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Comprehensive Food Security Survey (CFSS)

YEMEN

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Yemen
Comprehensive Food Security Survey
2014

vam
food security analysis

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Key messages

- Over 40 percent of the population are food-insecure
- Nearly half of the rural population and over one-quarter of the urban population are food-insecure
- Food insecurity is reduced between 2011 and 2014
- Food insecurity is greater in women-headed households
- More than one in 10 children is acutely malnourished
- Prevalence of global stunting fell between 2011 and 2014, but still remains at critical level
- More than one-third of rural children are underweight
- Al-Mahweet and Amran governorates have the highest prevalence of global stunting
- Breastfeeding practices are generally very poor

Foreword

With a population of around 26 million people, Yemen is the poorest country in the Arab region. It is also the world's eighth most food-insecure country. It continues to experience a range of complex socioeconomic and political problems. The country is struggling to recover from the impacts of international food and fuel prices as well as the global financial crisis. Yemen is now ranked the lowest in the Arab world when measured by all socioeconomic and political development indicators. More than half of the population is under extreme poverty. The country faces multi-dimensional challenges. Poor governance associated with lack of adequate social services; gender inequalities; poor access to social infrastructure; environmental degradation and depletion of natural resources coupled with the negative impacts of climate change have all increased the number of people affected by food insecurity and poverty.

Findings of this latest Comprehensive Food Security Survey (CFSS) reveal that the level of food insecurity in Yemen is still very high – although the overall proportion of food insecure population slightly declined from 45 percent in 2011 to 41 percent in 2014. However, the number of food insecure remains the same as that in 2011. Currently, 10.6 million people in Yemen are food insecure, of whom 5 million (or 19 percent of the population) are severely food insecure and 5.6 million (22 percent) are moderately food insecure. The level of both acute and chronic malnutrition among children and women nationally remains as high as recorded in 2011, due to poor levels of mother education, mother nutritional status and poverty as well as health-related problems associated with a lack of adequate services, including water and sanitation utilities and health care facilities.

Widespread conflicts, political instability and insecurity deterioration in economic growth, extreme poverty, high population growth, high unemployment rate, huge reduction in remittances, volatility of prices of food and other essential commodities, increasing cost of living, including unaffordable health expenses, declining purchasing power, and continued conflicts and the destruction of vital infrastructure, including oil pipelines and electricity power lines, are among the main factors responsible for the high levels of food insecurity and malnutrition.

The report offers a huge amount of updated information on the current food security and nutrition situation in Yemen and answers key food-security related questions, such as how many people are food insecure, where they are, who they are, why they are food insecure, etc. It also reviews the socio-political and macro-economic situation in the country and summarizes the contextual issues considered as among the most important underlying causes of poverty, malnutrition and food security in Yemen. The report also provides important recommendations for immediate humanitarian life-saving and livelihood protection responses to address the urgent needs of vulnerable groups in Yemen. It also recommends the implementation of the national food security strategy and other relevant policies to address the root causes of food insecurity and malnutrition in the country.

The findings of the CFSS remind us that we are still have a huge challenge ahead, requiring our collective action. All stakeholders need to join forces and resources to achieve a better and sustainable impact on enabling vulnerable Yemenis to become self-sufficient, able to feed themselves and resilient to future shocks. We hope our partners and all stakeholders will make a maximum use of the results of the survey for their various programmes in terms of advocacy, resource mobilization and prioritization of areas for implementation of humanitarian and development interventions. The three partners – WFP, CSO and UNICEF – are committed to working very closely with all stakeholders in the fight against hunger and malnutrition in Yemen. Finally, we would like to thank all the organizations involved in the successful compilation of the CFSS with special thanks to USAID for funding the survey.

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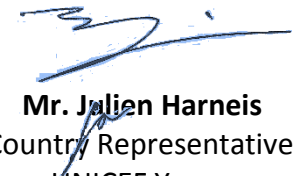

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Acknowledgement

The 2014 Comprehensive Food Security Survey (CFSS) was conducted jointly by World Food Programme, Central Statistics Organization (CSO) of Yemen and United Nations Children's Fund (UNICEF) with significant support from various stakeholders and partners in Yemen. We are deeply grateful to all the organizations which were involved and contributed to the successful implementation of the survey.

Special thanks go to the Government of Yemen, particularly to the CSO, for its great commitment and support throughout the entire process of the CFSS in general, and in the planning, preparations, sampling design, and management of the field work, in particular. Experts from CSO who have immensely involved in the survey include Ali Abdullah Saleh Ben Qanaan, Tareq Saeed Almathhaji, Redhwan Ali Ghanem Yahya, and Mofadal Ahmed Alharazi.

WFP's VAM team in Yemen has led and managed the entire process of the CFSS – Ahmadshah Shahi has played a critical role in the overall management and leadership of the survey, while Endalkachew Alamnew has technically led the various stages of the CFSS including the compilation of the report, and Ahmed Ismail has led the administrative and logistical aspects of the survey. Ms. Mariko Kawabata, a Regional VAM Officer in WFP Regional Bureau in Cairo, has made vital support during the design of the survey as well as in the analysis and commenting on the report. WFP VAM in HQ/Rome has also provided technical guidance and support.

Iain McDonald, Emergency Coordinator within WFP Yemen, has made remarkable managerial and technical support in the successful implementation of the CFSS. Francesca Erdelmann, Head of Programme in WFP Yemen, also contributed in terms of technical guidance on the nutrition section of the survey. Robin Lodge who is a senior donor relations officer and head of external relations, and Regina Bakhteeva who is donor and external relations officer – both from WFP Yemen Country Office – have made valuable contributions. Tom Woodhatch, a professional editor hired as a consultant by WFP Yemen, has consolidated and edited the full CFSS report.

UNICEF Yemen has taken the overall leadership on the nutrition part of the survey. Nagib Abdulbaqi was heavily involved in all stages of the survey focusing on the nutritional aspects of the CFSS. Oumar Hamza, a nutrition consultant hired by WFP with financial support of UNICEF, has led the data analysis and report drafting on nutrition section of the CFSS. Other colleagues from UNICEF including Anteneh Gebremichael (Nutrition Cluster Coordinator) have also made several important technical contributions.

The CFSS was technically guided by a steering committee that was established during the early stage of the survey. The committee members include WFP, UNICEF, CSO, FAO, USAID, MOPIC, Oxfam, Food Security and Agriculture Cluster Coordinator, and Nutrition Cluster Coordinator. Mohamad Sallam and Belihu Negesse from FAO have done critical support on the analysis of the CFSS data and providing valuable comments on the report. Several other individuals from WFP, CSO and UNICEF have made remarkable contributions during different phases of the survey.

The survey was generously funded by the United States Agency for International Development (USAID) Mission in Yemen which was crucial for the implementation of the CFSS. WFP Yemen also provided additional financial and logistical support. The Government of Yemen is grateful for these generous contributions.

Finally, the authors would like to thank WFP Yemen's former Country Director, Mr. Bishow Parajuli, for his support, advice and encouragement throughout the process of compiling this report.

Acronyms

AQAP	Al Qaeda in the Arabian Peninsula
CFSAM	Crop and Food Security Assessment Mission
CFSS	Comprehensive Food Security Survey
CI	Confidence Interval
CIA	Central Intelligence Agency
CSI	Coping Strategy Index
CSO	Central Statistics Office
ENA	Emergency Nutrition Assessment
FAO	Food and Agriculture Organisation
FCS	Food Consumption Score
FEWS NET	Famine Early Warning System Network
FSMS	Food Security Monitoring System
GAM	Global Acute Malnutrition
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GII	Gender Inequality Index
GoY	Government of Yemen
GPC	General People's Congress
HDI	Human Development Index
HDR	Human Development Report
HH	Household
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
MOA	Ministry of Agriculture
MENA	Middle East and North Africa
MUAC	Mid-Upper Arm Circumference
NDC	National Dialogue Conference
NGO	Non-Government Organization
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring and Assessment for Relief and Transition
SWF	Social Welfare Fund
TOT	Terms of Trade
UFSMS	Updated Food Security Monitoring Survey
UNDP	United Nations Development Programme
UN OCHA	United Nations Office of the Coordination of Humanitarian Affairs
UNICEF	United Nations Children's Fund
USD	United States Dollars
USAID	United States of Agency for International Development
VAM	Vulnerability Analysis and Mapping
WB	World Bank
WFP	World Food Programme
WHO	World Health Organization
WRA	Women of Reproductive Age

Executive summary

The results of the 2014 Comprehensive Food Security Survey (CFSS) showed that some 41 percent of the population in Yemen are food-insecure. In other words, 10.6 million people in the country had limited or no access to sufficient, nutritious food, and were eating less than the minimum required to live a healthy life. About 19 percent of the population are severely food insecure (poor diet) and 22 percent are moderately food insecure (just on borderline level of food consumption). Around 48 percent of the total rural population were found to be food insecure, compared to 26 percent in urban areas.

Yemen's macro-level food security has deteriorated dramatically in recent years, mainly because of declining oil exports and increasing food imports. The proportion of food insecure population stood at around 22 percent in 2003, but doubled to 44 percent in 2008 due to the impact of the high food and fuel prices and financial crisis in 2007/2008, which brought an estimated 44 percent increase in national poverty. However, the food security situation in 2009 improved remarkably and led to a significant reduction in the percentage of food insecure population to 32 percent.

The improved consumption in 2009 was partly a result of quick recovery by households with a strong coping capacity, while for poor households it came at the expense of increased debt and further depletion of assets. The 2011 civil unrest and political crisis, which happened before the population was able to fully recover from previous shocks, resulted in the worst food insecurity in decades. Some 45 percent of the population became food insecure – 40 percent higher than in 2009.

Compared to the 2011 CFSS findings, overall food insecurity fell by about 8 percent in 2014. While 44.5 percent of the population was food in secure in 2011, that figure reduced to 41.1 percent in 2014.

There are significant differences in food insecurity between governorates. Sa'ada governorate, which was surveyed for the first time, was found to have the country's most food insecure regions. Nearly 70 percent of the population there are food insecure, of which more than 40 percent are severely food insecure. In another five governorates – Lahej, Hajja, Shabwa, Ad Daleh and Al Bayda – more than half of all their populations are food insecure. Al Mahra, Hadramout and Aden governorates, meanwhile, are among the least food insecure, with less than 10 percent of people having poor or borderline food consumption.

Some governorates, including Ibb, Taiz, and Hudeida, although not the highest in terms of the proportion of food insecure people, are densely populated areas and have greater numbers of people experiencing food shortages. Some governorates have also seen remarkable improvements in 2014 over 2011 levels. More than 70 percent of the populations of Mareb, Sana'a and Al Bayda were food insecure in 2011, but the levels of food insecurity had fallen to 35 percent, 40 percent, and 55 percent, respectively, in 2014. There was some improvement in the food security of households in temperate highlands between 2011 and 2014 which could mainly be attributed to the ongoing humanitarian assistance, but a dramatic deterioration for those in the internal plateau agro-ecological zone where there was continued conflicts coupled with low level of aid operations.

The diet of many households in Yemen lacks diversity. The main staple items – wheat and rice, together with oil/fat and sugar/honey – make up the three dominant types of food group, in addition to the condiments that most people consume daily. Severely food insecure households have poor food consumption and their daily diet tends to consist of cereals daily, sugar six days a week, oil on five days, with very little other food groups consumed.

Moderately food insecure households are found consuming vegetables, meat, dairy, pulses and fruit more days than severely food insecure households, but at much lower levels than by the group with acceptable food consumption. Food secure households have a much more balanced diet than the other two groups. The level of dietary diversity and food frequency fell slightly in 2014 from 2011, but consumption of meat and dairy products increased between 2011 and 2014.

There are significant differences between rural and urban consumption patterns. Urban households are now consuming more diverse diet than their rural counterparts. The difference is most pronounced in the consumption of meat, vegetables and pulses.

Rural households are much more food insecure than urban households. The urban population makes up about 30 percent of the total population. Al Mahweet is the least urbanized governorate in Yemen with only 6.5 percent of its population living in urban areas. The level of severe food insecurity in rural areas is more than double that of urban places. Households in urban areas are better off in all categories of food security status.

Shocks continue to impact the already precarious food security situation of poor households in Yemen. Nationally, most surveyed households experienced shocks in 2014. The major shocks that have affected almost all the governorates include high food prices, high levels of debt, expensive health services, lack of job opportunities, lack of rainfall, high transport costs and insecurity/violence. However, the magnitude and severity of the shocks differ by governorate.

High food prices and high debts are perceived as the two leading threats that are aggravating the poor food security situation for millions of Yemenis in almost all governorates. Households with food shortages were forced to use a range of coping strategies, mainly consumption-related mechanisms that include consuming less preferred and less expensive food items, limiting the size of meals, reducing the number of meals, and restricting adults' consumption in favour of children. Rural households were found to be the worst-off in terms of using such destructive measures than those in urban areas.

The nutrition situation in children under five has improved since the 2012 CFSS. The prevalence of global stunting fell from 46.6 percent in 2011 to 41.3 percent in 2014. The prevalence of underweight children, as with chronic malnutrition, is higher in rural than in urban areas: 34.1 percent of rural children were underweight compared to 24.5 percent of urban children. The overall situation also improved between 2011 and 2014, falling from 35.5 percent in 2011 and 31.5 percent in 2014.

The survey found that boys were more wasted and more stunted than girls; and boys were more affected by acute and chronic malnutrition than girls. The prevalence of wasting is very high in children under six months old. With 19.2 percent of infants less than six months of age wasted, it is possible that some children were born malnourished, which may be caused by the mother's malnutrition during pregnancy. The prevalence of combined wasting and stunting in children under five years old was found

to increase with age. The highest prevalence of stunting was seen after three years (47 percent), and after four years for wasting (37 percent).

Only 12.4 percent of children aged between six and 24 months met the WHO recommended minimum dietary diversity. More than 85 percent of children do not consume a minimum dietary diversity and are likely to have poor micronutrient density in their diet. When minimum dietary diversity is considered in combination with breastfeeding practices, further feeding practices can be assessed. Only 10 percent of children aged between six and 24 months were breastfed and met the minimum dietary diversity.

The survey found a 24.2 percent rate of malnourished women aged between 15 and 49 years, of whom 14.4 percent were severely malnourished. Breastfeeding in the 24 hours prior to the survey, plus vaccination (including for measles), were significantly associated with the prevalence of stunting, wasting and underweight mothers. Interestingly, mothers' potential exposure to media through television or radio were all significantly associated with the prevalence of wasting. Hand washing, ownership of a fridge, and trade as a primary source of income were all also significantly linked with the prevalence of wasting.

The Yemen context

History

The Greek geographer, Ptolemy, called Yemen "*Eudaimon Arabia*" (*in Greek*), which means "Fortunate Arabia". The description referred to its fertility and climate that helped to sustain a stable population. Nomadic Semites had settled in Yemen by the 23rd century BC, but also migrated as far north as Mesopotamia. They dealt in spices and traded heavily and lucratively along the Red Sea coast. In later centuries, the Romans rendered Ptolemy's words into the Latin Arabia Felix, Happy Arabia. Sedentary agriculture and trade between the eighth and the early third centuries BC, south-western Yemen was ruled by the Sabaeans[1].

Islam arrived in around 630, and Yemen became a province in a rapidly expanding Islamic empire. Imams controlled northern Yemen and established a theocratic political structure that continued into the 20th century. Local feuding between Imams and occasional foreign military conquests characterized the 600 years from the 12th century, when the Ottomans and the British came to lay their own stakes to Yemen. The Turks and the British In the mid-19th century, the Ottomans moved into northern Yemen, taking Sana'a in 1872, which they made the district capital[2].

The rapidly expanding British Empire, meanwhile, was looking to protect and support its shipping routes to and from India, and captured Aden in 1832, making it a fuelling stop for shipping. With the opening of the Suez Canal in 1869, Aden acquired even more strategic value, and its surrounding areas became known as then Aden Protectorate. A border between north and south Yemen was formalized by a treaty between the British and the Ottomans in 1904.

Aden became a crown colony in 1937, transferring rule from Delhi to London. Oil was discovered in Arabia at around the same time, contributing to Aden's continued prosperity. Egypt's General Nasser opposed European imperialism in the Middle East while strongly advocating pan-Arab nationalism. Fighting between the Egyptians, the British and guerrilla forces over control of Yemen continued through much of the 1960s which, with the closure of the Suez Canal in 1967, succeeded in forcing the British to withdraw from Yemen.

The two countries that emerged – the Yemen Arab Republic (North Yemen) and the People's Democratic Republic of Yemen (South Yemen) – united into the single Republic of Yemen on 22 May 1990, with Ali Abdullah Saleh as President. But political infighting in the new government translated into violent civil war in 1994.

Saleh remained President until 2011. Popular uprisings in North Africa and in other Middle Eastern countries began at the end of 2010 and spread to Yemen in January 2011. Major protests in Sana'a and Aden called for President Saleh to resign. After several false starts, Saleh did eventually relinquish his presidency in November 2011. A presidential election was held on 21 February 2012, which returned former Vice-President Abdo Rabboh Mansur Hadi, the only candidate, to power with a stunning majority for an interim period of two years.

[1] CFSS 2011.
[2] CFSS 2011.

Government

The Republic of Yemen (Al Jumhuriyah al Yamaniyah) has a bicameral legislature that is designed to govern the country. The Shura Council has 111 members, who are appointed by the President. The House of Representatives has 301 seats, with members elected by popular vote to serve four-year terms. There are many active political parties in the country with different political views.

After almost a year of crisis, Yemen embarked on a political transition process based on an agreement brokered by the Gulf Cooperation Council (GCC) in November 2011. Yemen started a 565-member National Dialogue Conference in March 2013, which concluded in January 2014 with one of its decisions to transform Yemen into a Federal State.

A special committee appointed by the National Dialogue Conference (NDC) determined that there will be six entities under the Yemeni Federal State. The NDC also approved a Guarantee Document, detailing a road map for the implementation of its recommendations, including details of the extension of the political transition period, constitutional redrafting, preparation of basic laws to support a federal state, and parliamentary and presidential elections.

Population

Yemen has a population of around 26 million[3], more than double that of 1975. Yemen's population is growing rapidly – increasing at 3 percent per annum. That is much faster than the country's economic growth, and the population is expected to double in 25 years. With an average life expectancy at birth of 63.1 years (64.5 years for female and 61.8 years for male)[4], the country has an overwhelmingly young population, with around 46 percent under the age of 15, and a median age of 18.1 years. Ethnically, Yemen is predominantly Arab, with small minorities of Africans (notably from Somalia) and South Asians. Almost the entire population is Muslim. The urban population makes up around one-third of the total, with an urbanization rate of about 4.6 percent per year.

Poverty and development

Yemen is the poorest country in the Arab region. It is now the world's eighth most food-insecure country[5]. It continues to experience a range of complex socioeconomic problems. It is still struggling to recover from the impacts of significantly raised international food and fuel prices in 2007/08, and of the 2011 domestic political crisis. As well as diminishing natural resources – mainly water and oil – severe environmental degradation and serious climate change impacts pose further threats. According to the Yemen Humanitarian Response Plan, 14.7 million people, more than half of the Yemeni population, have required humanitarian assistance in 2014.

[3] Yemen CSO projection for 2014.
[4] UNDP HDR, 2014.
[5] Global Hunger Index (GHI), IFPRI 2014. http://www.ifpri.org/publication/2014-global-hunger-index

With a human development index (HDI) of 0.500 in 2013[6], Yemen is ranked 154th out of 187 countries in 2014 – well below the average for Arab States. The country continued ranked the lowest in the Arab world when measured by all socioeconomic and political development indicators. Yemen has rising unemployment and high poverty rates.

The average adult literacy rate stands at 65.3 percent[7] - 50 percent for female and 83 percent for male[8]. The situation of women is of particular concern, as the gender gap in Yemen is consistently ranked as the highest in the world with a Gender Inequality Index (GII) of 0.733 in 2013[9]. The maternal mortality rate stood at 200 per 100,000 live births in 2013, higher than the Arab States' average (176).[10] The infant mortality rate in 2013 was 54 deaths per 1,000 live births[11].

Continued political instability and conflicts, coupled with poor prospects for oil production (this expected to dry up in the coming few years), the country's economic outlook is far from promising. Poverty, which was already increasing prior to the latest political crisis, has risen further from 42 percent of the population in 2009, to over 45 in 2011[12] and reached to 54.5 percent in 2012.[13] Yemen's water resources are also far below the regional average.

The country faces multi-dimensional challenges. High population growth associated with gender inequalities; poor access to social infrastructure; long-lasting effects of the food, fuel and financial crisis have all increased the number of people affected by food insecurity and poverty. The country is characterized by high food insecurity and malnutrition with rates of child malnutrition and maternal mortality among the highest in the world.

[6] UNDP HDR, 2014
[7] UNDP HDR, 2014
[8] World Economic Forum, 2014. http://reports.weforum.org/global-gender-gap-report-2014/economies/#economy=YEM
[9] UNDP HDR, 2014.
[10] UNDP HDR, 2014.
11 UNDP HDR, 2014.
[12] CFSS 2011.
[13] www.worldbank.org/en/country/yemen/overview, Updated: Mar 17, 2014.

Looking at the structure of the economy before the 2011 crisis, agriculture made up 11 percent of GDP, with industry contributing 43 percent, and oil 19 percent. The services sector contributed close to 46 percent of GDP, with trade and transportation together making up 20 percent. The oil sector remains substantial and contributes almost one-fifth of the country's GDP. Both the agricultural and industrial sectors are reliant on imports, with import intensities of 45 and 39 percent, respectively. Industry makes up close to 72 percent of the import bill, with food processing alone accounting for 28.5 percent of Yemen's import value.

The contribution of agriculture to the national GDP declined further in 2012 (to just 7.9 percent of the GDP), while industry contributed 40.6 percent and services 51.5 percent. Although its contribution to the macroeconomic growth has been minimal and has even shrunk in recent years, agriculture plays an important role by employing more than half of the labour force and providing livelihood for about half of the population.[14]

Security and political instability

One disturbing consequence of the continued high poverty level has been the emergence of an al Qaeda presence in Yemen. Al Qaeda in the Arabian Peninsula (AQAP) is considered the most active of the various branches of al Qaeda that emerged after the death of Osama bin Laden (whose father was born in Yemen). In 2010, an American press report claimed that the CIA believed AQAP to be a greater threat to the USA than Osama bin Laden's core group. According to a British newspaper, "with its conservative Islam, ragged mountains, unruly tribes and problems of illiteracy, unemployment and extreme poverty, Yemen has been dubbed the new Afghanistan by security experts".

It is not hard to understand that high unemployment, persistent poverty levels, external shocks, and government instability can readily combine to catalyse forms of resistance, of which AQAP is one, particularly in a country with a very high proportion of youth. In some parts of southern Yemen, the Government has struggled severely to control a series of jihadists, lawless tribes, secessionists, and plain old-fashioned bandits. Although the groups may have little ideology in common, they are the product of, and contribute to, conditions in which extremism can flourish.

Economy

After unification in 1990, the Government had to work to integrate two distinct economic systems. Their efforts were hampered by the immediate return of some 850,000 Yemenis from the Persian Gulf states, major reductions in aid flows, and the 1994 civil war. Through the 1990s, the World Bank and the International Monetary Fund supported the Government's economic reform programmes, which included plans to reduce the country's dependence on oil. In 2009, Yemen exported its first liquefied natural gas as part of wider efforts to diversify its economy. Then, in January 2010, the Friends of Yemen group was established by the international community in an effort to further boost economic and political reform.

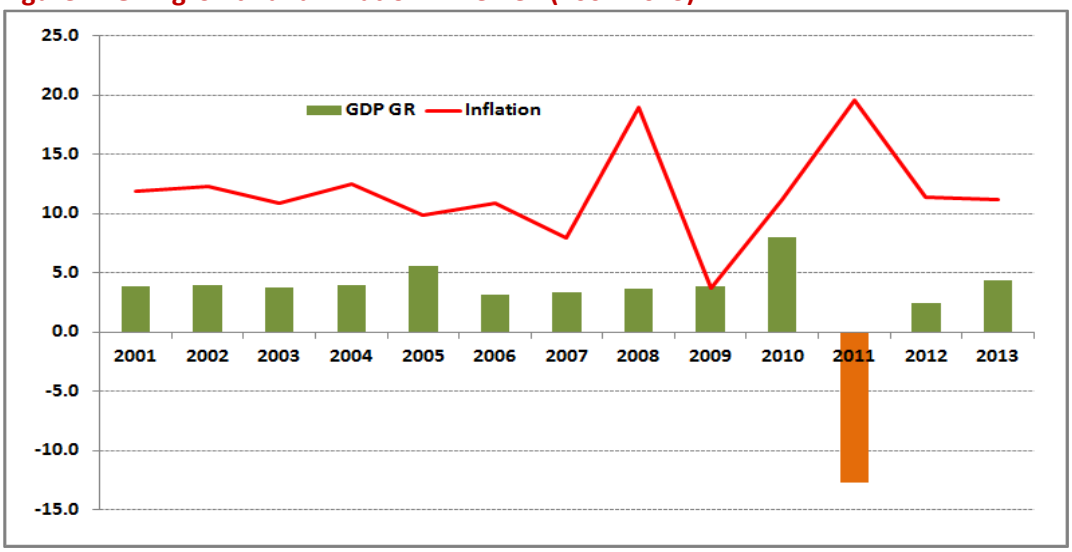
[14] FAO/WFP CFSAM, 2009.

Despite this, petroleum products make up around 70 percent of government revenue and some 25 percent of Yemen's GDP. Its 2011 GDP (PPP) was estimated to be $63.24 billion, which represents a negative growth of around 2.5 percent over 2010. The country's labour force stands at roughly 7,000,000, of whom most work in agriculture and herding. But agriculture contributes just 8.3 percent to GDP, while the figures for industry and services are estimated at 41.6 percent and 50.1 percent respectively. In 2011, GDP per capita was estimated at $2,500. More than one-third of Yemen's population is unemployed, while around 45 percent live below the poverty line. In 2011, inflation was estimated to be 20 percent. China and India are the main destinations for Yemen's exports, while the country's main imports come from UAE, China, and India.

Yemen's political stalemate is destroying the economy. Violence and labour unrest have shut down oil production, the central bank's foreign reserves are being drawn down, and fighting, demonstrations, electrical outages, and fuel shortages have paralyzed local businesses. There have been continued attacks on oil pipelines and electricity transmission lines leading to interruptions of oil production and electricity delivery. 2012 was not a happy year for Yemen's economy.

Yemen's economy is still recovering from the 2011 political crisis and has yet to return to pre-crisis levels. The country slipped into recession in 2011 with GDP shrinking by 12.7 percent, the economy grew by an estimated 2.4 percent in 2012 and 4.4 percent in 2013[15] (Figure 1). The budget deficit had widened to 6.2 percent of GDP in 2012, and the current account deficit had narrowed to about 1 percent of GDP. Economic prospects will depend on progress on the political and security fronts, continued donor support, and implementation of critical reforms. GDP per capita in 2012 stood at $2,300 still below the 2011 ($2,400) and 2010 ($2,700) levels, when the country was ranked 188th of 209 countries.[16]

Figure 1: GDP growth and inflation in Yemen (2001-2013)



Source: World Bank, CSO Yemen

[15] www.worldbank.org/en/country/yemen/overview, (accessed 17 Mar 2014)
[16] CIA World Fact Book, 2013.

Although inflation had fallen to below 5 percent in 2009 after the record high in 2008, the 2011 crisis caused inflation rocket to its highest level in a decade. It remained stubbornly high, but reduced to around 11.4 percent in 2012 and 11.2 percent in 2013.[17] The exchange rate has appreciated then stabilized at pre-crisis levels. These developments allowed a reduction in the official interest rate from 20 percent to 18 percent. The fiscal deficit was expected to be around 5.5 percent of GDP as a result of a Saudi oil grant and cuts in capital expenditures and transfers.

Information recently released from Yemen Central Bank revealed that the general debts on Yemen rose to USD $22.7 billion till September, which is the highest level ever, in comparison to USD $22 billion in July and USD $15 billion in 2011. Among the reasons contributing to such big increases in debts include destruction of infrastructure like the frequent attack on the power lines and bombing of oil pipelines. The Yemeni economy suffers further as a result of the current tense political situation in the country.

Food security

Yemen is characterized by widespread poverty, food insecurity, malnutrition, unemployment, low levels of education, high gender disparities, rapid population growth and insufficient access to safe drinking water and to land. Multiple and simultaneous shocks have exacerbated the vulnerability of families and left millions trapped in absolute poverty and hunger.

Yemen is facing an increasingly complex and worrying humanitarian crisis. Families displaced by the Sa'ada conflict and refugees from the torn Horn of Africa continue to rely on humanitarian assistance for survival. At the same time the combined effects of the global food, fuel and financial crises have increased poverty in Yemen and have further exacerbated the vulnerability of a population that is already suffering from alarming rates of hunger and malnutrition.

Half of Yemen's children are chronically malnourished and one out of ten does not live to reach the age of five. Such emergency levels of chronic malnutrition – or stunting – are the second worst globally after Afghanistan. The proportion of underweight children is the third highest in the world after India and Bangladesh.

As well as civil unrest, a variety of internal and external factors are putting further strain on Yemen's limited resources. The food, fuel and financial crises led to an increase in poverty to an estimated 55 percent from 35 percent in 2006. At the same time, the government's ability to provide basic services is challenged by oil prices and oil production. A six-year conflict in north-western Sa'ada governorate has displaced some 350,000 people and affected many more.

In addition, thousands of refugees continue to cross the Gulf of Aden from the Horn of Africa each year. The dire situation is further compounded by climate change, water scarcity, general insecurity, and limited access to basic services such as clean water and land. In the current situation where families are trapped in extreme vulnerability, any new shock no matter how minor could easily push millions over the edge.

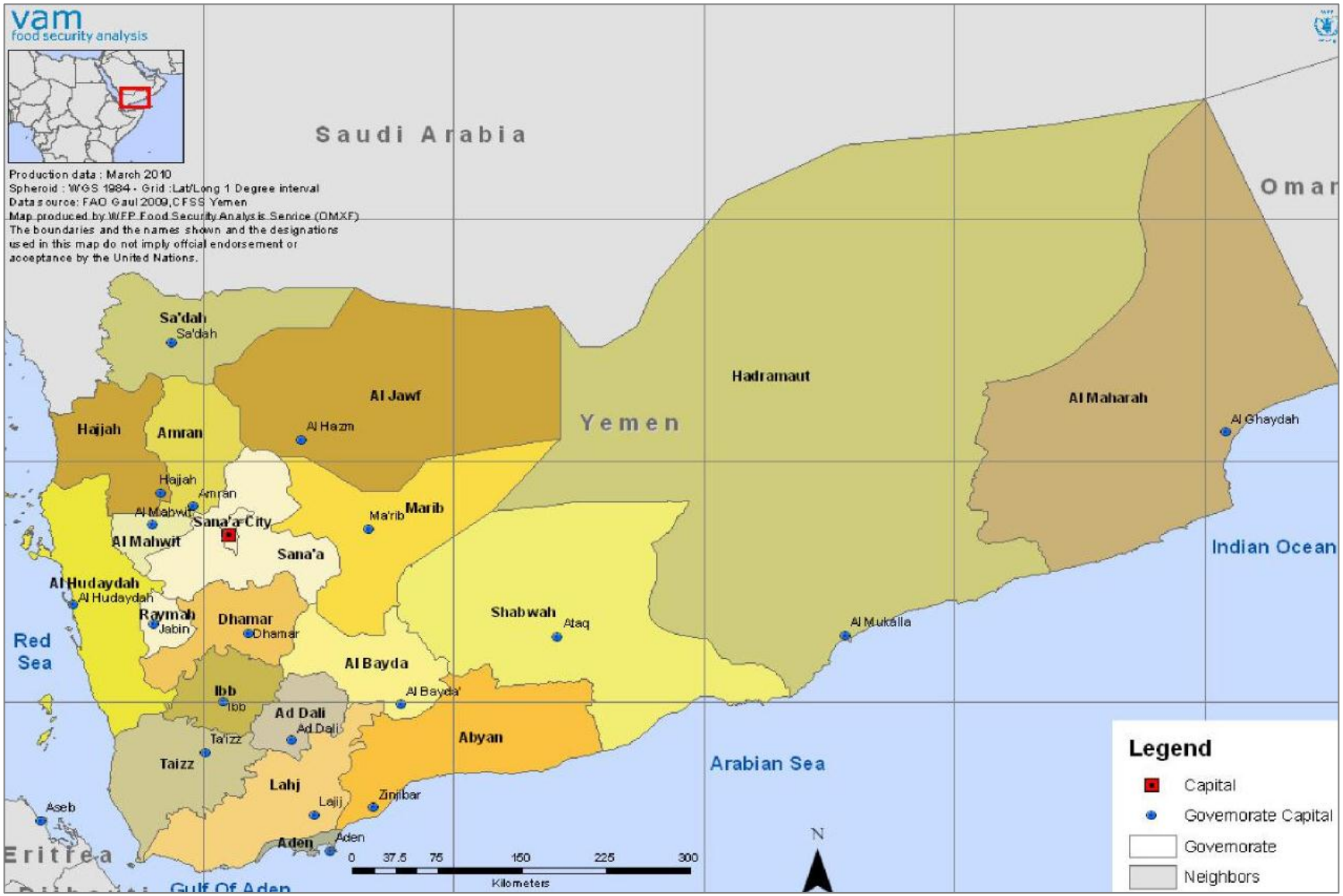
Conflict, economic downturn, low agricultural productivity, and poverty make Yemen one of the most food-insecure countries in the world. In 2012–14, 25.7 percent of the population was undernourished – just 3 percent less than in 1990–92 (28.9 percent)[18]. According to the World Health Organization

[17] Yemen CSO.
[18] FAO, IFAD, and WFP (2014). State of Food Insecurity in the World, 2014, Rome.

(WHO) classification of malnutrition severity, the prevalence of stunted children under five years of age remains critical, with 46.6 percent of children stunted or chronically malnourished[19]. The limited availability of land suitable for cultivation and water scarcity, caused by low and declining groundwater levels, affect food production, food security and rural incomes.

19 FAO, IFAD, and WFP (2014). State of Food Insecurity in the World, 2014, Rome.

Figure 2: Administrative map of Yemen



Objectives and methodology

Objectives

The CFSS is designed to enhance the food security and nutrition related knowledge base in Yemen. It aims to inform programme decision-making to combat transitory and chronic food insecurity and malnutrition. The survey objectives were to:

- Estimate the number of food insecure population and level of malnutrition at the national and sub-national levels;
- Identify the food-insecure and vulnerable households and population groups;
- Examine the underlying causes and risk factors of food insecurity and malnutrition;
- Recommend on the most appropriate and feasible response options to address food insecurity and malnutrition with suggested targeting criteria;
- Update the baseline information on food security and nutritional for monitoring of food security intervention outcomes; and
- Feed into the overall humanitarian response plans, the national food security strategy and other national development plans and initiatives in the country.

Methodology[20]

The main source of information for the CFSS analysis was from primary data collected through household interviews, measurements, and interviews of women of reproductive age, measurements of children under five years old, focus group discussions in all of the communities visited and trader surveys in important markets across the country. The survey covered all the 22 governorates of Yemen (including the newly created governorate of Soqatra).

The survey was designed to provide estimates/statistics that are representative at governorate, agro-ecological zone, urban/rural and national levels. Like the previous CFSSs, a two-stage cluster sampling approach was applied for the current CFSS. Sample sizes were drawn using a standard formula used for two-stage stratified sampling technique. Once the sample size was determined, the following two stage sampling procedures were employed to ensure representativeness at different levels described above:

Stage 1: Thirty EAs at the governorate level were randomly selected, using probability proportional to size, in order to ensure that each household in the population, whether from a small or large village, has an approximately equal probability of being selected; and

[20] A detailed description of the methodology used in the design of the survey, gathering data and analysis is documented separately in a comprehensive Annex Report.

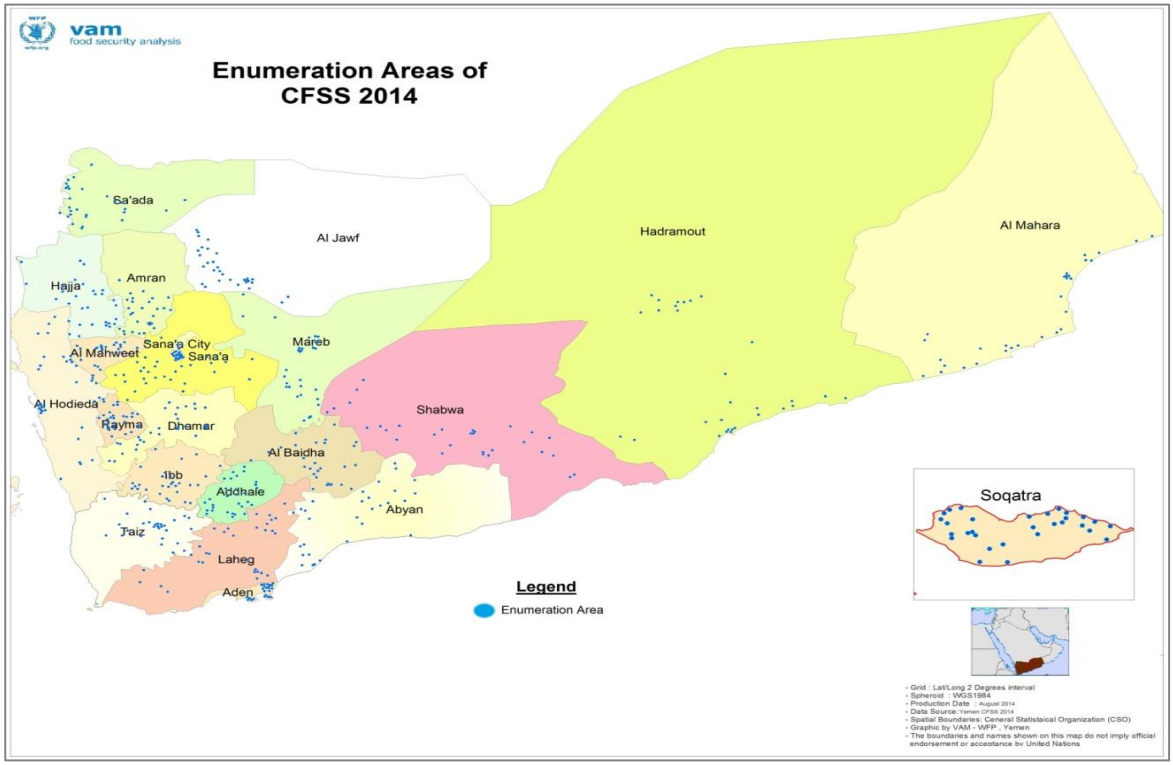
Stage 2: 16-18 households were randomly selected from within each sampled EA depending on the sampling requirement demanded for the nutrition section.

The sampling process was technically led by the Central Statistical Organization (CSO) of Yemen. The CSO has generated a complete list of sampling frame of enumeration areas (EAs) which was stratified by agro-ecological zones (AZEs) and urban/rural areas for all the governorates. Finally, the CSO, WFP and UNICEF have jointly conducted the sampling procedures and drawn the required number of sample sizes. Accordingly, the survey covered a total of 10,500 households for the food security interviews. Moreover, about 15,800 women were also interviewed and anthropometric measurements were taken from 13,400 children to assess their nutritional situation. The primary data collection was carried out during March and April 2014 with strict supervision of the three agencies.

The CFSS is a multi-dimensional study and includes modules on:

- Demography
- Education
- Water and sanitation
- Household assets
- Agriculture and livestock
- Income and livelihoods
- Expenditures and debt
- Food consumption
- Sources of food
- Coping mechanisms
- Household exposure to shocks
- Nutrition
- Child feeding practices
- Access to markets, health facilities, schools
- Market availability
- Market prices
- Impact of shocks to markets and recovery

Figure 3: CFSS 2014 enumeration areas



Measuring food insecurity and nutrition

This report provides an overview of food security at the national (urban and rural) and governorate level in Yemen. Food security depends upon three main factors:

1. Availability of food: This is the extent to which sufficient quantity and quality of food is physically present in an area. This includes food found in markets, produced on local farms or home gardens, or provided as food aid or gifts.

2. Access to food: Even when food is available, people cannot always access it. Food access is ensured when communities, households, and all individuals have enough resources to obtain sufficient quantity and quality of food for a nutritious diet through a combination of home production, stocks, purchase, barter, gifts, borrowing, or food aid.

3. Utilization of food: Even if food is available and can be accessed, inadequate utilisation of it will lead to malnutrition. Proper child care, providing a diet with enough energy and nutrients, safe drinking water, adequate sanitation as well as knowledge of food storage, processing, illness management, and basic nutrition are essential to achieving adequate food utilization.

In this report, the state of household food insecurity is assessed by calculating the food consumption score (FCS). The FCS combines food diversity, food frequency (the number of days each food group is consumed), and the relative nutritional importance of different food groups. The FCS uses standardized thresholds that subsequently divide households into three groups: poor food consumption, borderline food consumption, and acceptable food consumption. Households with poor food consumption are considered severely food insecure, those with borderline food consumption moderately food insecure, and households with acceptable food consumption are considered generally food secure.

A household coping strategy is also taken into consideration. When confronted with sudden negative events such as a natural disaster, food price rises, illness of household member or loss of employment, households' food security status is compromised by, for example, buying cheaper products and/or switching to less preferred food, limiting portion size and reducing the number of meals eaten in a day. These are known as coping mechanisms and they may have severe nutritional impacts. A coping strategy index (CSI), based on the frequency and severity of coping strategies for households reporting food consumption problems, can be calculated as an indicator of food insecurity. Higher CSI scores indicate a more serious food security situation, and lower scores, show better condition.

Malnutrition is measured by comparing the anthropometric indicators for children under the age of five (stunting, wasting, and underweight) against a healthy reference population as defined by the World Health Organization. Stunting, or low height-for-age, is defined as having a height at least two standard deviations below the median height for a reference population. Stunting among children is a strong nutritional indicator for chronic food insecurity as insufficient calorie intake translates into reduced child growth. Underweight or low weight-for-age is similarly defined and reflects both chronic and acute malnutrition. Wasting is based on standardized weight-for-height and low values can be a measure of acute malnutrition.

The food security situation

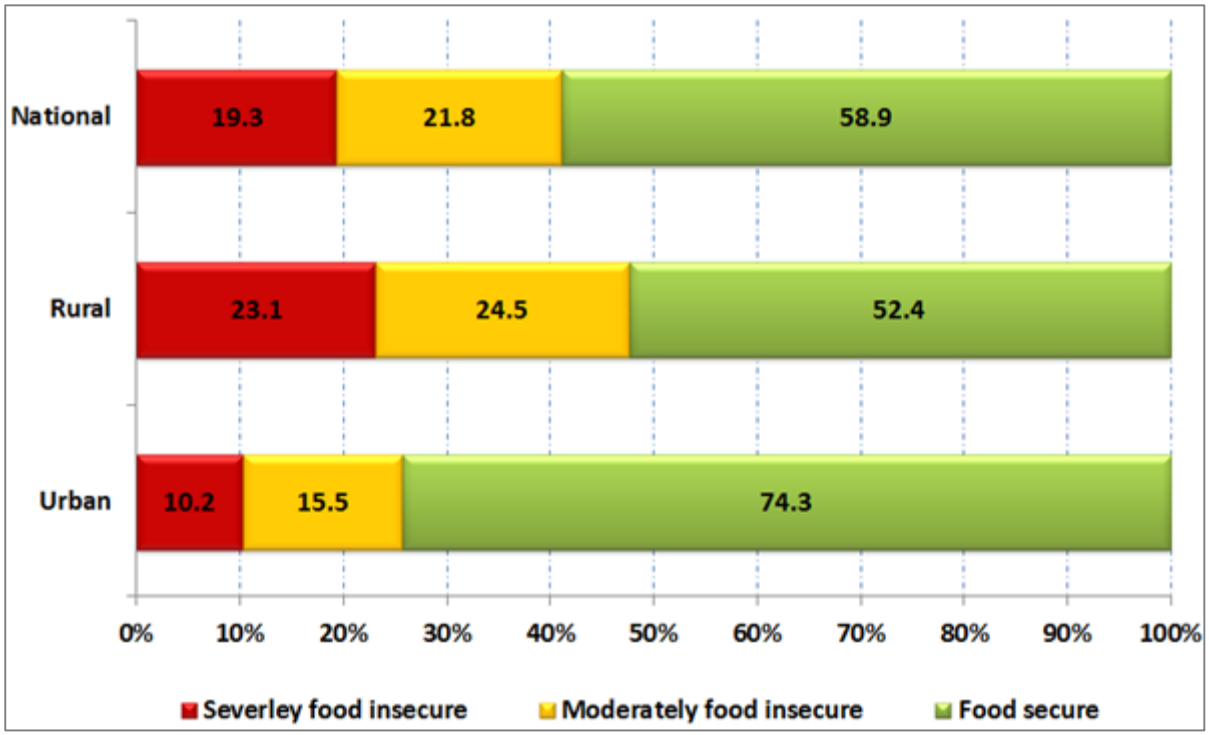
Key issues

- Over 40% of the population are food-insecure
- Nearly half of the rural population and over one-quarter of the urban population is food-insecure
- Food insecurity reduced between 2011 and 2014
- Food insecurity is greater in women-headed households

Over two-fifths of the population are food-insecure

The results of the 2014 Comprehensive Food Security Survey (CFSS) showed that some 41 percent of the population in Yemen are food-insecure. In other words, 10.6 million people in the country had limited or no access to sufficient, nutritious food, and were eating less than the minimum required to live a healthy life. About 19 percent of the population are severely food insecure (poor diet) and 22 percent are moderately food insecure (just on borderline level of food consumption). Around 48 percent of the total rural population were found to be food insecure, compared to 26 percent in urban areas.

Figure 4: Prevalence of food insecurity by urban/rural areas (%)



Source: CFSS 2014

TRENDS AND CHANGES IN FOOD INSECURITY

Yemen's macro-level food security has deteriorated dramatically in recent years, mainly because of declining oil exports and increasing food imports. The proportion of food insecure population stood at around 22 percent in 2003, but doubled to 44 percent in 2008 due to the impact of the high food and fuel prices and financial crisis in 2007/2008, which brought an estimated 44 percent increase in national poverty.[21] However, the food security situation in 2009 improved remarkably and led to a significant reduction in the percentage of food insecure population to 32 percent.

Overall food insecurity in Yemen fell by about 8% between 2011 and 2014

The improved consumption in 2009 was partly a result of quick recovery by households with a strong coping capacity, while for poor households it came at the expense of increased debt and further depletion of assets. The 2011 civil unrest and political crisis, which happened before the population was able to fully recover from previous shocks, resulted in the worst food insecurity in decades. Some 45 percent of the population became food insecure – 40 percent higher than in 2009.

[21] IFPRI, Impacts of the triple global crisis on development in Yemen; presentation at Climate Change workshop in Sana'a, November 2009.

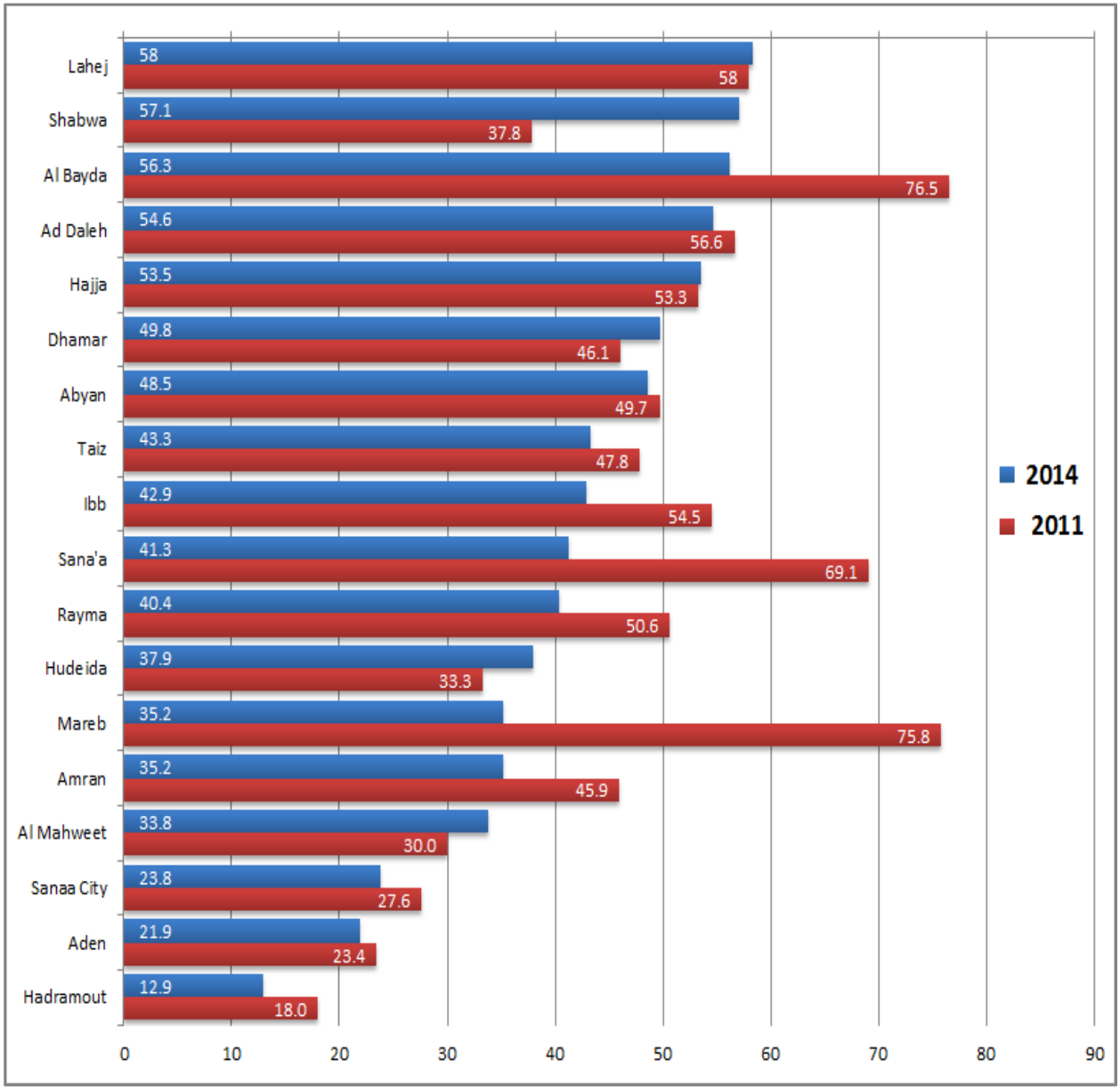
Compared to the 2011 CFSS findings, overall food insecurity fell by about 8 percent in 2014. While 44.5 percent of the population was food in secure in 2011, that figure reduced to 41.1 percent in 2014.

Table 1: Change in national level food insecurity: CFSS 2009, 2011 and 2014

Year	Severely food insecure	Moderately Food Insecure	Total food insecure
2009	11.8%	19.7%	31.5%
2011	22.2%	22.3%	44.5%
2014	19.3%	21.8%	41.1%
Change from 2009	**63.6%**	**10.7%**	**30.5%**
Change from 2011	**-13.1%**	**-2.3%**	**-7.7%**

Source: CFSS 2014, CFSS 2011, CFSS 2009

Figure 5: Changes in the prevalence of food insecurity, by governorate, 2011 and 2014 (%)



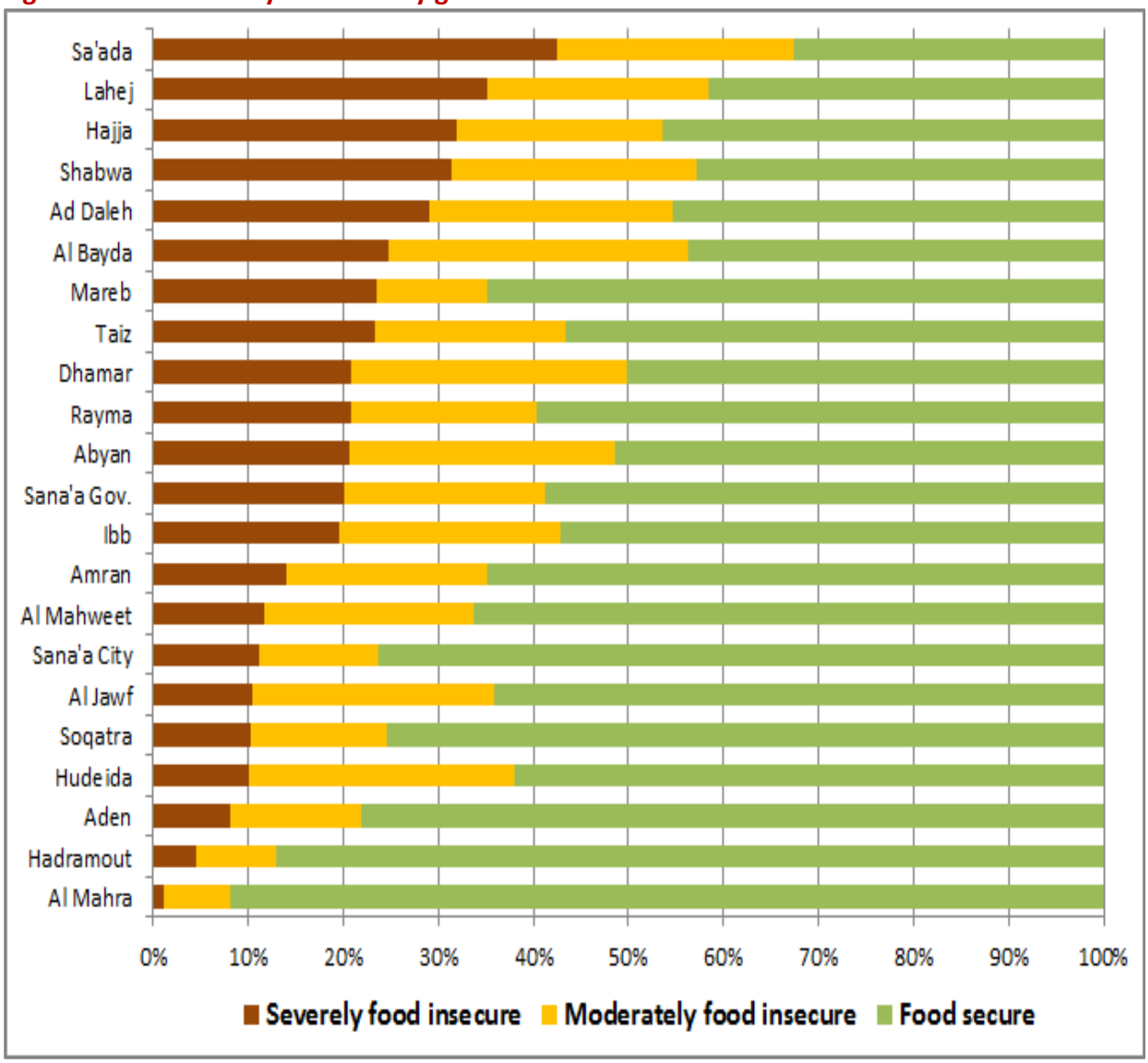
Source: CFSS 2014 and 2011

WHERE ARE THE FOOD-INSECURE?

Regional pattern of food insecurity

There are significant differences in food insecurity between governorates. Sa'ada governorate, which was surveyed for the first time, was found to have the country's most food insecure regions. Nearly 70 percent of the population there are food insecure, of which more than 40 percent are severely food insecure. In another five governorates – Lahej, Hajja, Shabwa, Ad Daleh and Al Bayda – more than half of all their populations are food insecure. Al Mahra, Hadramout and Aden governorates, meanwhile, are among the least food insecure, with less than 10 percent of their population are severely food insecure (Figure 6 and Figure 7).

Figure 6: Food security situation by governorate

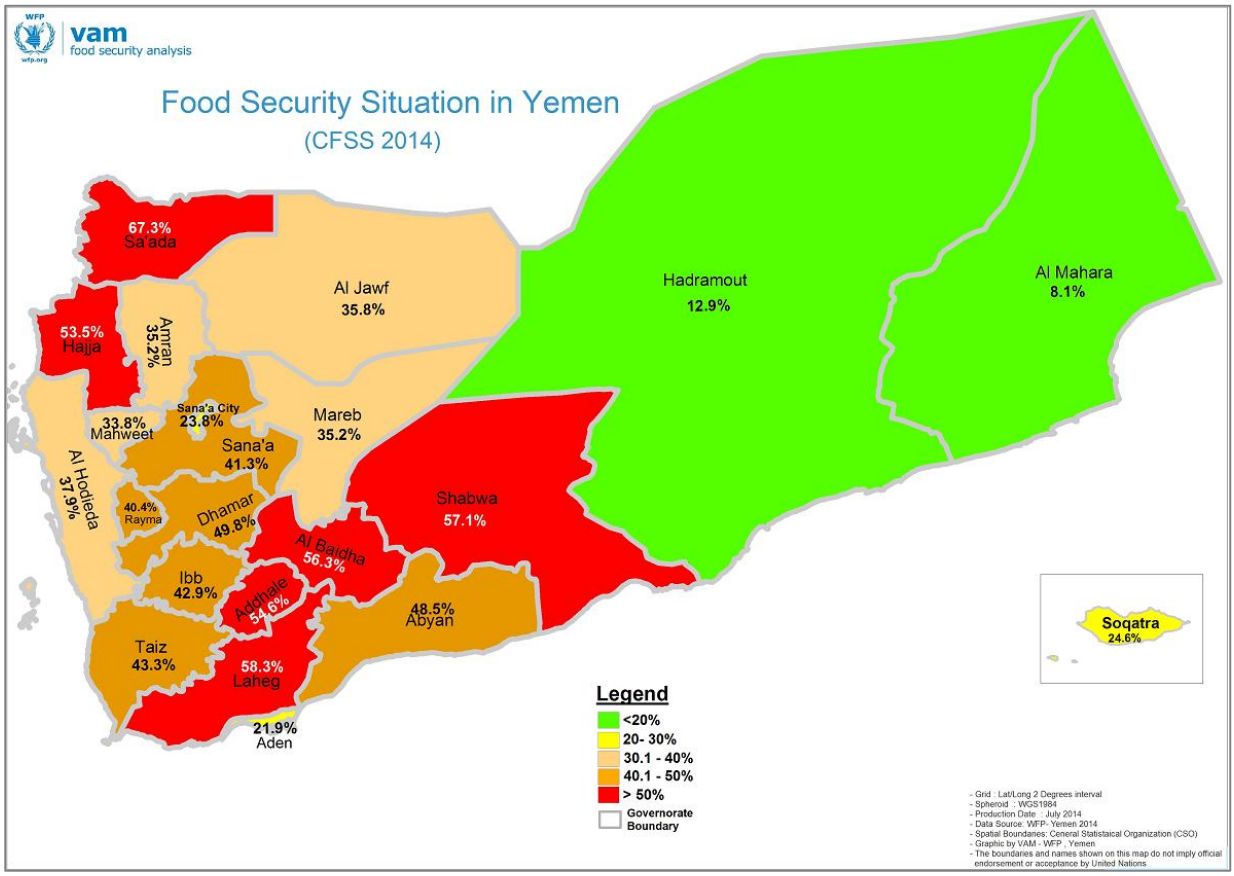


Source: CFSS 2014

Some of the key drivers of food insecurity in Yemen include the ongoing political instability, widespread conflicts and insecurity, frequent power interruption and oil pipeline damages due to tribal attacks, and other infrastructure destruction due to conflicts, high and volatile

food and fuel prices, long-lasting effects of the triple F-crisis (food, fuel, financial), reduction in remittances, extreme poverty, high population growth, poor access to social infrastructure, increasing cost of living including high health expenses, increased indebtedness by poor households, high level of unemployment, poor government capacity to provide social services, environmental degradation including water scarcity and declining domestic food production, and high dependence on markets to access food.

Figure 7: Food insecurity, by governorate



Source: CFSS 2014

Some governorates, including Ibb, Taiz, and Hudeida, although not the highest in terms of the proportion of food insecure people, are densely populated areas and have greater numbers of people experiencing food shortages. Some governorates have also seen remarkable improvements in 2014 over 2011 levels. More than 70 percent of the populations of Mareb, Sana'a and Al Bayda were food insecure in 2011, but the levels of food insecurity had fallen to 35 percent, 40 percent, and 55 percent, respectively, in 2014.

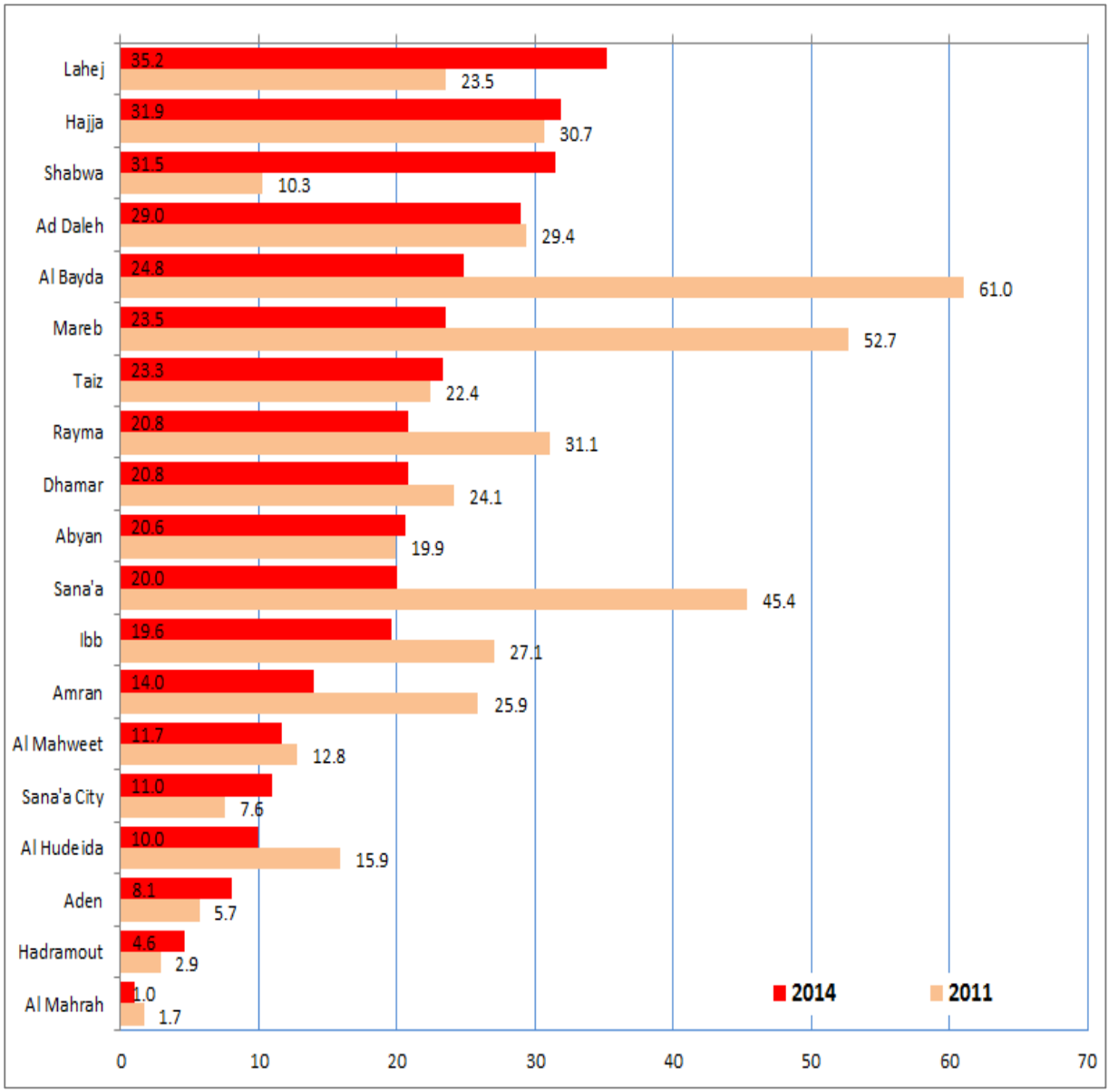
Table 2: Food-insecurity prevalence and number of food insecure

Governorate	Total Population (000)	Percent Food Insecure			Number Food Insecure (000)		
		Severe	Moderate	Total	Severe	Moderate	Total
Ibb	2,659	19.6%	23.3%	42.9%	521	620	1,141
Abyan	534	20.6%	27.9%	48.5%	110	149	259
Sana'a City	2,824	11.0%	12.7%	23.8%	312	359	671
Al Bayda	714	24.8%	31.5%	56.3%	177	225	402
Taiz	2,984	23.3%	20.0%	43.3%	696	597	1,293
Al Jawf	552	10.4%	25.4%	35.8%	58	140	198
Hajja	1,959	31.9%	21.7%	53.5%	624	424	1,049
Hudeida	2,917	10.0%	27.9%	37.9%	292	814	1,106
Hadramout	1,368	4.6%	8.3%	12.9%	63	114	177
Dhamar	1,761	20.8%	29.0%	49.8%	367	510	877
Shabwa	591	31.5%	25.6%	57.1%	186	151	337
Sa'ada	976	42.5%	24.8%	67.3%	415	242	657
Sana'a Gov.	1,095	20.0%	21.3%	41.3%	219	233	452
Aden	835	8.1%	13.7%	21.9%	68	115	183
Lahej	917	35.2%	23.1%	58.3%	323	212	535
Mareb	306	23.5%	11.7%	35.2%	72	36	108
Al Mahweet	643	11.7%	22.1%	33.8%	75	142	217
Al Mahra	133	1.0%	7.1%	8.1%	1	9	11
Amran	1,013	14.0%	21.3%	35.2%	141	215	357
Ad Daleh	654	29.0%	25.6%	54.6%	190	168	357
Rayma	521	20.8%	19.6%	40.4%	109	102	211
Soqatra	52	10.2%	14.4%	24.6%	5	7	12
National	**25,956**	**19.3%**	**21.8%**	**41.1%**	**5,018**	**5,578**	**10,595**

Source: CFSS 2014

The proportion of the population with severe food insecurity had also reduced in 2014 – down from 22.2 percent in 2011 to 19.3 percent in 2014. Although Sa'ada has the most severe food insecurity, comparisons at the governorate level were made only for governorates covered in the 2011 CFSS. Dramatic increases in the proportions of severely food insecure population were found in Lahej and Shabwa governorates, although significant improvements were found in, for example, Al Bayda, Mareb, Sana'a and Amran.

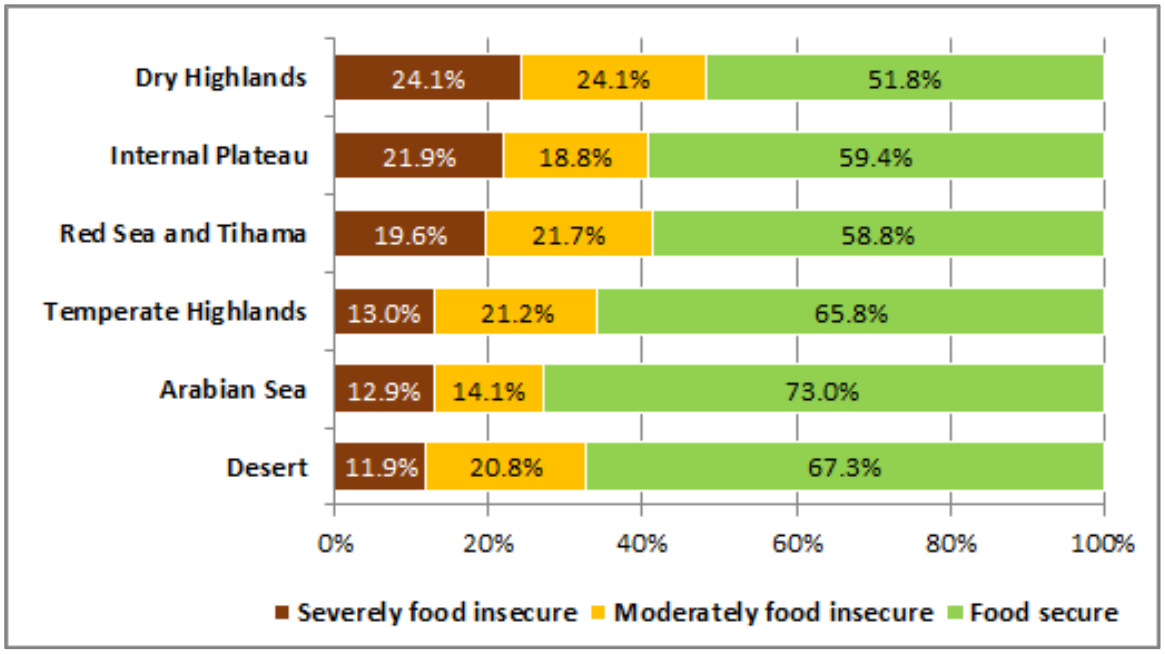
Figure 8: Percentage of severely food insecure population, 2011 and 2014



Source: CFSS 2014 and 2011

An examination of the food security situation by agro-ecology zones shows that households living in the dry highlands experienced the highest levels of food insecurity (48 percent) in 2014 followed by those in Red Sea, Tihama Coast and internal plateau (41 percent). Households in the Arabian Sea zone have the lowest prevalence of food insecurity (27 percent), while the proportions of food insecure households in temperate highlands and in the deserts are 33 percent and 34 percent, respectively.

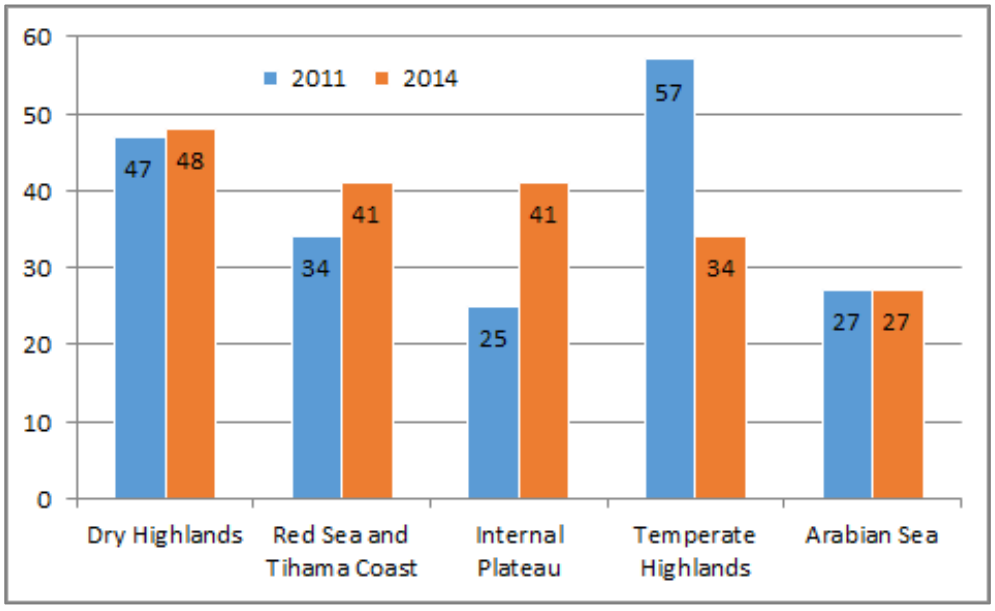
Figure 9: Prevalence of food insecurity by agro-ecological zones (2014)



Source: CFSS 2014

There was a major improvement in the food security of households in temperate highlands between 2011 and 2014, but a dramatic deterioration for those in the internal plateau agro-ecological zone. Figure 10 highlights these changes, although there is no comparison for desert areas, because the relatively small number of cases meant that these were not included in the 2011 CFSS.

Figure 10: Changes in food insecurity prevalence, by agro-ecological zones



Source: CFSS 2014 and 2011

Figure 11: Agro-ecological zones

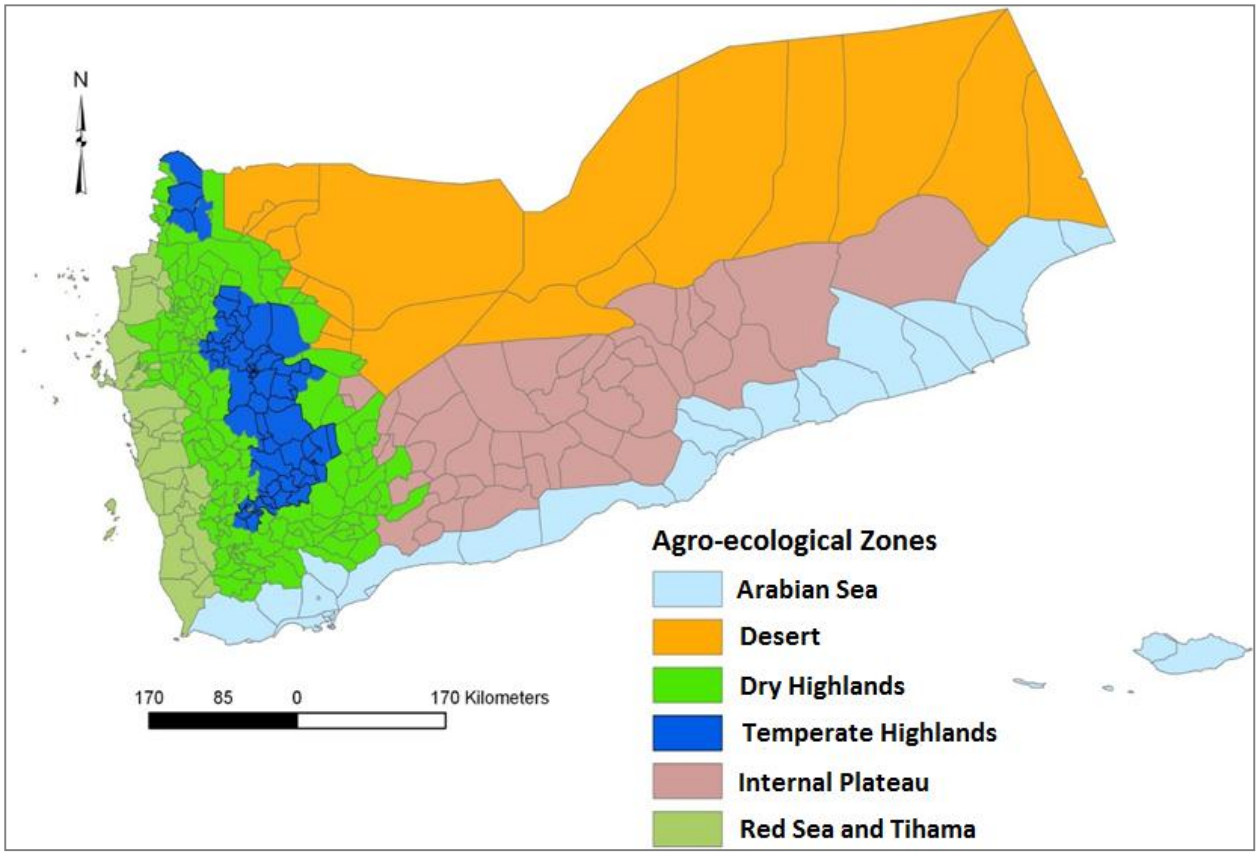


Table 3: Agro-ecological zones and the areas they cover

Agro-ecology zones	Areas covered
Dry Highlands	Eastern parts of Hajja, Taiz, Rayma, most parts of Al Mahweet, Amran, Ibb, Ad Daleh, northern Lahej, western Al Bayda, Mareb, small parts of Sa'ada and Sana'a
Red Sea and Tihama Coast	Most parts of Hudieda, western half of Hajja and Taiz, small parts of western Rayma and Dhamar
Internal Plateau	Eastern part of Al Bayda, small part of Mareb, northern half of Abyan, northern/most part of Shabwa, some part of Hadramout and Al Mahra
Temperate Highlands (above 1,900 meters)	Northern part of Ibb, most areas of Dhamar, Sana'a, Sana'a City, southern Amran and some parts of Sa'ada
Arabian Sea	Southern part of Lahej, all of Aden, southern part of Abyan, small southern areas of Shabwa, Hadramout and Al Mahra
Desert	Eastern half of Sa'ada and Mareb, most of Al Jawf, northern half of Hadramout and Al Mahra

Dietary diversity: how balanced are people's diets?

The diet of many households in Yemen lacks diversity. The main staple items – wheat and rice, together with oil/fat and sugar/honey – make up the three dominant types of food group, in addition to the condiments that most people consume daily. Severely food insecure households have poor food consumption and their daily diet tends to consist of cereals daily, sugar six days a week, oil on five days, with very little other food groups consumed. Meat, fish, and eggs, essential sources of protein and vitamins, are rarely consumed by severely food-insecure households. A diet of this type is clearly lacking in sufficient nutrition, and people in those households would be expected to suffer from micronutrient deficiencies.

Many households lack dietary diversity

Table 4: Average number of days each food group is consumed, by food security status

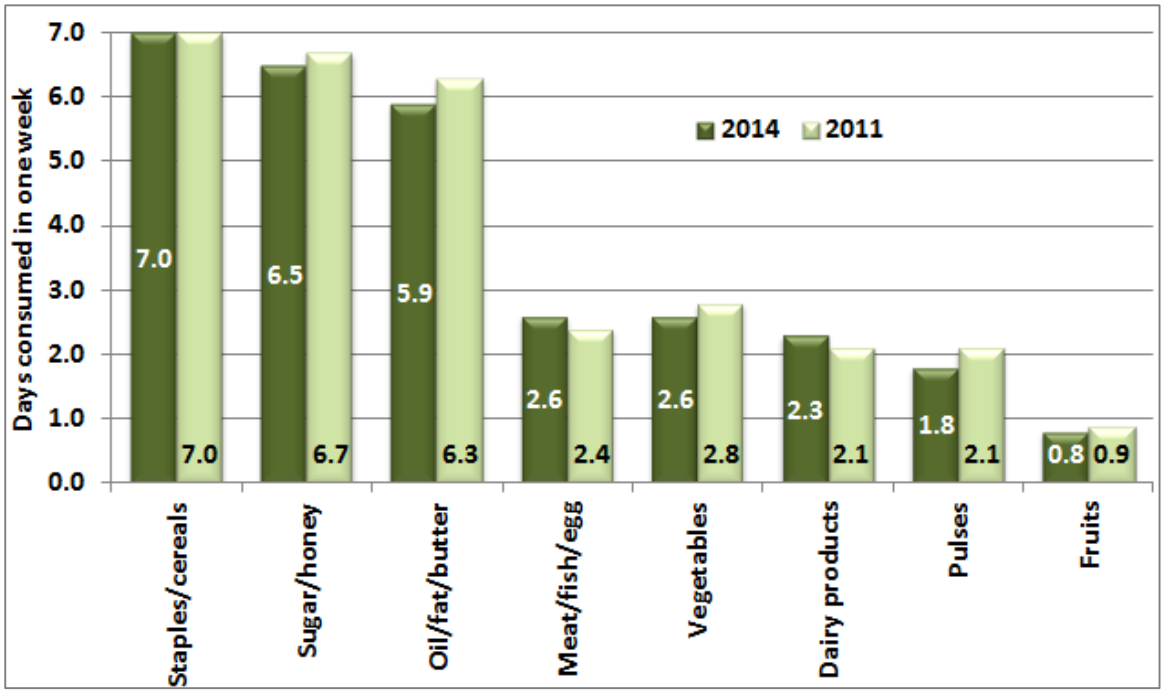
Food security status	Staples/cereals	Meat/fish	Pulses	Dairy products	Oil/fat/butter	Sugar/honey	Condiments	Vegetables	Fruits
Severely food insecure	6.9	0.4	0.1	0.1	4.8	5.9	4.9	0.9	0.1
Moderately food insecure	7.0	1.3	0.8	1.1	5.6	6.3	5.6	1.9	0.3
Food secure	7.0	3.7	2.6	3.5	6.3	6.7	6.3	3.4	1.2
Total	7.0	2.6	1.8	2.3	5.9	6.5	5.9	2.6	0.8

Source: CFSS 2014

Moderately food insecure households are found consuming vegetables, meat, dairy, pulses and fruit more days than severely food insecure households, but at much lower levels than by the group with acceptable food consumption. Food secure households have a much more balanced diet than the other two groups.

The level of dietary diversity and food frequency fell slightly in 2014 from 2011, but consumption of meat and dairy products increased between 2011 and 2014.

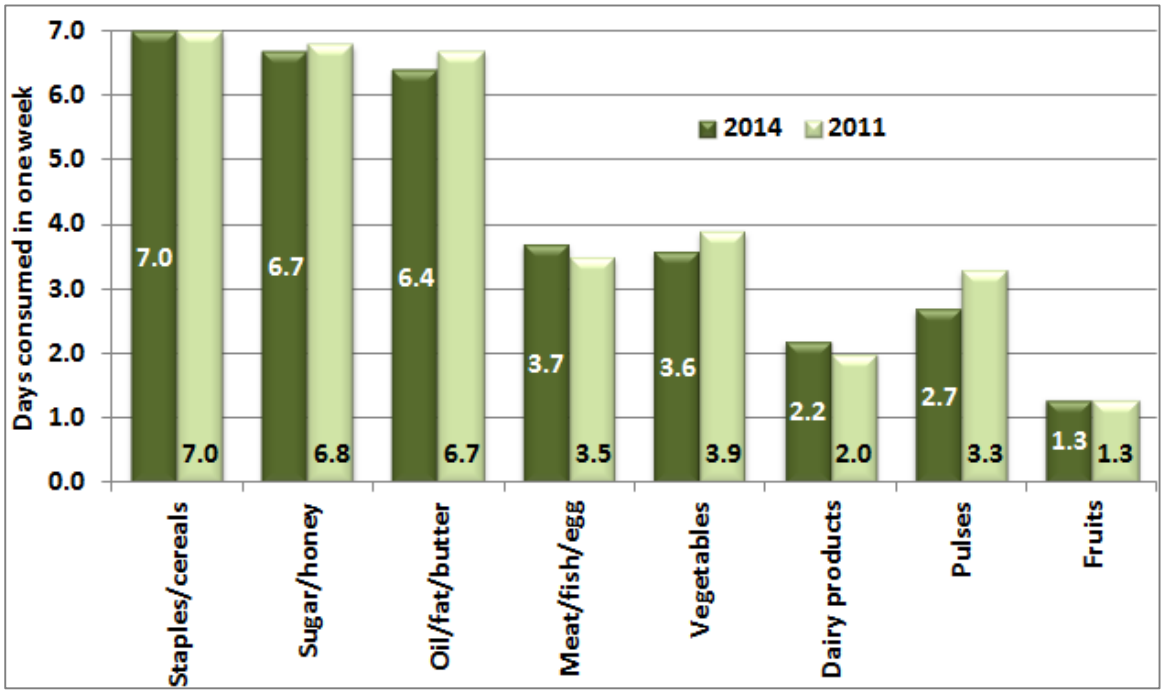
Figure 12: Food dietary diversity pattern nationally (2011 and 2014)



Source: CFSS 2014 and 2011

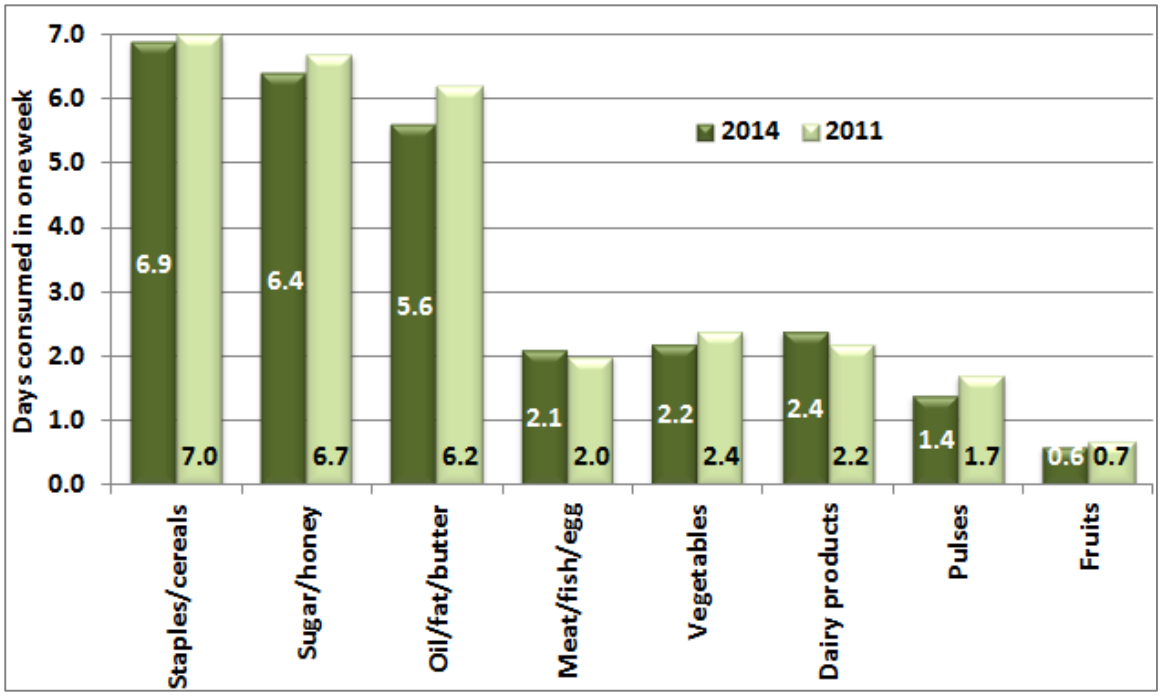
There are significant differences between rural and urban consumption patterns. Although the level of consumption of a balanced diet deteriorated between 2011 and 2014 in both urban and rural areas, urban households are now consuming more diverse diet than their rural counterparts. The difference is most pronounced in the consumption of meat, vegetables and pulses.

Figure 13: Food dietary diversity pattern in urban areas (2011 and 2014)



Source: CFSS 2014 and 2011

Figure 14: Food dietary diversity pattern in rural areas (2011 and 2014)



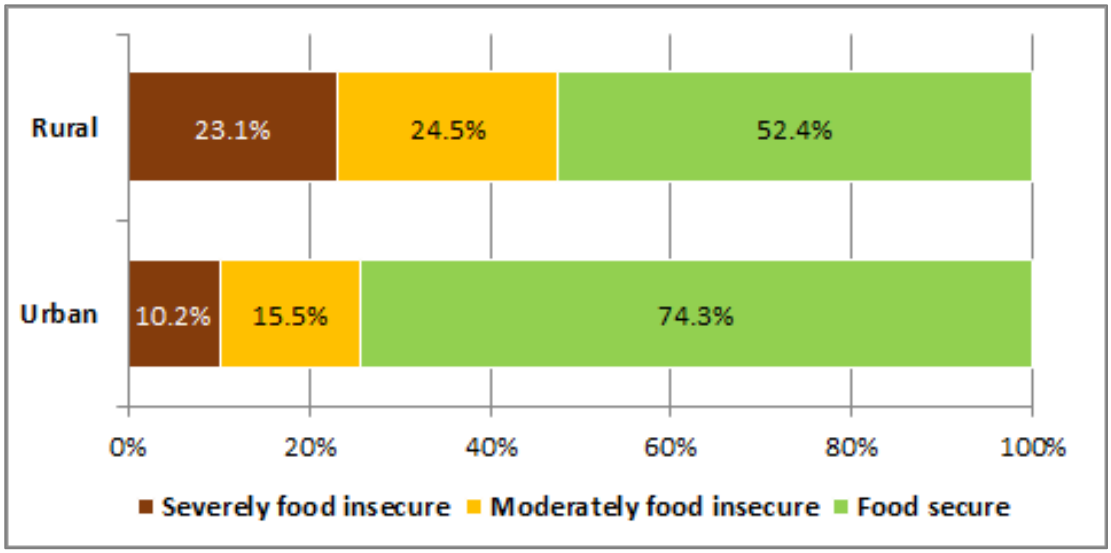
Source: CFSS 2014 and 2011

WHO ARE THE FOOD INSECURE?

Rural households are much more food insecure than urban households. The urban population makes up about 30 percent of the total population. Al Mahweet is the least urbanized governorate in Yemen with only 6.5 percent of its population living in urban areas. The level of severe food insecurity in rural areas is more than double that of urban places. Households in urban areas are better off in all categories of food security status.

Rural households are much more food insecure than urban households

Figure 15: Household food security status, urban and rural



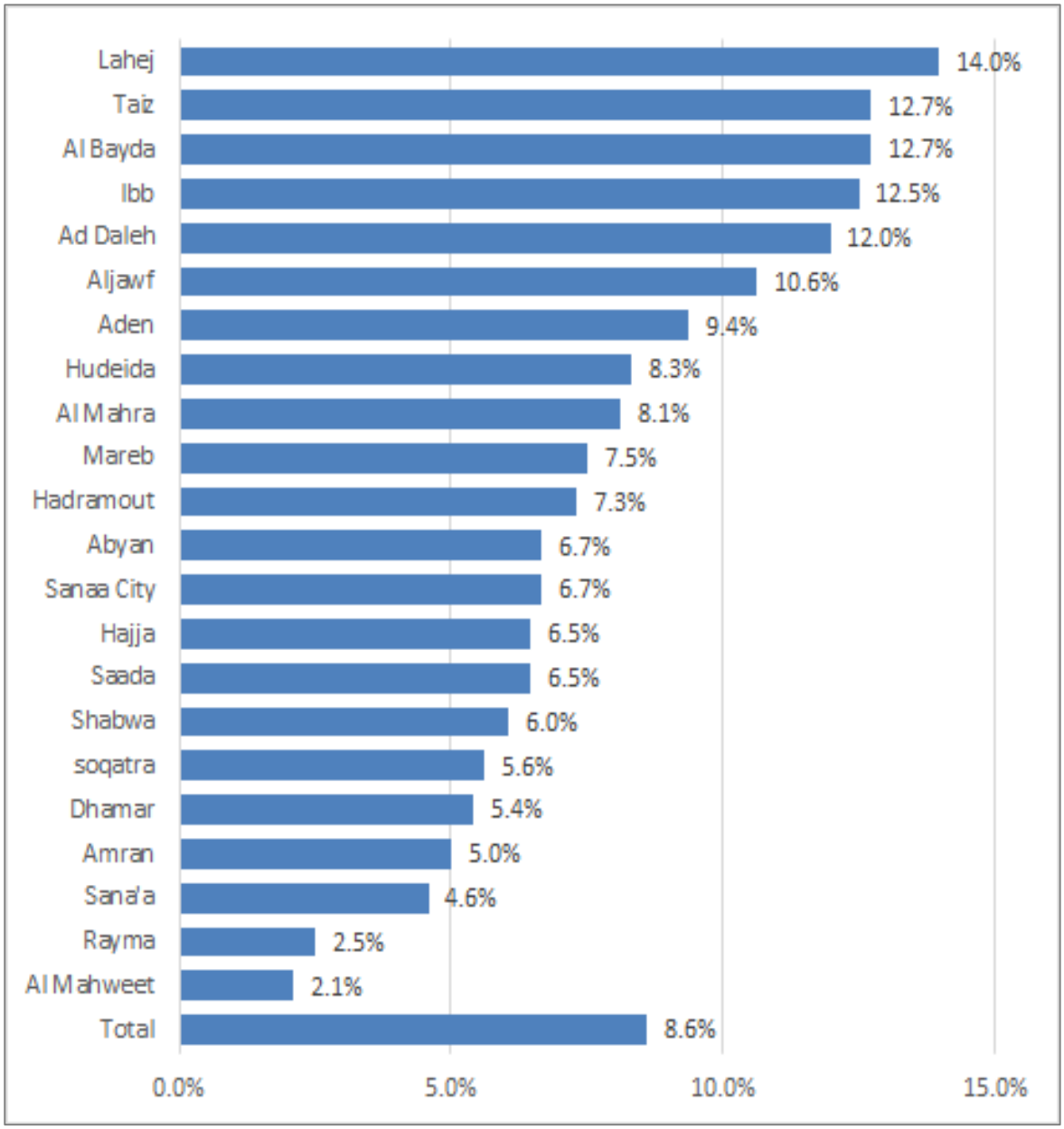
Source: CFSS 2014

Female-headed households are more food insecure than male headed families. Women-headed households make up around 9 percent of the households covered by this survey. There are significant variations between the governorates. Lahej governorate has the largest proportion of women-headed households (14 percent) followed by Taiz and Al Bayda with about 13 percent in each.

Food insecurity continues to be greater among women-headed households than in those headed by men. Currently, 45.1 percent of the women-headed families are severely food insecure – significantly more than in men-headed households (40.7 percent). By way of comparison, the 2011 CFSS found 52 percent of the women-headed households were food insecure compared to 44 percent for men-headed families.

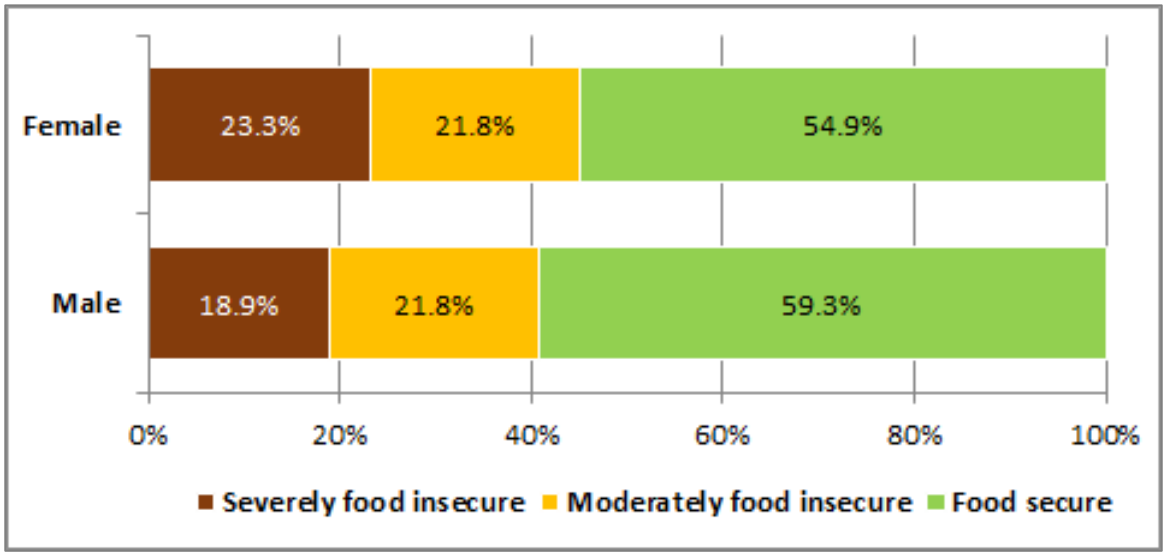
Food insecurity continues to be greater in women-headed households than in those headed by men

Figure 16: Percentage of female headed households by governorate



Source: CFSS 2014

Figure 17: Female and male headed households by food security status (%)



Source: CFSS 2014

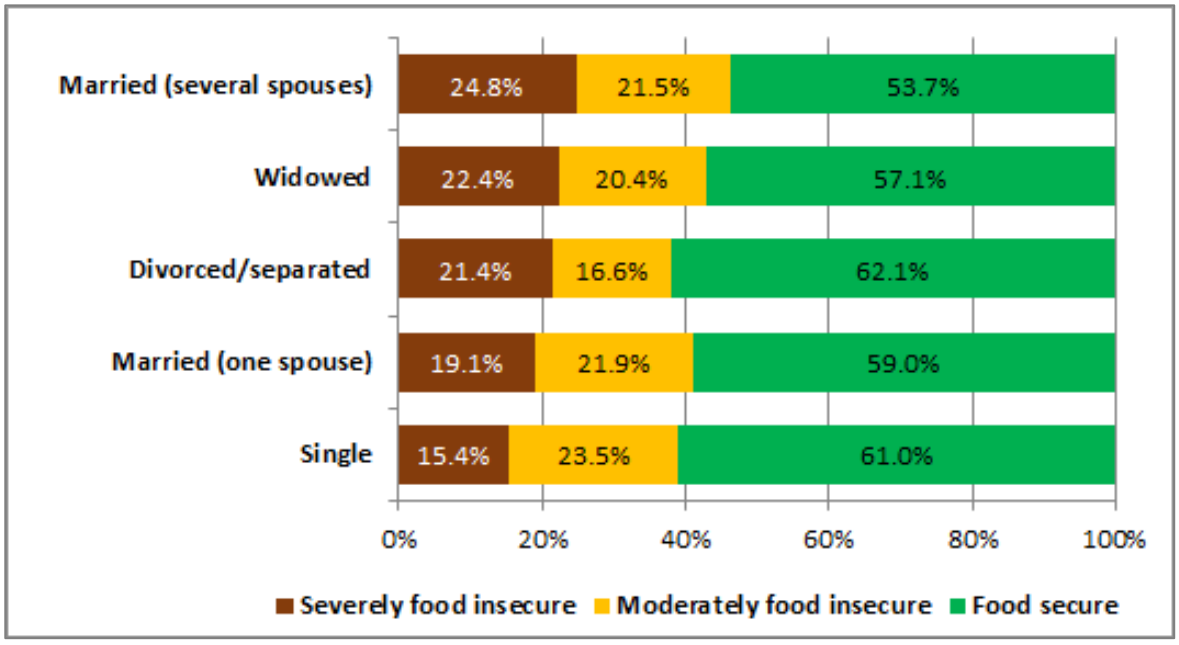
Households headed by widows and those headed by men with more than one spouse are the most food insecure**.** Of the surveyed households, about 90 percent are headed by individuals who are currently married with one spouse, while 4.5 percent are headed by widows (the highest is 9 percent in Lahej), 3 percent by singles, and only 1 percent are headed by divorced persons. Polygamous marriages are uncommon in Yemen, with 7 percent of married women living in polygamous unions in 1997,[22] which is significantly lower than in most other Arab countries. In the CFSS, only 1.6 percent of household heads were living in polygamous marriages, the largest share of whom reside in Al Jawf (7.5 percent) and Sa'ada (6.0 percent), while the lowest was found in Al Mahweet (0.2 percent).

Households headed by widows and those headed by men with more than one spouse are the most food insecure

The survey found that households headed by individuals with multiple spouses have the highest level of food insecurity – 46.3 percent of those households are found to be food insecure. However, given the small share of polygamous households in the sample, the representativeness of this group may be questionable, demanding further investigation. Families headed by single persons are the least food insecure followed by those who are headed by married with one spouse. Households headed by a person married with several spouses are the most food insecure. Living a married life with one spouse appears to offer an effective shield against food insecurity, providing social and economic securities that widowed, divorced or separated household heads do not enjoy. Widowed household heads are clearly the second worst off groups with 42.8 percent of them food-insecure, followed by the divorced or separated (38.0 percent).

[22] Central Statistical Organisation (1997), Demographic and Maternal and Child Health Survey.

Figure 18: Food security status of households by marital status of heads



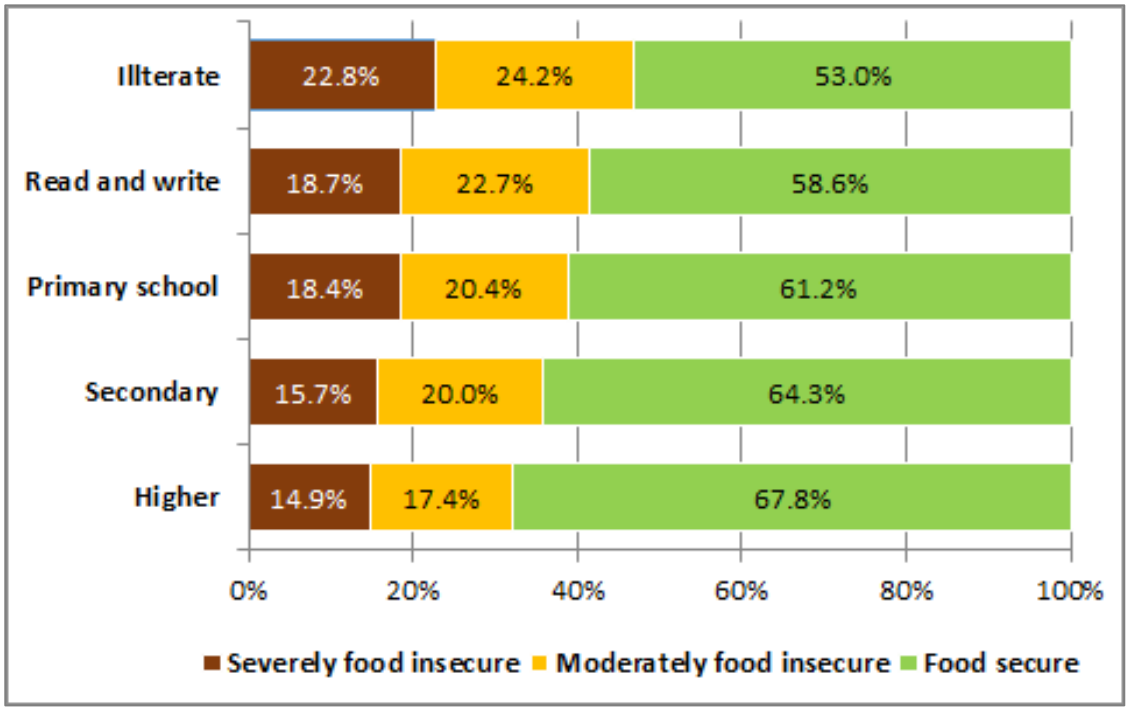
Source: CFSS 2014

Households headed by illiterate people are more food insecure than others. Several studies have shown that there is a direct relationship between level of education and food security. A good level of educational attainment provides better job opportunities and improves income sources and hence enhances food security condition. Of all surveyed households, about 36 percent have illiterate heads. Heads of households with no formal education, but who can read and write, constitute about 20 percent, while those who completed primary and secondary education each account for 17 percent. Only 10 percent of household heads were reported to have had higher education.

Households headed by illiterate people are more food insecure

Literacy rates vary considerably across all categories, with marked differences observed between rural and urban areas, between governorates, as well as by gender. For instance, the proportion of illiterate heads of the surveyed households ranges from 15 percent in Hadramout to 51 percent in Rayma. As expected, households headed by illiterate person have the highest level of food insecurity (about 47 percent of those households are food insecure, of which 23 percent are severely food insecure). But households headed by individuals that have had higher education are the least food insecure – 32 percent, of which 15 percent are severely food insecure (Figure 19).

Figure 19: Food security status of households by education level of household head

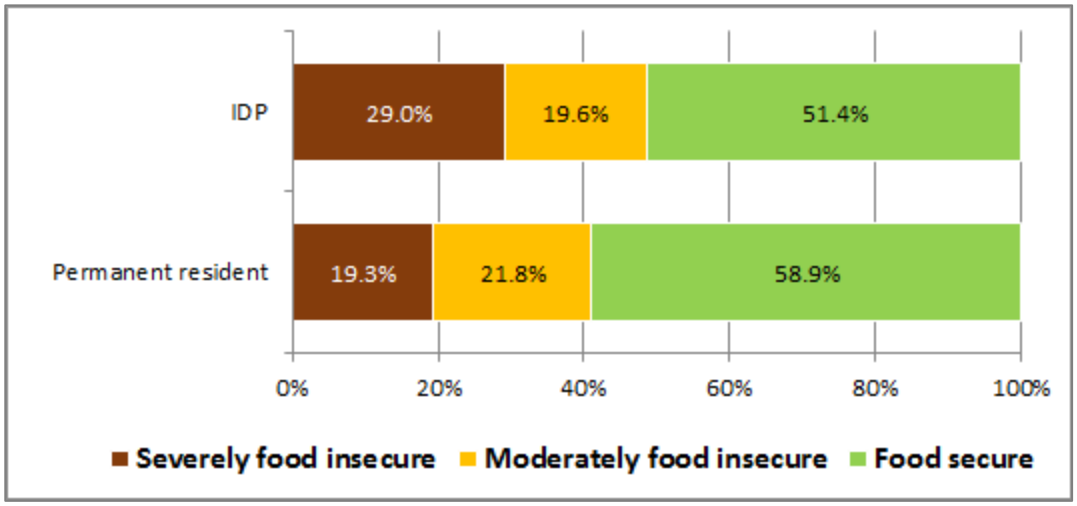


Source: CFSS 2014

Displaced households are more food insecure than permanent residents. In recent years, conflicts in various parts of the country have led hundreds of thousands of families to be internally displaced. Many households from Sa'ada and Abyan were displaced and temporarily settled in neighbouring governorates – those from Sa'ada were forced to move to Amran, Hajja and Sana'a, while households displaced from Abyan were living in Aden/Lahej. In 2014, the number of internally displaced persons in the south reduced, because many returned to their original home areas, but most of those originally from Sa'ada have remained in other areas. During the CFSS, households were asked whether they are internally displaced or permanent residents, including returnees. Internally displaced families were found to be worse off in all livelihood conditions, including their food security situation, with 48.6 percent of internally displaced persons being food insecure compared to 41 percent of permanent residents.

Displaced households are more food insecure than permanent residents

Figure 20: Food security status of households by status of their residence

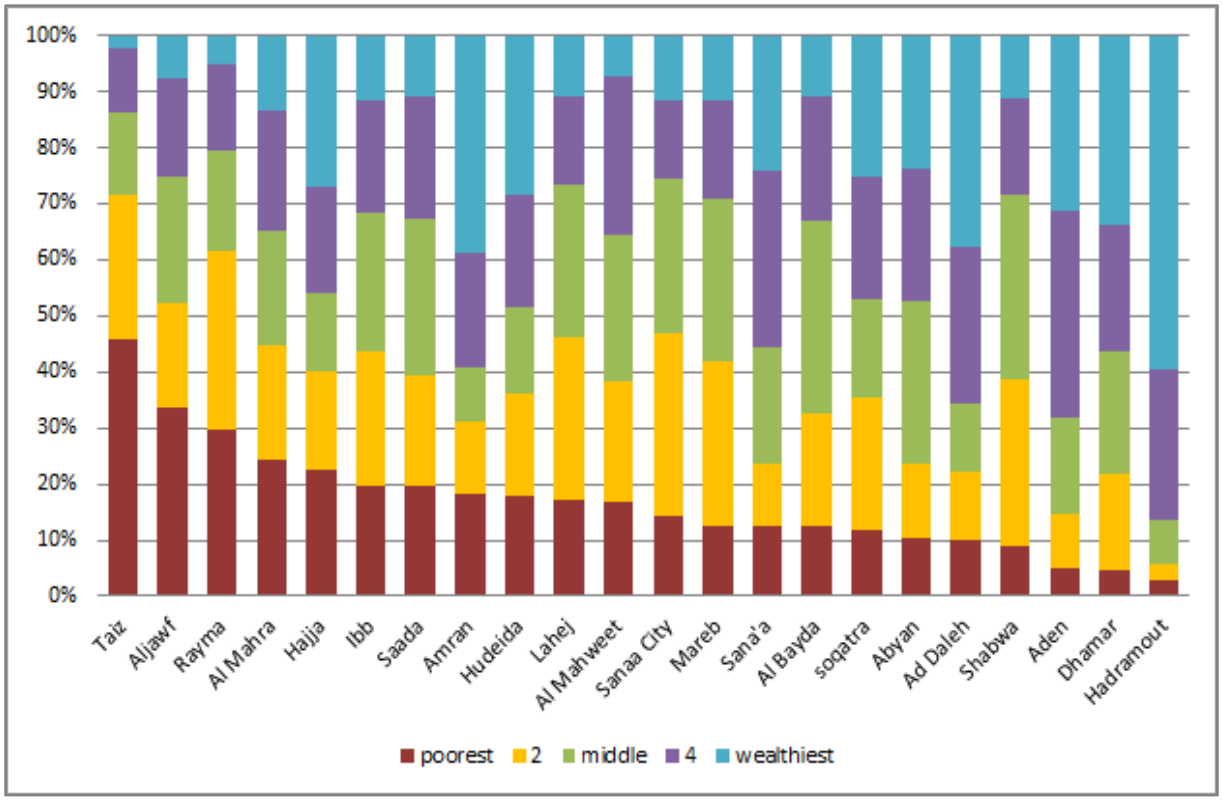


Source: CFSS 2014

A wealth index was created based on information on ownership of assets and access to essential facilities, such as electricity, drinking water and cooking sources. Based on the results of the wealth index, households were classified into five groups that show the level of their wealth status: poorest, poor, middle, wealthy and wealthiest. The poorest households in the wealth index are the most food insecure. Nationally, 19.5 percent of the surveyed households fell into the poorest category and 20.5 percent were categorized as poor, while the remaining three groups each accounted for 20 percent of the total. Huge variations, however, were found between governorates. Taiz has the highest proportion of poorest households (over 45 percent) followed by Al Jawf and Rayma, while Hadramout had the lowest proportion of poorest families (Figure 21).

The poorest households are the most food insecure

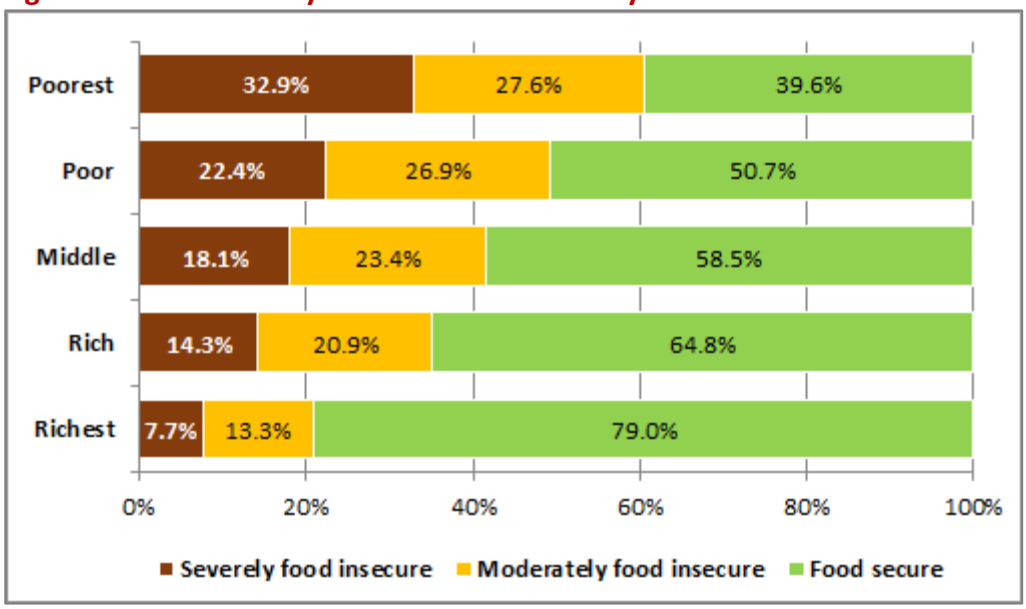
Figure 21: Households classified by wealth status



Source: CFSS 2014

The 2014 CFSS found a direct and positive relationship between wealth status and food security. The poorest households have continued to suffer from the highest level of food insecurity, with over 60 percent currently food insecure – 33 percent are severely food insecure and 27.6 moderately food insecure. The wealthiest households, meanwhile, are the least food insecure. They make up 21 percent of the total, of which only 7.7 percent are severely food insecure (Figure 22).

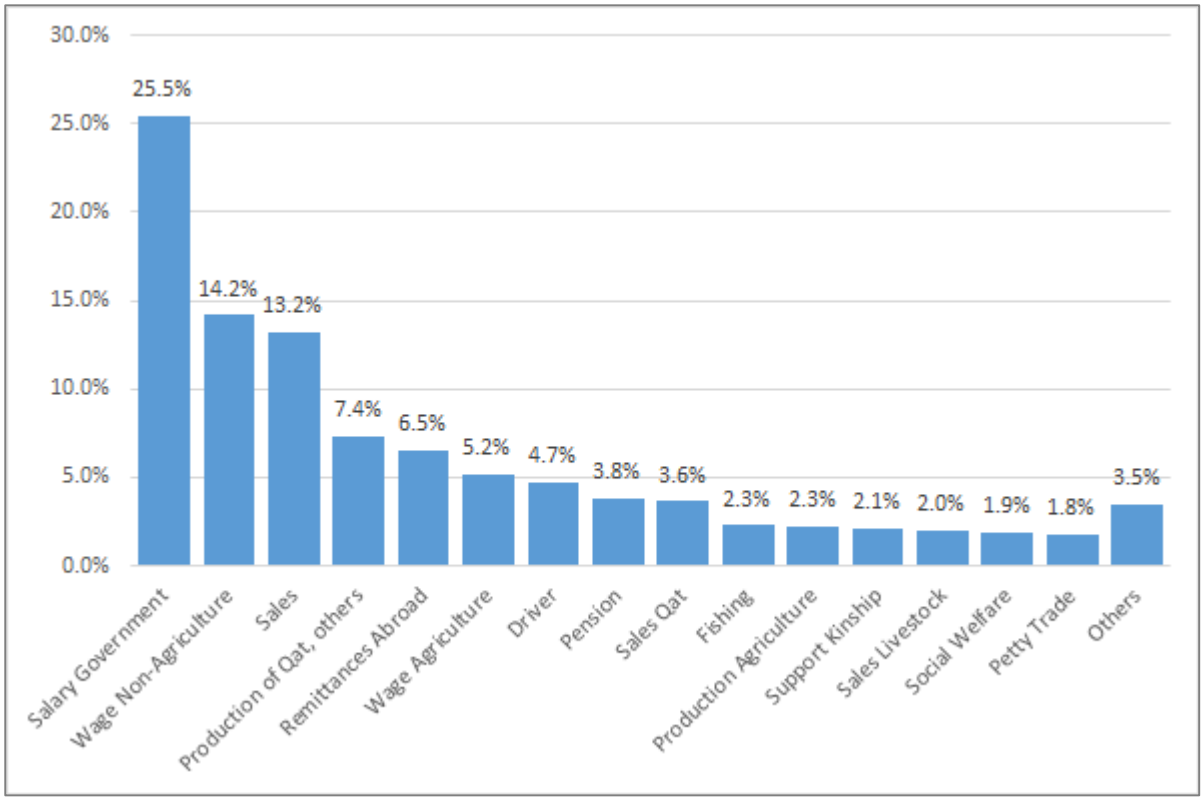
Figure 22: Food security status of households by wealth status



Source: CFSS 2014

Households whose livelihood depends on social welfare are the most food insecure. Livelihoods strategies and income sources vary greatly by urban and rural areas. Households whose main income is through government salary make up the highest proportion (25.5 percent nationally) followed by those who depend on non-agricultural labour (14.2 percent) and those engaged in their own private business/sales/services (13.2 percent). Petty trading is among the least dependable livelihood type, because it is the main source of income for only 1.8 percent of the surveyed households (Figure 23). Agricultural production and sale of products, sale of livestock and animal products as well as agricultural labour are the main sources of income and livelihoods for rural households. Urban dwellers usually depend on salaries (both government and non-government), private business and petty trading. Income from non-agricultural labour and remittances are additional income sources for both rural and urban households. Cash incomes for rural residents are mainly from sale of qat, vegetables, other cash crops, agricultural and non-agricultural labour, sale of livestock and products, and remittances. Urban households earn their income through salaries and business/trade as well as pension and remittances. Although production and sale of crops does not contribute significantly to the cash income of households, it employs over half of the working population.[23]

Figure 23: Percentage of households by major livelihood groups (income sources)



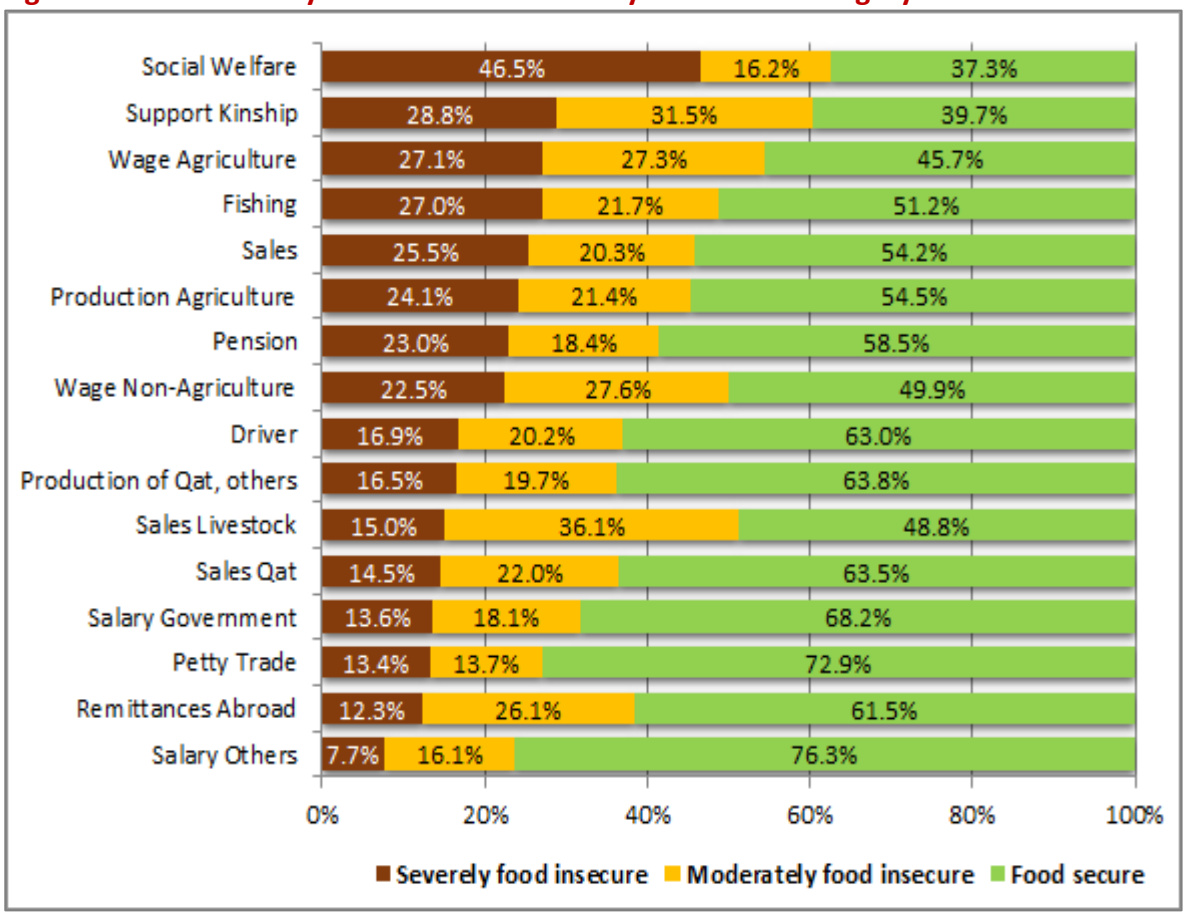
Source: CFSS 2014

The livelihoods and income sources of households determine the status of their food security conditions. The 2014 CFSS collected information on households' main sources of income and livelihood groups were established and the food security situation for these groups was assessed. According to the survey results, households whose main source of income depends

[23] FAO/WFP CFSAM, 2009

on support from the social welfare fund were found to be the most food insecure group – 63 percent are food insecure. Of households dependent on kinship support and agricultural wage labour, over 60 percent and 54 percent respectively are currently food insecure. Households whose main livelihood is salaried employment and remittances are among the least food insecure (Figure 24).

Figure 24: Food security status of households by livelihoods category



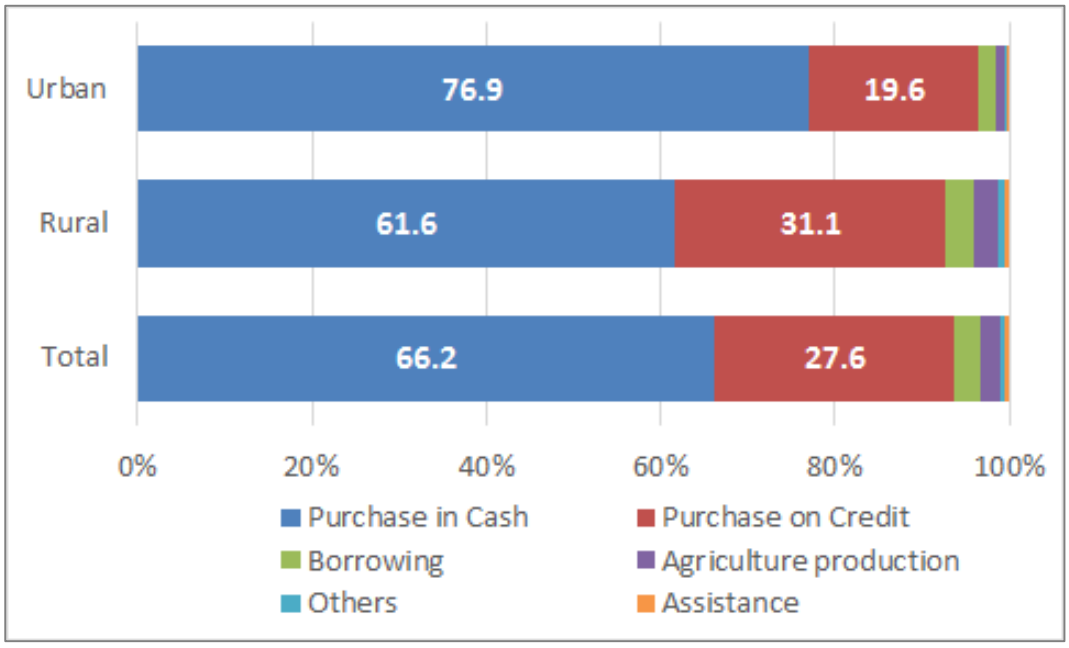
Source: CFSS 2014

Food sources: how do households access their food?

Purchase remains the principal way that both rural and urban households access food. Nationally, over 95 percent of food consumed at household level is purchased, with about 100 percent for urban areas and 75 percent to 85 percent for rural areas. About 96 percent of the population in Yemen are net buyers[24] and are highly vulnerable to market shocks and volatility of prices, both of which have become common in recent years. Higher food prices translate into a further increase in expenditures on food to the detriment of other needs such as health, education and asset/livelihoods building.

Survey findings show that nearly 94 percent of all households in Yemen continued to access their food through purchase – 66 percent through purchase in cash, while the remaining 28 percent buy their food on credit. About 3 percent of the households get their food by borrowing and/or gifts from relatives and friends and another 2 percent from their own agricultural production (Figure 25). Assistance and other sources make very little contribution. Over one-third of rural households access their food through credit, compared to 20 percent for urban families.

Figure 25: Household sources of food, urban/rural*

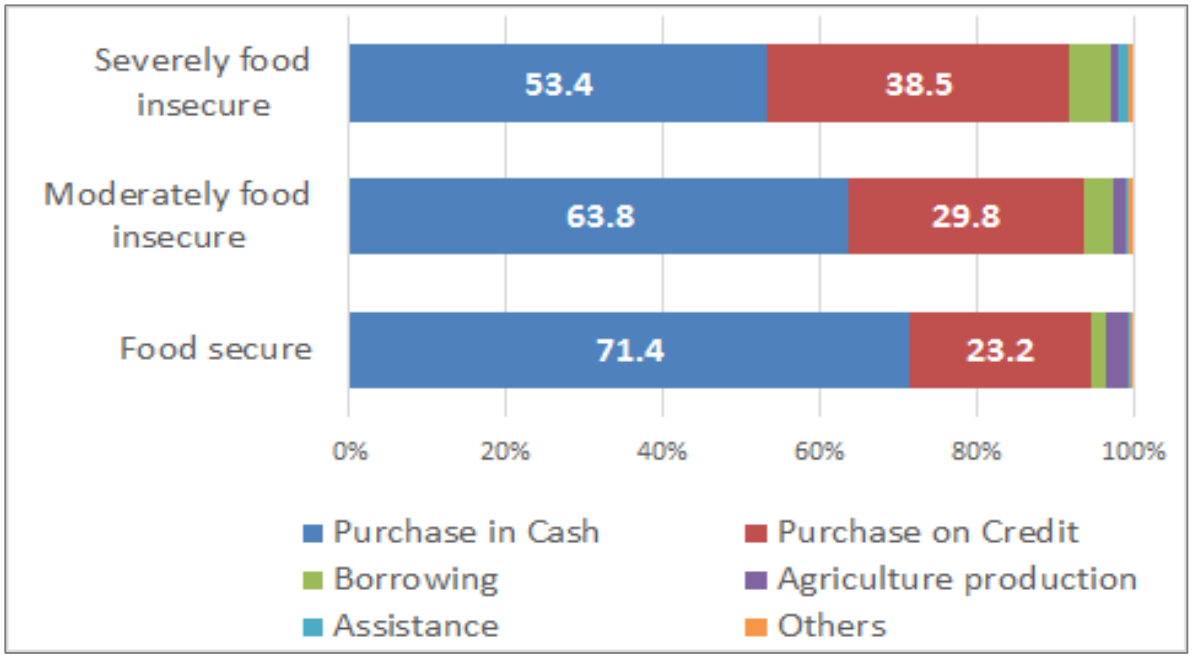


** Others include begging, fishing, hunting, gathering, and payment for work*
Source: CFSS 2014

A comparison of households in the three food security statuses shows that those with severe food insecurity use the greatest amount of credit to purchase their food – about 39 percent compared to 30 percent for moderately food insecure households, and 23 percent for the food secure group. A significant proportion of severely food insecure households depend on borrowing, while a similar proportion of food secure households use their own agricultural production as a source of food.

[24] IFPRI, 2010.

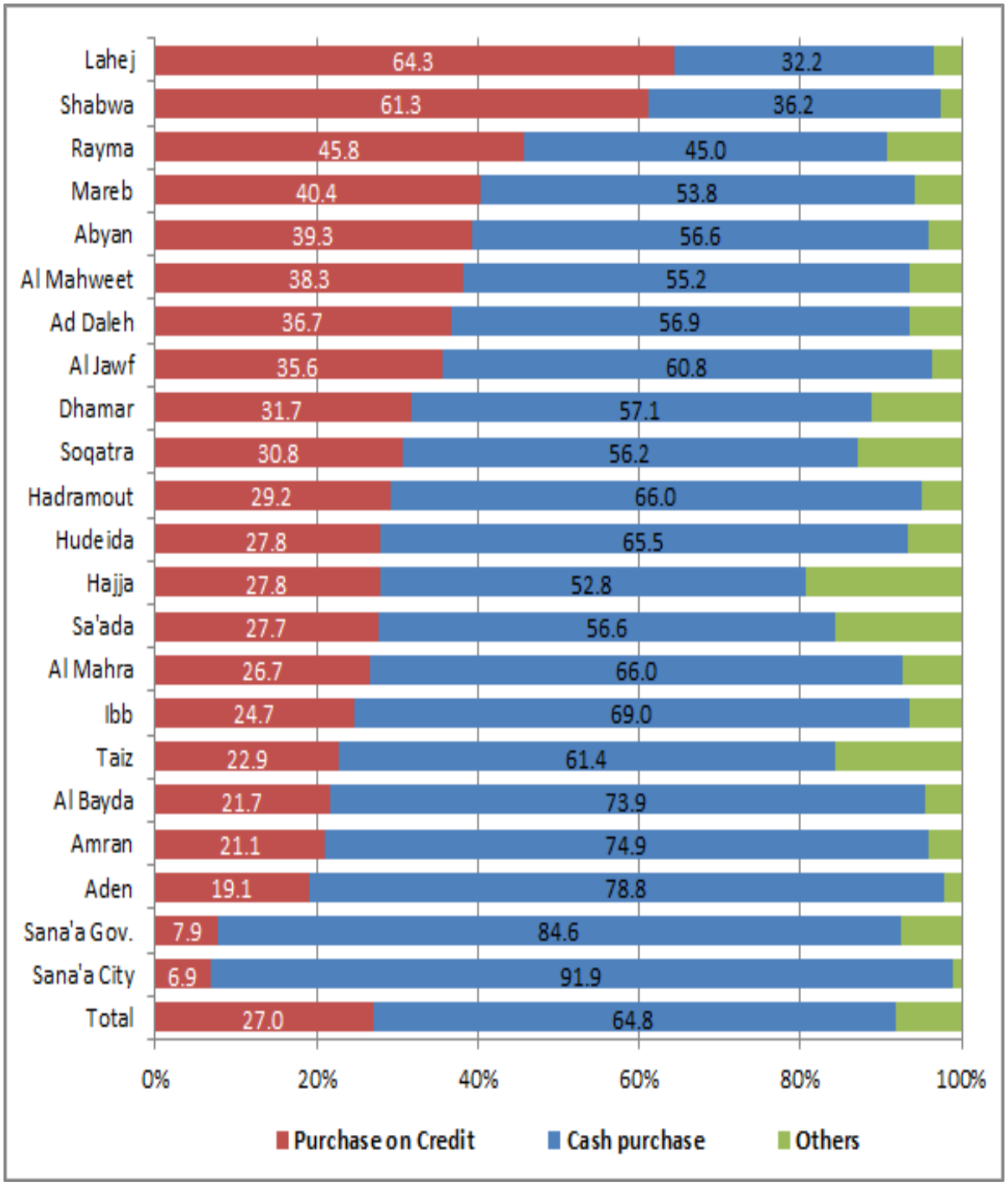
Figure 26: Household sources of food by food security status



Source: CFSS 2014

Looking at the sources of food by governorates, the survey found remarkable variations. Lahej and Shabwa have the highest proportions of households purchasing their food on credit – 64 percent and 61 percent, respectively. Sana'a governorate and Sana'a City have the lowest percentage of households (8 percent and 7 percent respectively).

Figure 27: Households' sources of food, by governorate



Source: CFSS 2014

Nutrition situation of children and women

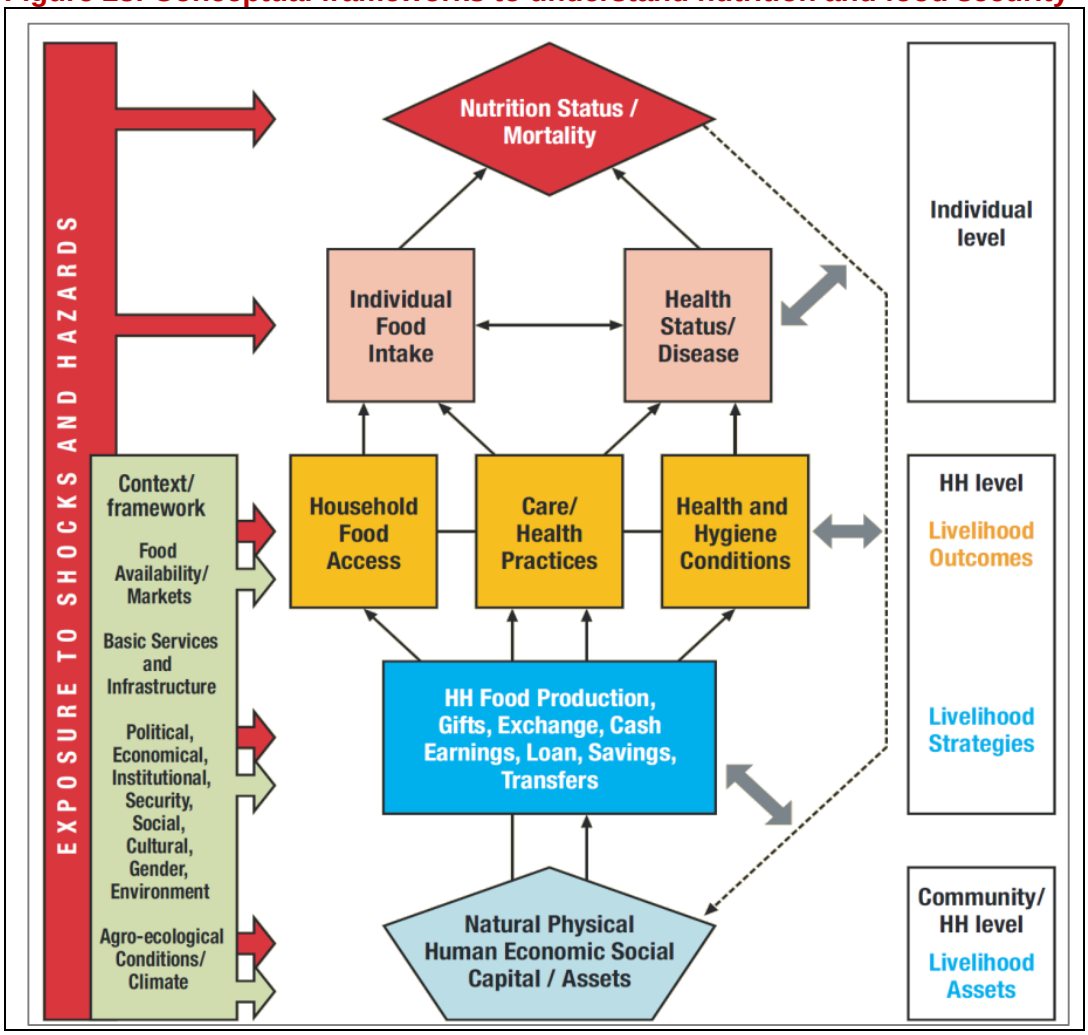
Key issues

- More than one in 10 children is acutely malnourished
- Prevalence of global stunting fell between 2011 and 2014
- More than one-third of rural children are underweight
- Hadramout and Al-Mahweet governorates have the highest prevalence of global stunting
- Breastfeeding practices are

Food security defines a situation in which all people at all times have physical and economic access to sufficient, safe and nutritious food, which meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996). The conceptual framework for understanding nutrition and food security developed by WFP, and inspired by the UNICEF framework on the causes of malnutrition, shows that food security is multi-dimensional (Figure 28). There is no single measure to capture a nation's food security and nutritional status – a variety of indicators and measurement techniques are required. This section of CFSS report presents the nutrition situation of children under five years of age and of women of reproductive age in Yemen.

Food security defines a situation in which all people at all times have physical and economic access to sufficient, safe and nutritious food

Figure 28: Conceptual frameworks to understand nutrition and food security



Source: WFP CFSVA Guidelines, 2009.

This framework considers malnutrition and mortality to be the final outcome, or the manifestation of insufficient food intake and/or disease, at the individual level. These two immediate determinants of malnutrition and mortality are, in turn, determined by a household's ability to access food, the care practices used, and the wider health and hygiene environment in which the household exists. Malnutrition can reduce immunity, increase susceptibility to disease, impair physical and mental development, and reduce productivity. Nutrition situation is best measured by the physical growth of children under five years of age.

Children's nutritional status

The CFSS measured the height, weight, age and mid upper arm circumference (MUAC) of all children aged under five in the households that were visited. Using WHO's 2006 child growth standards, standard child malnutrition indicators were determined. These include weight-for-height (a measure of wasting, which is in turn an indicator of acute malnutrition), height-for-age (a measure of stunting, which is an indicator of chronic malnutrition), and weight-for-age (a measure of underweight, which is considered a combination of both acute and chronic

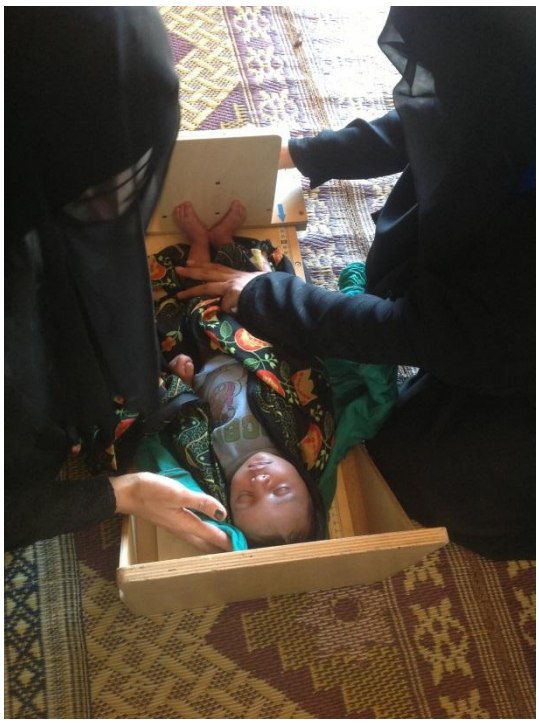
malnutrition). A cut-off point for MUAC of <12.5 cm was also used as an indicator of wasting in children under five years old[25].

According to the analysis results of the anthropometric measurements on children under five, the national level acute malnutrition prevalence rate is more than 10 percent. However, children under five who lived in rural areas were found more wasted than those in urban areas (13.5 percent and 10.5 percent) – Table 5.

Table 5: Nutrition status of children under five years old, rural/urban

	Acute malnutrition (Wasting)		Chronic malnutrition (Stunting)		Underweight	
	Global	Severe	Global	Severe	Global	Severe
Urban	(359) **10.5%** (9.5% - 11.6% 95% CI)	(57) **1.7%** (1.3% - 2.2% 95% CI)	(1212) **33.5%** (32.0% - 35.1% 95% CI)	(529) **14.6%** (13.5% - 15.8% 95% CI)	(864) **24.5%** (23.2% - 26.0% 95% CI)	(226) **6.4%** (5.7% - 7.3% 95% CI)
Rural	(1243) **13.5%** (12.8% - 14.2% 95% CI)	(262) **2.8%** (2.5% - 3.2% 95% CI)	(4323) **44.1%** (43.2% - 45.1% 95% CI)	(1894) **19.3%** (18.6% - 20.1% 95% CI)	(3234) **34.1%** (33.1% - 35.1% 95% CI)	(963) **10.2%** (9.5% - 10.8% 95% CI)
National	(1602) **12.7%** (12.1% - 13.3% 95% CI)	(319) **2.5%** (2.3% - 2.8% 95% CI)	(5535) **41.3%** (40.5% - 42.1% 95% CI)	(2423) **18.1%** (17.4% - 18.7% 95% CI)	(4098) **31.5%** (30.7% - 32.3% 95% CI)	(1189) **9.1%** (8.7% - 9.7% 95% CI)

Wasting, stunting and underweight are based upon WHO 2006 growth standards for weight for height, height for age and weight for age. Global refers to < -2 SD while severe refers to < -3 SD
Source CFSS 2014



The situation in children under five has improved since the 2011 CFSS. The prevalence of global stunting fell from 46.6 percent in 2011 to 41.3 percent in 2014. The difference is statistically significant (X2: 66.368, P < 0.001) and the CIs in 2011 (44.6 percent – 48.5 percent, 95 percent C.I.), and this does not overlap with the 2014 figures (40.5 percent – 42.1 percent, 95 percent CI) (Table 5).

The prevalence of underweight children, as with chronic malnutrition, is higher in rural than in urban areas: 34.1 percent of rural children were underweight compared to 24.5 percent of urban children. The overall situation also improved between 2011 and 2014, falling from 35.5 percent in 2011 and 31.5 percent in 2014. The difference is statistically

[25] More details analytical methodology and process of analysis are documented in a separate comprehensive Annex Report.

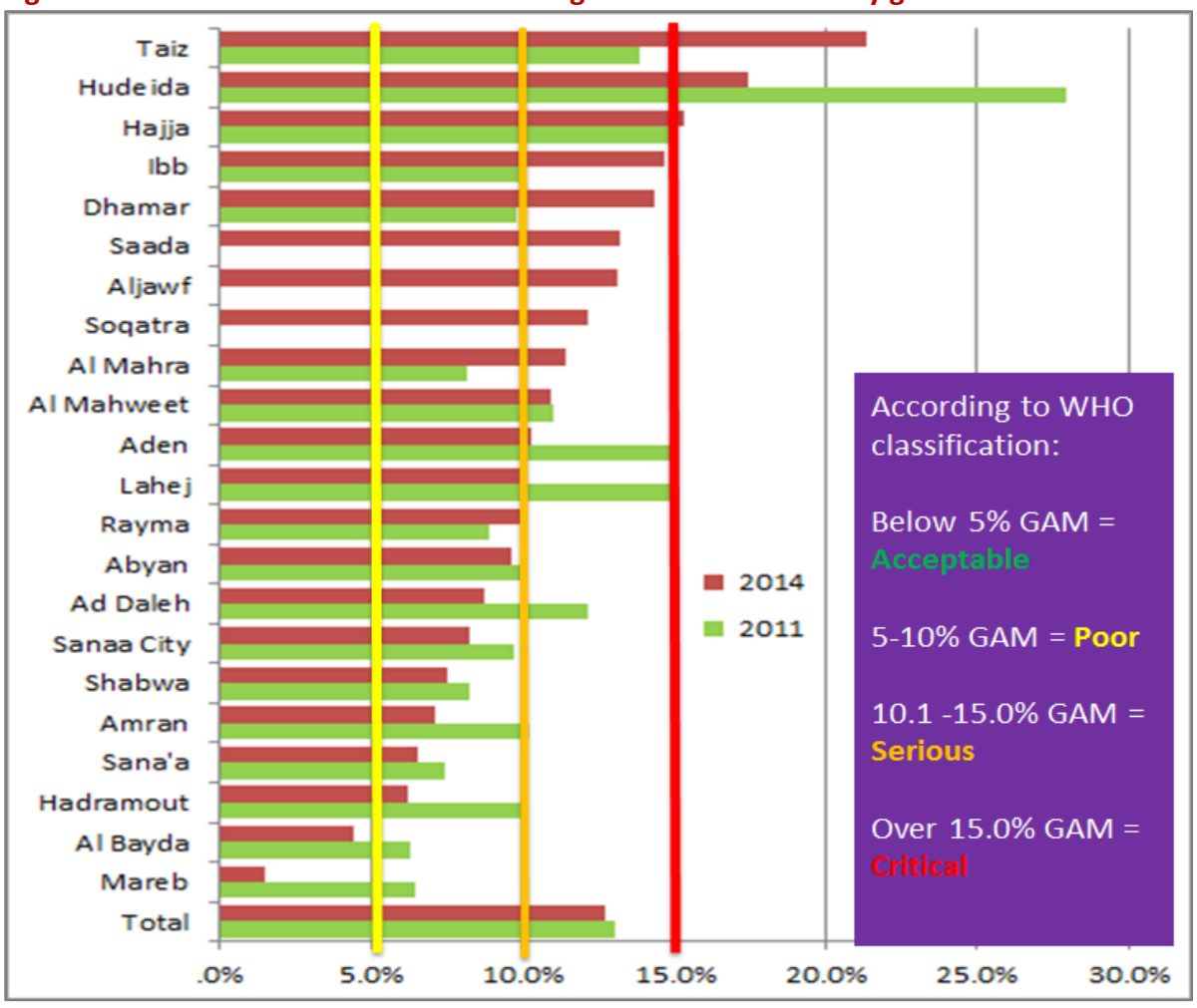
significant (X2: 40.628, P < 0.001) and the CIs (33.6 percent – 37.6 percent, 95 percent C.I.) in 2011, which does not overlap with the 2014 figures (30.7 percent – 32.3 percent, 95 percent CI).

Child nutrition status by governorate

The CFSS was not designed to provide the results statistically representative at the governorate level. The findings of the survey on the level of malnutrition by governorates are shown in Figure 29. Three governorates (Taiz, Hajja and Hudeida) had a wasting prevalence well beyond the WHO critical threshold of 15 percent (21.3 percent in Taiz, 15.3 percent in Hajja and 17.4 percent in Hudeida). However, previous surveys in Mareb governorate show one of the lowest rates of global acute malnutrition (GAM) prevalence. The quality of data, which were checked using ENA software, was very good, but the prevalence of GAM was also very low in this CFSS. This situation may benefit from further investigation.

Taiz, Hajja and Hudeida governorates have a wasting prevalence well beyond the WHO critical threshold

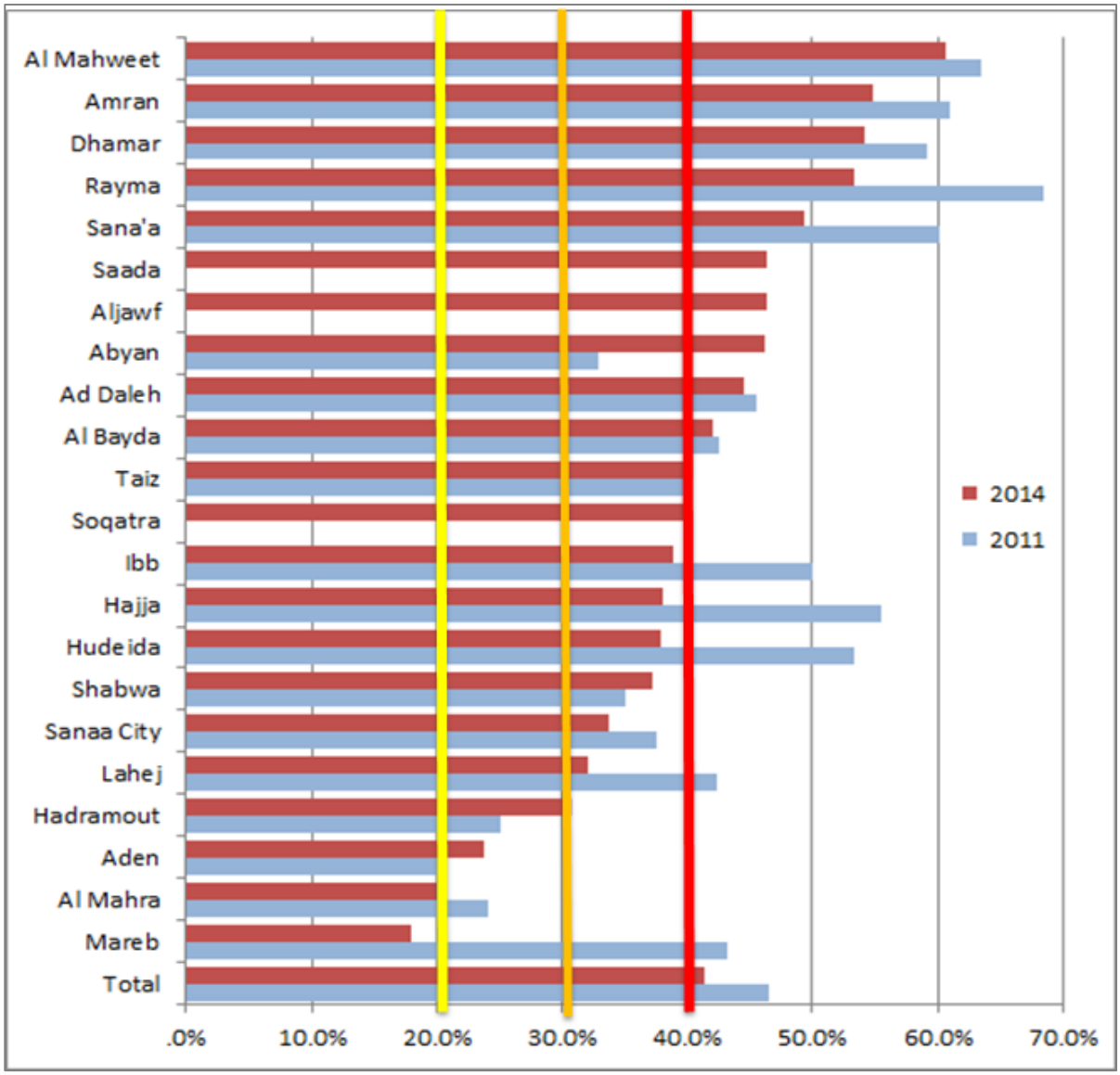
Figure 29: Global Acute Malnutrition among children under five by governorate



The level of chronic malnutrition (stunting) among under five children in Yemen is one of the highest in the world. Comparison of the prevalence of stunting by governorate shows that stunting has reached critical levels (≥40 percent) in 12 of the 22 governorates, while Al Mahweet, Amran, Dhamar and Rayma had alarmingly high rates of more than half of under five year old children stunted (Figure 30). Al Mahweet had the highest rate of chronic malnutrition, with more than 60 percent of under five year old children stunted, while the figure for Amran stood at 54.8 percent, for Dhamar 54.2 percent, and for Rayma 53.4 percent.

Child stunting has reached critical levels in 12 of the country's 22 governorates

Figure 30: Global Chronic Malnutrition among children under five by governorate



Source: CFSS 2014

*Note: According to WHO classification on Stunting: Below 20% is "**Acceptable";** 20.0% – 29.9% is "**Poor";** 30.0% – 39.9% is "**Serious";** 40% and above is "**Critical**" level.*

The underweight situation was also hugely concerning, with children in 13 governorates critically underweight (≥30 percent). Dhamar, with an underweight prevalence of 41 percent was significantly worse than all other governorates (see the Annex Report for details).

Infant and young child feeding

As well as collecting anthropometric measurements for assessment of children nutrition status, mothers and caretakers of children under the age of five were interviewed to obtain information about feeding practices. Data collected about Infant and Young Children Feeding (IYCF) included information on breastfeeding as well as consumption of various food groups.

Breastfeeding

The CFSS findings (Table 6) showed that 71 percent of children of breastfeeding age (6-23 months) were breastfed the day before the survey, and 94 percent of children below six months were breastfed in the preceding 24 hours. Some 73 percent of children were breastfed for their first 12 months (WHO indicator: children continued to be breastfed at 12-15 months old), and 35 percent were breastfed until two years (WHO indicator: children continue to be breastfed at 20-23 months old).

Table 6: Children under two years old who were breastfed in the preceding 24 hours

Age group	National	Urban	Rural
< 6 months	94.4%	92.0%	95.4%
6 – 11 months	83.3%	80.9%	84.1%
12 – 17 months	68.5%	72.6%	67.2%
18 – 23 months	40.6%	41.0%	40.4%
Total	**71.2%**	**71.2%**	**71.2%**

Source CFSS 2014

Although the CFSS did not directly capture exclusive breastfeeding practices, mothers were asked if children were breastfed and if they consumed any food items the day before, from an exhaustive list of seven food groups (using the WHO dietary diversity indicator guidance). Children who did not consume any of these food groups and were breastfed were categorized as having been "only breastfed". Exclusive breastfeeding for children under six months is critical for cognitive development as well as for the development of a healthy immune system. Just 12 percent of children under six months of age were only breastfed on the preceding day, which suggests extremely poor breastfeeding practices at this critical stage of a child's life (Table 7).

Breastfeeding practices can be extremely poor at a critical stage of a child's life

Table 7: Breastfeeding practices

	Percent of children under 6 months old only breastfed	Percent of children continued breastfed at 1 year old	Percent of children continued breastfed at 2 years old
National	12.0%	72.6%	35.3%
Urban	15.9%	75.3%%	36.9%
Rural	10.9%	71.7%	34.7%

Source CFSS 2014

Complementary feeding

The CFSS did not capture complementary feeding practices in the standard form, but it did capture information on breastfeeding in combination with consumption of other food items. Nationally, only 32 percent of children aged between 6 and 23 months are breastfed and consume at least one other food item. This figure is of serious concern, because of the high risk of developing malnutrition (Table 8).

Table 8: Complementary feeding in young children

Age group	Percent of children breastfed and consumed other food items		
	Urban	**Rural**	**National**
6 – 11 months	62.4%	67.4%	66.2%
12 – 17 months	69.5%	63.2%	64.7%
18 – 23 months	37.2%	36.9%	37.0%
Total	**43.8%**	**49.9%**	**48.3%**

Source CFSS 2014

Minimum dietary diversity for children

Using WHO guidance on infant and child feeding practices, information on the dietary diversity of children aged between six and 24 months was also collected and analysed. The minimum dietary diversity for children in this age group is defined as the consumption of four or more food groups (out of seven). The seven food groups are:

- grains, roots and tubers
- legumes and nuts
- dairy products (milk, yogurt, cheese)
- flesh foods (meat, fish, poultry and liver/organ meats)
- eggs
- vitamin A rich fruits and vegetables
- other fruits and vegetables

Table 9: Children under two years old with minimum dietary diversity

	Minimum dietary diversity		
Age group	< 4 groups consumed	≥ 4 groups consumed	Total
6 – 11 months	92.3%	7.7%	640
12 – 17 months	88.7%	11.3%	582
18 – 23 months	81.6%	18.4%	603
Total	87.6%	12.4%	1,825

Source CFSS 2014

Only 12.4 percent of children aged between six and 24 months met the recommended minimum dietary diversity (Table 9). More than 85 percent of children do not consume a minimum dietary diversity and are likely to have poor micronutrient density in their diet. When minimum dietary diversity is considered in combination with breastfeeding practices, further feeding practices can be assessed. Only 10 percent of children aged between six and 24 months were breastfed and met the minimum dietary diversity (Table 10).

Table 10: Children under two years old with minimum dietary diversity and breastfeeding

	Children under two years old breastfed but not with minimum diet diversity	Children under two years old breastfed and met minimum diet diversity	Total
6 – 11 months	93.5%	6.5%	556
12 – 17 months	90.5%	9.5%	441
18 – 23 months	81.6%	18.4%	277
Total	89.9%	10.1%	1274

Source CFSS 2014

Foods consumed by infants were also examined, along with vitamin A supplementation. It is recommended that infants receive animal protein daily (or receive iron supplementation) and consume vitamin A daily. But only 12.6 percent of infants consumed vitamin A rich foods and 31.2 percent consumed meat, fish, or eggs.

Table 11: Vitamin A intake in children aged between six and 59 months

	Vitamin A supplement in the last 6 months	Child consumed meat, fish and/or eggs	Child consumed vitamin A rich food	Total Numbers
6 – 11 months	52.3%	11.0%	4.6%	1643
12 – 17 months	59.6%	22.9%	9.2%	1430
18 – 23 months	65.4%	35.3%	13.9%	1429
Total 6 – 23 months	58.8%	22.5%	9.0%	4502
24 – 59 months	62.9%	36.3%	14.7%	7714
Total	61.3%	31.2%	12.6%	12216

Source CFSS 2014

The situation is no better for young children (aged between two and five years), where only 4.6 percent consumed vitamin A rich foods and 11 percent ate animal based proteins. Coupled with poor vitamin A supplementation, there is a clear concern that many children have micronutrient deficiencies.

Many children have micronutrient deficiencies

Nutrition status of women of reproductive age

Nutritional status in women of reproductive age

MUAC in women was classified according to the Sphere Project's Handbook (2011) cut-offs of:

- Total malnutrition: MUAC <23 cm
- Moderate malnutrition: MUAC ≥21 cm and <23 cm
- Severe malnutrition: MUAC <21 cm

The 2011 CFSS used other cut-offs to assess the malnutrition among women of reproductive age, and this CFSS therefore uses the same cut-offs:

- Total malnutrition: MUAC < 22.2 cm
- Moderate malnutrition: MUAC ≥ 21.3 cm and < 22.2 cm
- Severe malnutrition: MUAC < 21.3 cm

The survey found a 24.2 percent rate of malnourished women (MUAC <22.2 cm) aged between 15 and 49 years, of whom 14.4 percent were severely malnourished (MUAC <21.3 cm) (Table 12).

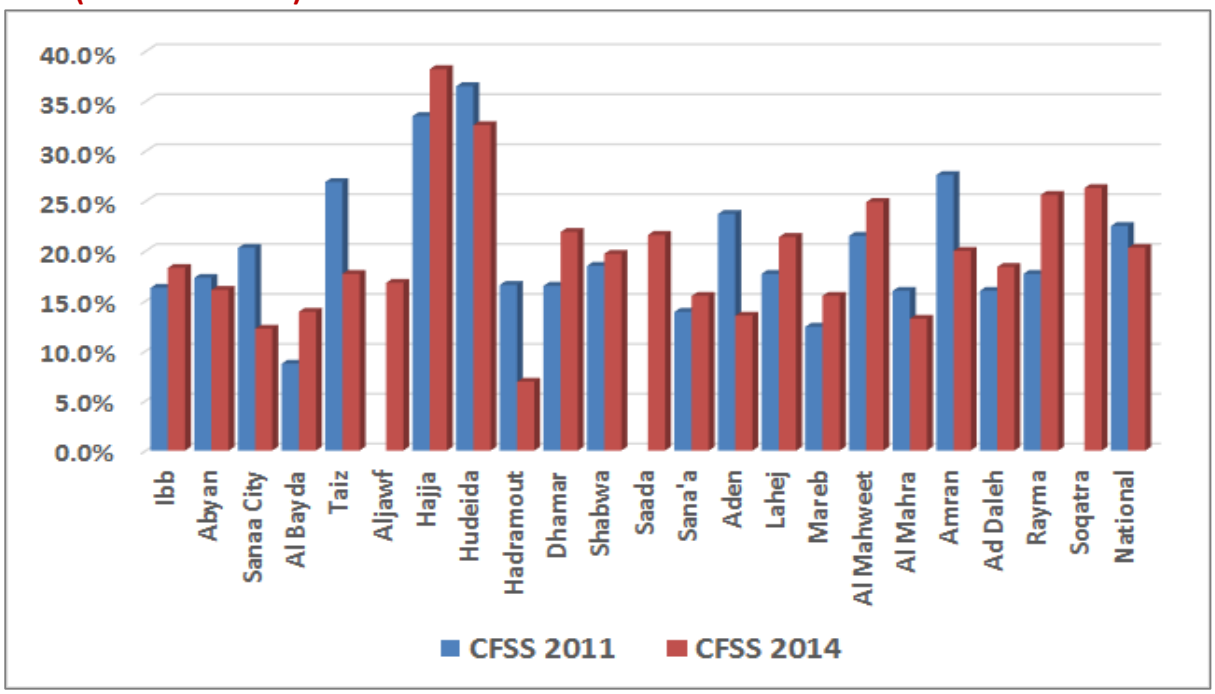
Table 12: Nutrition status of women of reproductive age (15-49 years) measured by MUAC

Governorate	Not malnourished (MUA ≥22.2 cm)	Globally malnourished (MUAC <22.2 cm)	Moderately malnourished (MUAC between 21.3 and 22.2 cm)	Severely malnourished (MUAC <21.3 cm)
Ibb	86.3%	13.7%	7.8%	5.8%
Abyan	85.0%	15.0%	5.9%	9.1%
Sanaa City	86.0%	14.0%	7.7%	6.3%
Al Bayda	80.6%	19.4%	9.0%	10.4%
Taiz	74.2%	25.8%	10.9%	14.9%
Aljawf	84.4%	15.6%	8.8%	6.8%
Hajja	56.0%	44.0%	13.8%	30.2%
Hudeida	68.8%	31.2%	12.5%	18.7%
Hadramout	87.0%	13.0%	2.5%	10.6%
Dhamar	72.8%	27.2%	11.1%	16.1%
Shabwa	79.6%	20.4%	8.2%	12.2%
Saada	61.5%	38.5%	11.0%	27.4%
Sana'a	72.6%	27.4%	11.4%	16.0%
Aden	86.0%	14.0%	6.1%	7.8%
Lahej	73.8%	26.2%	11.7%	14.5%
Mareb	88.4%	11.6%	7.3%	4.3%
Al Mahweet	73.8%	26.2%	11.4%	15.0%
Al Mahra	89.1%	10.9%	3.6%	6.4%
Amran	74.8%	25.2%	10.5%	14.8%
Ad Daleh	82.8%	17.2%	7.3%	9.9%
Rayma	67.5%	32.5%	11.1%	21.2%
Soqatra	75.0%	25.0%	10.3%	14.5%
15-19 years	60.9%	39.1%	13.9%	25.2%
20-24 years	73.2%	26.8%	11.2%	15.6%
25-29 years	76.8%	23.2%	9.9%	13.3%
30-34 years	80.6%	19.4%	8.4%	11.0%
35-39 years	85.7%	14.3%	6.5%	7.8%
40-44 years	84.1%	15.9%	5.6%	10.4%
45-49 years	90.4%	9.6%	4.6%	5.0%
Total	**75.8%**	**24.2%**	**9.8%**	**14.4%**

Source CFSS 2014

An assessment of the nutrition status by body mass index showed that 21.2 percent of women aged between 15 and 49 years are underweight (body mass index of <18.5), and 3.5 percent are severely underweight (BMI of <16) – Figure 31. Meanwhile, 7.1 percent of Yemeni women aged in the same age group years were obese (see the Annex report for more information).

Figure 31: Women malnutrition level by governorate and comparison between 2011 and 2014 (BMI below 18.5)



Source: CFSS 2011 and CFSS 2014

Causes of child malnutrition[26]

Association between household food insecurity and child malnutrition

According to the results of the survey, a strong and statistically significant association was found between households' food insecurity and level of child malnutrition. Prevalence of child malnutrition within food insecure households is higher than that found among food secure families. As presented in Table 13, the difference is more pronounced for stunting and underweight than acute malnutrition (wasting). The difference is statistically significant (X^2: 8.80, $P < 0.05$ for wasting; X^2: 76.76, $P < 0.001$ for stunting; and X^2: 91.80, $P < 0.001$ for underweight).

Table 13: Level of child malnutrition by food security status of households

	Global wasting	Global stunting	Global underweight
Severely food insecure	13.6%	46.4%	37.6%
Moderately food insecure	13.9%	44.9%	34.3%
Food secure	11.9%	38.1%	28.3%

Source CFSS 2014

[26] More causal analysis results with full documentations are available in the separate comprehensive Annex Report.

Association between child gender and child malnutrition

The survey found that boys were more wasted (14.0 percent for boys and 11.3 percent for girls) and more stunted than girls (43.5 percent and 38.9 percent). The difference is again statistically significant (X^2: 20.652, P < 0.001, for wasting and X^2: 29.102, P < 0.001, for stunting). Boys were more affected by acute and chronic malnutrition than girls (Table 14).

Table 14: Nutrition status of children under five years old, by gender

	Acute malnutrition (Wasting)		Chronic malnutrition (Stunting)		Underweight	
	Global	Severe	Global	Severe	Global	Severe
Boys	(912) **14.0%** (13.2% - 14.9% 95% CI)	(180) **2.8%** (2.4% - 3.2% 95% CI)	(3016) **43.5%** (42.3% - 44.7% 95% CI)	(1366) **19.7%** (18.8% - 20.7% 95% CI)	(2236) **33.3%** (32.2% - 34.4% 95% CI)	(660) **9.8%** (9.1% - 10.6% 95% CI)
Girls	(691) **11.3%** (10.5% - 12.1% 95% CI)	(139) **2.3%** (1.9% - 2.7% 95% CI)	(2520) **38.9%** (37.8% - 40.1% 95% CI)	(1058) **16.3%** (15.5% - 17.3% 95% CI)	(1862) **29.6%** (28.5% - 30.8% 95% CI)	(528) **8.4%** (7.7% - 9.1% 95% CI)

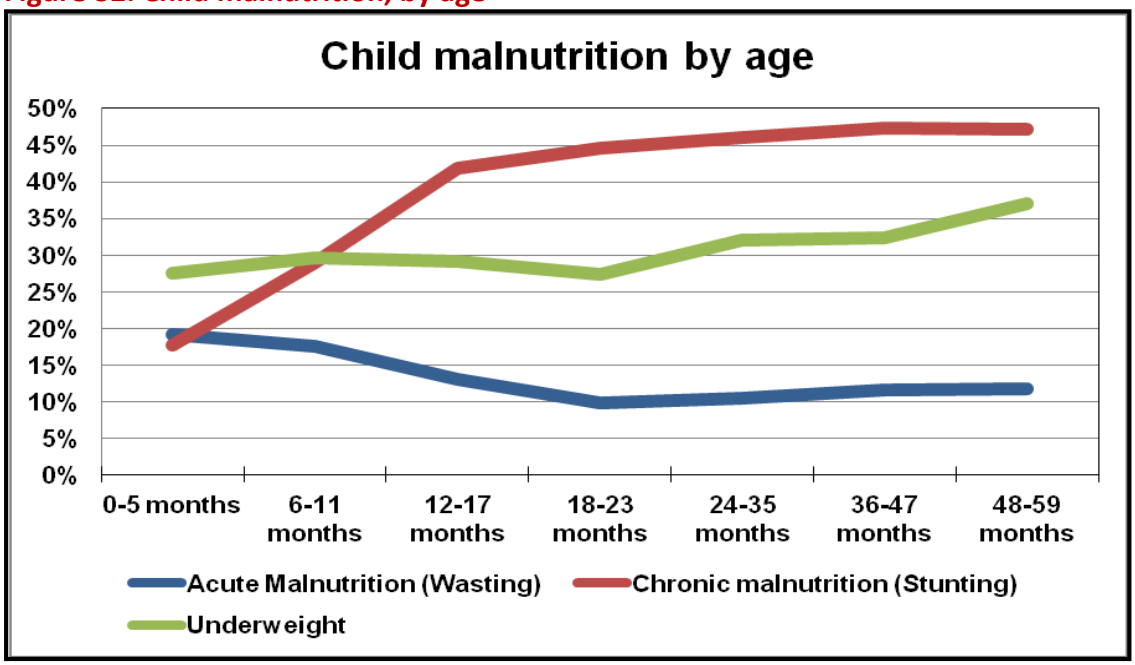
Source CFSS 2014

Association between child age and child malnutrition

The CFSS 2014 nutrition findings showed that Yemeni children under 18 months were much more affected by acute malnutrition than any other forms of malnutrition (Figure 32). The phenomenon is not uncommon and is usually associated with poor weaning practices and poor complementary feeding. In Yemen, however, the prevalence of wasting is also very high in children under six months old. With 19.2 percent of infants less than six months of age

wasted, it is possible that some children were born malnourished (low birth weight), which may be caused by the mother's malnutrition during pregnancy.

Figure 32: Child malnutrition, by age



Source CFSS 2014

The prevalence of combined wasting and stunting in children under five years old was found to increase with age. The highest prevalence of stunting was seen after three years (47 percent), and after four years for wasting (37 percent).

The prevalence of acute malnutrition fell at 18 months, but the prevalence of chronic malnutrition increased gradually from the age of 12 months. This suggests that specific nutrition interventions may be needed for the period from pregnancy to five years old.

Association between child morbidity and child malnutrition

The relationship between disease and nutrition is well documented. Malnourished children are prone to infection, because of a compromised immune system. Repeated episodes of infection or persistent subclinical infection can cause or aggravate malnutrition. For example diarrhoea is associated with insufficient water quality and quantity, and poor hygiene practices. It may cause malabsorption, loss of nutrients and appetite, leading to malnutrition. At the same time, malnutrition may increase the duration and severity of diarrhoea,

so increasing the risk of mortality. In general, infection compromises a child's nutrition status, because of higher nutrient requirements and appetite suppression. Malnourished children are more prone to infection, because of a compromised immune system, so a vicious cycle exists between malnutrition and morbidity.

Table 15: Children aged under five with sickness in the preceding two weeks

	Presence of three diseases (cough, fever or diarrhoea)	Child had cough	Child had fever	Child had diarrhoea	Total
Urban	61.8%	43.4%	46.7%	43.4%	**3615**
Rural	66.8%	48.8%	53.0%	48.8%	**9790**
National	**65.5%**	**47.3%**	**51.3%**	**47.3%**	**13405**

Source CFSS 2014

Mothers and caretakers were asked if children aged under five in their household were sick in the two weeks prior to the survey – specifically, if they had had a cough, fever or diarrhoea. Some 66 percent had experienced one of the three illnesses in the two weeks preceding the survey. There was a higher prevalence for each illness in children living in rural areas.

Table 16: Impact of child morbidity on wasting, stunting and underweight (rural/urban)

		Children wasted	Children stunted	Children underweighted	Total
Urban	No disease	9.3%	33.6%	21.4%	**1,375**
	Disease	11.1%	33.6%	26.5%	**2,234**
Rural	No disease	11.8%	43.1%	30.8%	**3,247**
	Disease	14.3%	44.7%	35.7%	**6,533**

Source CFSS 2014

The link between morbidity and acute malnutrition is not statistically significant for coughing (X^2: 3.52, P>0.05), but is significant for diarrhoea (X^2: 15.56, P<0.001) and for fever (X^2: 36.69, P<0.001). The high morbidity however remains a risk factor likely to undermine the nutrition wellbeing of children under the age of five.

Illness in children is associated with malnutrition, among other factors. For wasting, the CFSS findings showed the impacts of child health on nutrition outcomes. However, the association between illnesses during the two weeks before survey is only statistically significant in rural areas (X^2: 11.57, P<0.001). Some 14 percent of children in rural areas who were sick were also wasted, compared to 12 percent of children who were wasted, but not sick (Table 16).

However, for the prevalence of stunting, the survey did not find a statistically significant difference between sick and healthy children. For underweight children, around 5 percent more sick children in both rural and in urban areas were underweight compared to children who were not sick. This difference is statistically significant (in urban areas, X^2: 23.01, P<0.001 and in rural areas, X^2: 11.99, P<0.001).

Association between child diet diversity and child malnutrition

For urban areas, the link between child diet diversity and nutrition outcomes is presented in Table 17. For wasting and for stunting in urban areas, the survey found that children without minimum diet diversity were more affected than those with adequate diet diversity (for wasting, 13.3 percent against 8.5 percent; and for stunting, 37.6 percent against 28.0 percent). In rural areas, though, this difference is not statistically significant. Other factors can also influence this result.

In both urban and rural areas, the survey found that children without minimum diet diversity were more likely to be underweight than those with adequate diet diversity (in urban areas, X^2: 16.17, P<0.001; and in rural areas, X^2: 4.497, P<0.05).

Table 17: Impact of minimum diet diversity on wasting, stunting and weight (urban/rural)

		Children wasted	Children stunted	Children underweight	Total
Urban	< 4 groups consumed	13.3%	37.6%	27.9%	**867**
	≥ 4 groups consumed	8.5%	28.0%	17.3%	**397**
Rural	< 4 groups consumed	14.4%	46.1%	35.3%	**3005**
	≥ 4 groups consumed	14.8%	44.2%	30.1%	**432**

Source CFSS 2014

No statistically significant relationship was found between dietary diversity and morbidity. The nutrition findings showed contradictory effects (Table 18). For the three kinds of malnutrition (wasting, stunting and underweight), the prevalence of malnourished children is higher among healthy children when diet diversity is adequate.

Table 18: Impact of minimum dietary diversity and child morbidity on child malnutrition (urban)

Urban children age 6-23 months		Children wasted	Children stunted	Children underweight	Total
<4 groups consumed	No disease	6.5%	43.6%	20.0%	**101**
	Disease	14.9%	34.2%	29.6%	**284**
≥4 groups consumed	No disease	8.6%	42.1%	18.4%	**38**
	Disease	7.1%	24.3%	9.9%	**74**

Source CFSS 2014

Association between nutrition status of mothers and child malnutrition

Yemen has high rates of malnutrition among women of reproductive age. This study assessed this using body mass index and MUAC. The 2011 study considered women of reproductive age with a body mass index of less than 18.5 to be malnourished. Using that figure, this study

found that malnourished mothers had a significantly higher proportion of malnourished children in terms of wasting, stunting and weight (Table 19).

Table 19: Impact of maternal nutrition status on wasting, stunting and underweight

	Children wasted %	Children stunted %	Children underweight %	Total
Non-malnourished women (BMI ≥18,5)	11.7%	39.3%	29.0%	**14,370**
Malnourished women (BMI <18,5)	17.4%	43.6%	38.5%	**3,848**
Not severely thinned (BMI ≥16)	12.5%	40.0%	30.4%	**17,574**
Severely thinned (BMI <16)	22.6%	46.8%	47.3%	**645**
Not obese (BMI <30)	13.0%	40.7%	31.6%	**16,933**
Women with obesity (BMI ≥30)	10.9%	34.9%	22.8%	**1,285**
Unhealthy weight (BMI <18,5 or BMI ≥25)	13.7%	39.2%	30.8%	**8,347**
Healthy weight (BMI between 18,5 and 25)	12.2%	41.2%	31.2%	**9,873**
Non-severely malnourished women (MUAC ≥21,3 cm)	12.0%	39.9%	29.8%	**18,056**
Severely malnourished women (MUAC <21,3 cm)	17.3%	46.0%	40.2%	**2,958**
Not moderately malnourished women (MUAC <21,3 or MUAC ≥22,2 cm)	12.2%	40.2%	30.4%	**18,954**
Moderately malnourished women (MUAC between 21,3 and 22,2 cm)	17.6%	45.8%	38.6%	**2,060**
Non-globally malnourished women (MUAC ≥22,2 cm)	11.3%	39.2%	28.7%	**15,996**
Globally malnourished women (MUAC <22,2 cm)	17.4%	45.9%	39.6%	**5,019**

There is a statistically significant difference in the prevalence of wasted, stunted and underweight children of properly nourished and malnourished mothers (wasting: X^2: 81.85, P<0.001; stunting, X^2: 22.92, P<0.001; underweight, X^2: 125.61, P<0.001). Similarly, using the 2011 MUAC measure for malnourished women of reproductive age (<21.3 cm), this study found that malnourished women had a significantly higher proportion of malnourished children in terms of wasting, stunting and weight (wasting: X^2: 59.26, P<0.001; stunting, X^2: 38.39, P<0.001; underweight, X^2: 123.75, P<0.001).

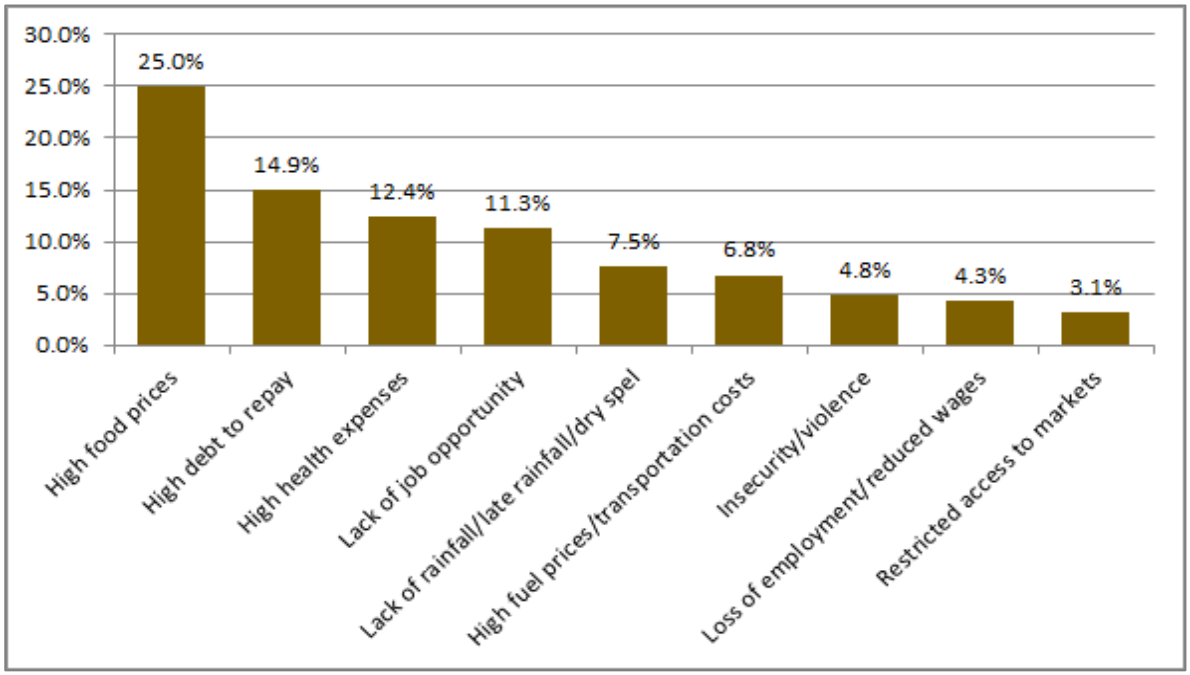
Causes of food insecurity and malnutrition

Yemen faces multi-dimensional challenges as a result of series of shocks during the recent past few years on top of accumulated long-term structural problems in the country. There are several factors and causes that deepened the vulnerability of millions of Yemenis for further increasing level of food insecurity and malnutrition. The driving factors include the current political instability, conflicts and insecurity, frequent power interruption and oil pipeline damages due to tribal attacks, and other infrastructure destruction due to conflicts, high and volatile food and fuel prices, long-lasting effects of the triple F-crisis (food, fuel, financial), reduction in remittances, extreme poverty, high population growth, gender inequalities, poor access to social infrastructure, deterioration in economic growth, increasing cost of living including health expenses, high indebtedness by poor households, high level of unemployment, poor government capacity to provide social services, environmental degradation, impacts of climate change and water scarcity including poor and declining domestic food production, and high dependence on food imports.

Shocks and food shortages

Shocks continue to impact the already precarious food security situation of poor households in Yemen. Nationally, most surveyed households experienced shocks in 2014 (Figure 33). The major shocks that have affected almost all the governorates include high food prices, high levels of debt, expensive health services, lack of job opportunities, lack of rainfall, high transport costs and insecurity/violence. High food prices and high debts are perceived as the two leading threats that are aggravating the poor food security situation for millions of Yemenis in almost all governorates.

Figure 33: Major shocks affecting households



Source: CFSS 2014

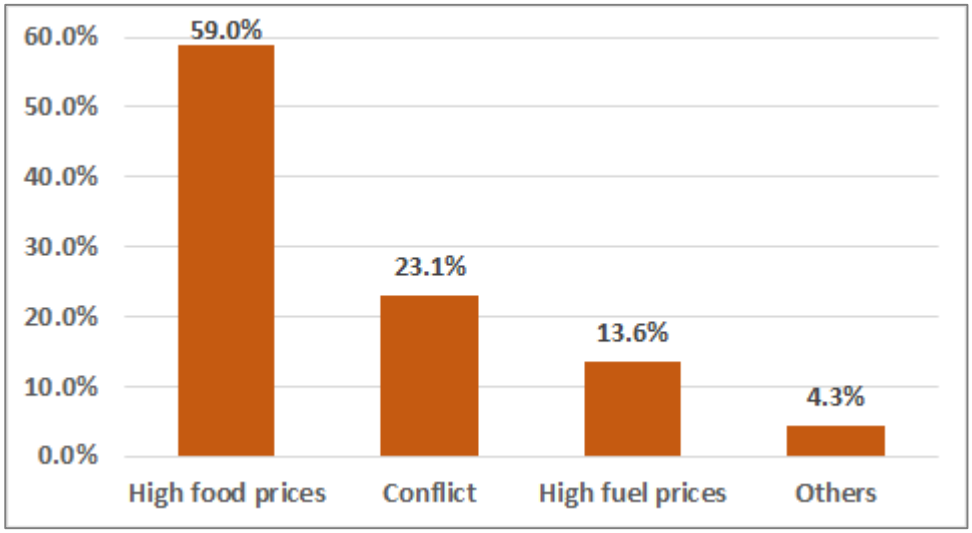
However, the magnitude and severity of the shocks differ by governorate. For instance, while an overall national average of about 5 percent of households are affected by insecurity and violence, the situation was reported to be as high as 22 percent in Shabwa and 12 percent in Al Jawf followed by Hadramout (11 percent). Soqatra is the least affected (0.2 percent).

In recent months after the CFSS data was collected, the security situation of the country has rapidly deteriorated due to the widespread conflicts and growing political instability and tensions. As a result, the impact of violence and instability is believed to exacerbate the high level of food insecurity and malnutrition in most parts of the country. Moreover, according to a recent study by IOM, nearly 700,000 migrant workers were deported from Saudi Arabia since early last year which resulted in huge reduction of remittances that negatively affected the macro economy and households who were dependent on it to support their livelihoods.

Major shocks affecting the markets

Markets in several governorates have been affected by shocks, including high food prices and intensified local conflicts. Southern and northern governorates in particular have become increasingly insecure as a result of conflict. Nearly 60 percent of traders interviewed suggested that high food prices are the main shocks that challenge their business (Figure 34).

Figure 34: Main shocks affecting markets

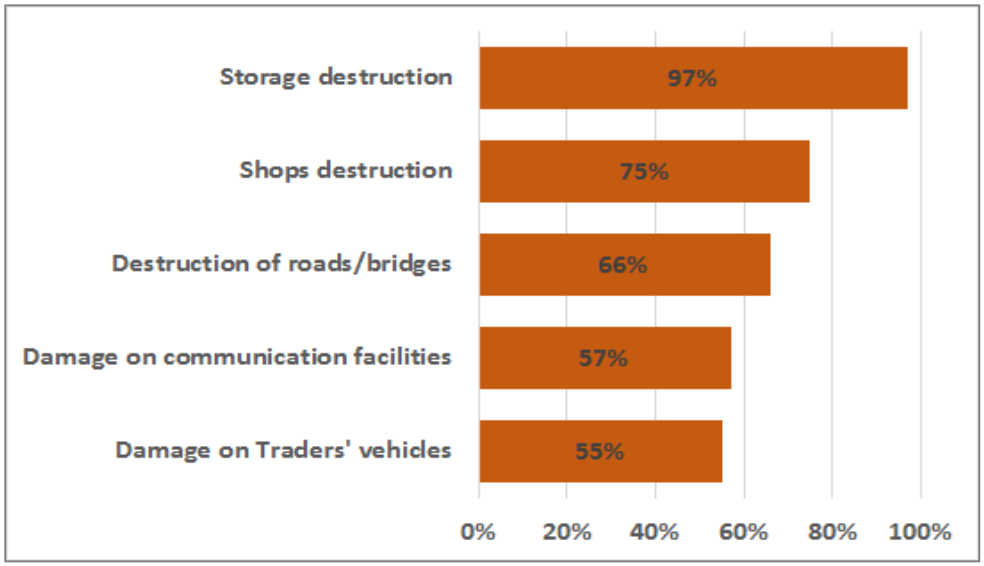


Source: CFSS 2014

Impact of conflicts on markets

More than three-quarters of traders said that local conflicts represent a huge challenge in terms of limiting access to markets and disrupting normal market functions mainly in the south and northern governorates. More than half of traders' materials and facilities were damaged in conflict affected areas, according to over 70 percent of traders interviewed (Figure 35).

Figure 35: Impact of conflicts on markets

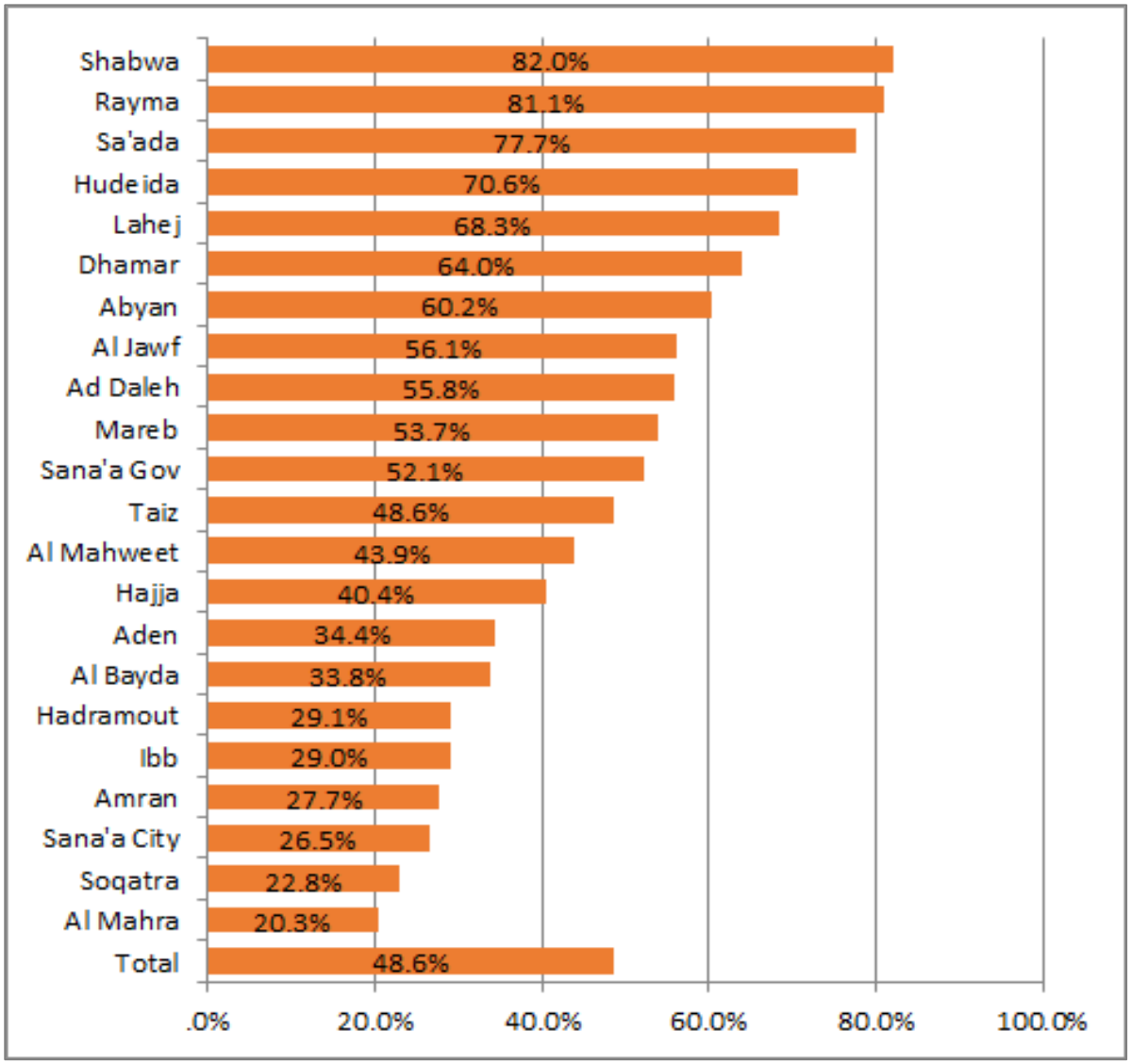


Source: CFSS 2014

Retailers are the most affected by conflict-related damage (70 percent to 85 percent for retailers compared to 15 percent to 30 percent for wholesalers). Markets in governorates including Al Bayda, Shabwa, Hadramout, and Ad Daleh in the south, and Sa'ada and Al Jawf in the north are the most affected.

Households were asked whether, over the preceding seven days, there were times when they did not have enough food or money to buy food. At the national level, almost half of households (49 percent) experienced difficulties in accessing food, with a significantly larger share of rural (54 percent) than urban households (33 percent). As a result of the various shocks and challenges, more than half of all governorates have over half of their populations without enough food. There are also considerable differences among the governorates: more than 75 percent of households in Shabwa, Sa'ada and Rayma governorates experienced difficulty in accessing food.

Figure 36: Proportion of households who did not have enough food or money to buy food



Source: CFSS 2014

Shabwa has 82 percent of households that currently experience a shortage of food, followed by Rayma (81 percent) and Sa'ada (78 percent). Soqatra and Al Mahra are among the better off governorates with the lowest proportions of households without enough food (Figure 36). Severely food insecure households (70 percent) were more likely to have insufficient food or money to buy food than food secure households (38 percent). Little difference was observed between female and male headed households.

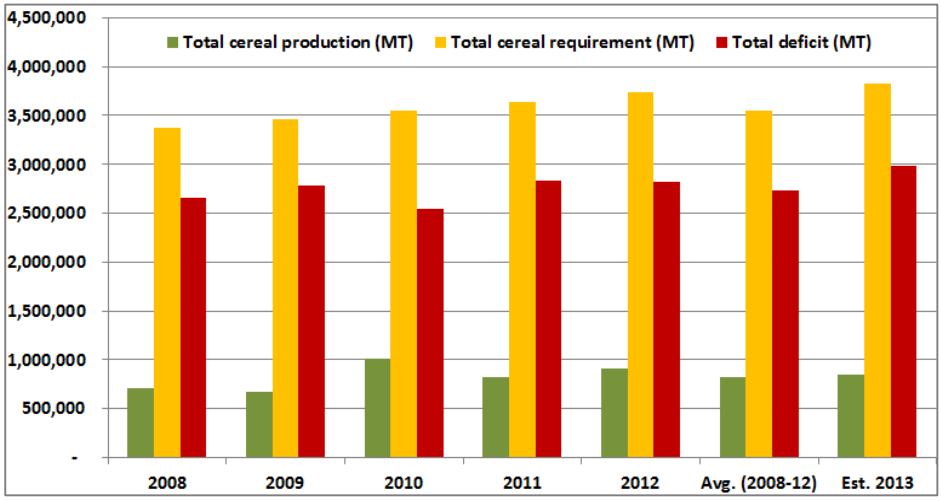
Low domestic food production and high vulnerability to changes in international food prices

Availability of food commodities

The majority of Yemenis do not produce enough food nor have sufficient income to food and meet their minimum nutritional requirement. Availability of food in Yemen is generally determined by imports. These make up more than 80 percent of the entire national food

requirement, and as much as 90 percent of wheat and 100 percent of rice. Domestic crop production meets less than 20 percent of the national food needs. According to the Ministry of Agriculture, the country produced 864,000 tonnes of cereals in 2013 – about 5 percent down from 2012. This was due to lower than average rainfall between March and July 2013. As in previous years, domestic production in 2013 will only be able to cover below 25 percent of the national food consumption requirements (Figure 37). Agriculture employs around 60 percent of the active labour force.

Figure 37: Domestic cereal production, requirement, and deficit

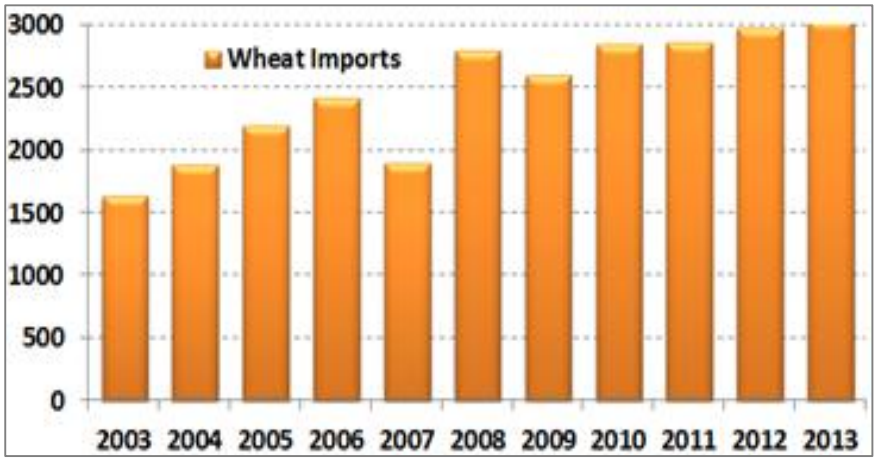


Source of Data: Ministry of Agriculture of Yemen

The survey found that less than one-third of households (30 percent) had access to agricultural land in 2013, of which 75 percent owned the land, 16 percent had shared cropping arrangements, and 9 percent rented the land. Maize and sorghum were among the major crops planted by farmers in 2013. Maize accounted for more than half and sorghum for about one-third of planted crops. Wheat, millet and barley were also grown. About half of all farming households experienced damage to their crops, leading to lower production than in 2012. The survey found that insufficient rainfall was the main constraint to agriculture and reported by most households. Other reported issues included disease, pests (including locust attacks), limited availability and high cost of inputs, poor soil fertility, and erosion. More than 75 percent of households used most of their crops for household consumption. Around 15 percent of households use their produce for animal feed, while some 10 percent sold their produce.

In each of the last five years, the country imported between 3 and 3.5 million tonnes of cereals, mostly wheat (80 to 85 percent) and rice and maize (15 to 20 percent). That represents between 75 and 85 percent of domestic utilization. Commercial wheat imports have increased in recent years, reaching a record high in 2013 of 3 million tonnes. That is 3.5 percent more than 2012 and about 10 percent more than in 2011 (Figure 38). Major importers along with Ministry of Industry and Trade report that the cereals imported in 2013 and the first two quarters of 2014 were sufficient for the entire national cereal consumption requirement.

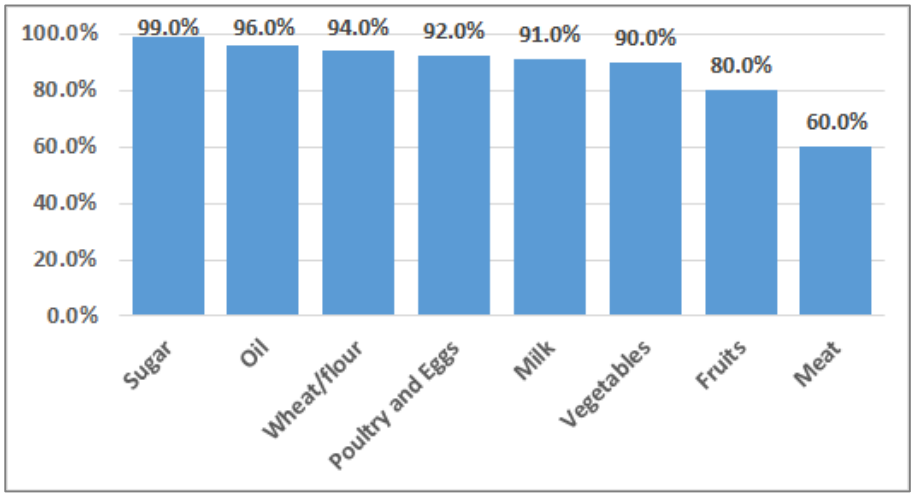
Figure 38: Trend on wheat imports between 2003 and 2013



Source: Ministry of Industry and Trade of Yemen; Major importers

The survey collected information from around 500 traders, both retailers and wholesalers, in more than 200 markets across all governorates. Most markets are open and provide services to customers on a daily basis (reported by 80 percent of traders), while 20 percent reported that there are weekly markets in their areas. A majority of traders suggested that most food items are readily available in their markets, with the exception of meat (Figure 39).

Figure 39: Availability of main food commodities in markets



Source: CFSS 2014

The survey also assessed the extent to which food aid distributions have affected markets. Over 80 percent of traders indicated that the food aid had no negative impact on markets.

International prices of food commodities

The FAO Food and Cereal Price Indices since the beginning of 2011 show a mixed trend. They were already high in early 2011, increased slightly in the second quarter and then declined steadily through the second half of the year. They fell further in the first half of 2012 before rising in the third quarter. The cereal price index rose substantially and reached a record high in September 2012. Between late 2012 and early 2014, the indices declined and settled at a record low (Figure 40).

International wheat prices followed a similar trend between 2011 and 2014. But having bottomed out in early 2014, it increased rapidly from February 2014 (Figure 40). As these rises were reflected along the supply chain – which can take two or three months – domestic market process also rose. Historically, the rate of transmission of international prices to the domestic markets in Yemen averages only 20 percent.[27]

Figure 40: Trends in international food prices and price indices

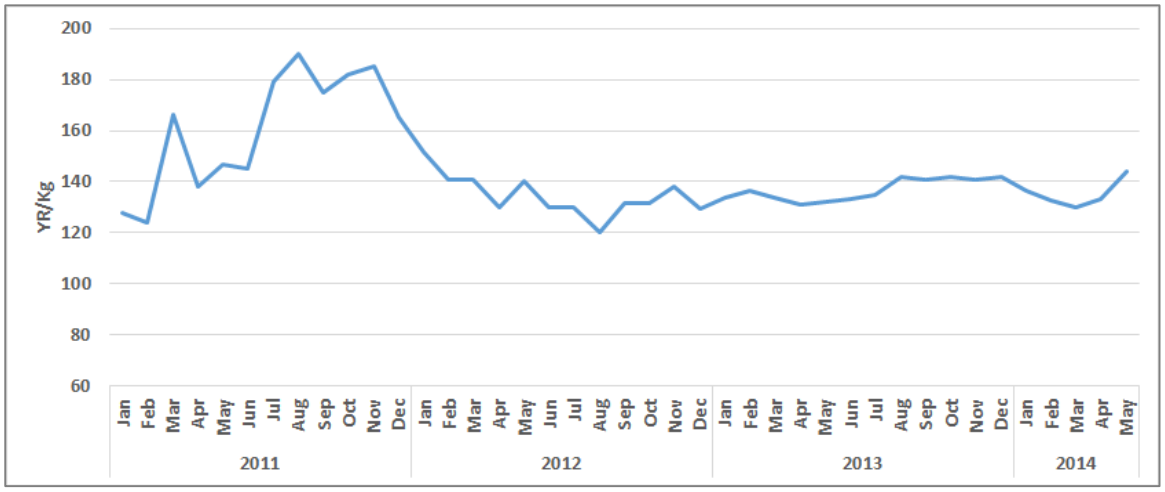
Source: Food and Cereals price indices: www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/
International wheat prices: www.indexmundi.com/commodities/?commodity=wheat

Domestic price of food commodities

According to price data for commodities collected from traders in early 2014, there were minor increases in food prices – from 3 percent for meat and cooking oil to 12 percent for pulses – over the same period of 2013. The price of wheat increased by 5 percent and of fruits by 10 percent. However, time series data from WFP monthly market monitoring indicates a generally stable trend since the second half of 2012. In the first months of 2014, prices have risen but remain much lower than in the third quarter of 2011 (Figure 41).

[27] Source: WFP Yemen Market Study conducted in 2010 and could be accessed at the link: www.wfp.org/content/yemen-market-study-december-2010.

Figure 41: Trend in retail price of wheat flour



Source: WFP Market Monitoring Data Archive

The Market Study conducted in Yemen in 2010 found there is a high volatility of prices of food and fuel showing significant differences across the regions of the country which makes people more vulnerable to market changes.

Higher share of food expenditure

Household expenditure patterns were among the key issues covered by the survey. Results indicate that food expenses make up a substantial proportion of households' expenditure. Nationally, over 42 percent of households' expenditure goes for food, of which 20 percent is spent on staple items. Severely food insecure households spent 45 percent on food. That is marginally more than the proportion spent by moderately food insecure households (44 percent) and food secure households (41 percent).

However, there is remarkable difference among the three food consumption groups in their expenditure on staple items. Severely food insecure households spent 29 percent on staple foods compared to 24 percent for moderately food insecure and 16 percent for food secure households (Table 20). The latter spend more on vegetables, meat, fruits and dairy products, a reflection of their diversified diet, which determines their food security status and, for example, makes them more resilient to micronutrient deficiencies than food insecure households.

Table 20: Household expenditure pattern, by food security status

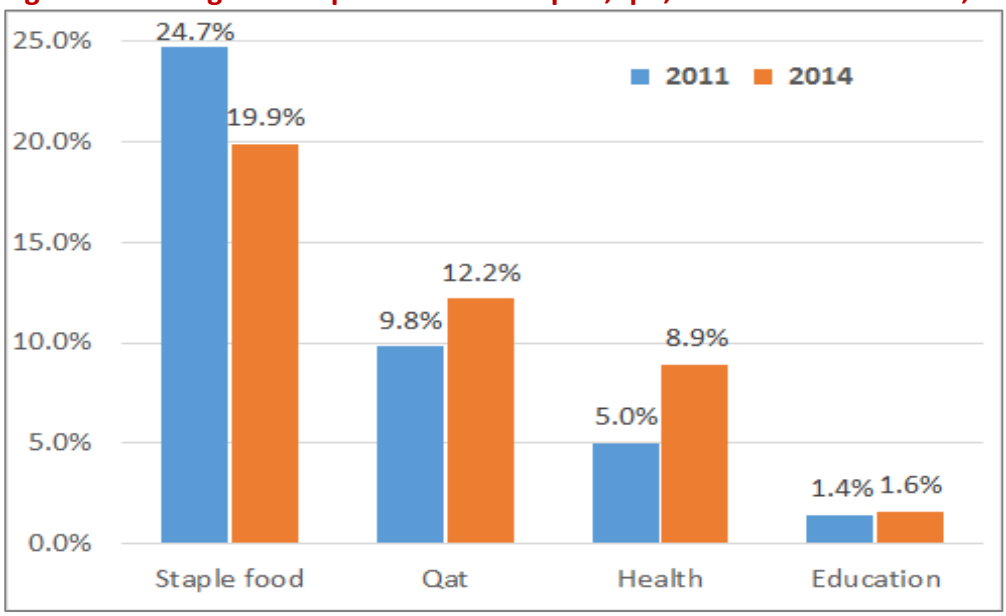
Expenditure Items	Severely food insecure	Moderately food insecure	Food secure	Total
Share of monthly expenditure on food commodities				
Bread/flour/ cereals/grains	28.5	23.7	15.7	19.9
Fresh vegetables	5.1	5.8	5.8	5.6
Poultry	3.7	4.3	5.1	4.6
Milk /dairy products/butter/ghee	2.6	3.2	4.3	3.7
Pulses (beans, lentils, cowpeas…)	1.0	1.7	2.2	1.8
Fish	0.9	2.4	2.9	2.4
Meat	0.8	1.1	1.8	1.5
Fruits	0.6	1.0	1.8	1.4
Drinking water	0.9	0.6	0.9	0.9
Meals, snacks consumed outside home	0.3	0.4	0.5	0.4
Total Expenditure on FOOD	**44.7**	**44.1**	**41.0**	**42.3**
Share of monthly expenditure on non-food items				
Qat	10.0	11.6	13.2	12.2
Health, medication	12.2	9.9	7.5	8.9
Utilities (electricity, water, gas)	6.5	7.2	6.9	6.9
Transport (incl. fuel)	3.6	3.6	5.2	4.5
Cooking fuel/firewood	4.7	4.7	4.0	4.3
Repayment of debts	2.8	2.5	3.8	3.3
Soap, cosmetics, personal hygiene	3.8	3.2	2.8	3.1
Clothing	2.7	2.6	3.0	2.9
Rent	1.5	1.5	2.3	2.0
House construction, repair	1.1	1.8	2.2	1.9
Tobacco/cigarettes, sheesha	1.8	1.7	1.6	1.7
Education	1.7	1.5	1.6	1.6
Celebrations, social events	0.9	1.4	1.9	1.6
Veterinary expenses for farm animals	0.7	0.7	0.6	0.6
Business inputs/development	0.6	0.8	0.6	0.6
Remittances/gifts to help out relatives/friends	0.4	0.4	0.7	0.6
Farming equipment, seeds	0.4	0.5	0.6	0.5
Hiring labour	0.2	0.2	0.5	0.4
Communication	0.2	0.1	0.1	0.1
Total expenditure on non-food	**55.3**	**55.9**	**59.0**	**57.7**

Source: CFSS 2014

The overall expenditure pattern does not suggest significant changes between 2011 and 2014. Qat expenditure is currently over 12 percent, which is higher than expenses for health (8.9 percent) and education (1.6 percent). Only staple foods account for a greater expenditure than qat (Figure 42). Expenditure on qat has increased since 2011. Households in 14

governorates were found to allocate the largest shares on qat — more than 10 percent of their monthly expenditures — include Ad Daleh (18 percent), Al Jawf (17 percent), Abyan (15 percent), and Sana'a (14 percent), and Sana'a City (13 percent). Households in Hadramout and Soqatra, which are among the least food insecure governorates, have the lowest expenditure on qat (only about 1.5 percent).

Figure 42: Changes on expenditure on staples, qat, health and education, 2011 and 2014

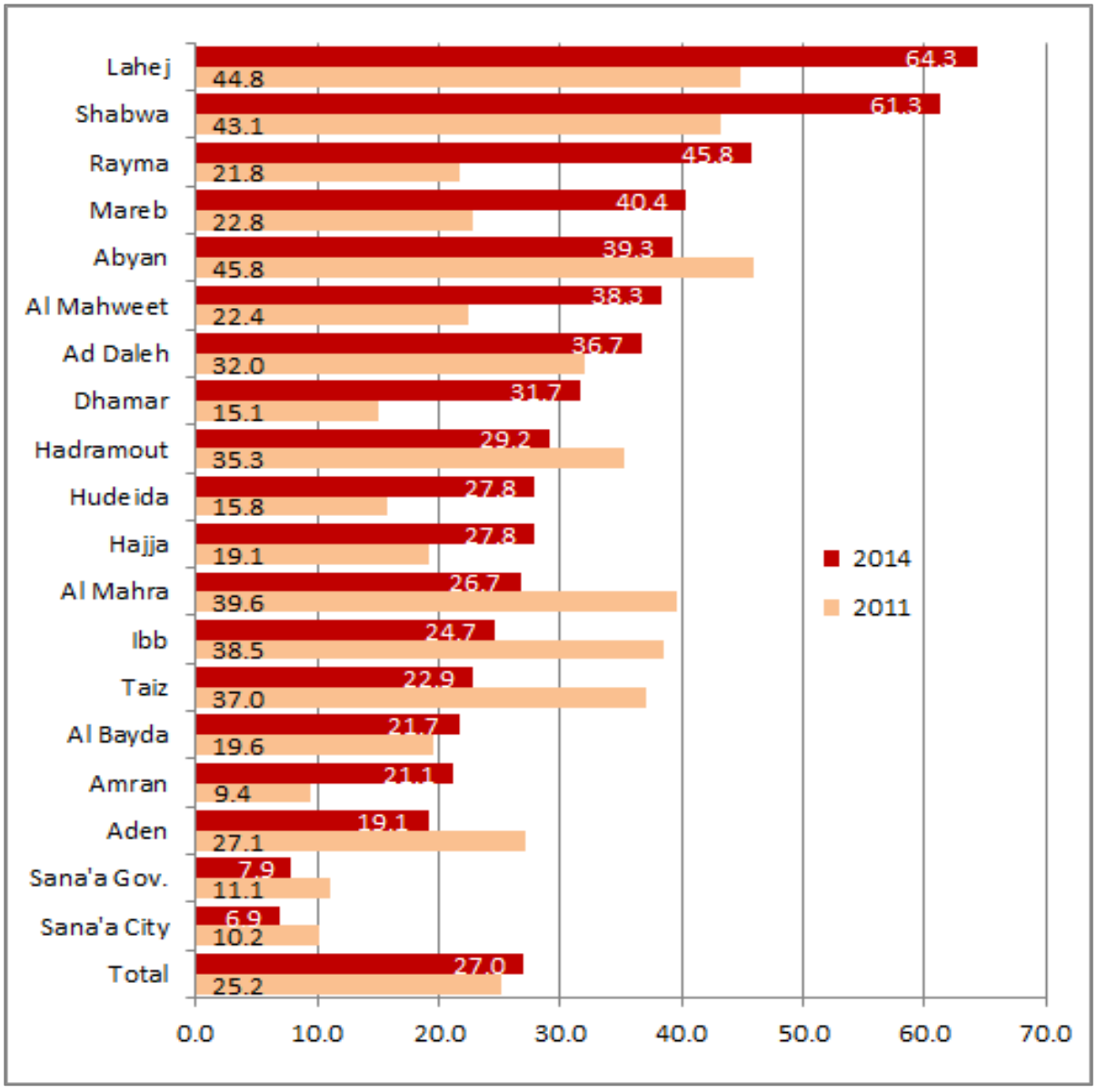


Source: CFSS 2014

Purchasing food on credit

As a result of poor income among significant proportion of households in Yemen, they are forced to buy their food on credit that increasingly lead them to high level of indebtedness. Those who are unable to get their essential needs on credit would end up using negative coping measures. Comparing the current use of credit with that in 2011, the overall average proportion of households accessing their food on credit increased slightly from 25 percent in 2011 to 27 percent in 2014, which would seem to make those populations more vulnerable to severe food insecurity. At governorate level, however, there are huge variations. The use of credit increased dramatically in Lahej, Shabwa, Rayma, Mareb, Al Mahweet, Dhamar, Amran and Hudieda governorates between 2011 and 2014. However, the situation in Ibb, Al Mahra, Taiz, Abyan, Hadramout and Aden has significantly reversed during the same period (Figure 43).

Figure 43: Changes in use of credit to purchase food by governorate, 2011 and 2014



Source: CFSS 2014

High level of debt

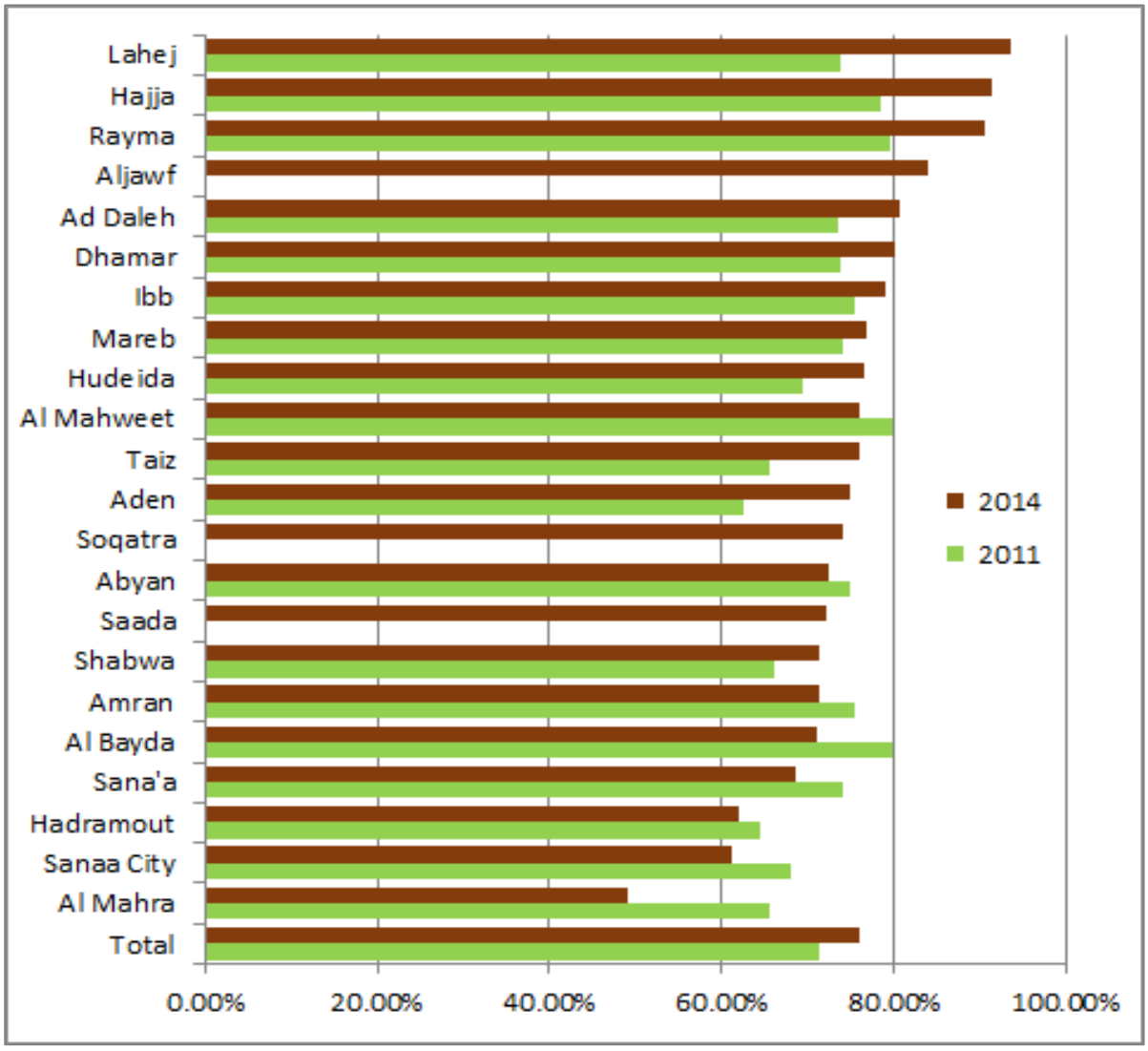
The proportion of households with debt remains high and is increasing. In 2014, a large proportion of households continued to suffer from the burden of debt as a result of increased use of credit, including for food and medical expenses. Nationally, 76 percent of surveyed households currently live with debt, of which 44 percent used their loans to buy food and 30 percent to cover health related expenses. This is an increase from 71 percent in 2011, although the proportion of households with food related debts reduced

The proportion of households with debt remains high and is rising

by 8 percentage points while those with health related loans increased by same magnitude. The sustained high use of credit has also increased the debt levels of food insecure households, thereby also increasing their vulnerability. Looking at the results at governorate level, over 80 percent of households are in debt in Lahej, Hajja, Rayma and Al Jawf. The lowest proportion was found in Al Mahra (45 percent). Households in 11 out of 19 governorates are in greater debt now than they were in 2011.

Most governorates have seen a major increase in the percentage of households who are currently indebted compared to 2011 (Figure 44). These include Lahej, Rayma, Hajja, and Ad Daleh, while Al Bayda, Sana'a City and Al Mahra have seen reduced debts over the same period. Over 50 percent of households in nine governorates reported that the loans they have taken were to buy food, and almost all household debts in Amran were food related.

Figure 44: Changes in proportion of households with debt by governorate (2011 vs 2014)



Source: CFSS 2014

But 85 percent of severely food insecure households have loans to repay compared to 78 percent from the moderately food insecure and 72 percent of the food secure categories. Of all currently indebted households, 48 percent of debt is food related in food insecure households, while the figure stands at 44 percent for moderately food insecure and 42 percent for food secure households.

Poor WASH facilities and practices

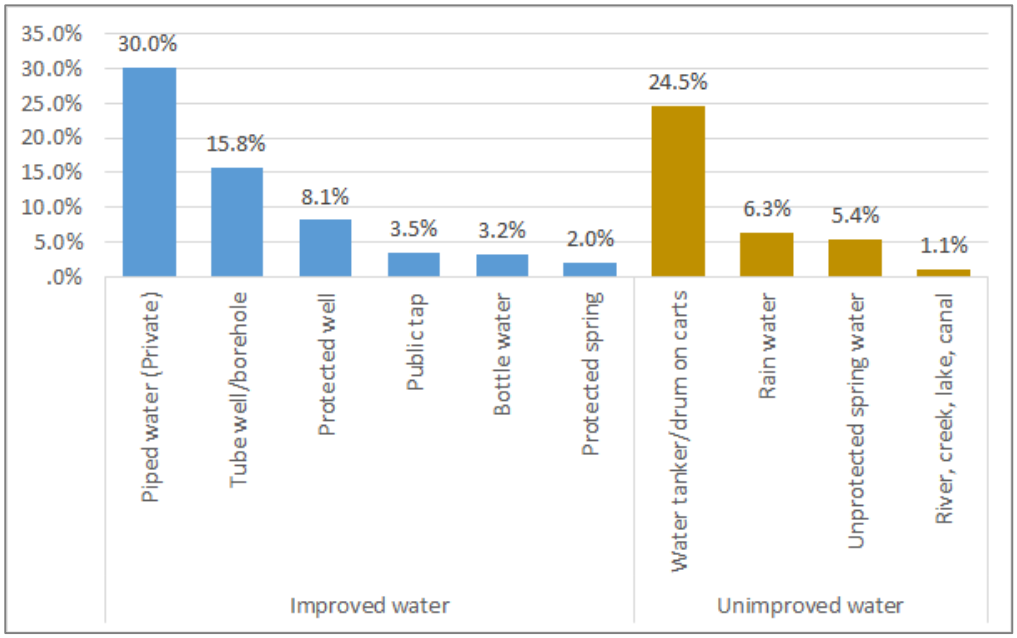
Household amenities, such as water, hygiene and sanitation facilities, and sources of fuel for cooking and lighting, are important indicators of socioeconomic status and can help identify the most vulnerable households. In addition to providing an indication of relative wealth, patterns of household ownership of such services and facilities are essential in a food security analysis, because they offer a valuable insight into potential health and nutrition implications.

Access to safe drinking water

The use of unimproved drinking water and sanitation facilities[28] aggravates the likelihood of the presence of acutely malnourished children and women in the household. CFSS results show that 65 percent of households nationally had access to sources of water, with Al Mahra and Abyan governorates having the highest proportion of households with access (over 95 percent). At just 30 percent, Sa'ada had the lowest. However, access to safe drinking water appears to have deteriorated between 2011 and 2014 with pronounced differences between urban and rural areas. At the national level, 37.4 percent of the population drinks from unimproved water sources (Figure 45), which is up from 22.3 percent three years previously. In 2014, nearly 70 percent of urban dwellers enjoyed access to improved water, compared to 60 percent in rural areas. The widespread use of unimproved drinking water in Yemen, even among better-off households, is an underlying factor of the persistent high malnutrition rates that prevail across all socioeconomic groups.

[28] Based on the UNICEF definition of improved and unimproved drinking water sources and sanitation facilities, except for bottled water, which the 2014 CFSS like in 2009 and 20122 classified as improved. See www.who.int/water_sanitation_health/monitoring/oms_brochure_core_questionsfinal24608.pdf.

Figure 45: Percentage of households accessing various sources of water for drinking



Source: CFSS 2014

Most households in Al Mahra (over 80 percent) and Amran (around 75 percent) were found to use unimproved water, while almost all households in Aden and over 90 percent in Hadramout had access to safe drinking water.

Despite the fact that the majority of households have improved water sources, they are not getting enough water due to frequent interruptions and obliged to use unwanted/unsafe sources, according to the information from community interviews.

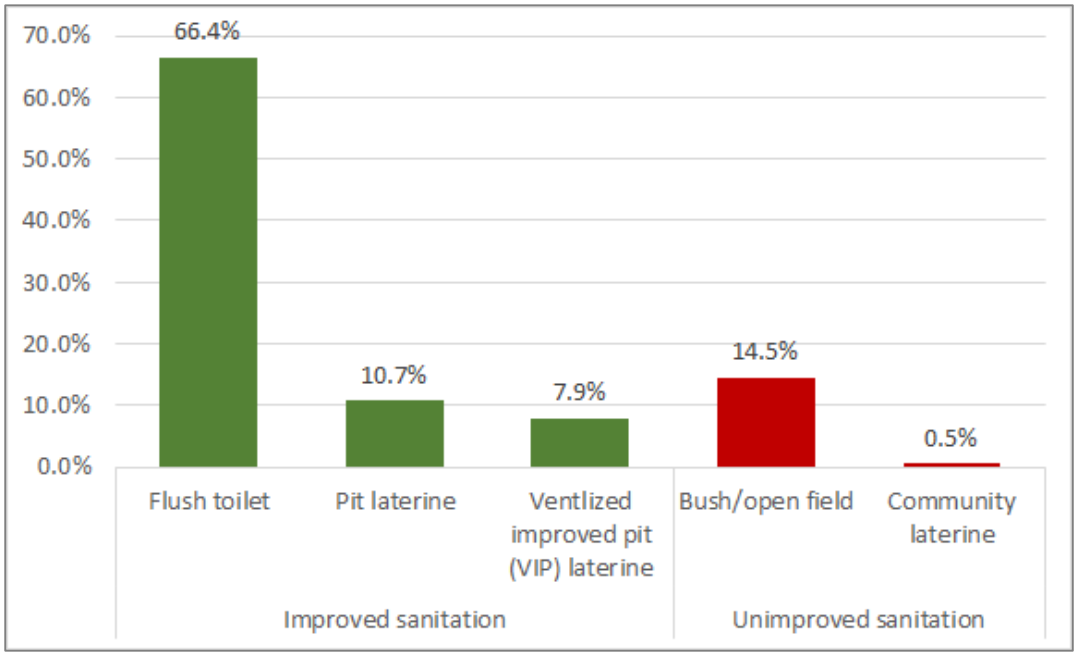
Sanitation

Proper sanitation facilities and practices are among the most important factors that promote a population's health status. Most of Yemen's population relies on groundwater and collected rainwater for drinking water, and lack of access to improved sanitation facilities has a number of health related consequences. Cisterns are replenished by rainfall, which may wash human and animal excreta from the catchment area into the cisterns. Water-related and water-borne diseases have been traced to the use of contaminated water in cisterns.

Most people rely on groundwater and collected rainwater for drinking water

The CFSS findings revealed that about 66 percent of households in the country currently have access to flush toilets. The study further indicated that 85 percent of households nationally could be categorized as having improved sanitation facilities (Figure 46). The figures are 95 percent for urban areas and 80 percent for rural areas. Households without sanitation facilities make up 15 percent of the total, a slight improvement from 2009 when it was 19 percent.

Figure 46: Percentage of households using various types of sanitation facilities



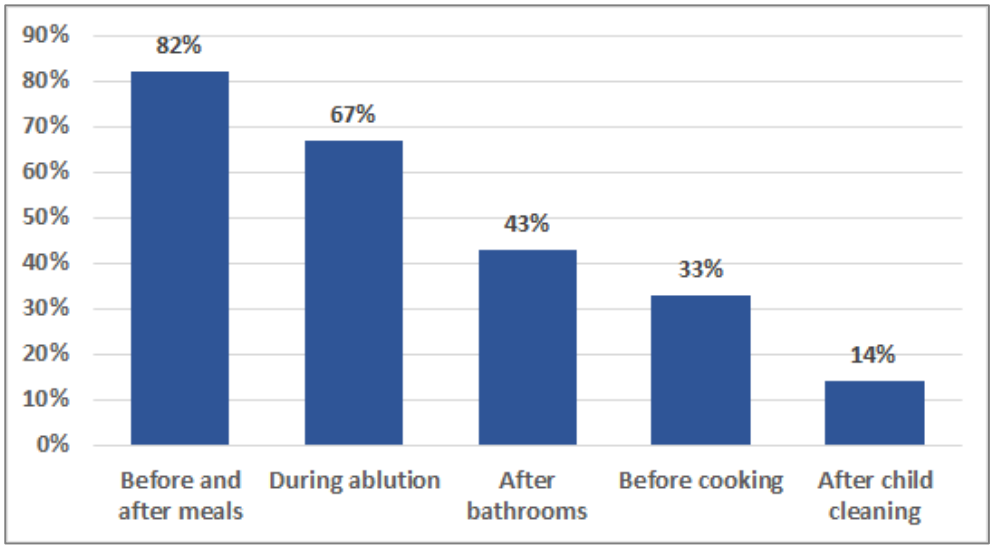
Source: CFSS 2014

Improvements have been seen in both rural and urban areas, with a significant fall in the share of households without access to any sanitation facilities. These improvements, together with better personal hygiene and access to improved water supplies, partially explains the small overall reduction in prevalence of acute malnutrition in Yemen. At governorate level, over half of households in Hajja are currently using unimproved sanitation followed by Soqatra and Al Mahweet while almost all households in Aden and Sana'a City are using improved sanitation facilities. Although households reported during the survey as having good types of sanitation facilities, further in-depth information from community discussion revealed that there is no enough water to use the services properly.

Hygiene

In terms of personal hygiene, about 82 percent of households reported that their family members wash their hands before and after meals. Sa'ada governorate has the lowest level of hygiene practice, with some 45 percent only washing their hands before and after meals (Figure 47). Washing hands differs remarkably by various types of activities across the governorates. The proportion of households that use various types of soaps (hard and fluid soaps) stands at just 43 percent. A far lower proportion of rural households wash their hands than their urban counterparts.

Figure 47: Percentage of households with members washing hands



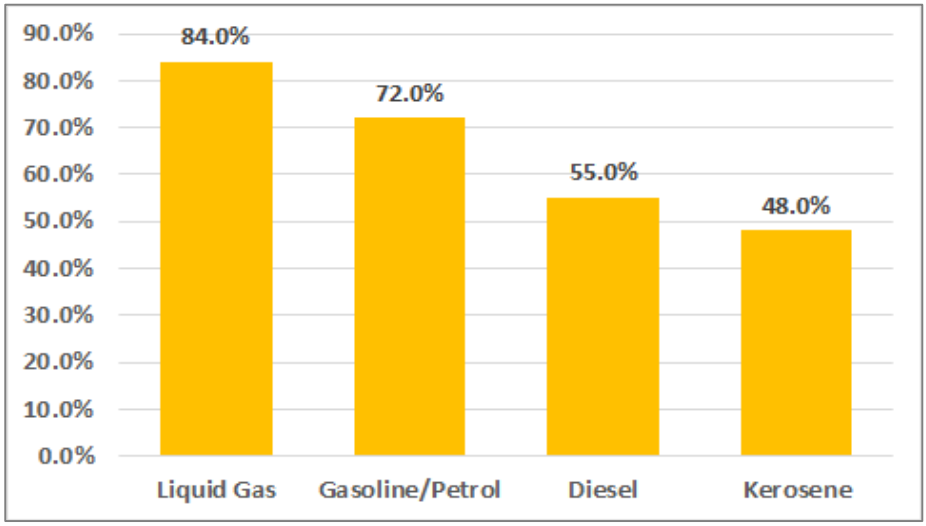
Source: CFSS 2014

Shortage of fuel and high prices

Availability of fuel

The study found a mixed pattern on availability of fuel. Liquid gas is far more available than the other types of fuel, with kerosene the least available (Figure 48).

Figure 48: Fuel availability in markets

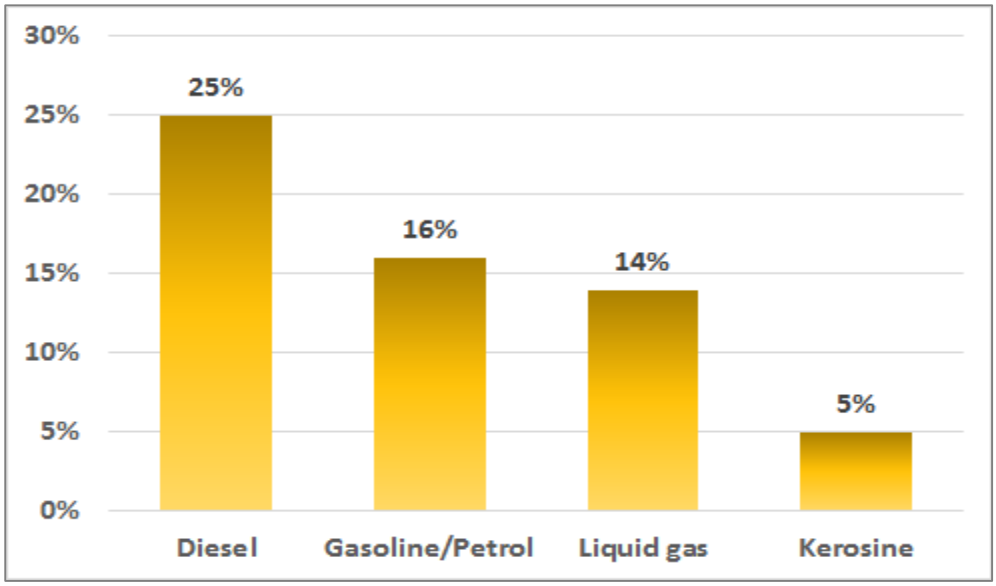


Source: CFSS 2014, Traders Survey

Domestic fuel prices

Although the government plans to remove the fuel subsidy, the prices of fuel have remained unchanged at government fuel stations at the time of preparing this report. But there is huge scarcity of fuel across the country. That has led to hoarding and black market trade and, consequently, higher prices. At the time of data collection, traders reported that fuel prices increased by between 15 percent and 25 percent (depending on the type of fuel) over the previous year (Figure 49).

Figure 49: Prices of different types of fuel in Yemen, 2014



Source: CFSS 2014

The main reasons for the rising prices of commodities, according to traders, are increases imposed at the source of purchase (65 percent) and higher costs of transportation (25 percent). Over 70 percent of the traders said that selling prices are determined by local retailers, while 20 percent said wholesalers fix the prices. Others attributed the increases to, for example, the government and traders outside the market.

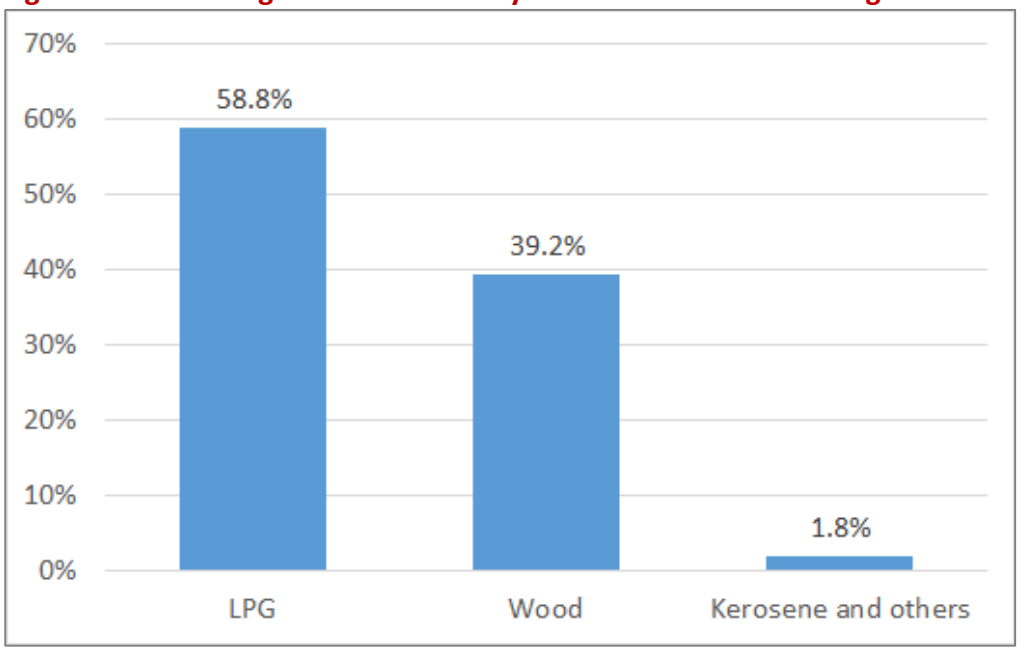
According to WFP's May 2014 market watch report, the supply of essential food commodities have continued to be normal in most markets. The exceptions are those parts of the country experiencing escalated conflict and increased transportation costs. Consequently, both wholesale and retail food prices rose significantly between April and May 2014. As households' purchasing power has weakened with the ongoing armed conflict and rising domestic food and fuel prices, the food security situation of poor households, who mainly depend on food purchases, remains precarious.

Sources of fuel for cooking

Access to fuel for cooking is one of the factors affecting the utilization of food which in turn impacts the food security status of households. According to the information gathered through the CFSS on the sources of fuel for cooking, LPG is the most common type of energy households' were using to cook their food – nearly for 60 percent of households (Figure 50).

The Government of Yemen controls, subsidizes, and occasionally adjusts fuel prices. In 2005, the government initiated a reform on fuel price subsidies but stopped following widespread violent protests. In July of that year some 39 people were reportedly killed and more than 300 were injured in riots sparked by the fuel price increases. When the price of diesel doubled in April 2012, farmers protested by blocking roads. The prices were then re-adjusted but only after the lives of over 20 protesters had been lost and 200 people injured.[29]These historical incidences and the current unrest in the country which was started partly due to the removal of fuel subsidy clearly show how sensitive such reforms are and can quickly lead to national level insecurity and violence.

Figure 50: Percentage of households by sources of fuel for cooking



Source: CFSS 2014

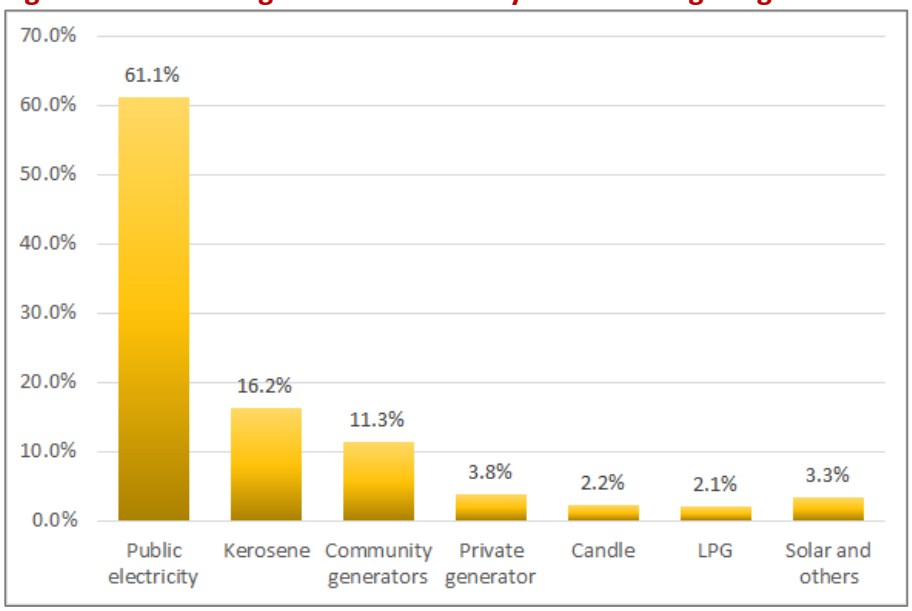
Sources of lighting

Based on information collected from surveyed households, public electricity is by far the main source reported by over 60 percent of households nationally (Figure 51). About 90 percent of households in urban areas have access to public electricity, but only about 50 percent for rural areas and remarkable differences among the governorates. The second and third important

[29] Source: Kojima, Masami. (2013, forthcoming). "Petroleum product pricing and complementary policies: Experience of 65 developing countries since 2009." Washington DC: World Bank.

sources of light are Kerosene and community generators. In recent months, frequent power interruption has been observed as a big challenge for those depending on it.

Figure 51: Percentage of households by sources of lighting



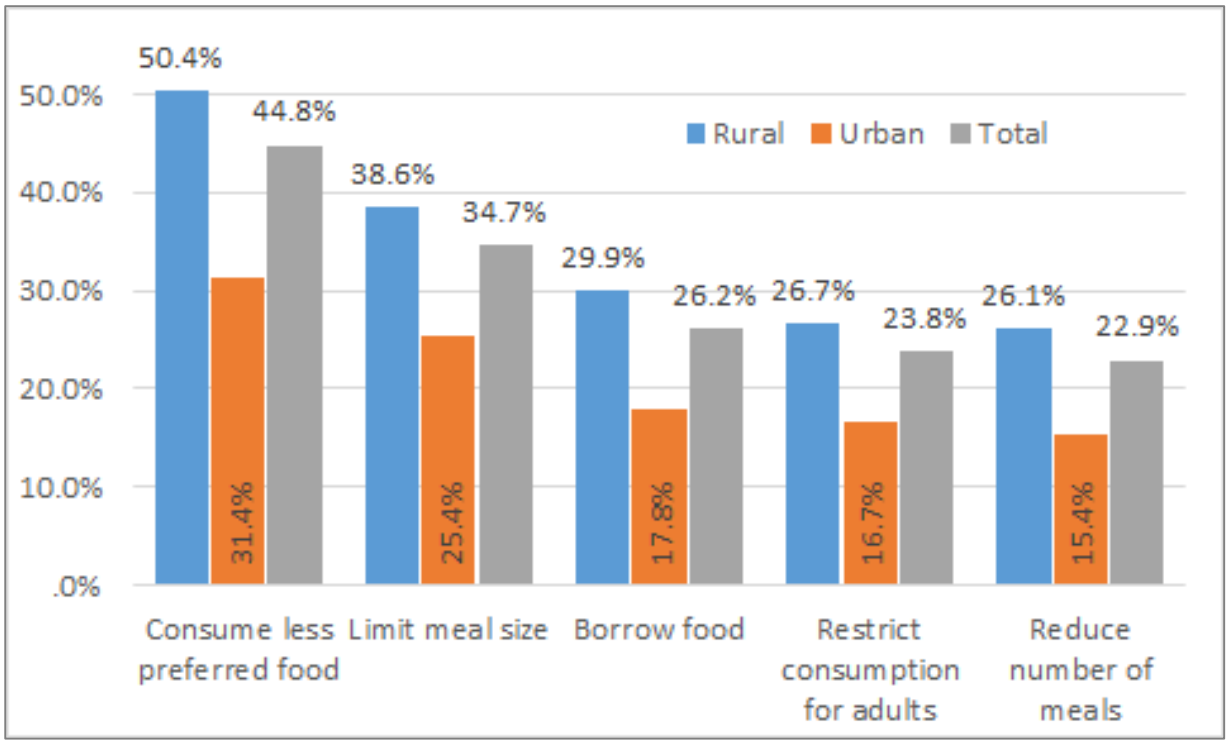
Source: CFSS 2014

Although the main source of lighting for most of the households is reported to be public electricity, continued cuts has left the population in desperate situation not only for lighting but also other livelihoods activities.

Coping strategies used by vulnerable groups

Households with food shortages were forced to use a range of coping strategies, mainly consumption-related mechanisms that include consuming less preferred and less expensive food items, limiting the size of meals, reducing the number of meals, and restricting adults' consumption in favour of children. Rural households were found to be the worst-off in terms of using such destructive measures than those in urban areas (Figure 52).

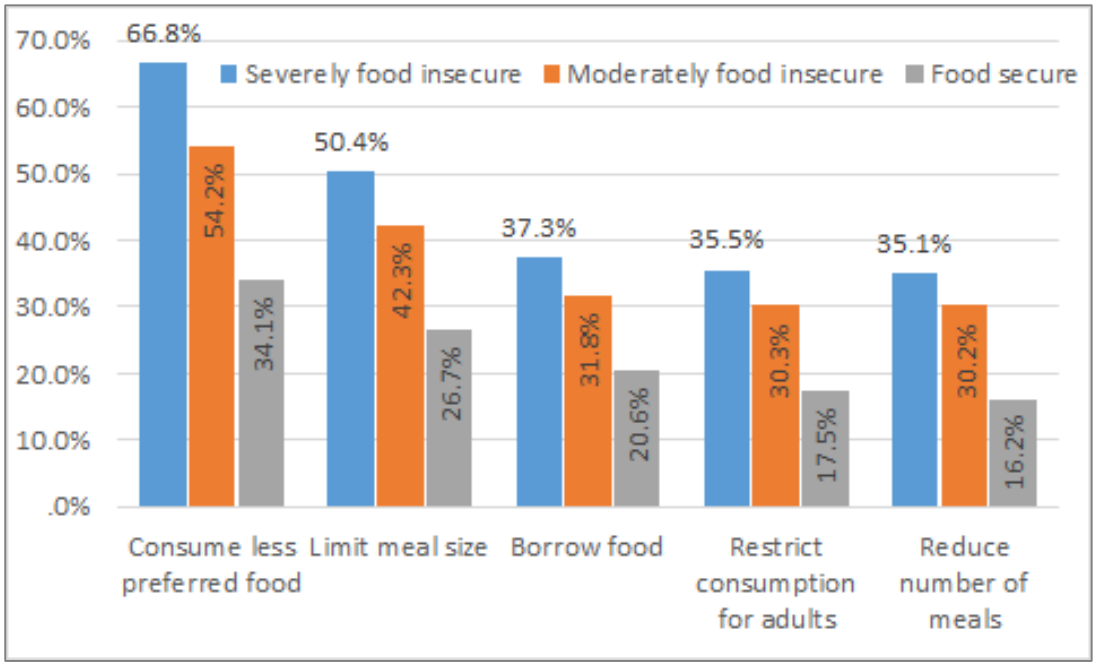
Figure 52: Household coping strategies, urban/rural (2014)



Source: CFSS 2014

Severely food insecure households appear to use the most consumption-related coping mechanisms. For instance, consuming less preferred food – the most common coping strategy in all households – is far more prevalent in severely food insecure households. The proportions here are 67 percent compared to 54 percent for moderately food insecure and 34 percent for food secure families. Limiting the size of meals is the second most used coping strategy for all groups, although the use of this strategy is more prevalent in severely food insecure households (Figure 53).

Figure 53: Household food security status and coping strategies (2014)

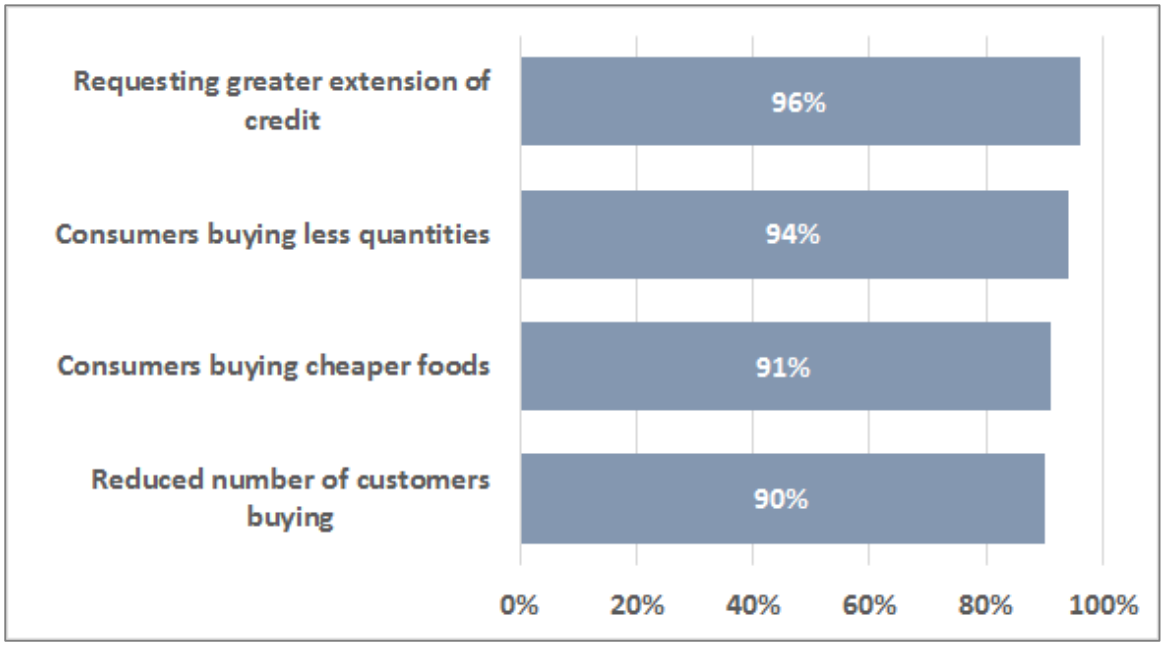


Source: CFSS 2014

Changes in consumers' purchasing behaviour

A dramatic change in consumers' purchasing behaviour was also reported by traders who were interviewed during the survey. This is consistent with the survey's findings on household coping strategies. For instance, consumers are purchasing lower quantities of foods than in the same period of 2013 (Figure 54). Traders – mainly retailers (over 80 percent) – have been negatively affected.

Figure 54: Changes in consumers' purchasing behaviour



Source: CFSS 2014

The reduced Coping Strategies Index (CSI) was used as an additional proxy indicator of household food security to better understand how Yemenis cope in response to food access constraints. Households were asked on how many of the preceding seven days they did not have enough food or money to buy food. Responses were categorized as follows:

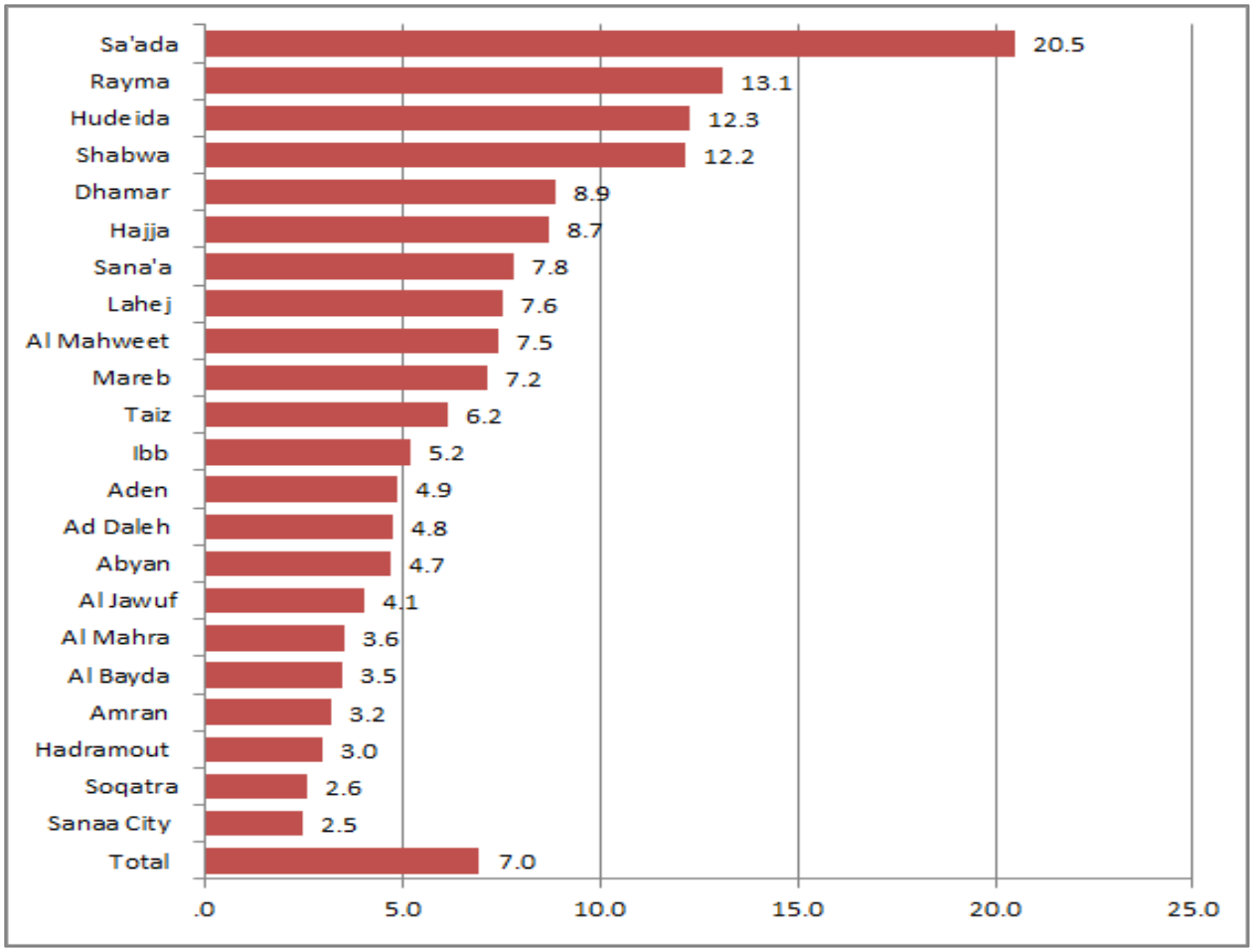
- Rely on less preferred and less expensive food;
- Borrow food or rely on help from friends/relatives;
- Limit portion size at meal times;
- Restrict consumption by adults in order for small children to eat; and
- Reduce the number of meals eaten in a day.

The CSI is a standard indicator in WFP's food security analysis. It is based on information from households who use consumption-related coping strategies when they encounter food shortages. The CSI is calculated as a weighted average of five coping strategies, illustrating the intensity and severity of mechanisms:

- Eating less-preferred foods (1.0);
- Borrowing food/money from friends and relatives (2.0);
- Limiting portions at mealtime (1.0);
- Limiting adult intake (3.0); and
- Reducing the number of meals per day (1.0).

The higher the CSI value, the higher the degree of food insecurity. Analysis finds Sa'ada governorate, with a CSI value of 20.5, to be the most food insecure.

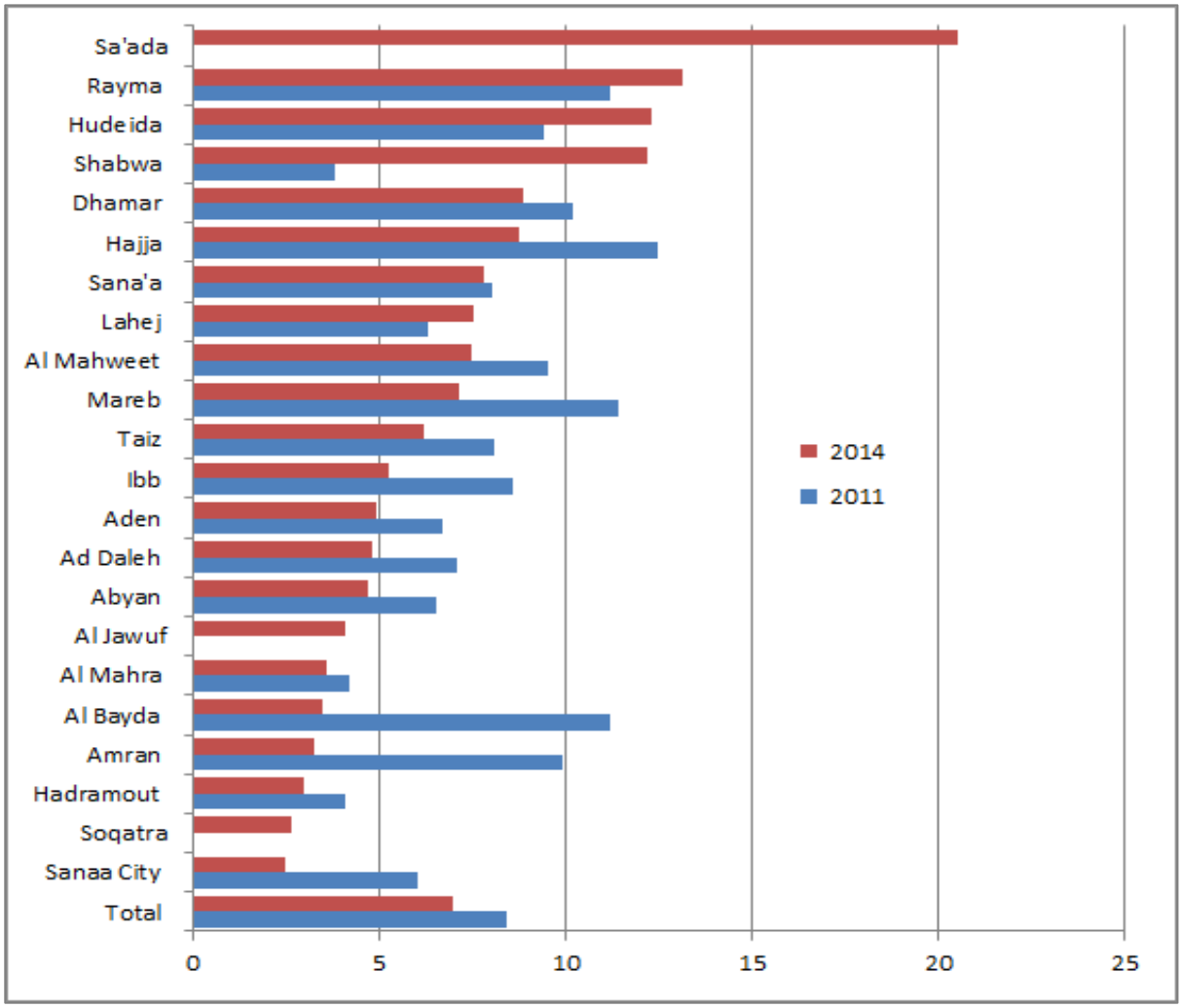
Figure 55: Coping strategies index, by governorate (2014)



Source: CFSS 2014

Next in order of food insecurity are Rayma, Hudieda and Shabwa with CSIs of 13.1, 12.3, and 12.2, respectively. Sana'a City, Soqatra, Hadramout and Amran are among the lowest in their CSI, illustrating that they are better off (Figure 56). Rural areas have a CSI value of 7.8 compared to 4.8 for urban areas, while the overall national level CSI is 7.0. The CSI value for severely food insecure households (13.2) is much higher than the other two groups – 8.6 for moderately food insecure and 4.4 for food secure households. This clearly shows how serious the situation is for severely food insecure groups. Looking at the changes in the CSI between 2011 and 2014, the study found a slight reduction. Nationally, the CSI decreased from 8.4 in 2011 to 7.0 in 2014. The CSI increased in Shabwa, Hudieda, Rayma and Lahej governorates and declined in all the others.

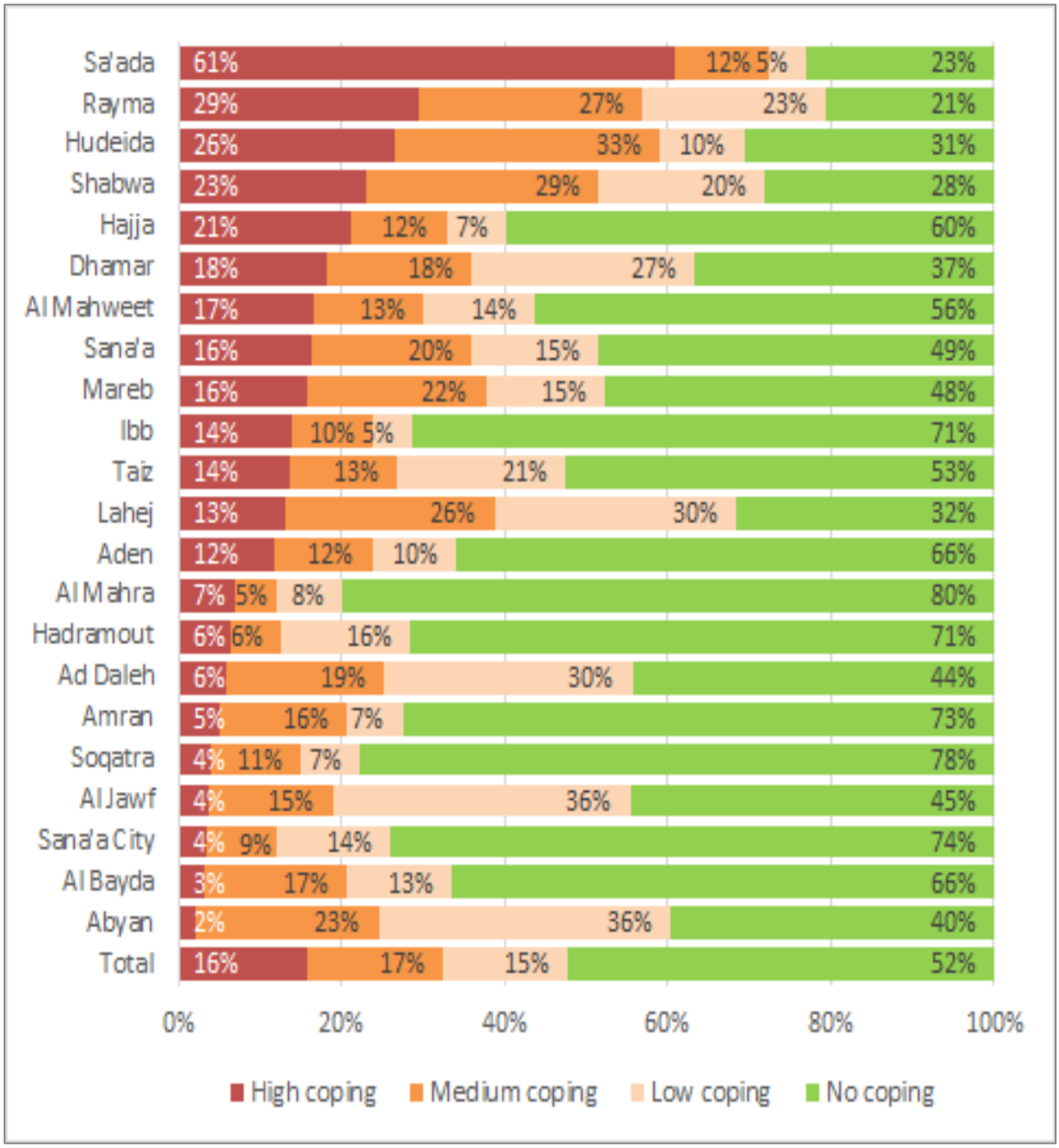
Figure 56: Changes in coping strategies index, by governorate, 2011 to 2014



Based on the values of the CSI, households were reclassified into three groups, or terciles (low, medium and high levels of using coping strategies[30]). The reclassified results show that households in Sa'ada appear to use significantly more coping mechanisms (61 percent) than those in other governorates. It is followed by Rayma (29 percent), Hudeida (26 percent) and Shabwa (23 percent) (Figure 57). Urban households have a 10 percent share in the use of high coping mechanisms, compared to 18 percent of rural households. Severely food insecure households, which make up 30 percent of households in the high coping terciles, demonstrated the highest coping strategies of the other two groups – 20 percent high coping for moderately food insecure and only 10 percent of the food secure households are found in the high coping terciles. Refer to the annex for more details on the CSI and terciles.

[30] Terciles are defined by arranging the CSI data in ascending order (lowest to highest) and then partitioning the data into three equal sized groups. For example, if the CSI values range from 0 to 60, the first/lower tercile would contain the CSI values 0-20, the second/middle tercile would contain CSI values 21-40, and the last/upper tercile would contain CSI values 41-60. Therefore, the lower third of the CSI values are classified as the lower tercile, the middle third of the CSI values are the middle tercile and the upper third of the CSI values are the upper tercile. Finally, the percentage of households falling under each of these terciles were categorized accordingly – those falling under lower terciles are called "households with no or low level of using any coping strategies"; those who have fallen under the middle tercile are classified as "households with medium level of using any coping mechanisms," and those under the upper tercile are termed as "households with higher level of using any coping strategies".

Figure 57: Level of coping strategies used by households in 2014 by governorate



Source: CFSS 2014

Recommendations

The findings of the current Comprehensive Food Security Survey (CFSS) show that the level of food insecurity in Yemen remains very high – although the overall proportion of the food insecure population declined slightly – from 45 percent in 2011 to 41 percent in 2014. However, the number of food insecure people remains the same as in 2011. Currently, about 10.6 million people in Yemen are food insecure of which 19 percent of the population (or 5 million people) are severely food insecure and 22 percent (5.6 million people) are moderately food insecure.

Over half of the population does not have enough food, or money to buy food, to meet the minimum nutritional needs to live a healthy life. As a result, a remarkable proportion of the vulnerable households used negative coping mechanisms, including consumption related strategies and buying their food on credit that make them highly indebted. The level of acute and chronic malnutrition among children and women remains as high as recorded in 2011 due to poor dietary intake and diversity as well as health related problems associated with a lack of adequate services including water and sanitation utilities and health care facilities.

The limited availability of land suitable for cultivation and water scarcity, caused by low and declining groundwater levels have negatively affected food production, food security and rural incomes. In addition to these and – more importantly - the various forms of ongoing conflict, economic downturn, low agricultural productivity which led to huge dependence on food imports and increased vulnerability to international food price fluctuations, and the high level of poverty, plus a rapidly growing population as well as environmental degradation and depletion of natural resources fuelled by the impacts of climate change make Yemen one of the most food insecure countries in the world. The national macro-level food insecurity status has even worsened in the last two years as revealed by IFPR's Global Hunger Index (GHI) – the country was ranked as the world's 11th most food-insecure country in 2011 but deteriorated further to eighth spot in 2014.

Because Yemen's transitional government has been overwhelmingly engaged in the process of political reconciliation in its effort to bringing peace and stability in the country through the national dialogue conference, insignificant effort has been given to socioeconomic development activities since the 2011 crisis. Consequently, most of the underlying causes of the high level of food insecurity and malnutrition identified during the 2011 CFSS have remained unchanged, resulting in the persistence of the problems in 2014 and beyond.

The humanitarian interventions that predominantly targeted populations with severe food insecurity as well as children and women under critical malnutrition levels have only managed to address immediate life-saving needs, which helped to improve the situation slightly. Although some progress has been made in the process of implementing the national food security strategy, the country is still nowhere in addressing the root causes of food insecurity and malnutrition, which require a long-term multi-sectoral development interventions. The huge challenges related to political instability and widespread ongoing conflicts have put the country in a standoff and are even feared to further worsen the precarious situation that left the nation with so many uncertainties about its future.

The complex nature of the multi-faceted challenges that the country is currently facing requires multi-dimensional urgent humanitarian as well as medium- and long-term development responses. As the findings of the current CFSS are by-and-large similar to that of the 2011, most of the recommended actions in the 2011 CFSS report are still considered valid in responding to the results of this survey. Accordingly, the following actions are recommended.

Immediate actions required

Based on the recently signed peace agreement among the different political parties and the outcomes of the NDC, the government and the various factions in the country with the support of the international community need to resolve the current unrest in the country and restore peace, stability and security which is the fundamental requirement for all the effort in addressing the immediate humanitarian needs and the root causes of food insecurity and malnutrition through long-term development-oriented interventions.

Despite the current challenging context, immediate humanitarian responses need to be put in place to save lives and protect livelihoods. These interventions should target at least the 5 million people identified as severely food insecure through different forms of assistance and relevant modalities based on the specific context and needs of the affected population. In addition to this, targeted supplementary food assistance and nutrition interventions need to be urgently provided for malnourished children under five years old and pregnant/lactating women to reduce the current level of malnutrition and improve nutritional status of these vulnerable groups.

Short term actions

Donors and humanitarian aid agencies have recently made a strategic shift from relief assistance to resilience enhancing interventions in order to build and strengthen the economic and livelihood capacity of vulnerable groups of Yemen's population, thereby enabling them to withstand future shocks and difficulties. These initiatives need to be based on the specific needs and context of governorates with respect to their food security condition and appropriate aid modalities. The specific resilience enhancing projects should be harmonized with the country's priorities and implemented in coordination with the relevant government institutions.

Medium/long term actions

The government, in collaboration with its development partners, need to implement the activities that are well developed and described under the national food security strategy document and the national agricultural and trade policies, as well as the poverty reduction strategy and other sectoral policies and strategies in order to address the underlying causes of poverty, food insecurity and malnutrition.

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