



## 1. General Background

Yemen has experienced an increasingly complex and worrying humanitarian crisis since late 2011. The combined effects of the global food, fuel and financial crises coupled with instability have increased poverty in Yemen and have further exacerbated the vulnerability of a population that was already suffering from alarming rates of food insecurity and malnutrition. Moreover, families displaced by the Sa'ada conflict and refugees from the war-torn Horn of Africa continue to rely on humanitarian assistance for survival.

In May 2012, some 46 percent of Yemenis were estimated to be food insecure, among which 24 percent were severely food insecure and 22 percent moderately food insecure (CFSS<sup>1</sup>, May 2012; IPC<sup>2</sup>, August 2012). Although some 80 percent of internally displaced persons (IDPs) who fled from Abyan governorate due to conflict and insecurity are reported to have returned to their places of origin during the last quarter of 2012 there remain approximately 300,000 IDPs in the north and centre. IDPs and the host communities in these areas continue to face the challenges of food and livelihoods insecurity and lack of access to basic services. Those IDPs who have returned are often confronted by a lack of basic services, continuing insecurity, the destruction of their houses, the absence of law enforcement authorities, financial constraints due to the losses incurred during and after their displacement and the absence of employment. Yemen is also hosting over 220,000 refugees from the Horn of Africa, further exacerbating the precarious food security situation<sup>3</sup>.

The main causes of food insecurity in Yemen include limited sources of income for the urban poor, fragile livelihood systems in rural areas, recent volatility of international food prices, lack of national strategic grain reserves, and continuing internal conflict and instability/insecurity in various parts of the country.

Given this range of rapidly changing factors, the establishment of a systematic and comprehensive food security monitoring system (FSMS) is crucial. The purpose of the FSMS is to regularly monitor the food security situation in Yemen, update the knowledge base and monitor changes in food availability, access and utilisation in order to adjust the on-going and planned food security interventions in Yemen.

## 2. Methodology and Data Sources

A combination of primary and secondary data collection and analysis methods were used. The primary data was collected in December 2012, one year after the 2011 CFSS. A household survey of 1,908 households selected from 11 governorates was carried out.<sup>4</sup> A questionnaire for each household was completed. It is emphasised that the results of the FSMS survey are representative at the governorate level only - for those governorates covered by the survey. The selection of the 11 governorates was based on their high levels of food insecurity and their sensitivity to rapidly changing conditions and insecurity. They contain an estimated 63 percent of the total national population and some 87 percent of the severely food insecure population identified by the 2012 Comprehensive Food Security Survey<sup>5</sup> (CFSS). The FSMS survey data was compared with data from the same 11 governorates in the 2012 CFSS. Differences observed were used to draw conclusions about changes in levels of household food security between the two periods.

## 3. Current Food Security Situation and Changes

### 3.1. Food Consumption

In the 11 surveyed governorates, 27.1 percent of the population have poor food consumption and 24.8 percent have borderline food consumption. This compares with 31.0 percent and 23.0 percent, respectively, in 2012.

<sup>1</sup> <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp247832.pdf>.

<sup>2</sup> [http://www.ipcinfo.org/fileadmin/user\\_upload/ipcinfo/docs/IPC\\_Acute\\_FS\\_Yemen\\_Aug2012.pdf](http://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Acute_FS_Yemen_Aug2012.pdf).

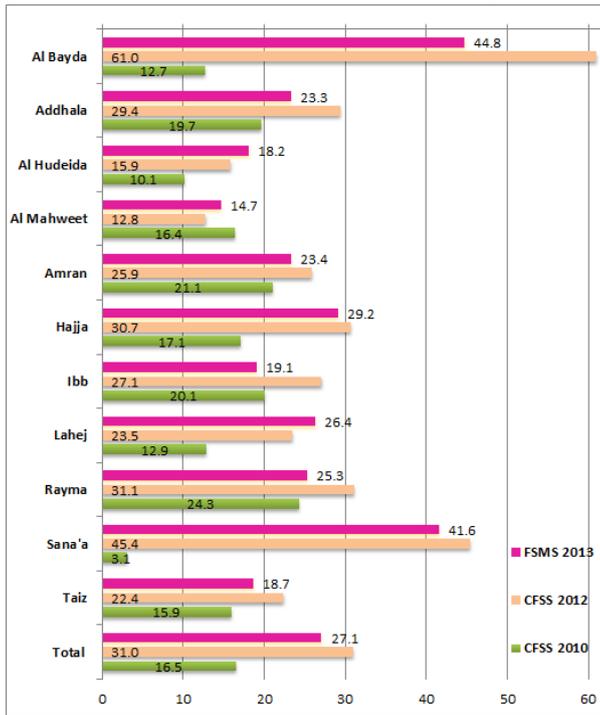
<sup>3</sup> UNHCR/WFP JAM, June 2012

<sup>4</sup> Governorates covered by the FSMS survey are Taiz, Ibb, Al Bayda, Sana'a, Amran, Hajja, Lahj, Hodieda, Rayma, Ad Dhale, and Al Mahwit.

<sup>5</sup> The CFSS conducted in December 2011 and the Report was released in May 2012. Throughout this report it is referred as 2012 CFSS.

The FSMS indicates that food consumption scores (FCS) for the households surveyed have improved compared to CFSS 2012. All 11 governorates showed around 10 percent improvement. However, in the Governorates of Lahj, Al Mahweet and Al Hudeida, the FCS slightly deteriorated (see Figure 1).

**Fig. 1: Percentage of households with severe food insecurity in 11 governorates covered by FSMS (FSMS 2013 vs CFSS 2012 and CFSS 2010)**

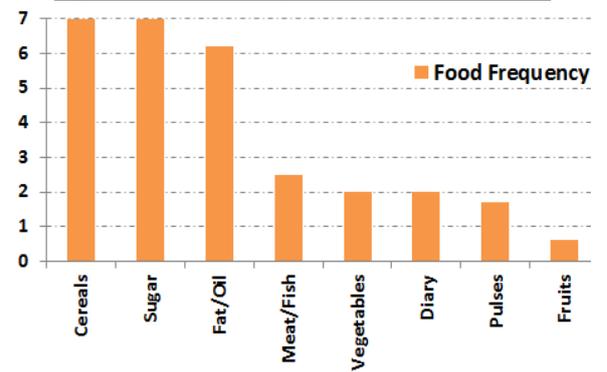


Source: WFP's FSMS 2013, CFSS 2012 and CFSS 2010

A map showing the changes in FCS is presented in Annex 1 while Annex 4 describes the percentage of households by FCS category.

The FSMS data shows that the Yemeni diets are not sufficiently diverse and that inadequate amounts of the essential food groups are consumed to guarantee a healthy life. Although some improvements in household food consumption were noticed when compared with CFSS 2012, the quality of the diet consumed by the surveyed households remains poor. Cereals, sugar and fat/oil are consumed daily - and all the other food groups are consumed fewer than two days per week (see Figure 2).

**Fig. 2: Number of days food items consumed**



Source: WFP FSMS 2013

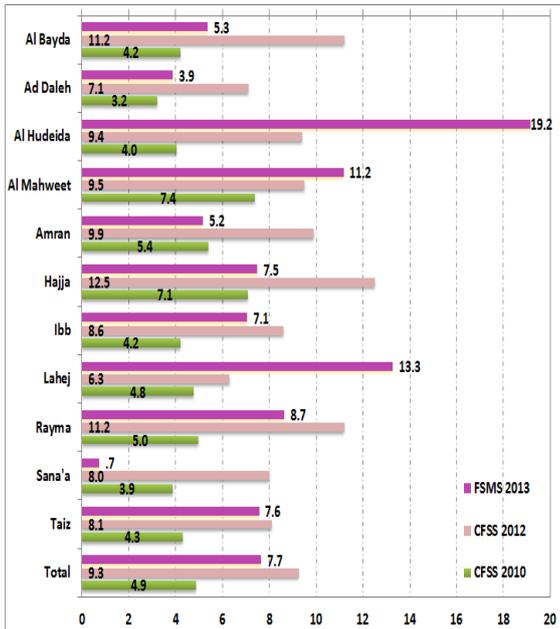
### 3.2. Coping Strategies

The Reduced Coping Strategy Index (CSI)<sup>6</sup> model was used as another proxy indicator of household food security. The information collected in the FSMS survey was used to calculate the reduced CSI which takes into account both the frequency and gravity of each of the five indicators within the Index. Higher CSI scores indicate a more serious food security situation.

The overall CSI has improved by 6 percent compared with the CSI based on the 2012 CFSS. Significant differences are noted among the 11 governorates. For instance the CSI has worsened significantly in Al Hudeida and Lahej and deteriorated slightly in Al Mahweet. Conversely, the CSI has improved considerably in Al Bayda, Amran, Hajja and Sana'a, and slightly improved in Ad Daleh, Ibb and Rayma (Fig. 3).

<sup>6</sup> Eating less preferred/less expensive food, limiting portion size at mealtime and reducing the number of meals per day have a severity score of 1. Borrowing food or relying on help of friends/relatives and limiting adult intake in order for small children to eat have a severity score of 2 and 3 respectively.

**Fig. 3: Coping Strategy Index in 11 governorates covered by FSMS (FSMS 2013 vs CFSS 2012 and CFSS 2010)**



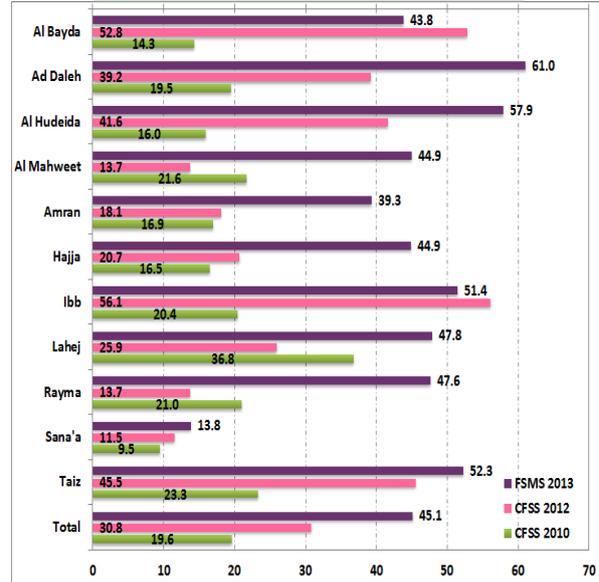
Source: WFP's FSMS 2013, CFSS 2012 and CFSS 2010

Annex 3 is a map showing the changes in coping strategies since CFSS 2012. By analysing the CSI, households were categorised by the level of coping strategies employed. It was found that 33 percent of households had high levels of coping strategies, 19 percent had medium levels and 48 percent had low or no coping mechanisms (Annex 6).

### 3.3. Sources of Food

About 45 percent of the households surveyed were found to rely on food bought on credit, a remarkable increase compared to an estimated 33 percent of CFSS 2012 (Fig. 4). The presence of a food-related debt is a sign of increasing vulnerability, posing a risk for households to be able to access to food in the future. Own production as source of food makes a very small contribution to household food security in Yemen, accounting on the average for only 2.5 percent of household food consumption.

**Fig. 4: Percentage of Households which buy food on credit (FSMS 2013 vs CFSS 2012 and CFSS 2010)**



Source: WFP's FSMS 2013, CFSS 2012 and CFSS 2010

According to the information from the FSMS survey, there is considerable variation among the surveyed governorates. In Ad Daleh, Al Hudieda, Ibb and Taiz for instance, more than 50 percent of food is bought on credit (Annex 2 shows changes in credit purchases between 2012 CFSS and 2013 FSMS).

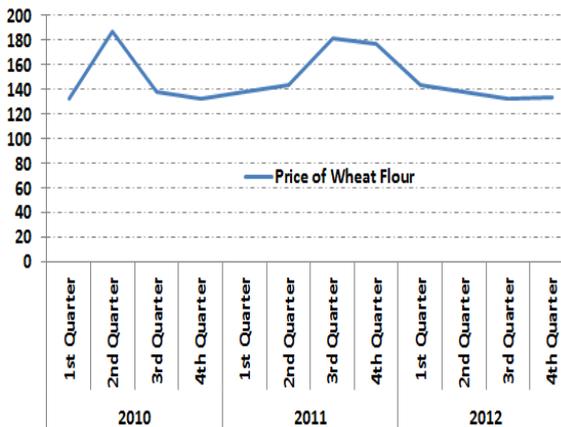
The poor households<sup>7</sup> in all governorates buy half of their food on credit. Around 38 percent of food is bought with cash and 14 percent with other means including gifts, borrowing and assistance (see Annex 5).

### 3.4. Purchasing Power

Despite the sharp increase in international food prices, notably wheat, since July 2011, the price of wheat flour in several local Yemeni markets fell, on average, by about 15 percent during 2012. This trend created favourable conditions for food purchasers (see Figure 5).

<sup>7</sup> Poverty status was determined based on measurements using ownership of various household assets (see CFSS 2012 Annex for more details).

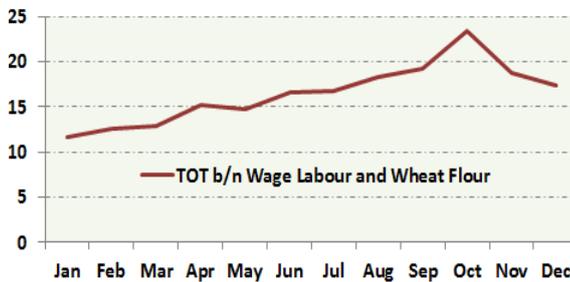
**Fig. 5: Retail prices of wheat flour – 2010-2012 by quarter**



Source: WFP's Market monitoring data

The terms of trade (TOT<sup>8</sup>) are proxy indicators of the purchasing power of households relying on livestock and/or casual labour as their main income to purchase cereals. WFP has been monitoring these two important TOTs since the beginning of 2011 through the market monitoring<sup>9</sup> system.

**Fig. 6: TOT between Wage and Wheat Flour, 2012 (Kgs/daily wage labour)**



Source: WFP Market Monitoring Data

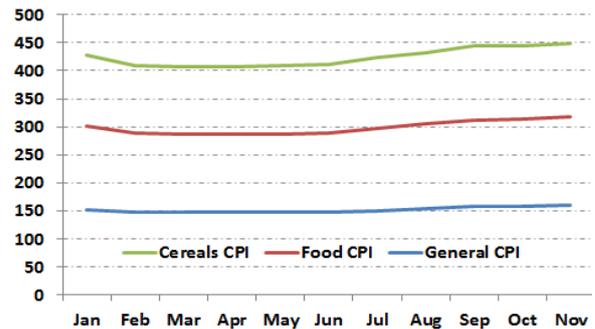
For the purpose of this FSMS bulletin, the time series information on TOT for 2012 was considered in order to monitor changes. As depicted in Figure 6, the TOT between wage labour and wheat flour increased during the first ten months of 2012, reaching a peak in October. This indicates a period of improving purchasing power for wage labourers in relation to wheat flour.

<sup>8</sup> The **terms of trade (TOT)** is a measure of the relative value of one commodity to another (or the inverse of their relative prices) and thus a measure of the exchange value of the good or service to be traded. Wage to cereal terms of trade is a standard indicator for purchasing power. The livestock to cereal ratio gives an indication of the purchasing power of households selling livestock and purchasing staple foods. Purchasing power is a measurement of the relative value of money in terms of the quality and quantity of goods and services it can buy. It represents the ability of a household to acquire goods and services based on its access to money or other forms of wealth.

<sup>9</sup> <http://www.wfp.org/content/yemen-monthly-market-watch-2012>

Major factors contributing to this favourable trend included: a stronger demand for labour, rising wages, stable food prices and persistently low inflation rates. In November 2012, the TOT started to fall due mainly to a reduced demand for labour following the end of the agricultural season and a slight increment in consumer price indices (CPI) (see Figure 7).

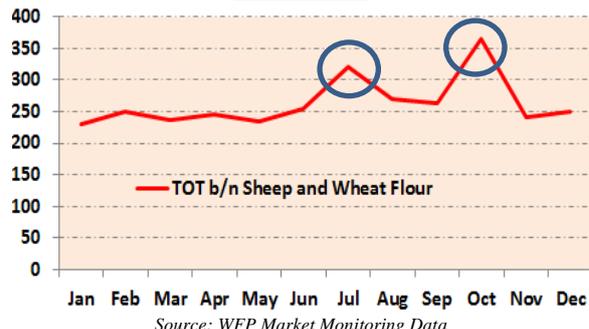
**Fig. 7: Consumer Price Index (CPI), 2012**



Source: WFP Market Monitoring Data

As most livestock-dependent households in Yemen use sheep as the main source of income to buy food, the TOT between a two-year old male sheep and wheat flour has been used as a key indicator within the market monitoring system of WFP.

**Fig. 8: TOT between Sheep and Wheat Flour, 2012 (Kgs/sheep)**



Source: WFP Market Monitoring Data

According to the time series information, the TOT between sheep and wheat flour performed favourably for livestock owners during most of the months in 2012 (see Figure 8). The two peaks in July and October are mainly due to Ramadan and Eid when demand for sheep rose.

## 4. Food Availability

### 4.1. Weather Conditions

The Red Sea convergence zone (RSCZ) and the monsoonal inter-tropical convergence zone (ITCZ) affect rainfall patterns in Yemen. Precipitation falls in rain storms of high intensity which are of limited duration and geographical coverage. ITCZ storms have a wider geographical coverage than those of the RSCZ.

The relative importance of the RSCZ and the ITCZ in different parts of the country is reflected in the seasonal rainfall distribution: RSCZ, whose influence is most noticeable in the west of the country, is active from March to May and to some extent in the autumn, while the ITCZ reaches Yemen in July-September, moving north and then south again so that its influence lasts longer in the south<sup>10</sup>.

Rainfall totals in 2012 were below average in Ad Daleh, Aden, Al Hudeida, Al Jawf, Al Muharah, Hadramaut, Lahj, Mareb, Sana'a, Shabwa and Taiz, governorates. Below-average precipitation, coupled with social unrest and insecurity are expected to negatively impact agricultural activities and productivity.

According to the satellite image analysis findings from USGS/EROS, the vegetation cover during October 2012 is well below the ten years average, particularly for the agriculturally higher potential areas located in the western highlands of the country (see Figure 9).

Dry conditions and water shortages inevitably caused a deterioration in the physical condition of animals that would negatively impact households who depend on livestock as their means of livelihoods. The poor performance of livestock could also have a negative implication for the national economy since livestock represents about 20 percent of agricultural gross domestic product (GDP). Animals also play a crucial role at the household level, contributing to poverty alleviation and supporting food security at the micro level.

### 4.2. Agricultural Production

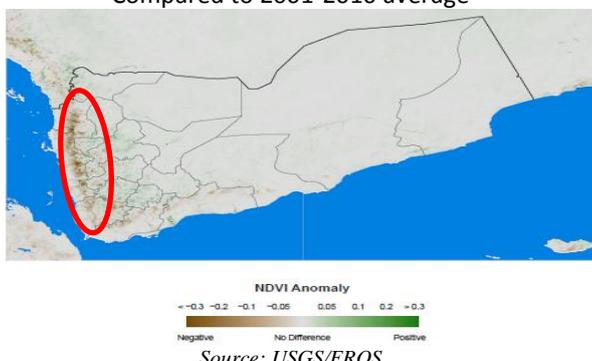
Although agriculture only contributes 15 percent of national GDP, it employs more than half of the labour force, providing a means of livelihood to more than two-thirds of the population. While agriculture therefore has a significant role for livelihoods, it plays a less important role in the availability of staple foods to households, since more than 90 percent of the staple grains consumed in Yemen are imported. Some 1.3 million hectares of arable land is shared amongst 1.2 million landholders.

Barley, maize, millet, wheat and sorghum occupy the main share of planted area at 58 percent. Cash crops (coffee, cotton, qat, sesame and tobacco) occupy 17 percent. Fruit and vegetables take up 12 percent. Some 10 percent is forage crops, 80 percent of which is sorghum. Pulses take up 4 percent.

Crop performance is determined by quantity and distribution of rainfall as well as by access to irrigation water. Approximately 50 percent of cultivated land is rain-fed, while 31 percent is irrigated from groundwater, 10 percent from floods (spate) and the rest from dams, streams and water tankers.

According to FAO, one of the consequences of poor rainfall during the second season in 2012 is that national agricultural production in 2012 is estimated to be 8 percent lower than the level in 2011 and 10 percent below the five-year average. Currently, the total cereal production is provisionally estimated to be 750 000 MT (see Table 1).

**Fig. 9: Yemen NDVI Anomaly in October 2012**  
Compared to 2001-2010 average



<sup>10</sup> FAO/WFP CFSAM, 2009.

**Table 1: Yemen cereal production forecast for 2012**

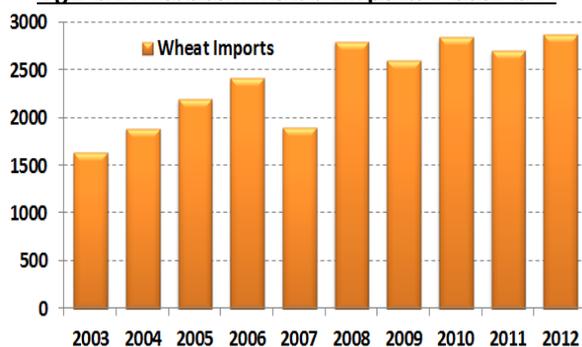
Crop type	Production (in MT) by Year			
	2010	2011	Avg. 2007-11	Est. 2012
Sorghum	507,302	412,031	421,974	378,451
Maize	89,454	67,367	73,063	61,877
Millet	111,135	74,815	84,052	68,718
Wheat	265,432	232,332	221,772	213,397
Barley	39,622	30,003	30,850	27,558
<b>Total</b>	<b>1,012,945</b>	<b>816,548</b>	<b>831,711</b>	<b>750,000</b>
Per capita Prod (Kg)	43.7	34.3	36.8	30.8

Note: Estimated figures for 2012 are based on FAO/GIEWS forecast.  
Source of Data: Ministry of Agriculture of Yemen

### 4.3. Imports and Market Information

Yemen has imported 3.2 million MT of cereals (mostly wheat in addition to rice and maize) annually since 2007. Commercial wheat imports have increased in recent years, reaching a record high in 2012 at 2.9 million MT; which is 6.5 percent more than 2011 (see Figure 10).

**Fig. 10: Wheat commercial imports: 2003-2012**



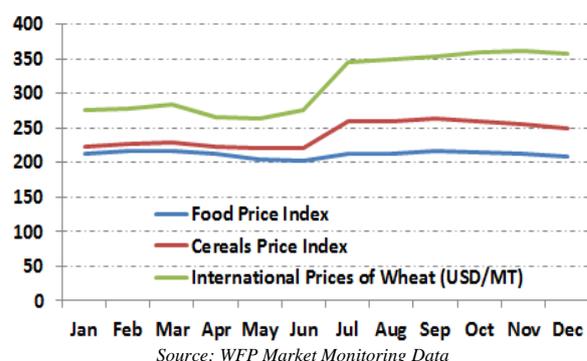
Source: Ministry of Trade and Industry of Yemen

Per capita, wheat imports in 2012 was approximately 118Kg, slightly higher than 2011 (114Kg) but lower than 2010 (123Kg). The high level of imports in 2012 was a factor in keeping the balance between the staple food availability and demand, thus helping to stabilise prices of food commodities.

During the first quarter of 2012, FAO's Food Price Index and Cereals Price Index was stable before declining slightly in the second quarter. International prices of wheat followed the same trend during the first half of the year. From July 2012, both FAO's indices and global wheat prices jumped up to a new record high and maintained a similar level throughout the second half of the year (see Figure 11). Drought in the United States and

poor wheat yields in the Russian Federation attributed to the shift in demand for wheat.

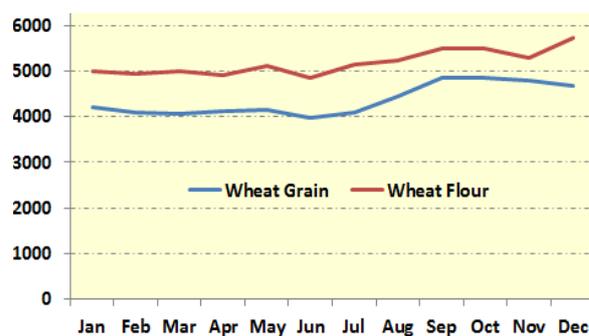
**Fig. 11: International wheat prices and indices, 2012**



Source: WFP Market Monitoring Data

In tandem with high global wheat prices and higher levels in food and cereal price indices, wholesale prices of wheat in Yemen also rose but at a lesser rate during the second half of 2012 (see Figure 12). Between the third and fourth quarters of 2012, wholesale prices of wheat and wheat flour increased by seven percent and four percent respectively. During the same period, the food Consumer Price Index (CPI) as well as international wheat prices increased by three percent. However, the retail prices of wheat and wheat flour have slightly declined in favour of the consumers that are believed to be one of the reasons for the minor improvement in food security.

**Fig. 12: Wholesale prices of Wheat and Wheat Flour, 2012 (YR/50Kg)**



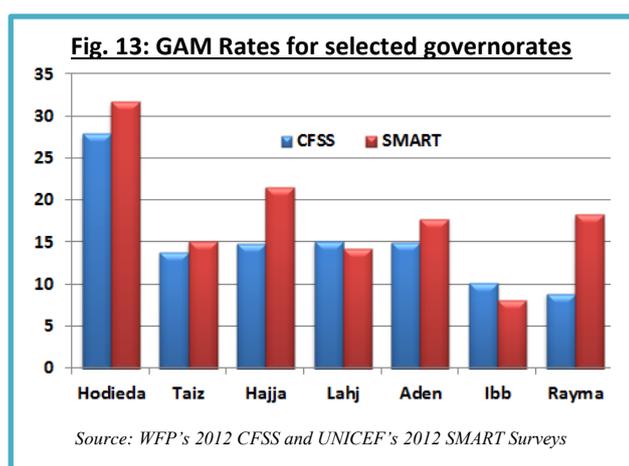
Source: WFP Market Monitoring Data

## 5. Nutrition and Food Utilisation

The findings of the 2012 CFSS as well as other localised monitoring reports indicated alarmingly high levels of malnutrition. The Ministry of Public Health and Population (MoPHP), with technical guidance from UNICEF and the nutrition cluster, conducted a series of nutrition surveys in governorates believed to have high malnutrition levels, namely Aden, Hajjah, Hudieda, Ibb, Lahj, Raymah and Taiz.

The surveys used the Standardized Monitoring and Assessment for Relief and Transition (SMART) methodology to establish and monitor the levels of acute malnutrition, stunting and underweight among children aged 6-59 months. The surveys also identified factors associated with malnutrition, estimated the under-five and crude death rates, and identified some of the public health services available to populations providing information on appropriate nutritional and health activities.

According to the surveys, levels of malnutrition have deteriorated in most governorates since the 2012 CFSS (see Figure 13). Although there are methodological differences between the CFSS and the SMART surveys<sup>11</sup>, the findings further confirmed that overall malnutrition levels in Yemen are at alarming levels.



Water supplies are low and irregular due to the depletion of water sources, disrupted power supplies and a lack of resources to pay for repairs. During 2012, limited access to adequate water and

sanitation facilities coupled with poor hygiene practices and high incidence of open defecation resulted in poor and deteriorated food utilisation in most governorates identified as severely food insecure and with high levels of malnutrition. (SMART Surveys, OCHA SDR, September 2012).

## 6. Food Security Outlook

The main drivers of food insecurity in Yemen during 2012 include:

- Limited sources of income for the urban poor which continued to limit their purchasing power;
- Poor and inadequate livelihood sources among the rural households;
- High levels of poverty among half of the population;
- High levels of indebtedness among the poor in relation to food access;
- Persistent volatility of international food prices;
- A lack of national strategic grain reserves; and
- Internal conflicts and insecurity.

The food security outlook in the first half of 2013 is anticipated to be slightly worse than that of 2012 due to the continuation of the negative drivers mentioned above. These factors will be further aggravated by the impact of probable poor local agricultural production, estimated to be about 8 percent lower than 2012 and 10 percent below the last five years average.

As in 2012, the most vulnerable segments of the population likely to be worst affected by the poor food security prospects in 2013 include:

- Market dependent households;
- Highly indebted poor families;
- Female-headed households;
- IDPs;
- Malnourished children; and
- Highly vulnerable members of poor families.

Governorates most likely to be affected in 2013 include Abyan, Aden, Al-Dhale'e, Al-Jawf, Al Bayda,

<sup>11</sup> <http://yemen.humanitarianresponse.info/clusters/nutrition/resources>.

Al Hudeida, Hajjah, Lahj, Mareb, Sada'a, and Sana'a.

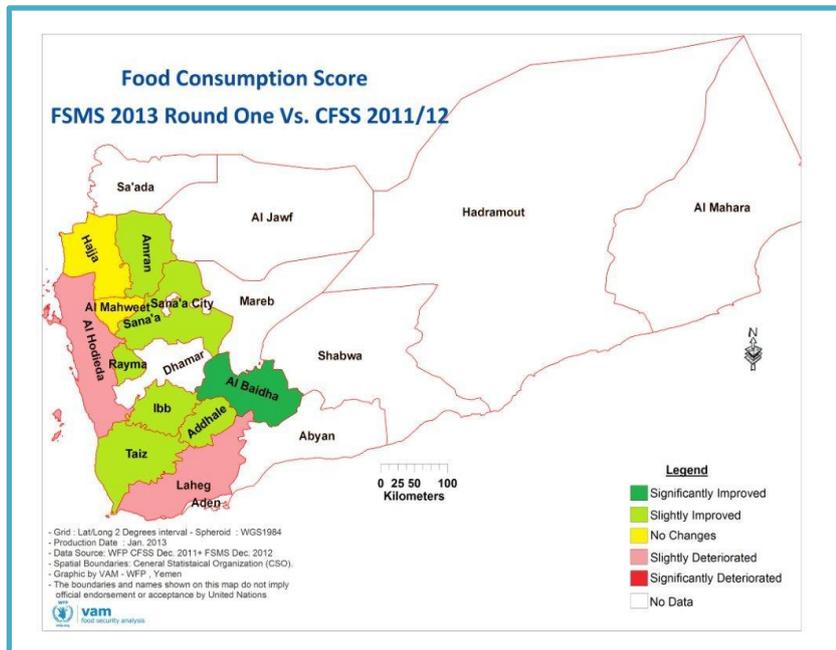
## **7. Recommendations**

The following recommendations have been reached based on the key findings of the FSMS:

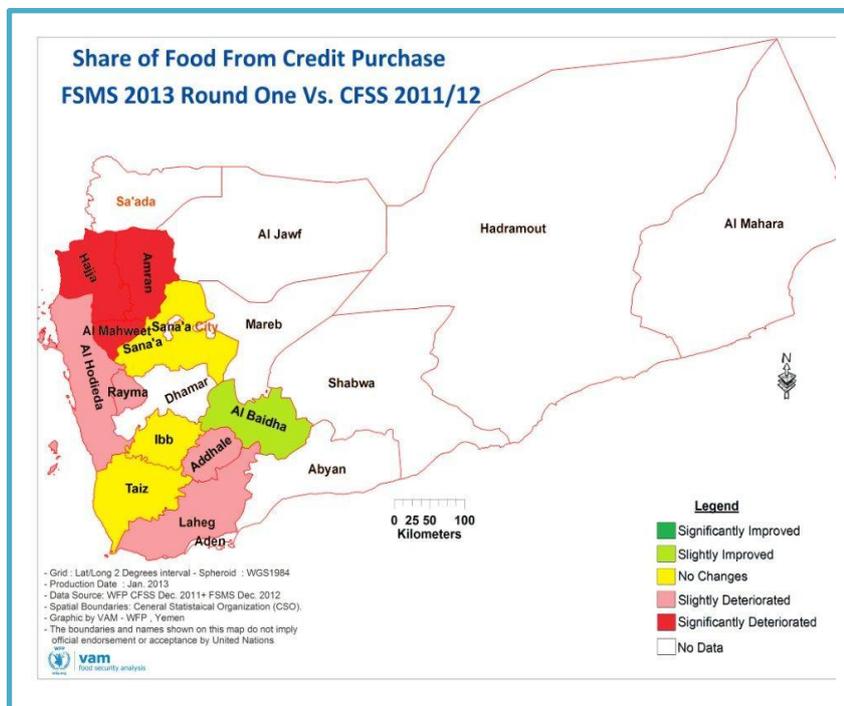
- Sector-specific agencies need to intensify their humanitarian interventions in the most-affected governorates where a deterioration in food security and nutrition has been highlighted.
- The southern and northern governorates that will probably face a deteriorating food security situation in 2013 due to the sustained conflicts/insecurity, need to be closely monitored and periodically assessed to adjust the humanitarian needs.
- Some findings of the FSMS need to be further investigated using causal analysis tools, particularly in Al Hudieda, Al Mahweet and Lahj.
- Information contained in this bulletin needs to be updated more regularly to capture the rapidly changing food security situation in the country.

**Annexes**

**Annex 1: Changes<sup>12</sup> in Food Consumption Score  
 between 2012 CFSS and 2013 FSMS 1<sup>st</sup> Round**



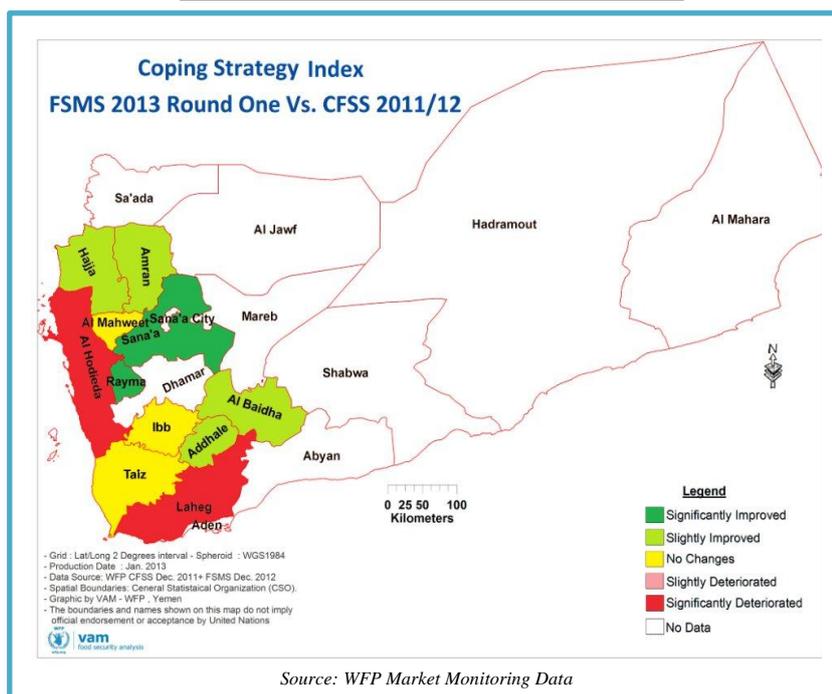
**Annex 2<sup>13</sup>: Changes in Share of Food from Credit Purchase  
 between 2012 CFSS and 2013 FSMS 1<sup>st</sup> Round**



<sup>12</sup> Note on the classification of the Legend: >20% - Significantly Improved; 10%-20% - Slightly Improved; -10% to 10% - No Change; -20% to -10% Slightly Deteriorated; <-20% - Significantly Deteriorated.

<sup>13</sup> Same as footnote 12.

**Annex 3<sup>14</sup>: Changes in use Coping Strategies  
between 2012 CFSS and 2013 FSMS 1<sup>st</sup> Round**



**Annex 4: Percentage of Households by  
FCS category (2013 FSMS 1<sup>st</sup> Round)**

Governorate	Food Consumption Score (FCS)		
	Poor	Borderline	Acceptable
AlBaidhah	44.8%	13.9%	41.3%
Addhala	23.3%	38.3%	38.3%
AlHodaidah	18.2%	25.0%	56.8%
AlMahweet	14.7%	27.3%	58.0%
Amran	23.4%	28.1%	48.6%
Hajjah	29.2%	16.7%	54.1%
Ibb	19.1%	27.5%	53.4%
Lahj	26.4%	29.5%	44.2%
Raimah	25.3%	34.9%	39.7%
Sana'a	41.6%	25.5%	32.8%
Taiz	18.7%	22.3%	59.0%
<b>Total</b>	<b>26.7%</b>	<b>26.1%</b>	<b>47%</b>

Source: WFP's 2013 FSMS Survey

<sup>14</sup> See footnote 12.

**Annex 5: Food sources by governorates (2013 FSMS 1<sup>st</sup> Round)**

Governorate	Source of food			
	Own prod.	Cash purchase	Credit purchase	Other Sources
AlBaidhah	1.9	44.1	43.8	10.2
Addhala	0.7	23.6	61.0	14.8
AlHodaidah	1.3	34.0	57.9	6.9
AlMahweet	4.5	25.0	44.9	25.5
Amran	3.9	41.1	39.3	15.8
Hajjah	0.7	42.7	44.9	11.8
Ibb	5.5	26.3	51.4	16.7
Lahj	0.2	41.8	47.8	10.1
Raimah	1.2	30.7	47.6	20.5
Sana'a	6.3	72.6	13.8	7.2
Taiz	2.4	24.1	52.3	21.2
<b>Total</b>	<b>2.5</b>	<b>38.1</b>	<b>45.1</b>	<b>14.3</b>

*Source: WFP's 2013 FSMS Survey*

**Annex 6: Percentage of Households with level of Coping Strategies they used (2013 FSMS 1<sup>st</sup> Round)**

Governorate	Level of coping strategies		
	No or Low Coping	Medium Coping	High Coping
Ibb	36%	29%	35%
Al Baidhah	57%	18%	25%
Taiz	28%	37%	35%
Hajjah	60%	10%	31%
Al Hodaidah	8%	10%	82%
Sana'a	92%	2%	6%
Lahj	6%	23%	70%
Al Mahweet	48%	16%	36%
Amran	60%	17%	23%
AlDhalee	53%	26%	20%
Raimah	51%	23%	26%
<b>Total</b>	<b>48%</b>	<b>19%</b>	<b>33%</b>

*Source: WFP's 2013 FSMS Survey*

**Annex 7: Acronyms**

CFSS	Comprehensive Food Security Survey
CSI	Coping Strategies Index
EROS	Earth Resources Observation and Science Centre
FAO	Food and Agriculture Organization of the United Nations
FCS	Food Consumption Score
FSMS	Food Security Monitoring System
GDP	Gross Domestic Product
IDP	Internally Displaced Person
IPC	Integrated food security Phase Classification
ITCZ	Inter-Tropical Convergence Zone
JAM	Joint Assessment Mission
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
RSCZ	Red Sea Convergence Zone
SDR	Secondary Data Review
SMART	Standardized Monitoring and Assessment for Relief and Transition
TOT	Terms of Trade
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USGS	U.S. Geological Survey
VAM	Vulnerability Analysis and Mapping