Sri Lanka

Department of Census and Statistics

# Crop Estimating Survey on Paddy (Maha) - 2008

Study Documentation

November 3, 2009

# Metadata Production

| | |
|---|---|
| Metadata Producer(s) | Department of Census and Statistics (DCS) , Ministry Of Finance and Planning , Conducting the survey |
| Production Date | November 10, 2009 |
| Version | Version 1.0 (2009) |
| Identification | DDI-LKA-DCS-CESP[M]-2008-v1.0 |

This document was generated using the **IHSN Microdata Management Toolkit**

# Table of Contents

| Sri Lanka ()<br>Crop Estimating Survey on Paddy (Maha) - 2008 (CESP[M] 2008) | |
|---|---|
| **Overview** | |
| Type | Agricultural Survey [ag/oth] |
| Identification | LKA-DCS-CESP[M]-2008-v1.0 |
| Version | Production Date: 2009-09-10<br>V1.0: Full edited dataset, for internal DPD Use |
| Series | This survey was started in the year 1950. It is conducted covering 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<br><br>This survey is carried out in each season of a cultivation year to collect the paddy extent under categories namely;<br><br>Asweddumized Extent<br>Sown Extent<br>Harvested Extent<br><br>Paddy extent is estimated on the basis of complete enumeration of paddy parcels in the county covering both Maha and Yala seasons.<br><br>All these variables are being collected through a form known as P1. The extent categories are again classified by type of irrigation namely;<br><br>Major Irrigation Schemes<br>Minor Irrigation Schemes<br>Rain-fed |

Abstract

Crop estimating survey on paddy which is popularly known as "Crop Cutting Survey" commenced in the year 1950. It is conducted covering 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.

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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. |

## Scope & Coverage

Scope
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 | agricultural, forestry and rural industry [2.1] |

Geographic Coverage
National Coverage

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

## Producers & Sponsors

| | |
|---|---|
| Primary Investigator(s) | Department of Census and Statistics, Ministry of Finance and Planning |
| Funding Agency/ies | Department of Census and Statistics (DCS) , Source of funds |

## 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.  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.

## Data Collection

| Data Collection Mode | Face-to-face [f2f] |
|---|---|

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.

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 April in the following year. Yala season is effective during the period from May to end of

| August. |  |
|---|---|
| Data Collector(s) |  |

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 Processing & Appraisal

Other Processing

Average yield per acre/hectare of paddy is estimated at the Head quarters in Colombo, based on the crop cutting sample data received from the Districts using a DBASE program and SPSS software customized  for this purpose by the Agriculture and Environment Statistics Division of DCS. Prior to final processing manual coding, verifications of data entries and checking outliers are performed

Data in the From C.C.3 are entered District-wise by about 10 Data Entry Operators / Coding Clerks into a dBase III database.  Then the databases they generate are merged to get the total file for the survey. This file which is in dbase form is imported to SPSS to produce standard tables.

Estimates of Sampling Error

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

| Accessibility | |
|---|---|
| Access Authority | Director General (Department of Census and Statistics) , http://www.statistics.gov.lk , dgcensus@sltnet.lk |
| Contact(s) | Director General ( Department of Census and Statistics) , http://www.statistics.gov.lk/ , dgcensus@sltnet.lk <br> Agriculture and Environment Statistics Division ( Department of Census and Statistics) , http://www.statistics.gov.lk/agriculture/index.htm , agriculture@statistics.gov.lk <br> Information Unit ( Department of Census and Statistics) , http://www.statistics.gov.lk/ , information@statistics.gov.lk |

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

The following rules apply to micro data released by the Department of Census and Statistics.

• 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] 2008 [CESP(M)2008] , Version 1.0 of the internal use dataset September 2009,  provided by the National Data Archive, Data Processing Division, www.statistics.gov.lk"

## Rights & Disclaimer

Disclaimer
The Department of Census and Statistics bears no responsibility for any results or interpretations arising from the secondary use of the data.

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# Files Description

Dataset contains 1 file(s)

| 2007_08maha | |
|---|---|
| # Cases | 9545 |
| # Variable(s) | 27 |

# Variables List

Dataset contains 27 variable(s)

| File 2007_08maha | | | | | | | |
|---|---|---|---|---|---|---|---|
| # | Name | Label | Type | Format | Valid | Invalid | Question |
| 1 | SEASON | SEASON | discrete | character-1 | 9545 | 0 | - |
| 2 | YEAR | YEAR | discrete | numeric-2.0 | 9545 | 0 | - |
| 3 | DISTRICT | DISTRICT | continuous | numeric-2.0 | 9545 | 0 | - |
| 4 | AGADIV | AGA DIV | continuous | numeric-2.0 | 9545 | 0 | - |
| 5 | IRRIGATIONTYPE | IRRIGATION TYPE | discrete | numeric-1.0 | 9545 | 0 | - |
| 6 | VILLAGE | VILLAGE | continuous | numeric-2.0 | 9545 | 0 | - |
| 7 | LD | PARCEL NO | discrete | numeric-1.0 | 9545 | 0 | - |
| 8 | SOWNA | EXT SOWN-ACRS | discrete | numeric-2.0 | 9545 | 0 | - |
| 9 | SOWNR | EXT SOWN-ROOD | discrete | numeric-1.0 | 9545 | 0 | - |
| 10 | SOWNP | EXT SOWN-PRCH | discrete | numeric-2.0 | 9545 | 0 | - |
| 11 | LID | NUM LIYADDA IN PARCEL | discrete | numeric-3.0 | 9545 | 0 | - |
| 12 | LIYADDALNG | LIYADDA LENGTH | discrete | numeric-3.0 | 9545 | 0 | - |
| 13 | LIYADDABRT | LIYADDA BREDTH | discrete | numeric-3.0 | 9545 | 0 | - |
| 14 | TENURE | SYSTEM OF TENURE | discrete | numeric-1.0 | 9514 | 31 | - |
| 15 | PREPARATION | PREPARATION OF LAND | discrete | numeric-1.0 | 9221 | 324 | - |
| 16 | VARIETY | VARIETY OF SEED | discrete | numeric-1.0 | 9545 | 0 | - |
| 17 | SOWING | SOWING METHOD | discrete | numeric-1.0 | 9457 | 88 | - |
| 18 | FERTILIZER | FERTILIZER APPLICATION | discrete | numeric-1.0 | 9528 | 17 | Inquire from the cultivator the total quantity of fertilizer used in the parcel and give the quantity in Kg's. |
| 19 | CHEMICAL | CHEMICAL FERTILIZER IF APPLIED (KG) | discrete | numeric-4.0 | 9545 | 0 | - |
| 20 | ORGANIC | ORGANIC FERTILIZER IF APPLIED (KG) | discrete | numeric-4.0 | 9545 | 0 | - |
| 21 | WEEDING | WEEDING | discrete | numeric-1.0 | 9488 | 57 | - |
| 22 | INSECTICIDES | INSECTICIDES | discrete | numeric-1.0 | 9417 | 128 | - |
| 23 | FUNGICIDES | FUNGICIDES | discrete | numeric-1.0 | 9189 | 356 | - |
| 24 | DAMAGE | ADVERSE AFFECTS ON CROP | discrete | numeric-1.0 | 9003 | 542 | - |
| 25 | YIELD | YIELD | discrete | numeric-5.0 | 9545 | 0 | - |
| 26 | RECN | RECORD NO | continuous | numeric-4.0 | 9545 | 0 | - |
| 27 | SN | SERIAL NO | discrete | character-5 | 1 | 0 | - |

# Variables Description

Dataset contains27 variable(s)

## File 2007_08maha

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### #1 SEASON: SEASON

| Information | [Type= discrete] [Format=character] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |
| Definition | Maha Season is the main season associated with North-east monsoons effective during September - April in the following year. |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| M | Maha | 204 | 2.1% |
| m | Maha | 9339 | 97.8% |
| n | | 1 | 0.0% |
| y | | 1 | 0.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

---

### #2 YEAR: YEAR

| Information | [Type= discrete] [Format=numeric] [Range= 7-8] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 8 | | 9543 | 100.0% |
| 9 | | 1 | 0.0% |
| 83 | | 1 | 0.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

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### #3 DISTRICT: DISTRICT

| Information | [Type= continuous] [Format=numeric] [Range= 1-27] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=12.931 /-] [StdDev=7.831 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Colombo | 156 | 1.6% |
| 2 | Gampaha | 402 | 4.2% |
| 3 | Kalutara | 605 | 6.3% |
| 4 | Galle | 474 | 5.0% |
| 5 | Matara | 386 | 4.0% |
| 6 | Ratnapura | 389 | 4.1% |
| 7 | Kegalle | 346 | 3.6% |
| 8 | Kurunegala | 1069 | 11.2% |
| 9 | Puttalam | 396 | 4.1% |
| 10 | Kandy | 429 | 4.5% |
| 11 | Matale | 271 | 2.8% |

## File 2007_08maha (cont.)

### #3 DISTRICT: DISTRICT (cont.)

| Value (cont.) | Label | Cases | Percentage |
|---|---|---|---|
| 12 | Nuwara Eliya | 176 | 1.8% |
| 13 | Badulla | 404 | 4.2% |
| 14 | Moneragala | 504 | 5.3% |
| 15 | Jaffna | 157 | 1.6% |
| 16 | Kilinochchi | 0 | 0.0% |
| 17 | Vavuniya | 37 | 0.4% |
| 18 | Mullaitivu | 0 | 0.0% |
| 19 | Mannar | 42 | 0.4% |
| 20 | Anuradhapura | 857 | 9.0% |
| 21 | Polonnaruwa | 615 | 6.4% |
| 22 | Trincomalee | 229 | 2.4% |
| 23 | Batticaloa | 289 | 3.0% |
| 24 | Ampara | 542 | 5.7% |
| 25 | Hambantota | 423 | 4.4% |
| 26 | Udawalawa | 208 | 2.2% |
| 27 | Mahaweli H | 139 | 1.5% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #4 AGADIV: AGA DIV

| Information | [Type= continuous] [Format=numeric] [Range= 1-42] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=7.967 /-] [StdDev=5.724 /-] |

### #5 IRRIGATIONTYPE: IRRIGATION TYPE

| Information | [Type= discrete] [Format=numeric] [Range= 1-3] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Major | 3260 | 34.2% |
| 2 | Minor | 3087 | 32.3% |
| 3 | Rainfed | 3198 | 33.5% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #6 VILLAGE: VILLAGE

| Information | [Type= continuous] [Format=numeric] [Range= 0-53] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=4.003 /-] [StdDev=3.496 /-] |

## File 2007_08maha (cont.)

### #7 LD: PARCEL NO

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-2] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |
| Definition | Paddy land Parcel is the land demarcated for the operator to cultivate |

### #8 SOWNA: EXT SOWN-ACRS

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-15] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 4223 | 44.2% |
| 1 | | 2820 | 29.5% |
| 2 | | 1620 | 17.0% |
| 3 | | 571 | 6.0% |
| 4 | | 118 | 1.2% |
| 5 | | 120 | 1.3% |
| 6 | | 31 | 0.3% |
| 7 | | 11 | 0.1% |
| 8 | | 6 | 0.1% |
| 9 | | 2 | 0.0% |
| 10 | | 10 | 0.1% |
| 11 | | 1 | 0.0% |
| 12 | | 3 | 0.0% |
| 13 | | 2 | 0.0% |
| 15 | | 2 | 0.0% |
| 18 | | 2 | 0.0% |
| 20 | | 1 | 0.0% |
| 22 | | 2 | 0.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #9 SOWNR: EXT SOWN-ROOD

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-6] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 4063 | 42.6% |
| 1 | | 1410 | 14.8% |
| 2 | | 3200 | 33.5% |
| 3 | | 862 | 9.0% |
| 4 | | 8 | 0.1% |

# File 2007_08maha (cont.)

## #9 SOWNR: EXT SOWN-ROOD (cont.)

| Value (cont.) | Label | Cases | Percentage |
|---|---|---|---|
| 5 | | 1 | 0.0% |
| 6 | | 1 | 0.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## #10 SOWNP: EXT SOWN-PRCH

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-98] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=2.739 /-] [StdDev=7.606 /-] |

Frequency table not shown (42 Modalities)

## #11 LID: NUM LIYADDA IN PARCEL

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-8] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |
| Definition | Liyadda - major block of cultivation in a parcel |

## #12 LIYADDALNG: LIYADDA LENGTH

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-0] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 9545 | 100.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## #13 LIYADDABRT: LIYADDA BREDTH

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-0] [Missing=*] |
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 9545 | 100.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## #14 TENURE: SYSTEM OF TENURE

| | |
|---|---|
| Information | [Type= discrete] [Format=numeric] [Range= 0-4] [Missing=*/0] |
| Statistics [NW/ W] | [Valid=9514 /-] [Invalid=31 /-] |
| Definition | System of Tenure could be (1) Singly owned (2)Jointly owned including Thattumaru and Kattimaru. (3) Ande (4) Other<br>Thattumaru - An accepted cultivation system where a each person claiming ownership of a paddy field cultivates |

# File 2007_08maha (cont.)

## #14 TENURE: SYSTEM OF TENURE (cont.)

| | 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. |
|---|---|

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Singly owned | 6979 | 73.4% |
| 2 | Jointly owned | 796 | 8.4% |
| 3 | Ande | 1568 | 16.5% |
| 4 | Other | 171 | 1.8% |
| 0 | | 31 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## #15 PREPARATION: PREPARATION OF LAND

| Information | [Type= discrete] [Format=numeric] [Range= 0-7] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9221 /-] [Invalid=324 /-] |
| Definition | Predominant method of preparation of land |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | By Tractor | 7159 | 77.6% |
| 2 | Buffalow ploughed | 919 | 10.0% |
| 3 | Buffalow mudded | 234 | 2.5% |
| 4 | Mammotied | 909 | 9.9% |
| 0 | 0 | 70 | |
| 5 | 5 | 118 | |
| 6 | 6 | 75 | |
| 7 | 7 | 61 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## #16 VARIETY: VARIETY OF SEED

| Information | [Type= discrete] [Format=numeric] [Range= 0-3] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 53 | 0.6% |
| 1 | | 9286 | 97.3% |
| 2 | | 198 | 2.1% |
| 3 | | 8 | 0.1% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

## File 2007_08maha (cont.)

### #17 SOWING: SOWING METHOD

| Information | [Type= discrete] [Format=numeric] [Range= 0-4] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9457 /-] [Invalid=88 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Broadcasting | 8539 | 90.3% |
| 2 | Transplanted in rows | 179 | 1.9% |
| 3 | Transplanted not in rows | 729 | 7.7% |
| 4 | Row seeded | 10 | 0.1% |
| 0 | | 88 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #18 FERTILIZER: FERTILIZER APPLICATION

| Information | [Type= discrete] [Format=numeric] [Range= 0-4] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9528 /-] [Invalid=17 /-] |
| Literal question | Inquire from the cultivator the total quantity of fertilizer used in the parcel and give the quantity in Kg's. |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Chemical fertilizer only | 7287 | 76.5% |
| 2 | Organic fertilizer only | 62 | 0.7% |
| 3 | Both chemical & organic | 1989 | 20.9% |
| 4 | None | 190 | 2.0% |
| 0 | | 17 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #19 CHEMICAL: CHEMICAL FERTILIZER IF APPLIED (KG)

| Information | [Type= discrete] [Format=numeric] [Range= 0-9900] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=347.305 /-] [StdDev=385.37 /-] |
| Definition | To be filled if Chemical fertilizer is applied |

| Frequency table not shown (426 Modalities) |
|---|

### #20 ORGANIC: ORGANIC FERTILIZER IF APPLIED (KG)

| Information | [Type= discrete] [Format=numeric] [Range= 0-9999] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=391.832 /-] [StdDev=1216.097 /-] |
| Definition | To be filled if Organic fertilizer is applied |

| Frequency table not shown (123 Modalities) |
|---|

## File 2007_08maha (cont.)

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### #21 WEEDING: WEEDING

| Information | [Type= discrete] [Format=numeric] [Range= 0-4] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9488 /-] [Invalid=57 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Hand weeding | 1735 | 18.3% |
| 2 | Using weedisides | 7036 | 74.2% |
| 3 | By the use of water | 180 | 1.9% |
| 4 | No weeding | 537 | 5.7% |
| 0 | | 57 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

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### #22 INSECTICIDES: INSECTICIDES

| Information | [Type= discrete] [Format=numeric] [Range= 0-2] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9417 /-] [Invalid=128 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Used | 5632 | 59.8% |
| 2 | Not used | 3785 | 40.2% |
| 0 | | 128 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

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### #23 FUNGICIDES: FUNGICIDES

| Information | [Type= discrete] [Format=numeric] [Range= 0-2] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9189 /-] [Invalid=356 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Used | 2440 | 26.6% |
| 2 | Not used | 6749 | 73.4% |
| 0 | | 356 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

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### #24 DAMAGE: ADVERSE AFFECTS ON CROP

| Information | [Type= discrete] [Format=numeric] [Range= 0-7] [Missing=*/0] |
|---|---|
| Statistics [NW/ W] | [Valid=9003 /-] [Invalid=542 /-] |
| Pre-question | Codes 1,2,3,4 or 5 should be encircled only if the parcel was severely affected and it was not harvested. |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 1 | Seed fauilure | 12 | 0.1% |
| 2 | Drought | 7 | 0.1% |
| 3 | Flood | 5 | 0.1% |

## File 2007_08maha (cont.)

### #24 DAMAGE: ADVERSE AFFECTS ON CROP (cont.)

| Value (cont.) | Label | Cases | Percentage |
|---|---|---|---|
| 4 | | 2 | 0.0% |
| 5 | | 3 | 0.0% |
| 6 | | 6919 | 76.9% |
| 7 | | 2055 | 22.8% |
| 0 | | 542 | |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

### #25 YIELD: YIELD

| Information | [Type= discrete] [Format=numeric] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] |

Frequency table not shown (844 Modalities)

### #26 RECN: RECORD NO

| Information | [Type= continuous] [Format=numeric] [Range= 0-4444] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=9545 /-] [Invalid=0 /-] [Mean=116.643 /-] [StdDev=128.225 /-] |

### #27 SN: SERIAL NO

| Information | [Type= discrete] [Format=character] [Missing=*] |
|---|---|
| Statistics [NW/ W] | [Valid=1 /-] [Invalid=0 /-] |

| Value | Label | Cases | Percentage |
|---|---|---|---|
| 0 | | 1 | 100.0% |

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

# Documentation

## Questionnaires

Crop Estimation Survey on Paddy - Survey Schedule, "Documentation\CC3.pdf"

## Technical documents

Formulae to Calculate Avg. Yield & Variance for a given Stratum, "Documentation\Formulae to Calculate Avg. Yield & Variance for a given Stratum.doc"

## References

Crop Estimation Survey on Paddy - Preliminery Cultivator Information Collecting Form, Form. C.C.1, "Documentation\CC1.pdf"

Crop Estimation Survey on Paddy - Cultivators Selected for Survey, "Documentation\CC2.pdf"

Crop Estimation Survey on Paddy - Quality Checking Report, "Documentation\CC4.pdf"

## Other documents

Study Documentation of CESP(M)08 Project, "Documentation\Study Documentation of CESP(M)08 Project.pdf"

Time series data of Extent, Yield and Production 77-08, "Documentation\Time Series Data of Extent, Yield, Production.xls"

Time Series of Sown, Harvested, Yield, Production - Maha 1970-2008, "Documentation\Time Series of Sown, Harvested, Yield, Production - Maha 1970-2008.xls"

District Codes List for Crop Estimation Survey of Paddy, "Documentation\District Codes List.xls"