1%
32		102	0.8%
320		3	0%
322		9	0.1%

324		4	0%
325		17	0.1%
326		4	0%
328		16	0.1%
33		123	1%
331		7	0.1%
332		4	0%
333		1	0%
334		9	0.1%
335		4	0%
336		1	0%
337		9	0.1%
338		1	0%
34		42	0.3%
340		5	0%
341		2	0%
342		2	0%
343		4	0%
344		1	0%
345		3	0%
346		5	0%
347		2	0%
349		2	0%
35		85	0.7%
350		1	0%
355		3	0%
356		1	0%
357		2	0%
359		2	0%
36		92	0.7%
365		2	0%
368		1	0%
37		49	0.4%
38		75	0.6%
385		2	0%
39		75	0.6%
396		1	0%
40		40	0.3%
401		53	0.4%

402		3	0%
403		3	0%
404		44	0.4%
405		7	0.1%
406		5	0%
407		33	0.3%
408		6	0%
409		1	0%
41		62	0.5%
410		24	0.2%
411		4	0%
412		10	0.1%
413		31	0.3%
414		1	0%
415		1	0%
416		30	0.2%
418		6	0%
419		21	0.2%
42		63	0.5%
421		3	0%
422		12	0.1%
423		2	0%
424		5	0%
425		16	0.1%
426		3	0%
427		6	0%
428		8	0.1%
429		6	0%
43		33	0.3%
430		2	0%
431		8	0.1%
432		7	0.1%
433		1	0%
434		2	0%
435		2	0%
437		3	0%
439		2	0%
44		47	0.4%
440		4	0%

441		4	0%
442		1	0%
443		3	0%
444		5	0%
447		1	0%
449		2	0%
45		44	0.4%
451		3	0%
454		2	0%
455		2	0%
457		1	0%
459		1	0%
46		28	0.2%
461		1	0%
463		2	0%
464		2	0%
465		1	0%
468		1	0%
47		39	0.3%
472		2	0%
473		2	0%
475		2	0%
476		1	0%
48		30	0.2%
49		23	0.2%
50		28	0.2%
501		57	0.5%
502		5	0%
503		6	0%
504		70	0.6%
505		4	0%
506		5	0%
507		41	0.3%
508		2	0%
509		10	0.1%
51		20	0.2%
510		42	0.3%
511		8	0.1%
512		7	0.1%

513		39	0.3%
514		4	0%
515		9	0.1%
516		31	0.3%
517		5	0%
518		6	0%
519		26	0.2%
52		21	0.2%
520		5	0%
521		8	0.1%
522		17	0.1%
523		1	0%
524		9	0.1%
525		19	0.2%
526		6	0%
527		2	0%
528		15	0.1%
529		2	0%
53		20	0.2%
530		5	0%
531		5	0%
532		4	0%
533		1	0%
534		2	0%
535		6	0%
536		4	0%
537		6	0%
538		3	0%
539		3	0%
54		17	0.1%
540		3	0%
542		2	0%
543		2	0%
544		2	0%
545		2	0%
546		3	0%
548		1	0%
549		4	0%
55		12	0.1%

550		2	0%
551		2	0%
552		6	0%
554		2	0%
555		2	0%
556		1	0%
559		1	0%
56		14	0.1%
560		1	0%
563		1	0%
57		10	0.1%
570		2	0%
571		1	0%
573		1	0%
577		1	0%
58		12	0.1%
583		1	0%
588		2	0%
59		14	0.1%
593		1	0%
60		10	0.1%
601		38	0.3%
602		7	0.1%
603		4	0%
604		38	0.3%
605		6	0%
606		5	0%
607		40	0.3%
608		12	0.1%
609		6	0%
61		12	0.1%
610		31	0.3%
611		3	0%
612		5	0%
613		36	0.3%
614		2	0%
615		10	0.1%
616		20	0.2%
617		4	0%

618		3	0%
619		19	0.2%
62		12	0.1%
620		9	0.1%
621		4	0%
622		26	0.2%
623		3	0%
624		2	0%
625		16	0.1%
626		5	0%
627		2	0%
628		16	0.1%
63		13	0.1%
631		9	0.1%
632		3	0%
634		15	0.1%
635		5	0%
636		1	0%
637		6	0%
638		1	0%
639		2	0%
64		7	0.1%
640		9	0.1%
641		3	0%
643		4	0%
644		2	0%
646		4	0%
649		3	0%
65		9	0.1%
651		2	0%
652		3	0%
656		1	0%
657		1	0%
658		3	0%
66		10	0.1%
660		2	0%
661		5	0%
663		1	0%
664		1	0%

667		1	0%
669		3	0%
67		9	0.1%
672		1	0%
673		1	0%
674		2	0%
679		1	0%
68		8	0.1%
688		1	0%
69		9	0.1%
692		1	0%
70		7	0.1%
701		50	0.4%
702		3	0%
703		9	0.1%
704		37	0.3%
705		8	0.1%
706		4	0%
707		39	0.3%
708		2	0%
709		6	0%
71		9	0.1%
710		30	0.2%
712		6	0%
713		16	0.1%
714		2	0%
715		10	0.1%
716		26	0.2%
717		5	0%
718		3	0%
719		27	0.2%
72		11	0.1%
720		4	0%
721		6	0%
722		27	0.2%
723		8	0.1%
725		15	0.1%
726		4	0%
727		1	0%

728		11	0.1%
729		2	0%
73		9	0.1%
730		2	0%
731		12	0.1%
732		3	0%
733		2	0%
734		13	0.1%
735		2	0%
736		4	0%
737		2	0%
738		5	0%
739		4	0%
74		7	0.1%
740		2	0%
741		2	0%
742		6	0%
743		5	0%
745		2	0%
746		2	0%
748		6	0%
749		1	0%
75		5	0%
750		1	0%
752		1	0%
755		1	0%
756		1	0%
758		2	0%
759		4	0%
76		5	0%
766		1	0%
768		2	0%
77		5	0%
771		2	0%
776		1	0%
778		1	0%
78		3	0%
781		2	0%
784		1	0%

79		5	0%
80		5	0%
801		50	0.4%
802		9	0.1%
804		51	0.4%
805		5	0%
806		5	0%
807		37	0.3%
808		10	0.1%
809		7	0.1%
81		3	0%
810		47	0.4%
811		5	0%
812		9	0.1%
813		28	0.2%
814		7	0.1%
815		17	0.1%
816		19	0.2%
817		8	0.1%
818		6	0%
819		16	0.1%
82		5	0%
820		2	0%
821		3	0%
822		17	0.1%
823		2	0%
824		1	0%
825		13	0.1%
826		2	0%
827		9	0.1%
828		6	0%
829		10	0.1%
83		4	0%
830		4	0%
831		11	0.1%
832		10	0.1%
833		1	0%
834		4	0%
835		1	0%

836		5	0%
837		10	0.1%
838		2	0%
839		2	0%
84		3	0%
840		7	0.1%
841		3	0%
842		2	0%
843		3	0%
844		1	0%
845		2	0%
846		2	0%
847		1	0%
848		2	0%
849		2	0%
85		1	0%
850		2	0%
856		2	0%
857		1	0%
858		2	0%
86		3	0%
864		1	0%
869		1	0%
87		3	0%
873		1	0%
88		1	0%
880		1	0%
883		1	0%
89		3	0%
90		4	0%
901		44	0.4%
902		4	0%
903		3	0%
904		29	0.2%
905		2	0%
906		2	0%
907		24	0.2%
908		7	0.1%
909		4	0%

91		1	0%
910		38	0.3%
911		4	0%
912		8	0.1%
913		27	0.2%
914		3	0%
915		3	0%
916		27	0.2%
917		6	0%
918		3	0%
919		16	0.1%
920		3	0%
921		5	0%
922		11	0.1%
923		3	0%
924		4	0%
925		11	0.1%
926		1	0%
927		1	0%
928		14	0.1%
929		5	0%
930		2	0%
931		7	0.1%
932		2	0%
933		2	0%
934		9	0.1%
935		3	0%
936		2	0%
937		10	0.1%
94		2	0%
940		4	0%
941		2	0%
943		4	0%
945		1	0%
948		1	0%
95		2	0%
950		2	0%
951		3	0%
952		1	0%

953		1	0%
955		2	0%
957		4	0%
958		1	0%
966		1	0%
97		2	0%
970		1	0%
971		2	0%
975		1	0%
976		1	0%
98		2	0%
987		1	0%
991		1	0%

Download related resources

Questionnaires

Crop Estimation Survey on Paddy - Survey Schedule

Title Crop Estimation Survey on Paddy - Survey Schedule
Filename CC3.pdf

Technical documents

Formulae to Calculate Avg. Yield & Variance for a given Stratum

Title Formulae to Calculate Avg. Yield & Variance for a given Stratum
Filename Formulae to Calculate Avg. Yield & Variance for a given Stratum.doc

Other materials

Crop Estimation Survey on Paddy - Preliminary Cultivator Information Collecting Form

Title Crop Estimation Survey on Paddy - Preliminary Cultivator Information Collecting Form
Filename CC1.pdf

Crop Estimation Survey on Paddy - Cultivators Selected for Survey

Title Crop Estimation Survey on Paddy - Cultivators Selected for Survey
Filename CC2.pdf

Crop Estimation Survey on Paddy - Quality Checking Report

Title Crop Estimation Survey on Paddy - Quality Checking Report
Filename CC4.pdf

Study Documentation of CESP(M)87Project

Title Study Documentation of CESP(M)87Project
Filename Study Documentation of CESP(M)87 Project.pdf

Time series data of Extent, Yield and Production

Title Time series data of Extent, Yield and Production
Filename Time Series Data of Extent, Yield, Production.xls

District Codes List for Crop Estimation Survey of Paddy

Title District Codes List for Crop Estimation Survey of Paddy

Filename District Codes List.xls
