Crop and Food Security Assessments: Country commodity balance sheet approach

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What is a CFSAM

- The primary purpose of a Crop and Food Security Assessment Mission (CFSAM) is to provide an accurate picture of the extent and severity of crisis-induced food insecurity, **existing or expected**, in the country (or in specific areas) so that timely and appropriate actions can be taken by the government and the international community to minimize the impact of the crisis on affected populations.

- The principal components of food security are food ***availability***, food ***access*** and food ***utilization***. CFSAMs focus on availability and utilization at the national level (and sometimes at sub-national levels) and access (and to a lesser extent utilization) at the household level. The focus for a CFSAM is particularly on ***changes*** compared with what would be “normal”, the implications of those changes, and what should be done in the short term to restore an acceptable level of food security.

Estimating Food Availability

- The focus of this presentation will be on food ***availability,*** *which relies on a good estimate of production*

- The main tool to do this is to rely on country commodity balance sheets

Supply/Utilization Accounts

- The statistical framework of S/U accounts for food and agriculture commodities include time series data dealing with statistics on:

  Supply: opening stocks + production + imports and

  Utilization: exports+ feed + seed + waste + other uses + food + closing stocks,

  which are kept physically together to allow the matching of food availability with food use

TOTAL SUPPLY

- **Domestic Availability**
  - ✓ Opening Stocks
  - ✓ Production
- **Imports**

TOTAL UTILIZATION

- **Domestic Utilization**
  - ✓ Food
  - ✓ Feed
  - ✓ Other uses (seed, losses, industrial uses)
- **Exports**
- **Closing Stocks**

National Food Balance Sheets

- Extracting from SUAs the data on food commodities for a specific period and **converting the food into calories, proteins and fats (commodity by commodity and by applying appropriate food composition factors),** it is possible to prepare national food balances sheets (FBS)

- **National Food Balance Sheets** are used to disclose changes that may have taken place in the types of food consumed, adequacy of food supply in relation to nutritional requirements, and changes in calorie intake over time.

Country Commodity Balance Sheets

- Supply and Demand elements for a determined commodity or a group of commodities
- CCBS is a tool for the quantitative assessment of potential food deficit and surpluses and for the assessment of food security in a given country
- FAO/GIEWS maintains CCBS for all countries with detailed accounts of each cereal since 1980/81
- CCBS is the basis for all the FAO work on short term assessment on global markets and global food security

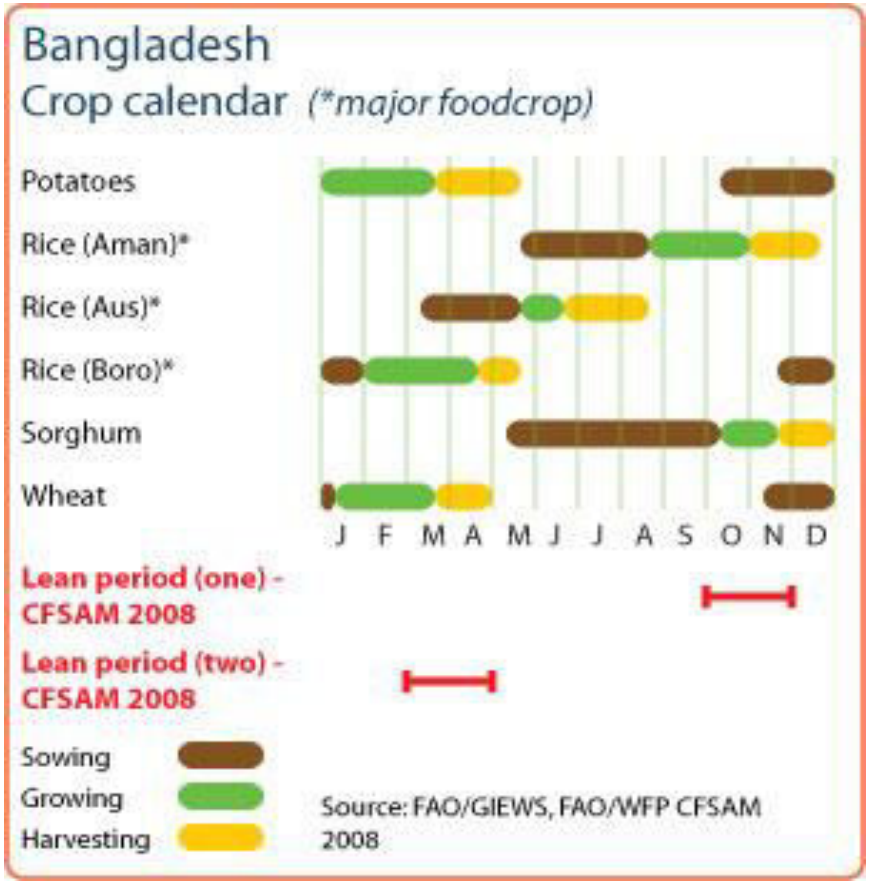
Format and time period

- Different presentations of CCBS: FAO Simplified balance sheet
- Modern techniques for aggregation formulas and balancing equations (Excel)
- CCBS are normally for a period of one year (but also quarterly, monthly, bi-annual)

Marketing Year (MY)

- In CCBS used for marketing monitoring the data is recorded following the individual countries marketing years (MY) defined as: **" the 12 months period after the harvest, over which the crop is marketed"**
- MY is related to the Crop Calendar of a commodity
- The same country may have different MYs for different commodities if the harvest occurs at different dates
- **The use of MY and not Calendar Year is a key difference between CCBS and National Food Balances**

Crop calendar



CCBS Dynamic for marketing monitoring

- CCBS focus on the current or upcoming year **(forecast**)
- CCBS are dynamic: supply and utilization elements are continuously updated as new information is available (ex: population; production forecasts; imports)
- CCBS are useful to monitor the prospective food situation linking to the up-to-date changes in the different elements
- CCBS are mainly used by policy makers to assess deficits or surpluses and quantify import needs and export availabilities.
- CCBS also used for inventory (procurement, storage,) and logistics planning

CCBS is Dynamic and remote sensing has become an important tool

- For FAO/GIEWS ASIS has become indispensable. It provides near real time observations on weather and drought conditions, which permits a faster adjustment of forecasts

- ASIS is a seasonal indicator designed to easily identify areas of cropped land with a high likelihood of water stress (drought). The indices are based on remote sensing data of vegetation and land surface temperature combined with information on agricultural cropping cycles derived from historical data, and a global crop mask. The final maps highlight anomalous vegetation growth, and potential drought, in crop zones during the growing season

- Remote sensing can be used, when there are data limitations, to estimate production. However, it is not a substitute for field surverys

Country Cereal Balance Sheet

	Wheat	Sorghum and Millet	Rice (Milled)	Maize	Total Cereals 2016	Total Cereals 2015	Total Cereals 5 Yr Avg
	Tonnes (000s)						
DOMESTIC AVAILABILITY	1,350	76	35,230	2,650	39,306	38,819	37,768
Percent Change from 2015		1	1	2	1		
Stock Draw Down	-	-	400	50	450	220	449
Production	1,350	76	34,830	2,600	38,856	38,599	37,768
Percent Change from 2015		0.0	0.7	0.8	0.7		
TOTAL UTILIZATION	4,950	76	35,760	2,680	43,466	42,973	42,554
Food Use	3,920	76	29,452	700	34,148	33,325	32,443
Feed Use	-	-	658	1,700	2,358	2,311	2,057
Other uses (seed, losses, other)	950	-	5,650	280	6,880	7,137	6,724
Exports	30	-	-	-	30	-	-
Stock Build Up	50	-	-	-	50	200	1,330
IMPORT REQUIREMENT (MY)	3,600	-	530	30	4,160	4,154	4,786
Percent Change from 2015	2	-	-12	-	0.1		
Per capita food use	24	0.5	181	4.3	210	210	206

CCBS Historical Years

- Historical CCBS data are used to show overall trends in supply and utilization of one commodity
- Historical CCBS data are used as a based for projections and forecast (consistency)
- CCBS, in general, are also used to derive indicators:
  - ✓ Self sufficiency ratio = production/(production + imports – exports)
  - ✓ Import dependency ratio = imports/(production + imports - exports) or =1 minus SSR when exports are zero; and Import bill calculations
  - ✓ Stock-to-utilization ratios (if reliable data available)
  - ✓ Per capita consumption trends
- Historical CCBS data are used for analyze changes over time of these indicators.

Limitations of CCBS

- Accuracy of CCBS depends greatly on reliability and availability of data (ex: population)
- Provide overview at national level, do not give any indication of the differences that may exist in different regions/group of population
- Availability is by no means identical with consumption