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# **Technical Report of the Estimate of Private Food Grain Stock in Sri Lanka**

**International seminar on approaches and  
methodologies for private food grain stock  
measurement New Delhi, 9 – 11 November 2016**

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# Outline

1. Introduction
2. Type of food grain coverage in Sri Lanka
3. Food grain cultivation and production in Sri Lanka
4. Food grain consumption pattern in Sri Lanka
5. Type of food grain stock in Sri Lanka
6. Methodologies of calculate private food grain stock in Sri Lanka
7. Importance of the estimate private food grain stock



## Introduction

Like other developing countries Sri Lanka use food grain for their staple foods at daily life. About 40% calorie earns by using it. Rice, Wheat flour, Lentil, Chickpeas, Maize, Soya bean, Green gram, Cowpea, Gingerly, Black gram, Ground nut, Kurakkan, and Meneri are main and sub food grain productions use them obtained their good nutrients. In Sri Lanka there are good agro ecological zones, climate changes and developed irrigation schemes behave good productivity of food grain production.

Therefore developing of methodologies and approaches to reach the estimate food grain stock in Sri Lanka can benefit to the government in policy making process.



## food grain coverage in Sri Lanka

Rice, Wheat, lentil are the famous food grain use in Sri Lanka as their daily needs nearly 100%. Out of the total arable land area of Island nearly 10% crop coverage by paddy cultivation. food grain Wheat, Chickpeas and Lentils are not cultivate here 100% import from the rest of the world. And other food grain production such as Maize Soya bean, Green gram and Cowpea etc. not sufficient with local requirements there fore we have import it. And local rice production is sufficient with local demand since the year 2012.



## food grain cultivation and production in Sri Lanka

There are two agro ecological zones call Dry and Wet zone and two cultivation seasons call Maha and Yala season use for seasonal crops production. Food grain famous both two seasons and grown in specially in the Dry zone.

Food grain	Are a in both Maha/Yala seasons -2015 (Hectors)	Production 2015 (MT)	Annual consumption requirements (MT)	Self sufficient ratio (%)
Rice (Paddy)	1253288	3277188	2375250	137
Wheat flavor	0	0	1207804	0
Maize	69971	261121	328358	79
Soya bean	6383	11254	18547	60
Greengram	11346	15058	26547	56

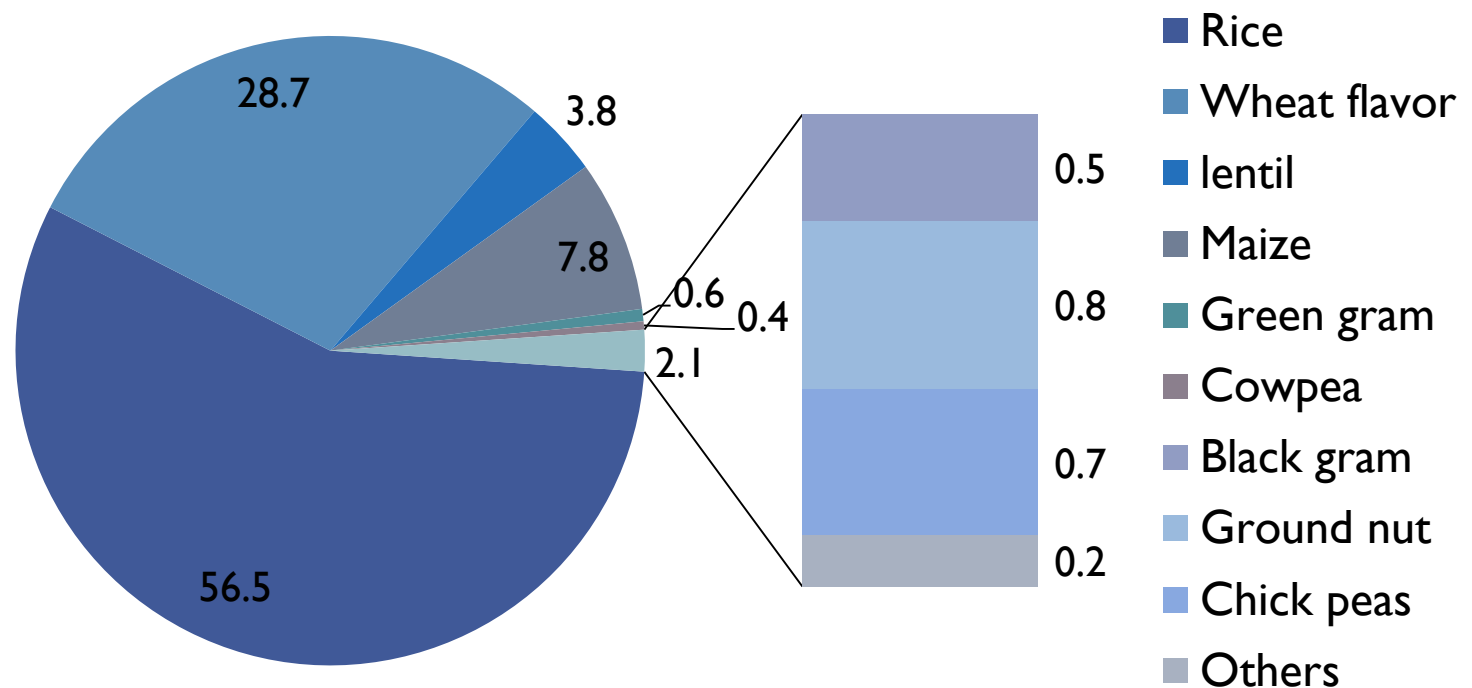


## food grain cultivation and production in Sri Lanka Continued.

Food grain	Area in both Maha/Yala seasons – 2015 (Hectors)	Production (MT)	Annual national consumption requirement (MT)	Self sufficient ratio (%)
Cowpea	9200	12276	17954	68
Gingerly	17841	13285	13395	99
Black gram	12305	11998	20098	59
Ground nut	17716	28503	31982	89
Kurakkan	6950	8916	9681	92
Meneri	57	43	45	96
Lentils	0	0	160877	0
Chick peas	0	0	27677	0

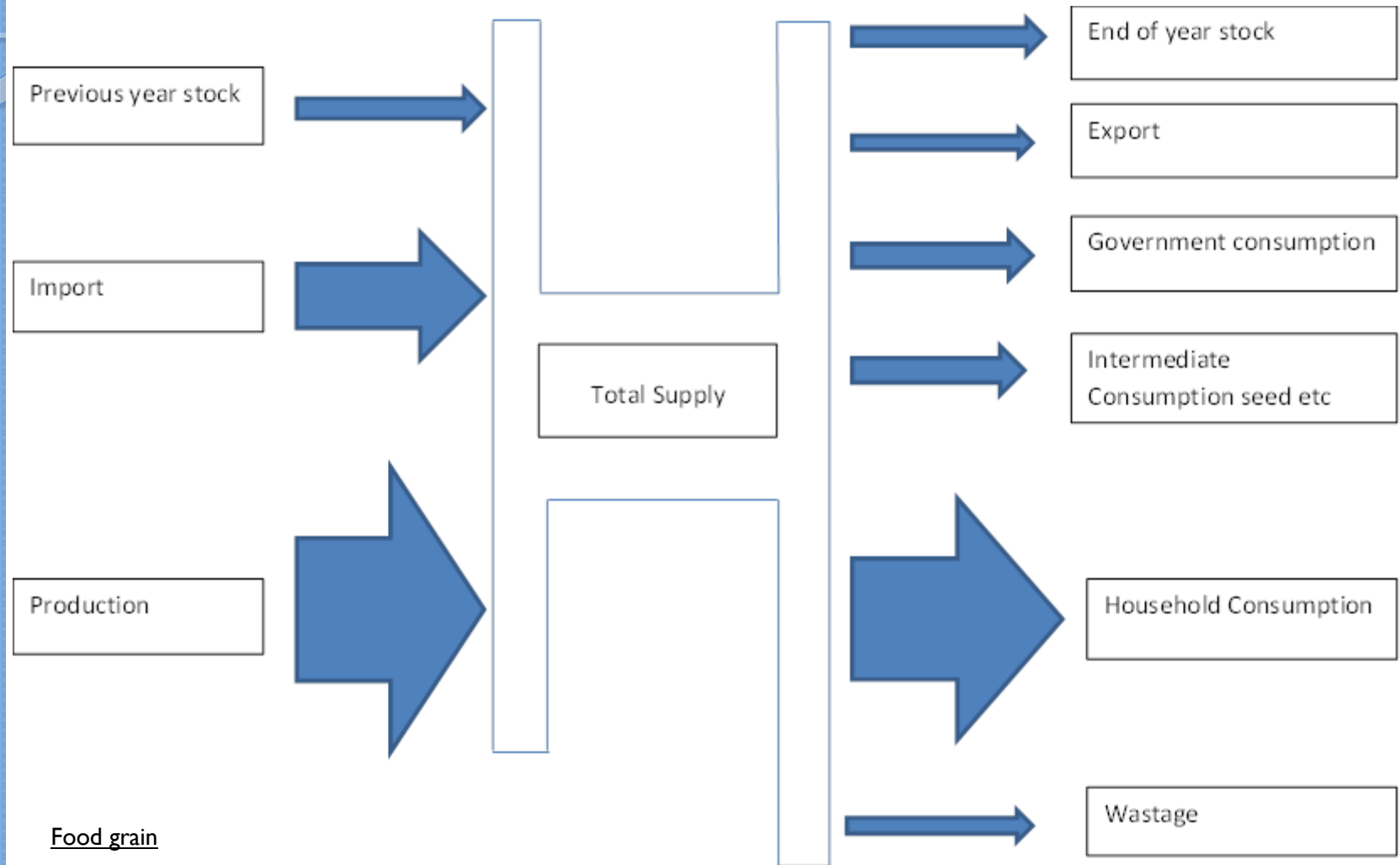


## Food grain consumption pattern in Sri Lanka as a percentage to the whole consumption





## Supply chain diagram for Selected food grain



Food grain

Rice, Wheat, Maize, Lentil and Green gram



## Type of food grain stock in Sri Lanka

**Government food grain stock** can be obtained from Annual or monthly reports or their annual administrative report without doing sample surveys or full enumeration. They provide their information at national level meeting of food security.

- Example : Paddy Marketing Board
- CWE ( Cooperative Whole Sale Establishment ) consist with 240 Is land wide whole and Retail sale outlets
- Lanka SATOSA consist with 162 retail sale outlets
- Food grain stock (seed) Department of Agriculture



## Type of food grain stock in Sri Lanka

- **Private food grain stock:** Can divide five phase such as
  - Food grain stock in private household
  - Food grain stock in group of Luxury Super Markets call KEELS, FOOD CITY and ARPICO and their consist with Is land wide retail sale outlets.
  - Paddy stock in large scale Paddy mills called Nipuna, Araliya, Wanni, Sadaliya etc. they are limited.
  - Food grain stock in Large scale food grain mill and industries.
  - Food grain stock in medium and small private sale outlets in Sri Lanka. The number of outlets over fifty thousand.



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## Methodology for estimate private household food grain stock in Sri Lanka

Agriculture and environment statistics division of the Dept. of Census & Statistics have to plan do '**Household Agricultural Production Survey**' combine with their field staff in the years 2016/2017. This sample survey enumerate with 25000 market oriented agricultural households they operated with agricultural land over 40 perches. The sampling method of this survey **multi stage SRS** down from about 2.9 millions agricultural households.

**In first stage** down 2500 Census blocks out of these 80000 CBs in Sri Lanka probability proportional size to number of CBs in the district



## Methodology calculate private food grain stock in Sri Lanka

**And the second stage** drawn 10 agricultural households from the selected census block in the first stage using SRS procedure listing updated with **HAPS1 form** generate from the **F1 form**, Census of Population and housing in 2011. The primary work of the survey such as questioner design, Stake holder meeting and pilot test in the field has been completed. The rest of the work such as staff training, data collection and report writing will continues in 2017 under the national budget provide by the government.

Modern data collecting system called **CAPI** (Computer Assisted Personal Interview) will adopt to this survey using our technical staff in the field. DCS will continue this survey within four years period to get the structural changes of the private household food grain stock and other related information of the agricultural households.



## Questioner of Household Agriculture Production Survey 2016/2017 (Cont.....)

RESULT

☐

Result code

Complete Questioner.....1

Complete Part of Questioner.....2

No responded .....3

Reject Answer .....4

Temporary closed household.....5

Not Household .....6

Other (specify).....7

Name of Cording Officer

Name
Signature
Date:

Name of Data Entry Operator

Name
Signature
Date:

1.7 Agrarian Service Centre

1.8 Census Unit Number

1.9 Number of Agricultural holding from HAPS1

1.10 Number house holds

1.11 Number of this house hold



## Questioner of Household Agriculture Production Survey 2016/2017

### Question 1.14 Ask about Paddy and Seasonal crops cultivation

1.14 Have you been engaged with any agricultural activities in 2016  
(Please circle relevant code )

Paddy cultivation	1
Coconut cultivation	2
Rubber cultivation	3
Tea cultivation	4
Other seasonal crops	5
Other permanent crops	6
Tal/Kitul farming	7
Ornamental plant farming	8
Cattle farming	9
Goat farming	10
Pig farming	11
Poultry farming	12
Bee and honey farming	13
Aquaculture	14
Other animal husbandry	15

### Question 2.7 paddy production stock

2.7 Information about the Paddy Production

1	2	3a	3b	4a	4b
Se. Num ber		2015/16 Maha		2016 Yala	
		KG	Rs.	KG.	Rs.
1	Stock from last season 2015 Yala				
2	Total harvested production				
3	Sale amount				
4	Amount of Household consumption				
5	Use for other utilities				
6	When rent farmer amount keep for Land owner				
7	Damage Amount				
8	Final stock in household				
9	Average price of one Kilogram of paddy				



## Questioner of Household Agriculture Production Survey 2016/2017

### Question 6 Seasonal crops cultivation and stocks

#### Part 6 Other Seasonal crops cultivation

#### 6.1 Please indicate information regarding 2015/2016 Maha season

1	2	3			4a	4b	4c	4d	4e	4f	5	6	7	8	9		10
Serial NO	Crop	Cultivated area in 2015/2016 Maha season			Cost Rs						Production (KG)	Sale Amount (KG)	Household consumption (KG)	Damage amount (KG)	Household stock in 2015/2016 Maha season		Average sale price (KG)
		Ac	R	Ph	Fertilizer	Weedicide	Seed	Labor	Transport	Other					Amount (KG)	Stock period (Months)	
1	Chillies																
2	Red onion																
3	Big onion																
4	Maize																
5	Potato																
6	Kurukkan																
7	Green gram																
8	Gowpea																
9	Gingerly																
10	Meneri																
11	Black gram																
12	Turmeric																
13	Ginger																
14	Soya bean																
15	Ground nut																
16	Monioc																
17	Sweet potato																
18	Tobacco																
19	Other																



## Questioner of Household Agriculture Production Survey 2016/2017

### 6.1 Please indicate information regarding 2016 Yala season

1	2	3			4a	4b	4c	4d	4e	4f	5	6	7	8	9		10
Serial NO	Crop	Cultivated area in 2016 Yala Season			Cost Rs						Production (KG)	Sale Amount (KG)	Household consumption (KG)	Damage amount (KG)	Household stock in 2016 Yala season		Average sale price (KG)
		Ac	R	Ph	Fertilizer	Weedicide	Seed	Labor	Transport	Other					Amount (KG)	Stock period (Months)	
1	Chilies																
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11	Black gram																
12	Turmeric																
13	Ginger																
14	Soya bean																
15	Ground nut																
16	Monioc																
17	Sweet potato																
18	Tobacco																
19	Other																



## Methodology for estimate of private food grain stock in non-household institutions

Private food grain stock in non-household institutions can be divided into four groups.

- Food grain stock in Luxury Supermarkets
- Paddy stock in the large scale paddy mill
- Food grain stock in the large scale grain mill and industries
- Food grain stock in medium and small private sales outlets

Food grain stock in the **Luxury Super markets** and **Medium/Small Scale Sales Outlets** in Sri Lanka can be estimated by doing a sample survey organized by the DCS. The survey will use **PPS stratified sampling** method for the whole establishments in the two groups. And the sampling frame can be obtained from the business registry, which is a document of the Industries Trade and Service division of the DCS.



## Methodology for estimate of private food grain stock in non-household institutions

- **Paddy stock in the large scale Paddy Mill:** Large scale paddy mill are limited there fore paddy stock in the large scale paddy mill can obtained from complete enumeration of the establishment s either inquiry with their yearly administrative report or monthly progress reports. List of establishments can obtain from DCS.
- **Consider with food grain Stock**
- Opening grain stock + Purchasing -( Sales + Processing) + ending stock
- **Food grain stock in the large scale grain mill and industries:** The same procedure can apply for these establishment. The DCS covered these establishment with their Annual Industrial Survey .



## Methodology of data capturing

- **Import and export:** custom returns
- **Production :** Seasonal data collection DCS or Agriculture Household d Production Survey
- **Household consumption:** Estimated from Household Income and Expenditure Survey DCS
- **Government consumption:** Ministry of Social welfare and Samurdhi
- **Intermediate consumption:** Seed farms, Department of Agriculture and estimated according to sown area food grain
- **Stock: Household stock for paddy:** Agricultural household survey  
Questioner question no 2.7 row 1 and 8



## Methodology of data capturing

- **Stock: Household stock for other food grain:** Agricultural household survey Questioner **Part 6** other field crops column 2 see crops and column 9 amount and period.
- **Other food grain stock in non-household private institution:** Large scale paddy mill, grin mill and Industries can obtained from complete enumeration by DCS.
- **Other food grain stock in non-household private institution:** Luxury supermarket and medium/Small sales outlet can estimate by sample survey DCS.



## **Importance of national food grain stock to cover the policy formulation**

- This information is most reliable to decision making of the Food Security meeting.
- Control the food grain imports and their retail prices also Justify the MRP (Maximum Retail Price of the food grain).
- Food grain stock in the end of year can use for data source of Food Balance Sheet.



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• **Thanks for Attention**