FOOD BALANCE SHEET (FBS)

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Outline

• Introduction
• Definition of FBS
• Potential uses
• Interpreting FBS data
• Issues
• Challenges and Obstacles
• Opportunities and Innovations
• Recommendations
FOOD BALANCE SHEET

Introduction

• A food balance sheet (FBS) “presents a comprehensive picture of the pattern of a country’s food supply during a specified reference period.”

• The FBS - by bringing together various key data variables (e.g. agricultural production, trade, feed, losses) – provides precisely such a cross-validation tool as well as a complete picture of the food supply situation in a country in any given time period. Various indicators can also be calculated.
The FBS is a national accounting/statistical framework, presenting a comprehensive picture of the pattern of a country's food supply during a specified reference period (usually calendar year).

**SUPPLY = UTILIZATION**

\[ P + I - \Delta St = X + Fo + Fe + Se + T + IU + Lo (+ ROU) \]

\[ (+ \text{food processing}) \]

Where:
- \( P \) = production
- \( I \) = imports
- \( \Delta St \) = Δ stocks
- \( X \) = exports
- \( Fo \) = food
- \( Fe \) = feed
- \( Se \) = seed
- \( T \) = tourist food
- \( IU \) = industrial use
- \( Lo \) = loss
- \( Rou \) = residual or other uses
The basic identities

a) Domestic supply = Domestic utilization

Production + (Imports-Exports) + Opening Stocks = Food + Feed + Seed + Tourist Food + Industrial Use + Loss + Residual Use + Closing Stocks (+ \textit{food processing})

b) Total supply = Total utilization

Production + Imports + Opening Stocks = Exports + Food + Feed + Seed + Tourist Food + Industrial Use + Loss + Residual Use + Closing Stocks (+ \textit{food processing})
Definition & Concepts

Production

Data for production should include:

- all production quantities of a given commodity within the country
- both commercial and non-commercial production

Sources:

Annual production surveys: paddy yield estimating survey, Big onion Survey, Potato survey
Administrative records; Animal Production, fisheries Production
Annual Data Collection: Highland Crops, Egg and milk Production
Industrial output surveys: Wheat flour, Sugar
Definition & Concepts

Trade data

• Gross Imports & Gross Exports
  ▪ Commercial trade,
  ▪ food aid granted on specific terms
  ▪ donated Quantities
  ▪ Estimates of unrecorded trade
Definition & Concepts

Stocks

Stocks are defined as the aggregate total of product allocated to storage for use at some future point in time

- Government stocks,
- Stocks with manufactures,
- Importers,
- Exporters
- Other whole sale and retail merchants
- Transport and storages enterprises
- Stocks in farms
Definition & Concepts

**Feed** - quantities of commodities (both domestically produced and imported) that are available for feeding to livestock.

**Seed** - any quantity of a commodity set aside for reproductive purposes in the following year.

**Industrial use** - refers to utilization of any food items in any non-food industry.
Definition & Concepts

Food* losses are all the crop and livestock human-edible commodity quantities that, directly or indirectly, completely exit the post-harvest/slaughter production/supply chain by being discarded, incinerated or otherwise, up to, and excluding, the retail level.

Losses that occur during storage, transportation and processing, also of imported quantities, are therefore all included.
Data Comparability

• Data need to be fully comparable

- a) Item
- b) Reference period
- c) Unit of measurement
Data Quality and Flags

As data are taken from different sources, with different quality, it is recommended to publish a flag denoting the data source.

Flags help users to:

• Understand which data are more reliable than others
• Assign *a priori* tolerance intervals to be used in the balancing process
• Example of flags denoting data source

<table>
<thead>
<tr>
<th>Source</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official</td>
<td></td>
</tr>
<tr>
<td>Semi-official</td>
<td>T</td>
</tr>
<tr>
<td>Estimated</td>
<td>E</td>
</tr>
<tr>
<td>Imputed</td>
<td>I</td>
</tr>
</tbody>
</table>
Supply Utilization Account (SUAs) and FBS

**SUAS**
- Are the accounting balances for all individual products
- Supply and utilization occurring for each product, both primary and derived

**FBS**
Primary commodity equivalent aggregate level (in order to facilitate interpretation)

Doesn’t provide a holistic picture on how the commodity is being consumed, traded, or otherwise used after being processed into various derived products
Supply Utilization Account (SUAs) and FBS

- Sample blank SUA table for paddy rice

<table>
<thead>
<tr>
<th>Product</th>
<th>Production</th>
<th>Imp.</th>
<th>Exp.</th>
<th>Stock change</th>
<th>Food</th>
<th>Food processing</th>
<th>Feed</th>
<th>Seed</th>
<th>Net Tourist Food</th>
<th>Ind. Use</th>
<th>Loss</th>
<th>ROU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy rice</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Husked rice</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Milled paddy rice</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rice bran</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Broken rice</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rice flour</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>
Draft Food Balance Sheets for last Five Years

• 2013
• 2014
• 2015
• 2016
• 2017
## DRAFT Results From Sri Lanka

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (000)</th>
<th>Calorie/person/day</th>
<th>Protein (gm)/per/day</th>
<th>Fat(gm)/per/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>20585</td>
<td>3100</td>
<td>79</td>
<td>59</td>
</tr>
<tr>
<td>2014</td>
<td>20771</td>
<td>2800</td>
<td>76</td>
<td>46</td>
</tr>
<tr>
<td>2015</td>
<td>20996</td>
<td>3289</td>
<td>88</td>
<td>53</td>
</tr>
<tr>
<td>2016</td>
<td>21203</td>
<td>3184</td>
<td>81</td>
<td>58</td>
</tr>
<tr>
<td>2017</td>
<td>21444</td>
<td>3102</td>
<td>90</td>
<td>87</td>
</tr>
</tbody>
</table>
Issues

- Coverage and representativeness of the basic data
- Gaps in statistics of utilization of non-food use
- Under Reporting
- Accuracy of waste food data
Challenges/risks, innovations, opportunities

Challenges/Risks

- Regularly updated Population
- Data from different Sources
- No indication of differences exist in the diet by different population group

Opportunities

- Availability of custom data
- Availability of age wise calorie needs
Proposed Recommendations

Needs  Geographical Calorie preparation

Points to Note

To Reduce the time period for data collection introducing the online system.
Thank you!