Market Assessment

Darfur

April 2014
Data collected in December 2013

WFP
World Food Programme
wfp.org

MARKET ASSESSMENT IN DARFUR

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Executive Summary

I. After more than a decade of prolonged crisis, there are nearly 2 million people internally displaced in Darfur. Despite timid signs of recovery, the market environment remains fragile and the availability of food items mostly dependent on good harvests. Banditry and the advent of armed opposition in the region further contribute to stretch the movement of people and goods, with far-reaching poverty growth.

II. On top of its complex and large operations in Darfur, WFP has introduced vouchers in 2011, and has progressively expanded the use of market-based food assistance since then. At the beginning of 2014, WFP assisted more than 354.1 thousand beneficiaries with vouchers, and has planned to expand its assistance to additional 142.9 thousand people.

III. The objectives of this market assessment were threefold: a) to assess the capacity and potential of Darfur's local markets for cash and voucher programming and to compare with the 2014 expansion plans; b) to estimate the impacts of the planned 2014 voucher expansion on local markets and prices; c) to review the impact of the 2011-2013 voucher programs on markets in Darfur.

IV. Considering that agricultural performance and insecurity are the major factors hindering the market functioning in Darfur, the major findings of the assessment are as follows.

Are market based interventions potentially conducive in Darfur?

V. The report investigated whether food security outcomes of vulnerable people in Darfur may be leveraged by means of market interventions to return some non-anecdotal evidence to support programme decision and eventually highlight the IDP camps where circumstances from a demand-side perspective are potentially more favourable.

VI. Overall, the results confirm the goodness of the site-specific approach undertaken by WFP Country Office in Sudan, mostly targeting the locations where more vulnerable population live (*e.g.* camps or mixed-communities) and where the purchasing power leverage may be effective to improve the overall food security of households.

VII. Out of the 65 sentinel locations in Darfur, voucher programmes have been introduced in Kebkabiya, Abu Shouk, Otash, and in Saraf Omra camps; all showing not only higher food consumption scores as compared to the average, but also improving trends (with a mild exception in the latter camp). From a household perspective, market based interventions seems to be properly grounded in Dorti camp within the planned C&V expansion sites in 2014.

Is appropriate food available in sufficient quantities and at reasonable prices?

VIII. The 2013/14 harvest season ended up in a failure in most of the Sudan. Total cereal production is estimated at 2.9 million metric tons, which is about 48 percent of last year production and 68 percent of the last 5-year average. The likely cereal gap will be of about 3 million metric tons.

IX. Unless the country will be able to import adequate amount of food to compensate the production setback and put in place adequate measures to support markets using its strategic reserves, there are growing fears of an overall food availability issue for the remainder of the marketing year.

X. The analysis of macroeconomic indicators does not return a comfortable evidence on the likelihood to fully implement such measures, as the overall economic performance is being affected by the slow-down of oil production and a growing external debt stock estimated at 87.6 percent of GDP in 2013. As a matter of fact, the Sudanese pound got further depreciated against the US dollar and its value is still lower compared to the unofficial exchange rate, *de facto* further increasing the price of imported goods. Moreover, the lift of fuel subsidies further boosted inflation up to 42.6 percent in November 2013.

XI. Worrisome signs of this are clear in the feverish levels achieved by prices of sorghum and millet in almost all markets in the country. Actually, prices as of March 2014 have achieved '*crisis*' levels according to WFP warning scale called ALPS in all Darfur, with retail prices in Eddaein, Nyala and Fasher at record levels since the past five years.

Are food markets sufficiently integrated so that food will flow to deficit/target zones?

XII. Millet and sorghum are the main food staples. The Darfur contribution to the national output is fairly marginal for sorghum (on average below 10 percent), while for millet is substantial (close to 60 percent). Thence, occurring a very poor local production (-44 percent from the 5-yr average), millet will be likely substituted with sorghum. However, as sorghum is poorly available in the rest of Sudan, price tensions will spread across commodities and markets.

XIII. Specifically, high prices in Central Sudan (*i.e.* El Obeid) are being transmitted primarily to Eddaein and Fasher, to eventually reach Nyala. All markets behave similarly under stressed circumstances, with Fasher, Nyala and Eddaein prices converging, while Geneina and Zalingei follow the same trends but at lower levels.

XIV. Current reliance to bring food from elsewhere in Sudan is further challenged by poor infrastructures, flooding and insecurity; market 'accessibility' is a relevant issue for traders operating in Darfur, as reaching detached markets may either be unfeasible or embed additional costs that have to be transmitted to customers.

XV.   The markets of Zalingei, Kass, Saraf Omra, and Kabkabia are quite connected one each other, being in the range either of Geneina or Nyala, which are their reference markets. The latter has a wider catchment area, being fairly close to Eddaein, Gereida and Dar El Salam, thus confirming how these three markets are quite disconnected from the broader trading network in Darfur. Fasher market is rather standalone, as its weak connections with other relevant markets in Darfur are challenged by increasing insecurity along the road.

Have traders appropriate contingency options in place in case of tight availability?

XVI.   Traders confirm the meagre agricultural performance, reporting reduced sales from last year, and ascribing it to a broader availability issue. With the conventional supply chains under stress, most cereal traders are not able to cope with supply restraints, as they usually operate with poorly or nil diversified provision channels, possibly reducing the steps along the supply chain.

XVII.   At least one-third of traders do not have any supply network to secure supply in case of poor local production, while another third and more is constrained either locally or to Darfur only, thus creating a huge covariate risk when setbacks are widespread, as it is actually the case.

XVIII.   As such, almost 81 percent of retailers may not be able to meet demand. Differently, those dealing both as wholesalers and as retailers appear more geared-up and may have similar operational capacity as compared to bigger wholesalers.

XIX.   Indeed, traders have to deal with mounting costs to adapt to the volatile environment in Darfur. Reportedly, trading routes are further stressed by rising uncertainty over transport time, as checkpoints and compulsory escorts dramatically delay commercial trucks. Poor mitigation measures are usually in place in case of losses along the way.

XX.   As a result of this stretched cost composition in addition to the environmental constraints, traders may have limited or null capacity to withhold increases of prices occurring a demand shock (with additional beneficiaries in the WFP voucher program) on top of the ongoing supply shock.

Can traders respond to any increase in the effective demand?

XXI.   Reportedly, the great majority of traders (in particular wholesalers) claims to usually have the capacity to deliver with an increased demand by 25 percent within one or two weeks; moreover, half of the traders asserts to have never handled poor supplies despite the stock replenishment time is generally low (one week).

XXII. Still, when controlled with other data sources, traders' deliver capacity may be an issue, in particular when assessed against WFP voucher expansion plans and a conservative threshold of 25 percent increased supply capacity is defined.

XXIII. In Fasher, the estimated market capacity with more than 100 thousand new beneficiaries in the voucher program should be in the order of 50 percent or more of the current local production. The resulting competition level between beneficiaries and not beneficiaries is quite sustained, especially if the whole additional supply should come from elsewhere Fasher area, thence further stressing the already stretched logistics around the town.

XXIV. Geneina market seems fairly capable to deliver an additional 25 percent of cereals even with current reduced local production. When the additional demand is estimated, 20,000 additional beneficiaries should be in the conservative threshold of 25 percent, thus the markets seems fairly conducive to progressive voucher expansion.

XXV. Despite the security deterioration in Nyala, cautious evidence seems to be in favour of vouchers, as traders might be able to deliver an additional 18,167 metric tons.

XXVI. Finally, in Eddaein, the market capacity should not exceed 40/50,000 beneficiaries to avoid falling outside the conservative 25 percent threshold. However, the volatile security situation may partially limit the assessed traders' capacity.

Is it likely that vouchers have contributed or will contribute to rising purchasing prices?

XXVII. An impact evaluation model was estimated for Fasher, where an overall 72 percent of total WFP beneficiaries are being assisted with vouchers.

XXVIII. Price increase of sorghum, sorghum food aid and milled was striking since the recent inclusion of Zamzam camp in the program; yet, this upturn is relatively smaller as compared to September 2013, when fuel subsidies were drastically cut down; moreover, the price increase should be evaluated also against the background of the poor 2013/14 agriculture season.

XXIX. Yet, millet and sorghum prices are also partially influenced by the whole set of WFP operations (both in-kind GFD and vouchers). When local production is poor, the model confirms that markets in Fasher are unable to fully absorb the increased demand, thus driving millet prices up. The current local supply-gap triggers sorghum price up as well, even though to a lower extent.

Recommendations

XXX. At the current increasing pace, prices should be monitored with high frequency. If government plans related to the strategic reserves are not

effective to release prices, there will be likely implications on the transfer values, overall operational budget and number of beneficiaries reached that may be worth considering in a contingency plan.

XXXI. Provided the actual on-going voucher programmes and the current overall trading capacity, consider to balance the number of beneficiaries within Darfur states, thus temporarily slowing down the expansion plans in North Darfur to allow market functioning to adjust to the current beneficiaries' caseload.

XXXII. Taking into account usual price patterns and to avoid the misconception among beneficiaries that vouchers are primary responsible of driving the prices up, explore the feasibility of implementing future voucher programs at the beginning of the next harvest season - when price increase usually relent - if the agricultural prospects are fair.

Acknowledgements

Abbreviations and Acronyms

CBS	Central Bureau of Statistics of Sudan
CFSAM	Crop and Food Security Assessment Mission
IDP	Internally Displaced Persons
EIU	Economist Intelligence Unit
EMOP	Emergency Operations
MT	Metric Tons
SDG	Sudanese Pound
UNAMID	African Union - United Nations Mission in Darfur
WFP	United Nations World Food Programme

1. Objective of the study

The Darfur crisis has had a severe impact on the market system in Darfur. Even though the markets have been able to somewhat recover since the peak of the crises, the markets remain fragile and the availability of food items dependent on a good harvest.

WFP has been using voucher assistance in Darfur since 2011 and has progressively expanded the use of cash and vouchers since then. In 2013, WFP will assist around 440,000 beneficiaries in Darfur with a value transfer of more than USD 15 million. The bulk of the programme is being implemented in North Darfur. In 2014, WFP is planning to further expand its activities to several new locations and to almost double the transfer value in Darfur compared to 2013. More specifically, the expansion plan includes Zam Zam camp in Fasher, two camps in Geneina and two locations in Eddaein. The market assessment is thus to cover all main markets in Darfur.

The overall objective of the market assessment is:

- ✓ To assess the capacity and potential of Darfur's local markets for cash voucher programming and to compare with the 2014 expansion plans;
- ✓ To estimate the impacts of the planned 2014 voucher expansion on local markets and prices;
- ✓ To the extent possible, to review the impact of the 2011 to 2013 voucher programme on markets in Darfur in terms of prices, local production, market integration, etc.

This will be done after reviewing the supply chain of the traders with the current implementation of the programme. More specifically the study will:

- ✓ Analyse the historic and current availability of both staple commodities on local markets including potential recent changes and patterns of seasonality;
- ✓ Analyse the overall market environment in which food commodity trade takes place, including relevant government policies and regulations, the (current) socio-political situation, security, road and transport infrastructure;
- ✓ Describe the market structure and conduct in terms of actors and institutions of relevant supply chains, barriers and constraints to enter trade or maintain and increase levels of supply, as well as market catchment areas.
- ✓ Identify key market outcomes such as seasonality and volatility patterns of prices, market integration with supply sources, including physical flow of commodities.

- ✓ Analyse the market's potential for responding to demand increases, e.g. storage facilities, duration of stocks, stock replenishment lead-time, and expected price developments due to increased levels of demand.
- ✓ Provide/collect price data and develop price scenarios for different food commodity to be used in developing potential food baskets and transfers values, and to support cost efficiency/effectiveness analysis, that can facilitate decisions if and when to switch between different transfer modalities or food baskets depending on seasons.
- ✓ Analyse affected populations' demand conditions: their physical and economic access to local markets (including inflation patterns of food and non-food commodities, households' purchasing power, livelihood and market participation behaviours, self-sufficiency and resilience statuses, and preferences).
- ✓ Formulate and - if possible - map food market related recommendations on a) suitable areas, b) periods of the year and c) scale conceivable to support either cash/voucher or in kind based interventions as well as d) how to address identified bottlenecks for traders to meet increased demand and strengthen respective supply chains.

2. Methodology

The analysis was structured using primary and secondary data sources, other that empirical models to cross check part of the findings. Traders' data were collected in December 2013, following a preliminary field visit to develop questionnaires and sampling procedures.

The report is organized as follows. The first part (sections 3 and 4) contextualises the operational environment, with insights on the economic performance; section 5 describes agriculture trends and actual cropping season results, which is paramount to understand market functioning in Darfur; section 6 analyses food security outcomes related to market based interventions by means of a multi-level econometric model; section 7 describes the results of the traders' survey, controlling the findings with GIS mapping techniques and capacity-to-respond dashboards; section 8 describes the historical trends of prices for selected markets and derives forecasts; section 9 reviews the impact of WFP operations in Fasher using a seeming unrelated regression model; concluding remarks and recommendations try to summarize the key findings and provide operational recommendations for decision making.

3. Background

Darfur region lies in the western part of the Sudan, bordering with South Sudan, Central African Republic, Chad and Libya. The population of Darfur is estimated at 8,462,324 in 2013 (CBS), representing about 23% of total Sudan population.

The whole Darfur constituted one of the provinces of Sudan since independence in 1956, with El Fasher being the capital. In the recent past, the region used to be split into three States, North, South and West, following the implementation of the federal system in 1994. South Darfur is most densely populated State and its population amounts to 4,958,148, while the population of North Darfur and West Darfur amounts to 2,267,680 and 1,625,811 respectively (CBS). Administratively, the region is now divided into five states, namely North Darfur, South Darfur, East Darfur, Central Darfur and West Darfur.

People in Darfur belong to a multitude of ethnic and linguistic groups who are dispersed among each other. They include non-Arabic speaking groups such as the Fur, Masalit, Zaghawa, Tunjur, and Daju, as well as Arabic-speaking such as Rizaiqat, Missairiyya, Ta`isha, Beni Helba, and Mahamid, just to name a few. There are also a large number of West Africans, such as Hausa, Fulani, and Borno (Sikainga, 2009).

Darfur region consists of a number of climatic zones. The southern part lies within the rich savannah, which receives considerable rainfall. The central part is a plateau where the landscape is dominated by the mountain of Jebel Marra, while the northern part of Darfur is mostly a desert that extends all the way to the Egyptian and Libyan borders. The series of mountains and rocky areas and rock outcrops constitute natural barriers that constrain mobility of people due to poor infrastructure and in the absence of paved roads. A number of *wadis*[1], running throughout the region, further limit the movement of vehicles especially during the rainy season.

The conflict of Darfur dates back to a complex history of deeply entrenched social inequalities, environmental crisis and competition over natural resources, conflicting notions of identity, militarization of rural societies, and, above all, a chronic problem of bad governance that plagued the Sudan since its independence from the British colonial rule in 1956 (Sikainga, 2009).

Farming represents the main livelihood of the majority of Darfur people, where traditional crop production and animal breeding are the main activities. Competition over resources, pasture and water, have often resulted in conflicts between tribes and even within tribes, mostly contained with traditional norms and codes.

Crop farming, being the main economic activity, depends heavily on rainfall and soil fertility; thus rendering the population vulnerable to climatic changes. In the

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[1] Water courses.

last decades, Darfur has experienced a series of drought episodes especially in 1983/84 and in the early '90s. Droughts, desertification, and population growth caused sharp decline in food production leading to wide spread of famine. The human misuse of natural resources such as over-cultivation, over-grazing and mass destruction of the tree cover were among the reasons that caused deterioration of the environment in Darfur.

Land ownership in Darfur is also an important issue to be considered in dealing with the conflict in that region. The land tenure system in Darfur has evolved over time to produce a current set of practices that have tended to increase inter-communal tensions. Conflict between pastoralists and sedentary farmers, caused in part by environmental pressures and changing land ownership patterns, was an important cause of the Darfur violence (Sikainga, 2009).

Environmental degradation and competition over resources were also accompanied with little efforts of development and long history of marginalization. Banditry and the advent of armed opposition in the region further contributed to far-reaching poverty growth, with widespread insecurity in the region, severely constraining farming activities and forcing people to flee their home to seek shelter in camps.

3.1 Displacement in Darfur

The scale of destruction outraged the international community and put the region in a state of emergency that prompted considerable assistance from the International Community, with civilians being dramatically affected by clashes between Government and armed movement forces, and inter-communal fighting involving militias (United Nations Security Council, 2013).

Despite the signing of a number of peace agreements culminated by the Doha Document for Peace in Darfur (DDPD, 2011) and the creation of the High Transitional Council in Darfur, the progresses towards the implementation of the agreement from the Government side are slow (iDMC, 2013); on the other hand, fragmentation of armed groups and competition among rebel groups triggered chaotic violence in the region, threatening several local communities with targeted attacks and looting, further exacerbating people displacements.

Most of the inter-communal violence is grounded on the overall deterioration of the economic situation; with few livelihood sources available and increasing disputes over natural resources including land, water and gold. As a matter of fact, it is estimated that around 100,000 people were forced to flee their homes at the beginning of 2013 following tribal fighting over gold mines in North Darfur (United Nations Security Council, 2013).

Environmental degradation in the form of desertification, deforestation and erratic rainfalls increased the pressure on land and water resources, leading to serious

conflicts between sedentary farmers and pastoralists; the violent land dispute that started in April 2013 between Misserya and Salamat tribes in Central and South Darfur is among those[2].

Natural hazards such as heavy floods also cause displacement of the population in several parts of Sudan. Food insecurity and seasonal droughts are also thought to contribute to people movements especially from Darfur and Kordofan.

As a result, according to UN estimates, there are currently nearly 2 million people internally displaced in Darfur, including some 380,000 additional people displaced in 2013 only[3]. As violence continues, other 162,197 people were displaced in 2014 only[4], in particular in South Darfur Um Gunya area (59,396), and in North Darfur, specifically in Saraf Omra (11,941) and El Taweisha (81,300).

3.2 Drivers of food insecurity

Very high poverty rates in Darfur are the natural outcomes of years of conflicts, marginalization, environmental degradation, and insecurity.

Widespread poverty dates back in time, as noted in earlier analysis in the six regions that formed the administrative division of northern Sudan (Faki *et al.*, 2012). In Darfur, very high and rapidly rising poverty incidence[5] was indeed reported from 1990 to 1996, in particular in rural areas, were it increased from 55 to 97 percent; whereas in urban areas remained stable at very high levels, ranging from 87 to 89 percent. In the meantime, the dramatic downturn in rural areas is well described by the depth of poverty, which rose from 26 to 73 percent, as well as the severity, spanning from 18 to 69 percent.

More recent figures[6] revealed that about 46.5% of the population in northern Sudan was below the poverty line, with 26.5 among the urban population and 57.6 among the rural population (Castro, 2010). The study also indicated that Khartoum was the region with the lowest poverty incidence, while Kordofan and Darfur were the poorest regions, with poverty incidence above the two thirds of population in Northern Darfur matching with the lowest per capita consumption figures in the whole Sudan.

A study on poverty mapping in North Sudan (Faki, Nur, Abdelfattah, & A Aw-Hassan, 2012) showed that human poverty indicators for 2006 depicted significant

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[2] OCHA, "*Humanitarian Bulletin Sudan*", Issue 09|10, 2 March 2014.
[3] OCHA, "*Sudan: Humanitarian Snapshot*", 28 February 2014.
[4] OCHA, "*Humanitarian Bulletin Sudan*", Issue 11|10, 16 March 2014. The figure reported in the text takes into account also the 52,825 returnees in Saraf Omra, reducing the overall number of newly displaced people in Darfur (215,022) as of 17 March 2014.
[5] "*This type of poverty is commonly known as a lack of income; and defined as income inability to attain a socially determined food basket that contains the recommended minimum calorie and protein intake per person per day.*" (Faki, Nur, Abdelfattah, & A Aw-Hassan, 2012)
[6] Based on the National Baseline Household Survey conducted by the Central Bureau of Statistics of Sudan in 2009.

level of deprivation in the three main human development components of survival, knowledge and material well-being, but with high disparities among the Northern States. West Darfur registered the highest level of deprivation (58%), South Darfur ranked third while North Darfur had the sixth level of deprivation among 15 States of northern Sudan (*ibidem*). As a whole, Sudan was ranked as number 147 out of 177 countries and territories on the 2007/08 Human Development Index (HDI), and went down to 154th out of 169 countries in 2010 (*ibidem*, quoted from UNDP, 1997 and 2010)

According to a survey carried out in 2010 by the Ministry of Health on the nutritional status of under-5 year children (GAPAE, 2012), anthropometric measures indicated that medium-severe malnutrition in North Darfur (21.6%) and South Darfur (18.6%) were higher than the national average of 17.7 percent (Figure 1). High severe malnutrition was also prevalent and exceeding the national average of 6.4 percent in South Darfur (6.7%) and North Darfur (6.5%) (Figure 9).

Figure 1 - Nutritional Status of under 5-year Children (Malnutrition) in percentage, 2010
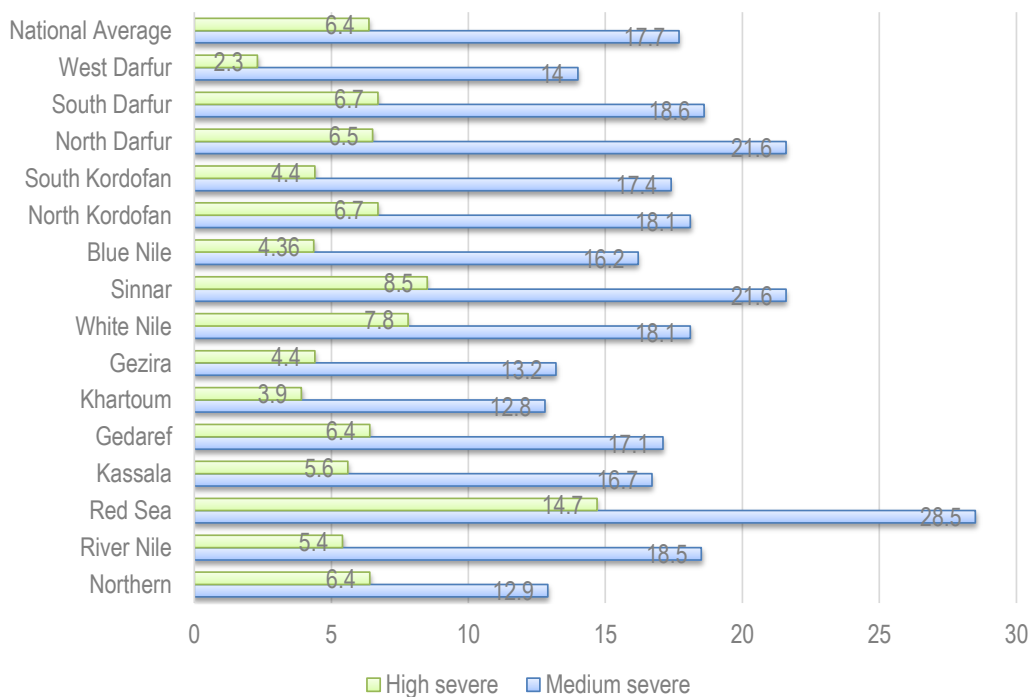
Source: Annual Report of Food Security in Sudan for 2011 (quoted from Ministry of Health, Indicators of Sudanese Survey for Family Health).

The nutritional status survey carried out in 2012 in some localities in greater Darfur (GAPAE, 2013) showed that in North Darfur state, Al Tana locality registered the highest global acute malnutrition (GAM) level at 20%.

Figure 2 - Malnutrition in selected localities (%)
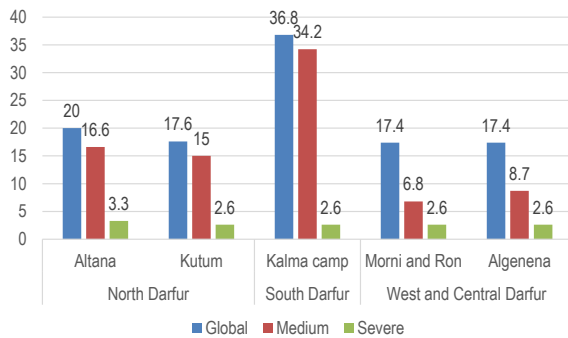
Source: Annual Report for Food Security Situation in Sudan for 2012 (quoted from Ministry of Health, Sudan).

Kalma camp showed the highest GAM level (36.8%), while Altana locality in North Darfur had the highest level of severe malnutrition among all Darfur (3.3%, see Figure 2).

4. Economic performance

4.1 Macroeconomic situation

Despite Sudan is endowed with large natural resources, the economic performance is largely affected by civil war and political instability. The armed conflicts in Darfur, South Kordofan, and the Blue Nile force the Government to increase spending in defence, and as a result budgetary allocation to infrastructure, health and social services decline[7].

The secession of South Sudan in July 2011 has led to the loss of about 70 percent of Sudan proven oil reserves, while the oil production collapsed by 82 percent[8], resulting in reduction of 35.6 percent of budget revenue, more than 65 percent of foreign exchange earnings and 80 percent of total exports (MFNE, 2012).

Figure 3 - Real GDP and population growth rates
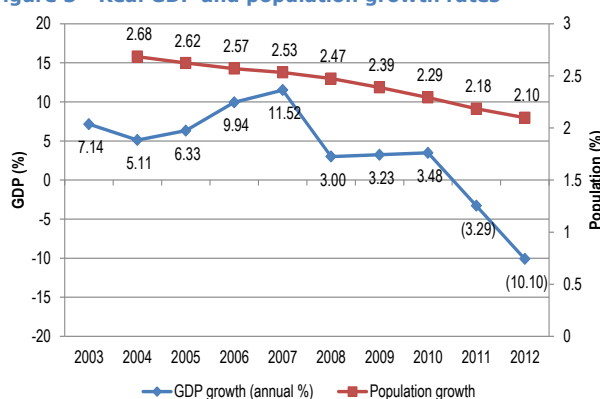
Source: World Bank, GDP growth computed on GDP in constant 2005 USD.

The gross domestic product (GDP) growth rate is on a long-run slowdown, mostly attributable to the loss of population and oil revenues, with a dip in 2012 (-10.1%, see Figure 3). In 2013, the GDP showed an upturn, due to partially resumed oil revenues and increased gold production (+3%)[9].

Sudan is heavily indebted with a growing external debt stock estimated at 87.6% of GDP in

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[7] According to WB data, public health expenditures as a percentage of GDP were 2.38% in 2011.
[8] British Petroleum, Statistical Review of World Energy June 2013.
[9] Source: Economist Intelligence Unit, data accessed as of 26/03/2014.

2013[10]. However, the country could not benefit from the initiative of debt relief under the heavily indebted poor countries initiative (HIPC), remaining at a pre-decision point and yet to start the process; in September 2013, as the country was still in arrears to the IMF and World Bank, "*the authorities prepared and implemented a comprehensive reform package [omissis] which introduced new austerity measures, including lifting of fuel subsidies and unifying the official and commercial exchange rates*" (IMF and WB, 2013).

The rise in food prices and the depreciation of the Sudanese pound pushed average inflation up to 35 percent in 2012, from the 18 percent in 2011 (Central Bank of Sudan, 2012), and was forecasted to decrease down to 17 percent in 2013 (Figure 4), owing to expected increase in oil and gold production, in addition to the financial and monetary measures taken by the government (MFNE, 2012). However, this optimistic scenario hardly occurred, as the Sudanese Central Bureau of Statistics reported an additional 26 percent on top of the 17 percent projection by the end of 2013, with runaway inflation from 29.4 percent in September, to 40.3 percent in October and eventually to 42.6 percent in November. Yet, there is no consensus on the actual estimates, as the IMF reported the inflation rate for 2013 to be at 32.1 percent (IMF, 2013). It is likely that inflation reflected the earlier government decision in late September to lift fuel subsidies which caused the prices of gasoline and diesel to almost double. Average inflation in the three Darfur States were above the national average both in North and South Darfur (respectively 46% and 43%).

Figure 4 - Inflation
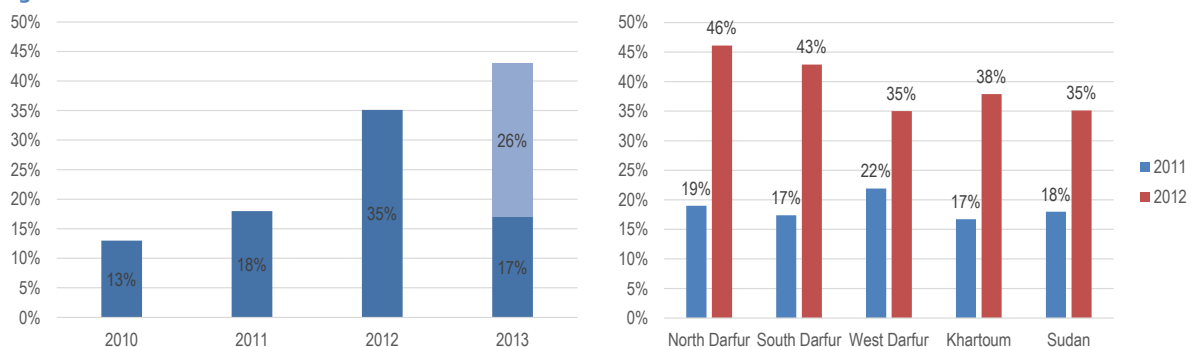
Source: *Ministry of Finance and National Economy, Central Bureau of Statistics and Central Bank of Sudan.*

During the two-year period from January 2012 to December 2013, the official value of Sudanese pound against the US dollar dropped from 2.7 to 4.4 SDG per USD. However the price in the free market may be higher compared to the official rate, *de facto* increasing the price of imported goods. The imposition of fuel subsidy cuts in 2013 pushed fuel prices up by about 75%, with far-reaching negative effects on households' purchasing power.

Development and revival of agriculture is important for overall economic growth, poverty reduction and food security

Figure 5 - Agriculture and Oil Sector Shares on GDP (%)

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[10] EIU, *Idibem.*

particularly in rural areas. Agriculture is estimated to employ between 70 and 80 percent of the labour force in rural areas (FSTS, 2014), and used to be the leading economic sector forming over 40 percent of GDP before discovery of the oil; thereinafter, it has lost much ground with a drop of its contribution to GDP to about 24 percent in 2011. Nonetheless, the share of agriculture to GDP started to slightly grow again in the last two years, most likely as a consequence of oil revenues setback (Figure 5).
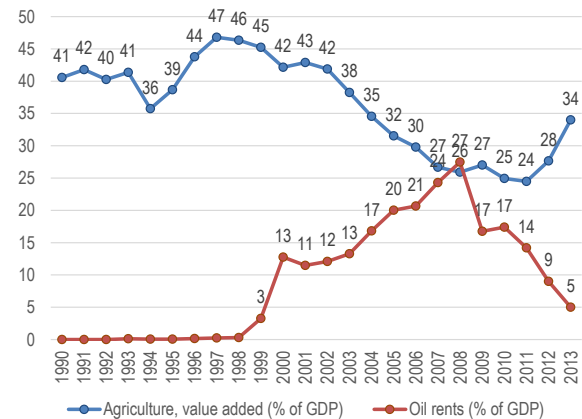
Source: World Bank (1990-2012) and Bank of Sudan & CBS for Agriculture 2013, and Oil 2012/2013 data.

4.2 Trade

Provided exports are dominated by petroleum products and gold which both accounted for about 72 and 70 percent in 2012 and 2013 respectively, Sudan trade balance in 2014 is projected to be in deficit for the third year in a row since the oil sector has shrunk (Figure 6).

China and the Arab countries are the main trade partners of Sudan. During the period January–December 2013, the value of Sudan exports to those commercial partners represented about 57 and 23 percent respectively of the total value of exports. In the same time frame, the value of Sudan's export to African countries accounted for only 6 percent (CBS, 2013).

At the same time, West Europe and the United States, China and the Middle East represented the most important sources of Sudan imports, accounting for about 21, 19, and 19 percent of the value of total imports respectively, while trade imports from the rest of Africa accounted for about 10 percent.

The most relevant imports of Sudan are food items, manufactories, and machines and equipment, representing respectively about 22, 21, and 19 percent of total imports in 2012 (Central Bank of Sudan, 2012). Statistics on the volume of border trade between Darfur and West African countries, especially via Chad are lacking. Reportedly, according to surplus/deficit circumstances, food grains actually flow from/to West Darfur and Chad.

Exports have increased by 110 percent in 2013, from 3,368 million USD in 2012 to 7,067 million USD[11], also pulled by the expansion of the crop-commodity sector, following the excellent production occurred in 2012 (FSTS, 2014).

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[11] Data from the Economist Intelligence Unit, 2014.

Overall, the country is food import dependent, with food exports accounting only 9 percent of total trade in 2012 (Table 1). Sudan food crops exports are highly variable depending on domestic supply of agricultural production. During the period 2004-2012, sorghum exports ranged from as high as 265,764 metric tons in 2008, to as low as 320 metric tons in 2010, while imports of

Figure 6 - Trade Balance

Source: Economist Intelligence Unit, 2014.

food were largely dominated by wheat, followed by sugar. In 2012, wheat accounted for about 67% of the total food imports, and sugar by 23%.
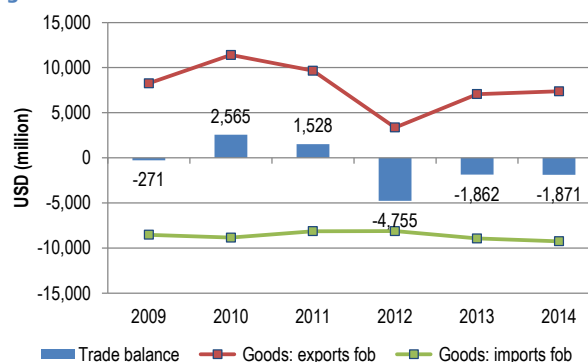
Table 1 - Sudan Food Import and Exports 2004-2012 (metric tons)

Year	IMPORTS						EXPORTS						
	Wheat	Wheat flour	Sugar	Rice	Veg.Oil & Fats	Lentil	Sorghum	Groundnut	Sesame	Groundnut Oil	Sesame Oil	Sugar	Wheat Bran
2004	1,061,007	5,210	16,952	36,145	33,774	33,268	16,722	3,182	218,336	1,014	55	24,325	
2005	1,452,658	54,701	16,987	48,068	56,278	47,622	2,336	3,214	154,675	2,045	100	24,109	
2006	1,369,042	13,258	17,913	48,058	49,240	70,831	4,550	343	219,047	2	110	17,856	
2007	1,122,804	9,095	3,081	48,078	54,221	43,942	149,142	1,167	111,798		36	29,045	
2008	1,130,831	52,766	339	36,868	63,665	49,970	265,764	842	96,744	190	81	30,587	
2009	1,521,661	86,341	203,112	52,079	129,760	44,442	3,240		137,659		57,831	30,400	
2010	2,560,521	59,506	1,024,506	60,270	192,560	46,917	320	376	193,000		78	40,800	5,000
2011	1,673,875	43,697	683,100	49,900	82,200	42,278	86,050	2,270	380,630	190	120	20,350	16,020
2012	2,053,963	46,830	719,991	47,880	163,890	49,109	55,880	5,667	208,916		434		18,350

Source: Bank of Sudan, annual reports.

Focusing on Darfur only, sorghum and millet are the main food staples consumed by households, with millet being particularly preferred in North and West Darfur.

Millet marketable surplus is not large because it is mainly consumed by households in western Sudan. Nonetheless, it is reported that movement of millet from surplus areas to deficit areas within Darfur is common because production of millet is confined to certain areas where soil and climatic conditions suit to its production. Generally in normal years, the northern parts of West and North Darfur are considered as millet deficit areas. In South Darfur, millet is produced in 'goz' soil where rainfall is generally adequate for good harvest. Thus marketable surplus is generally produced and channelled to urban markets (El Dukheri, Damous, & Khogali, 2004).

Sorghum is mainly grown in South and West Darfur for household consumption and for the market. The marketable surplus of sorghum is relatively larger compared to millet, as vast areas are grown with sorghum due to favourable climatic conditions, especially in some parts of West Darfur. In the past, there

used to be few large farmers cultivating relatively large areas of sorghum and millet and significantly contributing to the generated marketable surplus (*ibidem*).

However, the rising conflict in Darfur and deterioration of security in the area in the past ten years, have affected agricultural production as well as internal movement and trade within the region.

5. Food availability

5.1 Agriculture in Sudan

The agricultural resource base in Sudan is large including forests land, cultivable land and pasture land. Rainfall declines steadily from the south to the north and, along with variations in temperature and soil conditions, creates different agro-ecological zones that suit for cultivation of different crops, vegetables and fruits.

Agriculture in Sudan is usually classified into three distinct farming systems. These are 1) irrigated farming system, 2) semi-mechanized farming system, and 3) traditional system.

The irrigated sub-sector is constituted by a number of large irrigated schemes in Central and Eastern Sudan, and small irrigated schemes along the White Nile, Blue Nile and River Nile. The crop mix in the irrigated sub-sector includes cash crops such as cotton, groundnuts, sugar, beans, vegetables and fruits. It also includes cereals such as sorghum and wheat. The semi mechanized sub-sector is practiced on large scale along the central clay plains of Sudan, and extends to Gedaref, Kassala, Blue Nile, Sennar, southern parts of the White Nile, and South Kordofan. The main crops produced in this sub-sector are sorghum and sesame, with sunflowers assuming increasing importance, as well with cotton production. The traditional rain-fed sub-sector varies from the widely prevailing large areas under clay soils across central Sudan, to '*goz'* sandy soils in western parts. It is dominated by sorghum in the central clay soils, where sesame, sunflower and limited amount of short staple cotton are produced. In the sandy soils of western Sudan, the major crops are millet, sesame and groundnuts, but there are notable areas of Roselle hibiscus plants ('*karkadeh'*) and water melon. Vegetables and fruits are grown in almost all parts of the country although they are more important in the north, which is also the hub of production of cool-season food legumes such as fava beans and chickpeas (Faki, Nur, Abdelfattah, & A Aw-Hassan, 2012).

Livestock production prevails all over the country and is intermingled in the three farming systems. The most prevalent is transhumant livestock keeping within an agro-pastoral system, being characterized by presence of arable farming and livestock migration in search for feed and water in part of the season. Sedentary livestock keeping is also widely spread and is more obvious under irrigated

farming; the most intensive type is the relatively modern dairy farming in urban and peri-urban locations in most parts of the country. Nomadic livestock keeping is also found in all parts of northern Sudan, but is decreasing in importance (Faki, Nur, Abdelfattah, & A Aw-Hassan, 2012). According to estimates of the Ministry of Livestock and Fishery Resources (GAPAE, 2013), total livestock numbers in Sudan are estimated at 104.9 heads of cattle (29.8), sheep (39.5), goats (30.8), and camels (4.8). After the secession of South Sudan, it is now believed that Darfur's livestock resources accounts for about one-fifth to one-quarter of Sudan's livestock resources. Livestock is Darfur's major export, but has not received attention in terms of adequate investment in physical market structure and veterinary services. The consequences were deterioration in livestock trade which in turn hardly affected rural livelihoods. The situation was further exacerbated by the conflict, which has disrupted and distorted livestock trade (Buchanan-Smith, Fadul, Tahir, & Aklilu, 2012).

5.2 Cereal production

Sorghum, millet and wheat represent the major staple foods in Sudan. The three cereals are produced in the country and their production is primarily consumed domestically. Sudan total cereal production for 2013/2014 is estimated to be 2,852 thousand metric tons, which is about 48 percent of last year production and about 68 percent of the 5-year average 2008/2009 – 2012/2013 (FSTS, 2014). Out of the total area grown with cereals in 2013/2014, sorghum occupied about 73, millet 25, and wheat only 2 percent. Sorghum accounted for about 79 percent of total cereal produce in the country, millet 13 percent, and wheat 1 percent in the same year.

Sorghum is extensively produced in Sudan because it is the staple food especially in rural areas; its use as feed for animals and poultry has been increasing in recent years as well as the opportunities of trade towards regional markets, where the crop is usually exported in times of bumper production.

Domestic production of sorghum is variable and fluctuates annually depending on area harvested and yield. The variability in sorghum area is mainly attributed to rainfall in terms of amount and distribution throughout the season. Generally, the bulk of sorghum is produced under the semi-mechanized sub-sector, which accounted for about 42 percent of total sorghum production in 2013/2014. In the same season, the irrigated and traditional sector produced about 32 and 25 percent of total production respectively. Total sorghum production dropped sharply by about 50 percent in 2013/2014 compared to the previous season and by 37 percent as compared to the last 5-year average (Figure 7).

Darfur contributed only by 6 percent of total sorghum production in Sudan in 2013/2014, down from 12 percent in the previous season (Table 2). Overall, the actual production of sorghum in Greater Darfur witnessed a very sharp decline by

about 73 percent y/y. The decline was more severe in South Darfur (82%), followed by North Darfur (76%), and West Darfur (57%).

Figure 7 - Sorghum and millet domestic production by sector
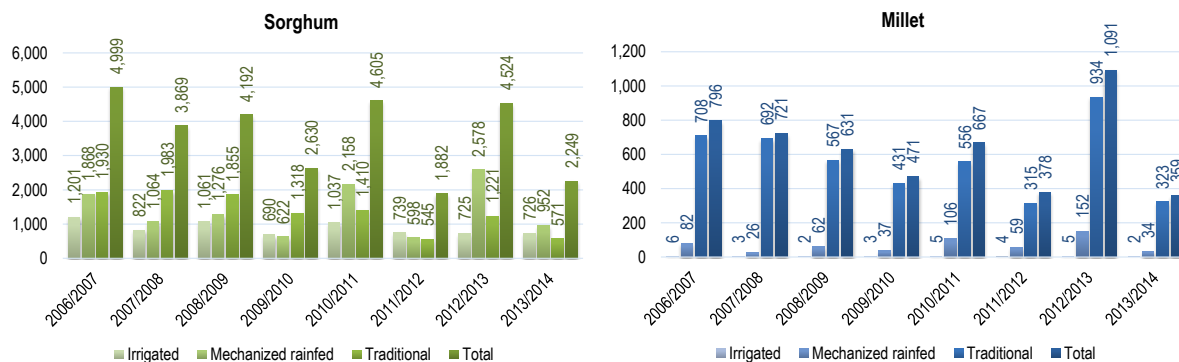
Source: Ministry of Agriculture and Irrigation.

The bulk of millet is produced under the traditional rain-fed farming system. It is largely produced and consumed in western Sudan, where the Darfur states accounted for about 64% of total millet production in 2013/2014 (Table 2). About one fourth (24%) of total millet was produced in the same season in Kordofan State neighbouring to Darfur. As like sorghum, millet production is variable and fluctuates annually. Overall, total production of millet in Sudan dropped sharply by about 67 percent in 2013/2014 compared to the previous season (Figure 7). Historically, South Darfur used to be the largest producer of millet in the region, but in the last two marketing years, the bulk of millet production has shifted to West Darfur. In South Darfur, millet production dropped by 74 percent in 2013/2014 compared to the previous season, whereas the corresponding declines in North and West Darfur were 61 and 68 percent respectively.

Table 2 - Sorghum and millet area/production/yield

Season	State	Sorghum					Millet				
		North Darfur	West Darfur	South Darfur	Total Sudan	Darfur/Sudan	North Darfur	West Darfur	South Darfur	Total Sudan	Darfur/Sudan
2006/2007	Area ('000 Feddan)	67	132	780	**15,655**		442	200	1,848	**5,574**	
	Production ('000 MT)	4	46	226	**4,999**	*5.5%*	34	48	230	**796**	*39.2%*
	Yield (KG/Feddan)	60	348	290	**319**		77	240	124	**143**	
2007/2008	Area ('000 Feddan)	286	160	663	**15,754**		1,068	175	1,485	**5,598**	
	Production ('000 MT)	17	51	159	**3,869**	*5.9%*	203	39	126	**721**	*51.1%*
	Yield (KG/Feddan)	59	319	240	**246**		190	223	85	**129**	
2008/2009	Area ('000 Feddan)	231	132	780	**15,968**		1,274	231	1,240	**5,659**	
	Production ('000 MT)	14	36	164	**4,192**	*5.1%*	76	51	279	**631**	*64.4%*
	Yield (KG/Feddan)	60	269	210	**263**		60	220	225	**112**	
2009/2010	Area ('000 Feddan)	100	187	801	**13,364**		640	319	1,118	**4,800**	
	Production ('000 MT)	4	31	189	**2,630**	*8.5%*	19	48	189	**471**	*54.4%*
	Yield (KG/Feddan)	40	166	236	**197**		30	150	169	**98**	
2010/2011	Area ('000 Feddan)	256	234	1,067	**17,278**		1,128	400	1,246	**6,009**	
	Production ('000 MT)	46	74	384	**4,605**	*10.9%*	102	58	237	**667**	*59.4%*
	Yield (KG/Feddan)	180	316	360	**267**		90	145	190	**111**	
2011/2012	Area ('000 Feddan)	89	282	929	**9,559**		500	377	1,177	**3,102**	
	Production ('000 MT)	7	107	166	**1,882**	*14.9%*	24	117	118	**378**	*68.3%*
	Yield (KG/Feddan)	79	379	179	**197**		48	310	100	**122**	
2012/2013	Area ('000 Feddan)	280	567	653	**17,008**		773	756	1,298	**6,624**	
	Production ('000 MT)	50	185	290	**4,524**	*11.6%*	100	382	266	**1,091**	*68.5%*
	Yield (KG/Feddan)	180	326	444	**266**		129	505	205	**165**	
2013/2014	Area ('000 Feddan)	169	336	566	**10,367**		645	557	747	**3,572**	
	Production ('000 MT)	12	80	51	**2,249**	*6.4%*	39	124	68	**359**	*64.3%*
	Yield (KG/Feddan)	71	238	90	**217**		60	223	91	**101**	

Source: Ministry of Agriculture and Irrigation.

The main factors that affected agricultural production current season were the low amount and poor distribution of rainfall. Effective rainfalls delayed about two months until the end of July and beginning of August. Another important factor was conflict and deterioration of security in Darfur and South Kordofan which adversely affected agricultural performance in Sudan. Moreover, production costs increased this year compared to last year along with the partial withdrawal of subsidy from petroleum products. In addition, further costs derived from some scarcity of agricultural labourers, partially caused by returns to their home of South Sudan labourers, and partially by civil gold mining (FSTS, 2014b).

Finally, wheat is mainly produced under irrigation in Sudan and its production is low and variable. It also exhibited declining trend during the period 2006/2007 – 2013/2014. Notwithstanding Sudan is a wheat net importer, the demand for its consumption has increased steadily over the past years because of urbanization and changing habits of food.

5.3 Food grain balance

Sudan strategy for food security depends on achieving self-sufficiency in producing commodities that the country has comparative advantage in. Generally, the country produces sizable portion of its grain needs, but in times of production shortfalls, it has to resort to imports and food aid.

Figure 8 shows self-sufficiency of food grains by state in the year 2010/11 and 2011/12. Overall, the balance of domestic cereal grains has reversed from a surplus in 2011 into a large deficit in 2012. Some states realized surplus production of food grains, while others registered deficit. In 2011/12, Sudan production of grains surpassed consumption, with food likely flowing from surplus to deficit areas despite the security deterioration in part of the country.

Three states of Darfur showed deficits in domestic cereal grains production in both years, but the deficit widened in 2012 except in West Darfur, with North Darfur dramatically dropping from 45 to 9 percent; while in South Darfur the dip was from 89 to 42 percent. West Darfur only was about to be grains self-sufficient in 2011/12 (96%) because of the relatively good harvest occurred in that season. This is far better than the situation reported in the previous year of 2010, when the three states of Darfur realized only 7, 36, and 5 percent for North, West, and South Darfur respectively (GAPAE, 2012).

While state balance sheets are not available for the marketing years 2012/13 and 2013/14, it is likely that the self-sufficiency ratio strongly improved after the bumper crop in 2012, while for the current season, taking into account production estimates only, the situation could be even worse than what described for 2011/12.

Figure 8 - Self-sufficiency of food grains by state (2011/2012)
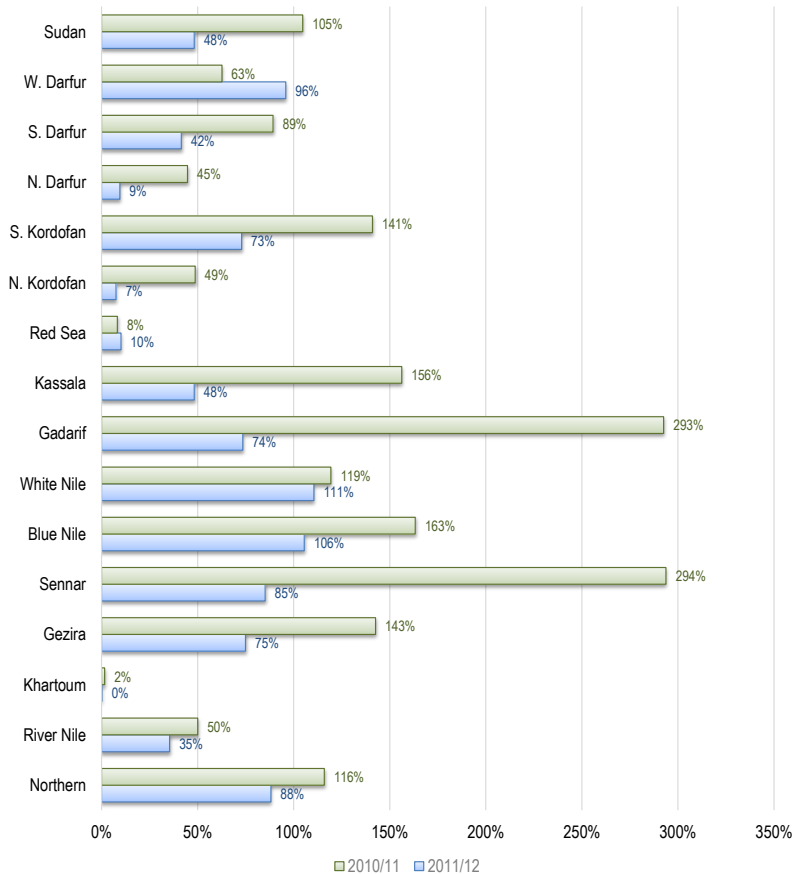
Source: General Administration of Planning Agricultural Economics.

The cereal balance sheet for Sudan in Table 1 show that available food grains (about 3.4 million metric tons) are not enough to cover domestic consumption needs (6,451 thousand metric tons), with a likely gap of about 3 million metric tons. Based on the assumption that nearly 2 million tons of wheat (1,900 thousand tons) and rice (50,000 tons) are normally imported, the actual gap in food grains would be above one million tons, mostly composed by sorghum (73%), followed by millet (25%), and maize (2%). Overall stock-to-use ratio, measuring the level of carryover stocks as a percentage of total use, are quite low at 12 percent, with millet being at 6 percent only.

Table 3 - Food grain balance, 2013/2014 ('000 metric tons)

	Sorghum	Millet	Maize	Wheat	Rice	*Total*
Opening stocks	189	1	-	346	-	*536*
Production	2,249	359	20	244	28	*2,900*
Supply	2,438	360	20	590	28	*3,436*
Human being Consumption	2,722	559	37	2,051	75	*5,444*
Fodder	112	18	1	-	-	*131*
Seeds	68	12	-	30	2	*112*
Export	-	-	-	-	-	*-*
Closing stocks	313	38	3	409	1	*764*
Consumption	3,215	627	41	2,490	78	*6,451*
Stock-to-use ratio	10%	6%	7%	16%	1%	*12%*
Additional requirements	-	777 -	267 -	21 -	1,900 -	50 -	*3,015*
Quantities to be covered by imports	-	-	-	1,900	50	*1,950*
Estimated gap	777	267	21	-	-	*1,065*

Source: Technical Secretariat of Food Security, Ministry of Agriculture.

In the recent past, part of the Sudan food requirements were also fulfilled by food aid, which used to represent a significant component in all conflict-affected areas. Figure 9 shows the trend of food aid to Sudan (cereals and non-cereals) during the period 1988-2012. After food aid peaked in 2005 slightly above 900,000 tons, it has started to decrease thereafter. Cereals accounts for the largest share of total food aid representing more than 80% of total aid received.

Figure 9 - Food Aid in Sudan 1988-2012 (Metric Tons)
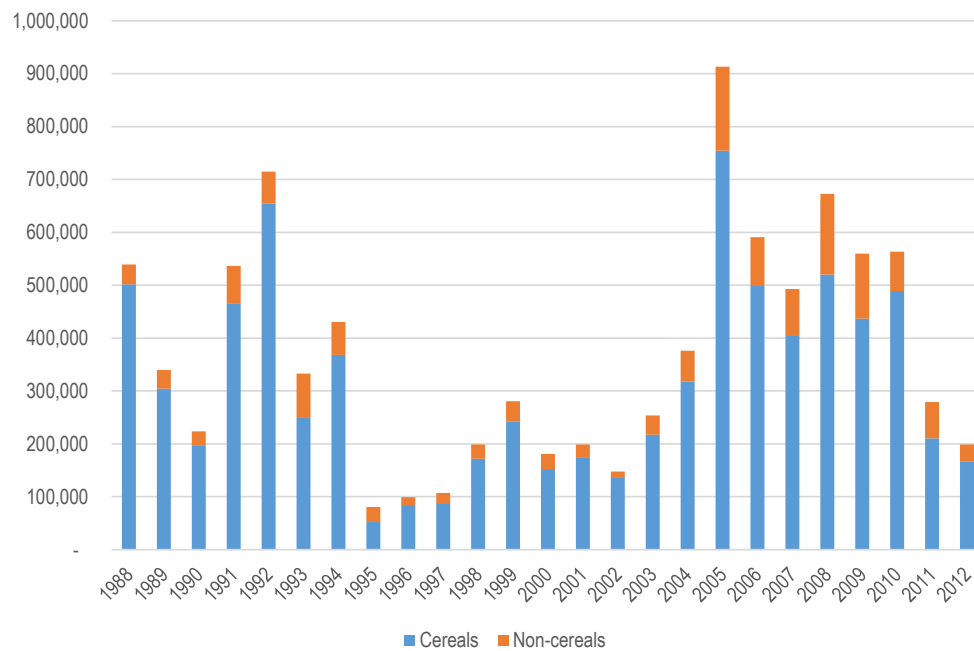
Source: WFP, FAIS online database.

In view of the expected increase in grain prices and the consequent deterioration of the purchasing power of considerable sectors of the population, it is expected that the Government would play an important role to bridge the gap in food grains through the use of strategic reserves, by importing about 550 thousand tons during this season which represent only about 50 percent of the estimated food requirements. Ideally, these quantities should be disposed in vulnerable states in order to stabilize prices of food grains (FSTS, 2014c).

5.4 Strategic reserves

Grain trade is primarily handled by the private sector, but there are government institutions which are involved in cereal trade as well. Traditionally, the Agriculture Bank of Sudan (ABS) used to be in charge of purchasing sorghum each harvest season in order to stabilize prices and build-up buffer stocks. With the increasing concern over food security, the government set up the Strategic Reserve

Authority[12] (SRA). The SRA[13] aims to establish a buffer of strategic commodities (particularly sorghum) and foster the storage sector to stabilize the market; in particular, it should support food producers and protect consumers with active participation of the private sector in the field of grain production, domestic trade and export to international markets (GAPAE, 2013).

There are no empirical studies on the effect of ABS and SRA operations on supply and prices of food grains, particularly sorghum which accounts for most of the purchases. The government intervenes in sorghum prices directly through taxes, but it is believed that the intervention targeted the quantities either by procurement of bulk or restricting trade, has more impact on sorghum trade than the one targeting quantities (El Dukheri I. , 2007).

The ABS operates a number of silos and stores in different parts of Sudan. The Eastern sector accounted for the highest stored quantity of sorghum in 2010 and 2011, followed by the Central sector, and eventually the Western Sector (Kordofan and Darfur), which accounted only about 9% of total stock in 2011. Millet was exclusively stocked in Western Sudan in Nyala (6,120 tons) and Geneina (2,746 tons) stores (GAPAE, 2013).

The strategic reserve plan for 2012 was to build-up buffer stocks up to 950,000 tons, in addition to the carry-overs from 2011, accounting for more than 300,000 tons (GAPAE, 2013). However, several factors prevented the SRA to achieve its plan, in particular lack of adequate resources, overall decrease of cereal production in 2011, widespread insecurity in large producing areas in South Kordofan and Blue Nile States, shortage of food in South Sudan and neighbouring countries which diverted significant amounts of sorghum from the country (*ibidem*).

Ultimately, most of these constraints continued to bite in 2014, with likely implications in the reserves strategy.

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[12] Originally, the SRA operated under the Ministry of Finance and Economic Planning, but was recently transferred under the ABS.
[13] The objectives of SRA are:
- ✓ Collection and monitoring of information on commodity production;
- ✓ Estimation of size of consumption and identification of volumes of surplus and deficits;
- ✓ Building up of strategic commodity buffer stocks.
- ✓ The SRA is entrusted with:
- ✓ Provision of finance required for strategic reserve of commodities;
- ✓ Coordination with concerned authorities for provision and procurement of strategic reserve of commodities and decide on measures to bridge gabs on food;
- ✓ Identification of the volume of strategic reserve of commodities;
- ✓ Conduction of stock replenishment operations and distribution according to specified regulations and criteria;
- ✓ Sales in State domestic markets in case of production shortfall or exports from stock quantities in case of bumper production;
- ✓ Improvement of storage capacity to meet expansion in production, trade and consumption (GAPAE, 2012; GAPAE, 2013).

6. Demand-side: A Food Security Background

6.1 Objective

The objective of this section is to investigate whether market-sensitive variables describe the households' food security patterns across the monitored period, to provide a background justification for a potential introduction of market-based transfer modalities and eventually highlight the IDP camps where circumstances from a demand-side perspective are potentially more conducive to such transfer modalities, thus allowing preliminary understanding of the demand-side impact of the ongoing C&V, and potentially derive *ex-ante* insights for other sites where similar programs could be implemented.

In order to achieve this objective, a model to analyse the food security situation in sentinel sites under the WFP Food Security and Monitoring System was exploited. Data encompass 14 surveys from 2009 to 2012[14], with regular data collection rounds as of February, May, August and November, which correspond to the pre-lean, peak-lean, early harvest, and main harvest seasons respectively[15]. On average, 1,600 households have been monitored in 65 sites located in the five Darfur states.

6.2 Methodology: a multilevel approach

The dataset used is an extremely unbalanced panel, as households were not necessarily interviewed across all the rounds to avoid respondents' fatigue and in line with the purposive sampling strategy adopted. As a matter of fact, given that building age cohorts to derive pseudo-panels with homogenous households' profiles was not feasible[16], a multi-level empirical approach was used, assuming that no-repeated households were surveyed. The time dimension in the fixed part of the model was controlled for, as if it was an explanatory variable. Moreover, time was also modelled in the random part[17] as specified hereinafter.

The underlying assumption of the model is that food security situation may not be exclusively household-dependent, but can reflect as an outcome the community of settlement. Hence, households within the same location (and in particular in IDP camps) tend to be more alike as compared to households living elsewhere, "*causing a greater dependency of observations, or intra-class correlation*" (Roberts, 2004)[18]. The model therefore allows that observations within the same

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[14] An additional 15th round in May 2013 is available but contains rather different information, and therefore was dropped for the sake of the present analysis.

[15] The August round was dropped both in 2011 and 2012.

[16] Note that the respondent age is not specified in the surveys.

[17] See Annex 1 for a visual justification for random slopes by location.

[18] The hierarchical data structure enables to gain more efficient estimates and correct standard errors, confidence intervals and significance tests as the group characteristics are not freely assigned to households and factor influencing food security at the individual or group level become noticeable (Goldstein, 1999).

cluster might be correlated as a result of unobserved cluster-effects. The residuals contain an household-specific error-term e_{ijk} uncorrelated with the explanatory variables, while random-level intercepts $u_{0.jk}$ and $v_{..k}$ are allowed to depend on cluster level covariates (Woolridge, 2002). Finally, a random slope $u_{1.jk}$ at the location level is allowed as a function of the survey round, therefore introducing the time dimension not only in the fixed part of the model but also in its random part.

The empirical strategy used is common to multilevel analysis via maximum likelihood estimation and it is based on a model building approach, starting from an unconditional empty (or null) model without explanatory variables and incrementally adding explanatory variables in order to better understand their distinctive contribution to the model (Raudenbush & Bryk, 2002) (Roberts, 2004) (Rabe-Hesket & Skrondal, 2008). The empty model provide a baseline to compare further developments, as it returns the food consumption score grand mean and the variance at the location and state levels. Moreover, as food security outcomes may be driven differently if the household and the group levels (*i.e.* location and/or state based) are taken into account, the between- and within-cluster relationships are controlled for, using the deviations from cluster mean per covariate as instrumental variables[19].

Figure 10 plots the random-intercept predictions with 95% confidence intervals of the empty model, and gives the state- and location-effects on food consumption score before any adjustment is made for explanatory variables. As those residuals represent departures from the overall mean, clusters not overlapping the horizontal axis (representing the mean food consumption score across levels) differ from the average at the 5% level of significance. While a state effect could not be emphasized, it is clear that living in a specific location significantly influences the households' food security status. As a matter of fact, the residuals for several camps fall either above or below the zero line and show relevant group-effects, thus confirming the relevance of capturing the location effect. In particular, the residuals for the locations below the overall mean are:

- ✓ Um Ketera, Um Kesharok, Rwanda, Nena, Um Marahik, Kuhjara, Dagagg, Abu Sufyan in North Darfur; Feina, Au Camp, Sabon El Faq, Gur Lumbnug in South Darfur;
- ✓ Mukiar, Garsila, Al Karanik in Central Darfur; and
- ✓ Furbaranga, Kandobi in West Darfur.

It is worth noting that out of the 65 sentinel locations in Darfur, voucher programmes have been introduced in Kebkabiya and Abu Shouk since November 2011, in Otash since May 2013, and in Saraf Omra since July 2013[20]; the residuals for these four locations are all above the overall average mean and it can be

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[19] This phenomenon is known in the literature as the *ecological fallacy* issue (Robinson, 1950). Non-significant instrumental variables were dropped out from the model.
[20] See Annex 2 for further details.

asserted that the fact of living there provides to the households a starting food consumption score significantly higher from the average. Still, at this stage of the analysis, no conclusion can be drawn about any impact of such C&V programming (in particular for the locations where it has been implemented starting from 2013).

Figure 10 - Estimating Group Effects

A. Random intercept prediction rank per Darfur State
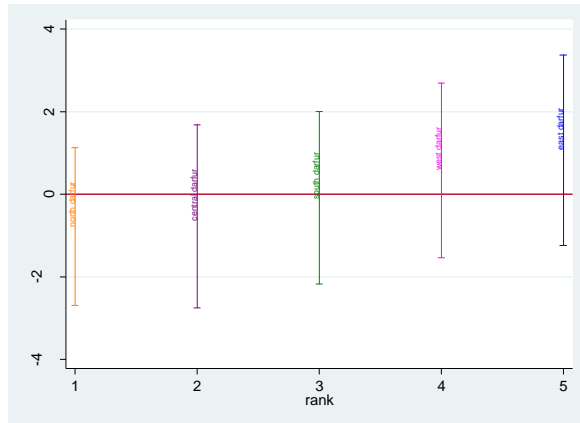
B. Random intercept prediction rank per location
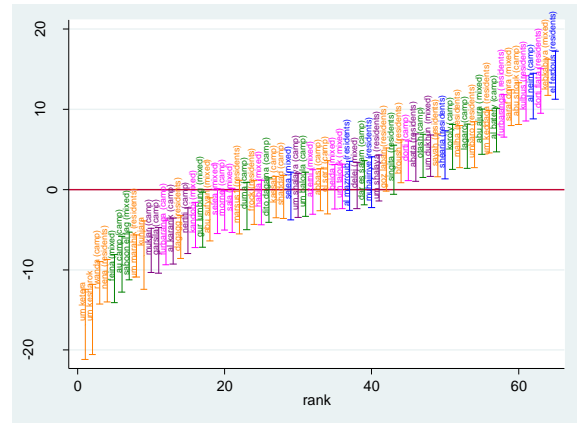
Note: Data from WFP Darfur Food Security and Monitoring Survey, rounds 1-14. Colour legend: orange for North Darfur, magenta for Central Darfur, green for South Darfur, purple for West Darfur, and blue for East Darfur.

6.4 The model

The choice of the explanatory variables in the model is grounded to provide *ex-ante* justification to eventually introduce market-based transfer modalities. Within the realm of WFP strategic objective to '*support and restore food security and nutrition and establish or rebuild livelihoods in fragile settings and following emergencies*' as in the Darfur context, it is key to derive a non-anecdotal understanding whether food security outcomes of vulnerable people may be leveraged by means of market interventions.

As a result from the above described empirical strategy, the resulting model can be written in formal terms as follows:

$$FCS_{ijk} = \beta_0 + \beta_1(FSMS\ Round) + \beta_2 X_{ijk} + v_{..k} + u_{0.jk} + u_{1.jk}\ (FSMS\ Round) + e_{ijk}$$

$$e_{ijk} \mid x_{ijk}, v_{..k}, u_{.jk} \sim N(0, \theta)$$
$$u_{.jk} \mid x_{ijk}, v_{..k} \sim N(0, \psi)$$
$$v_{..k} \mid x_{ijk} \sim N(0, \varphi)$$

where the dependent variable is the Food Consumption Score (FCS)[21] as a proxy for the households' food security status, while the covariates X_{ijk} are:

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[21] The FCS is a proxy indicator that represents the energy (calories) and nutrient (macro- and micro-nutrient content) value of the food that households eat. It is calculated based on the type of foods and the frequency with which households consume them over a seven-day period (IPC, 2012).

- Household status (*e.g.* refugee, idp, resident)   *Categorical Variable*
- Coping strategy index   *Ordinal Variable*
- Share of expenditures on food   *Continuous Variable*
- Household size   *Continuous Variable*
- Livelihoods   *Categorical Variable*
- Livelihoods × Sorghum price   *Combined Variable*
- Livelihoods × Millet price   *Combined Variable*

and the subscripts *i* reflect the household, *j* the site location and *k* the Darfur State. The overall variance of the model is composed by *θ* that is the within household variance while *ψ* and *φ* are the between-household variances at the group-levels.

As a whole, both the *household status* and *livelihoods* variables are statistically significant (see Table 4 below), but were broken down into the different compounding categories to better differentiate the estimation results. At the residual level, a further decomposition was allowed to differentiate the unexplained variance in terms of minimum food basket, and namely whether the purchasing capacity allows the household to hypothetically buy twice (or above) the minimum food basket, less than the minimum food basket, or somewhere in the middle of these opposite circumstances.

A brief description of the explanatory variables is provided henceforth. The *households' status* differentiates the people living in sentinel sites whether they are internally displaced, refugees, residents, returnees or nomads[22]. For the first two categories, a further distinction is made between households living inside or outside the camps. As most of WFP food assistance is targeted to IDPs, it is therefore expected that this status implies a reduction in the food consumption score that would need to be supported.

The *Coping Strategy Index* is a WFP household food security indicator that informs about the strategies adopted by households to cope with food consumption shortfalls. It is a score based on a week recall period that aggregates the frequency of different coping behaviours weighted according to their severity. Ideally, higher scores are associated to deteriorated food security levels.

The *share of total expenditures on food* is a measure of vulnerability itself, as the more expenditure are channelled to purchasing food, the less room is available for families to buffer against inflation, shortfalls of income and unexpected shocks. By definition, it is a proxy to evaluate the vulnerability to market excessive up-bound volatility and in the frame of market-based interventions it provides insights on the households' market dependency.

The *household size* variable portrays the number of people living within a household. In theory, it is used in lieu of the household dependency ratio, which was non derivable from the dataset. However, it encompasses a certain level of

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[22] See Annex 3 for further details on the households' status breakdown by each category per round.

ambiguity as large households might either be more exposed to shocks if the income provider is only one, or be relatively less exposed if they are able to differentiate the livelihood burden across its components.

Finally, the *livelihoods* variable[23] controls the degree of market dependency according to the households' main income source. Eight groups were aggregated from the original database which consisted in 25 classes.[24] In order to further disentangle the market effect, this variable was also combined with the prices of locally produced crops (*i.e.* millet and sorghum) which are assumed to provide a reversed contribution to the overall food security level.

6.5 Empirical results and discussion

The results from the model are summarized in Table 4. As already mentioned all the explanatory variables return statistically significant coefficients and to a large extent the expected effects.

Among the households, the high and statistically significant negative coefficients attached to IDPs both living inside and outside the camps, and to refugees in the camps, show how their food security is jeopardized by their status. This is somehow a proof of the goodness of the inclusion of these people in the target groups of WFP interventions. When the copying strategies are taken into account, it should be emphasized that the households and group effects differ in sign, meaning that the CSI performs as expected in explaining idiosyncratic reductions in the food security levels. However, there is an opposite component meant to be location-specific that can explain whether covariate coping strategies are positively linked with food security outcomes. In other words, a site effect that determines how households can cope with food insecurity is disconnected by their own circumstances and linked to the environment they are settled in, proving either an additional negative or positive sustainment in the same direction of the FCS pattern.

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[23] See
 for further details on the livelihoods breakdown by each category per round.
[24] In particular, the livelihood group called '*Social Protection*' consists in households either receiving food aid, remittances or gifts from family and relatives.

Table 4 - Maximum Likelihood Results

Food Consumption Score (FCS)	Coef.	Std. Err.
Round	0.226259 *	0.095973
Household status		
IDPs in camps	-7.19622 *	3.03379
IDPs outside camps	-7.3055 *	3.027318
Refugees in camps	-8.67039 *	3.698791
Residents	-0.38028	3.018122
Returnees	-0.51434	3.054404
Nomads	1.472636	3.422521
Refugees outside camps	-1.63673	5.271985
Coping Strategy Index (CSI)	-0.45539 ***	0.028508
Mean of CSI by IDP camp	0.129857 *	0.057966
Share of expenditures on food	-0.11174 ***	0.006926
Household size	0.418603 ***	0.043219
Livelihoods		
Agriculture	-1.42609	0.760201
Livestock	0.401713	0.964271
Social Protection	-5.65596 ***	0.847732
Agricultural wage	-5.19354 ***	0.793093
Salary	-0.41489	0.792148
Petty trade	-0.9895	0.819617
Other trade/business	-6.55233 ***	0.87111
Building sector	-5.65655 ***	0.942374
Livelihoods X sorghum price	-0.15865 ***	0.034816
Livelihoods X millet price	0.131547 ***	0.027106
Constant	61.82659 ***	3.283328

Random-effects Parameters	Estimate	Std. Err.
Darfur State: Identity		
$v_{..k}$	6.17E-08	6.65E-07
IDP camp: Unstructured		
$u_{1.jk}$(FSMS round)	0.706869 **	0.076793
$u_{0.jk}$	7.611708 ***	0.787337
corr($u_{1.jk}$(FSMS round),$u_{0.jk}$)	-0.50147 ***	0.104216
Residual: Independent, by purchasing power category		
< price of minimum food basket: e_{ijk}	15.83925 ***	0.132909
= price of 1-2 minimum food baskets: e_{ijk}	16.33073 *	0.137343
> price of 2 minimum food baskets: e_{ijk}	18.71887 ***	0.201504

LR test vs. linear regression: chi2(6) = 2868.28   Prob > chi2 = 0.0000

*Note: Authors' elaboration based on WFP Darfur Food Security and Monitoring System data, rounds 1-14. The following notations represent different level of significance: * at 10%, ** at 5%, *** at 1%. Estimates were computed with STATA 12 routine xtmixed.*

As expected, the coefficient for the share of expenditures on food is negative. Moreover, when the purchasing power categories are controlled in the household's residuals, it is quite clear how different food security outcomes may be leveraged

by market based interventions. Indeed, most of the unexplained variance can be attributed to whether a household can afford more than the minimum food basket and to what extent. Considering that the household size is significant and positively affects the FCS, it can be assumed that larger households are able to better differentiate and sustain their income sources.

Finally, in a livelihoods perspective the model provides statistically significant evidence for households relying on any kind of social protection, be it food aid, remittances or gifts. Similarly, households involved in the agricultural sector as casual workers are likely to face similar food insecurity levels, while households having their major income source from agricultural commodity trading are likely to show lower levels of food insecurity.[25] This result is not surprising, as the aforementioned households may pursue autarkic livelihoods means in meagre times while returning to the market when possible. Conversely, casual labourers in the agriculture sector are more likely to be vulnerable to poor agricultural performance. Under the same circumstances, relying mostly on remittances and gifts from the family determines extreme uncertainty, while for food aid receivers it must be acknowledged either the good targeting of WFP transfer modalities - considering that these households are among the more disadvantaged in the sample -, or the fact that income returns from food aid are limited. The other households whose FCS is worse are those engaged in the sale of firewood, grass and charcoal, and in the building sector (*i.e.* brick making and construction). In the specific, the latter category is more relevant in IDP and refugee camps (where 15% and 12% of total households are involved in those activities) while in mixed and resident communities it is by far less important (only for 7% and 4% respectively)[26].

The effect of price changes combined to livelihoods returns mixed evidence, as millet and sorghum show respectively positive and negative outcomes to food security. As millet is by far preferred in Darfur, this evidence may be counterintuitive. However, it can entail that households consuming millet are relatively better-off, while those confined to sorghum consumption are likely to be somewhat more food insecure. Differently, as millet is the major crop produced in the region and is generally more expensive compared to sorghum, it can be speculated that spill-over effects comes from its higher prices, mostly with regards to households to a certain degree involved in millet production and trade. Conversely, those beneficiaries that may decide to sell part of the sorghum food aid received are likely to allow losses of the transfer value in order to switch to the most preferred commodity, millet.

Figure 11 shows the unexplained variance of the random part of model at the location level, bringing back the time component. On the horizontal axis, from left to right the intercepts by location indicate the improving food security level

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[25] However, the coefficient for this subcategory is not statistically significant.
[26] See Annex 6 for further details.

explained by the group-effect, while on the vertical axis, the random slopes show the overall positive or negative trend over the 14 FSMS rounds by location.

The sites on the top right corner are those locations where there is both a better-off overall food security level and where the trend has been improving. Noticeably, three out of the four communities where C&V programmes have been implemented so far fall in that case in point (i.e. Abu Shouk, Otash and Kebkabiya[27]), while Saraf Omra is still on the right side of the horizontal axis but its negative slope is fairly limited. Among the planned C&V expansion sites in 2014, only Dorti has been monitored so far, and it falls in the group of the sites with better performances which means that market based interventions seems to be properly grounded from a household perspective.

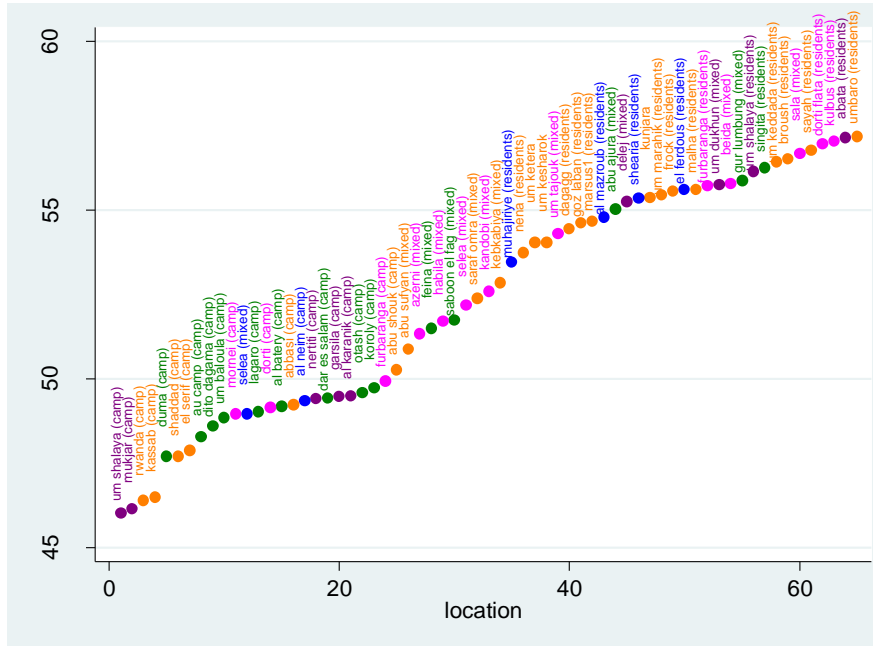**Figure 11 - Unexplained Variance as a function of time changes**
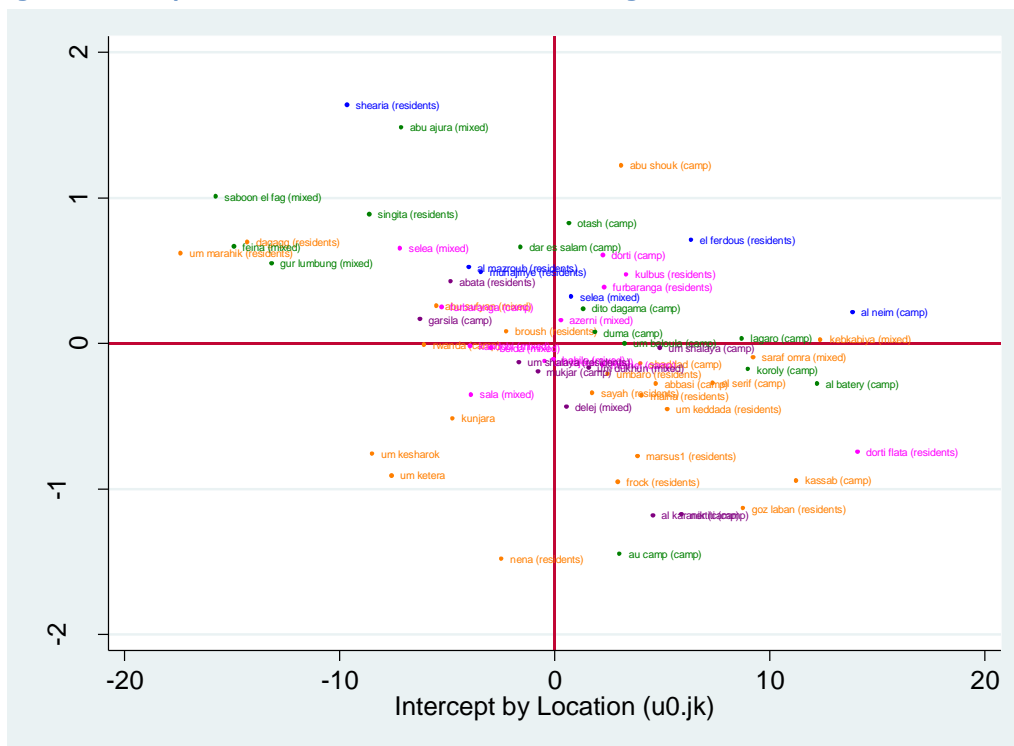
Note: Data from WFP Darfur Food Security and Monitoring Survey, rounds 1-14. Colour legend: orange for North Darfur, magenta for Central Darfur, green for South Darfur, purple for West Darfur, and blue for East Darfur.

Finally, Figure 12 shows the ranking of the food security model predictions by location. Overall, the model performs quite well and in line with the expectations. Indeed, almost all the camps are ranked in the lower positions, while the resident communities attain better scores. Among the C&V sites, Kebkabiya and Saraf Omra (where mixed communities live in) rank in the middle of the sentinel sites. Abu Shouk is the better performing camp with a predicted FCS above 50, Otash is the fourth, while Dorti camp falls slightly behind.

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[27] However, for the Kebkabiya the slope is close to be zero.

Figure 12 - Ranking of predicted FCS by location

Note: Data from WFP Darfur Food Security and Monitoring Survey, rounds 1-14. Colour legend: orange for North Darfur, magenta for Central Darfur, green for South Darfur, purple for West Darfur, and blue for East Darfur.

Overall, these results confirm the goodness of the site specific approach undertaken by Sudan CO, mostly targeting the locations were more vulnerable population live (camps or mixed communities); among this group, the locations selected have a relatively higher FCS as compared to other similar communities. This lays the ground for market-based interventions, as quitting GFD for the camps at the very left of might have been more challenging where food security levels were lower.

Unfortunately, the overlapping between sentinel sites and locations where C&V is being implemented is fairly limited so far, therefore it is highly recommended to include them in the food security monitoring before any expansion phase in order to have baseline information and be able to monitor the program impact.

Still, it can be argued that when market-related variables are controlled, then the food security levels in the camps are way below those of the resident communities. In many camps with middle ranking, market-based interventions are likely to be well-grounded; while as the rank gets lower compelling threats are likely to challenge the effectiveness of the program. When translating this information in operational terms, it can be claimed that the purchasing power leverage may be effective to improve the overall food security of households within the sentinel sites. However, this background evidence needs to be triangulated with the supply insights from the next section.

7. Market structure and conduct – A traders survey perspective

This part analyses the market structure in Darfur. It aims at defining the volumes of traded goods and their flows, the constraints and capacities to respond to an increased demand, and traders' credit and stocks strategies. To answer the above questions, which are key to implement cash and voucher transfer modalities and provide an insightful understanding of the market functioning, two questionnaires (one specific for traders, while the other generic for the whole market) were submitted in the five capital cities in Darfur (*i.e.* Eddaein, Fasher, Geneina, Nyala, and Zalingei), plus in six other additional minor markets deemed to be important in the understanding of trading flows in a regional perspective (Sarf Omra, Dar El Salam, and Kabkabia in North Darfur, Gereida, and Kass in South Dafrur, and Furbaranga in West Darfur). Additionally, the sample was expanded to take into account relevant IDP camps were reasonably developed markets take place (*e.g.* Zam Zam in Fasher).

The categorization of traders replicates an earlier market assessment conducted in Nyala (WFP, 2013), and specifically:

- ✓ Specialized wholesalers:
  Specialized in one/two commodities; using wholesale units (i.e. sacks and jerry cans); selling the whole unit and not part of it.
- ✓ Generic wholesalers:
  Specialized in many commodities; using wholesale units (i.e. sacks and jerry cans); trading the whole unit and not part of it.
- ✓ Wholesaler-retailers
  Selling both to traders and ultimate customers; specialized in many commodities; using both wholesale and retail units (i.e. sacks and malwa); selling in small quantities.
- ✓ Retailers

The commodity of interest were: cereals (millet, sorghum, wheat and rice), pulses (beans and lentils), sugar, and groundnut oil.

With regards to the Traders Questionnaire, considering the limited number of specialized wholesalers, the sampling plan was to interview all the traders within that category to better capture their paramount role in securing the bulk of trading flows, whereas limiting the interviews for the remaining three categories of traders according to the following rule of thumb: maximum #10 for cereal traders, #10 for groundnuts oil traders, #5 for pulses traders, and #5 for sugar traders, while if the number by category and commodity was below these thresholds, all the traders should have been interviewed. In order to have a better understanding of the population of interest, traders associations and other official bodies with information on the records of traders by market (both wholesalers and retailers) were approached.

On the other hand, the Market Questionnaire, was submitted to key informants (*e.g.* market managers, traders' association chairmen), in each different market location.

7.1 Traders profiling

In total, 667 traders were interviewed, as reported in Table 5. Among those, 210 were wholesalers, either specialized in one commodity or dealing with a wider range of products, while the remaining were mostly oriented towards retailing activities.

Table 5 – Traders sample

State	Locality Name	Specialized Wholesaler	Generic Wholesaler	Wholesaler / Retailer	Retailer	No answer	Total
Central Darfur	Zalingi	2	18	11	30	0	61
East Darfur	Eddein	8	18	17	23	0	66
North Darfur	Dar El Salam	0	0	10	10	0	20
North Darfur	Fasher	7	16	19	46	0	88
North Darfur	Gereida	3	13	15	16	0	47
North Darfur	Kabkabia	2	7	10	5	0	24
North Darfur	Sarf Omra	1	8	5	7	0	21
South Darfur	Kass	2	14	14	28	0	58
South Darfur	Nyala	13	4	16	28	0	61
West Darfur	Furbranga	0	28	31	31	0	90
West Darfur	Geneina	28	18	37	46	2	131
Total		**66**	**144**	**185**	**270**	**1**	**667**

Source: WFP, traders' survey, December 2013.

The sample is overall quite balanced in terms of traders' category representation by location, with a slight oversampling in West Darfur compared to the relative weights of the markets in that state.

Traders selling sugar were relative more in Dar El Salam (70%), Zalingei (64%) and Kabkabia (81%); in other markets, the sugar sellers share is large too, being firmly above 40 percent of the sample (Eddein Kass, Gereida, Fasher, and Nyala). Similarly for groundnut oil, sold by 83 percent of the interviewed traders in Gereida, followed by traders in Kabkabia (76%), in Dar El Salam (75%), in Nyala (66%) and Zalingei (64%).

As expected, among grains, both sorghum and millet are broadly traded; the same applies for beans and rice, as well as sugar and groundnut oil (Figure 13).
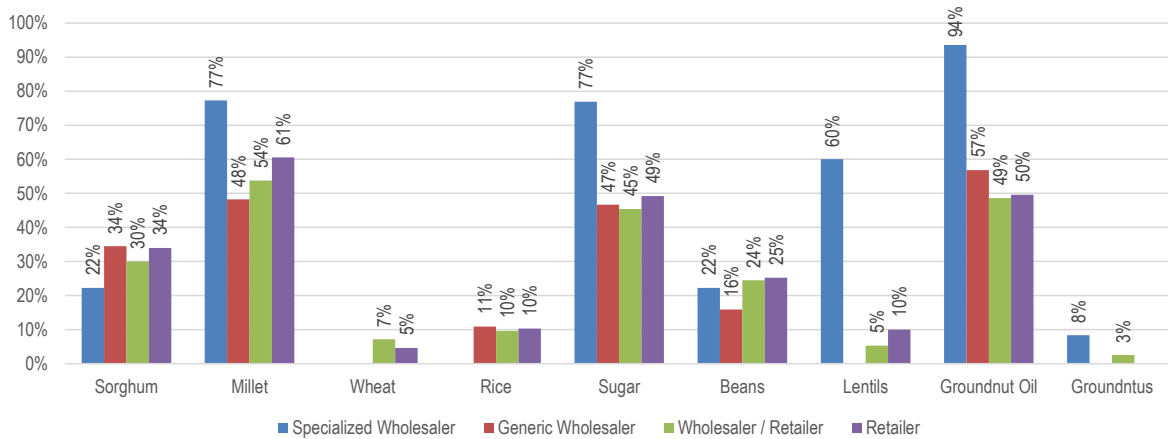
Figure 13 - Commodities traded
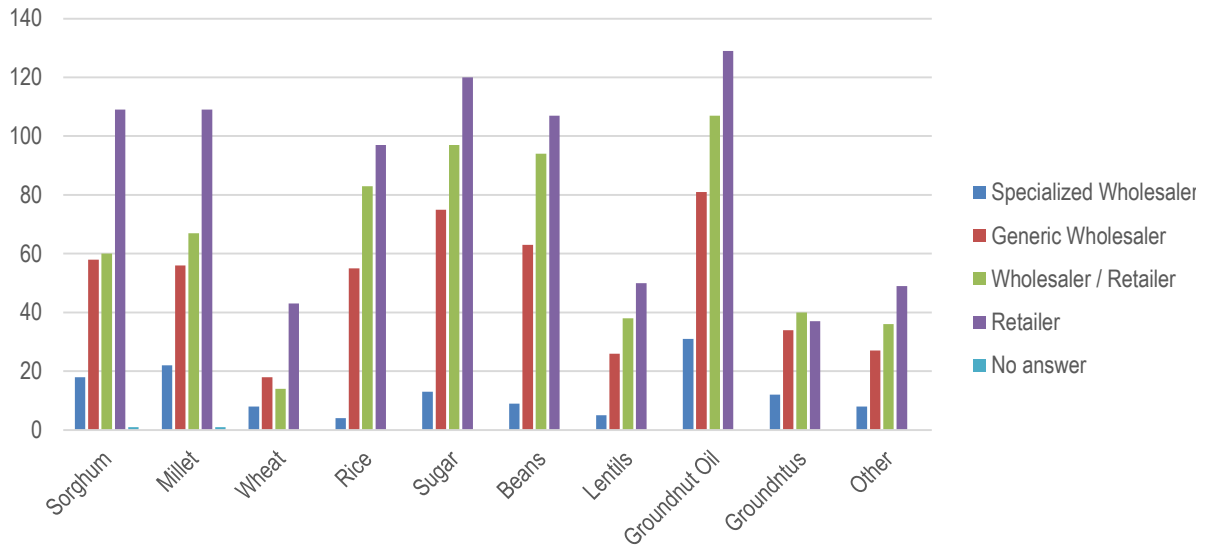
Source: WFP, traders' survey, December 2013.

The commodities with the higher degree of specializations are mostly millet, groundnut oil, sugar and, to a limited extent, lentils (Figure 14).

Figure 14 - Most important commodity out of all the commodities traded
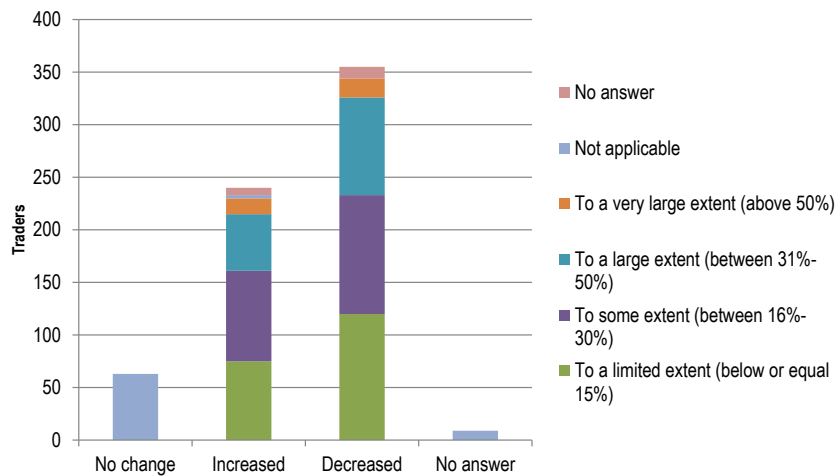

Source: WFP, traders' survey, December 2013.

In general, the interviewed traders were predominantly men (81%), and owning their activity (89%); most of them had a long-run personal history of trade, as 63 percent have been running their activities for at least five years, while for about 81 percent the most important commodity traded has not changed from last year. Finally, 41 percent owned the premises of their shop, 46 percent rented it, while 12 percent ran the business using open air stalls.

7.2 Volumes and flows

Traders in the sample confirm the meagre agricultural performance envisaged earlier in Table 2; the sales during the 2013/14 harvest period as compared to the

previous year have decreased for almost half of them, and actually for one-third quite significantly (above 15%, see Figure 15).

Figure 15 - Extent of sales change from last year (same period)

Source: WFP, traders' survey, December 2013

Figure 16 - Reason for sales change from last year (same period)
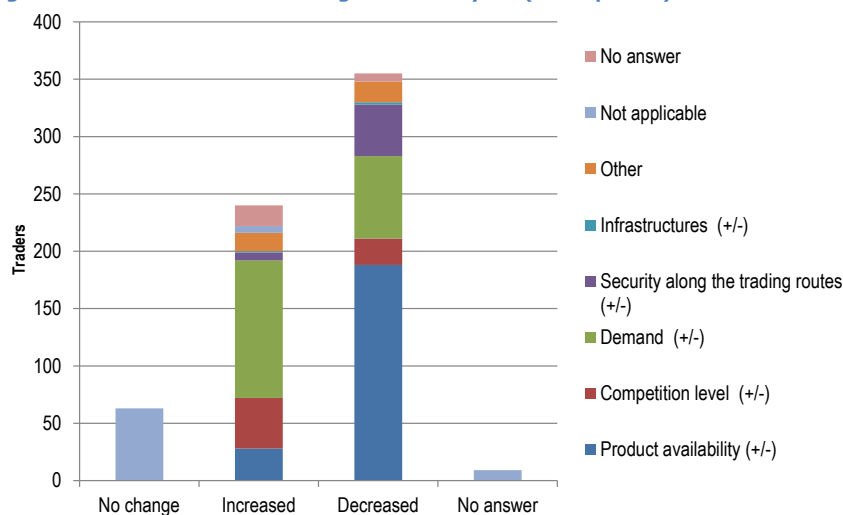
Source: WFP, traders' survey, December 2013.

Indeed, most of them ascribe such a decline to a broader availability issue (Figure 16), therefore pinpointing in the supply the major challenge to their business. Not surprising, security along the trading routes is not perceived as the major cause of such decrease[28], because traders may have developed coping capacities to deal with it and they might have set their expectations against a background were insecurity is somehow the rule, while availability issues may further challenge their business according to the yearly production outcomes. As a counterproof, during a market assessment in Nyala carried forward as of November 2012 in the eve of last year bumper crop, one-fourth of the wholesalers declared that improved production pushed their business up (WFP, 2013). Demand issues is also perceived as a factor apparently contributing to sales reduction, and may be linked with the higher price level from last year. However, there is a level of ambiguousness here, as enhanced demand was largely perceived the triggering cause for increased sales for those traders having a better performance as compared to last year.

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[28] With the exception of traders in Eddaein and Sarf Omra, where insecurity is deemed as the major constraint.

When possible, traders operating in Darfurian markets prefer to reduce the steps along the supply chain and purchase the commodities traded directly from the very origin, while reliance on markets is seen often as a second best option (Figure 17).

According to the trader survey, both sorghum and millet are preferably purchased directly from farmers while, as an additional source, traders rely either on other wholesalers or - less prominently - on middlemen.

Differently, groundnut oil is largely originated from factories or, alternatively, from other traders. Sugar is mostly channelled towards Darfur from traders; however, specialized and bigger wholesalers may directly purchase it from factories to

Figure 17 - Main sources of supply

Source: WFP, traders' survey, December 2013.

eventually propel it along the supply chain at the lower levels of retailing activities.
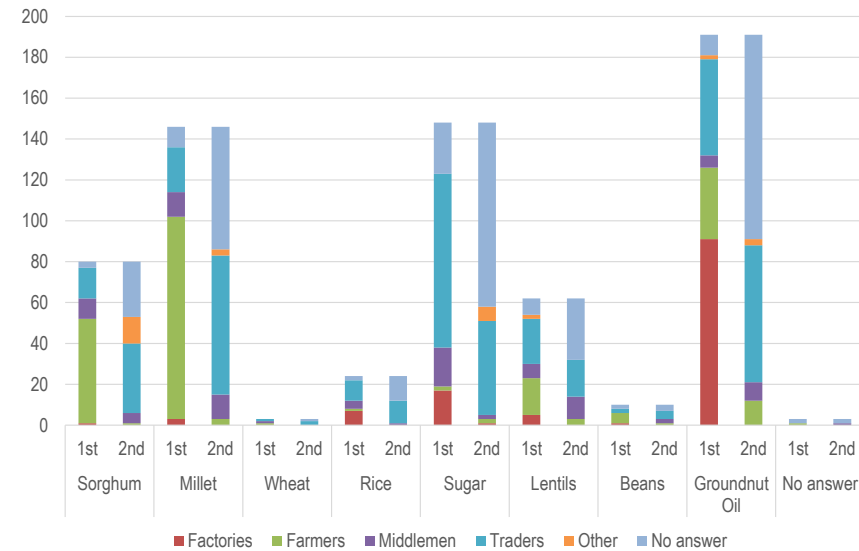
Another element constraining the business is the limited sources of supply. When asked, almost 45 percent of the respondents declared not to have other potential suppliers, while for another 40 percent the alternative possibilities were tremendously scanty (between 1 and 3). In other words, should the conventional supply chain go under stress, most traders will find themselves facing supply restraints.

In this case, the majority of traders in Dar El Salam and Gereida markets would not have replacements options, while more than 90 percent of the traders operating in major cities (*i.e.* Fasher and Nyala) are operating with poorly or nil diversified provision channels. Reportedly, the exception to this rule is Furbranga, where almost one-third of traders should be able to diversify.

When considering the trader category, more than half of the retailers do not have any alternative source of supply. This share tends to decline up to 30 percent as traders gets bigger and more specialized; in opposition, 25 percent df the traders belonging to the latter group have a decent number of suppliers. The category of traders, deemed not fully reliant on a limited number of suppliers, drops to 17 and 15 percent of the generalized wholesalers and wholesaler/retailers respectively, and to 7 percent of the retailers.

Traders were further tested on their linking-up capacities, by asking them whether they were able to establish connections with other traders in case of poor local production. Figure 18 confirms that at least one-third do not have any supply network to secure production in this circumstance. On top of this group, another third and more is constrained either locally or to Darfur only, thus creating a huge covariate risk in case production setbacks are not confined to a given area but are more widely spread within the whole region.

Sugar traders are the ones with more far-reaching connections beyond Darfur, while groundnut oil trade is more local as well as grains.

Figure 18 - Trading connections in case of poor supply
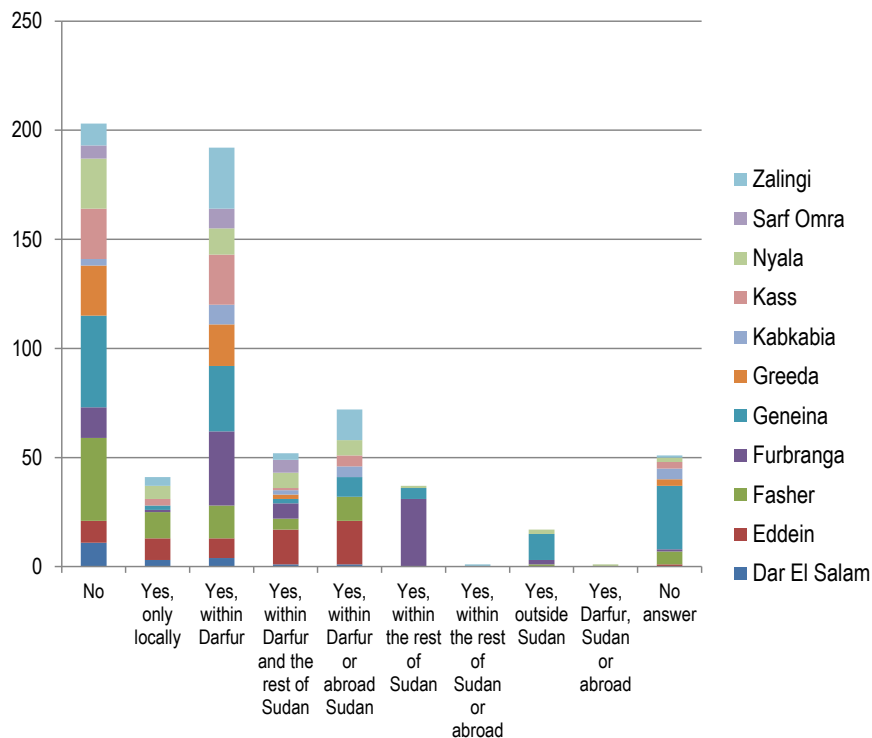
Source: WFP, traders' survey, December 2013.

Almost 81 percent of retailers would not be able to meet demand in this case, which is exactly what North Darfur may be experiencing in the post-harvest season 2013/14. Differently, wholesaler / retailers appear more geared-up as their percentage drops to 41 percent, while for generalized and specialized wholesalers it is 27 and 13 percent respectively. In a market support perspective, it may be worth exploring how far wholesaler / retailers are suitable to implement vouchers, as the retailers' pay-off may be too uncertain, while massive reliance on bigger wholesalers will probably not be beneficial to develop the market. As such, this assessment partially echoes the recommendation - limited to wholesaler / retailers - that "*specific efforts should be made to improve competition among traders and spread the market incentives among a wider variety of traders with differing capacity*" (Bizzarri, 2013).

7.2.1 Catchment areas

As mentioned above, in regular years traders tend to purchase millet and sorghum locally. More in detail, traders operating in Nyala get their stocks from local

sources of supply or, alternatively, along the commercial route to Kass and Zalingei. This does not apply the other way round, as traders operating in Kass mostly rely on local supply sources, while those in Zalingei reach out northbound to Saraf Omra or westbound to Mornie[29]. Geneina is another site where traders usually meet their supply-needs locally, albeit some of them widen their operating areas towards Kerenek region (north-east). Furbranga traders are tied to Geneina and Mornie and, being a border-post, to Chad. Traders in Saraf Omra operate mostly locally, as well as in Kabkabia, even though partially connected to the latters. Finally, El Fasher and Dar El Salam traders reported not to be strongly connected with the rest of Darfur, as well as those in Gereida and Eddaein, whose traders may have El Gedaref as an alternative source to local supply.

When asked about their alternative supply sources should usual partners fail to provide enough grains, Eddaein traders would link-up all the way to Geneina and Fasher, while those operating in Gereida only to Nyala. Including also the other commodities under investigation but sugar[30], Nyala is the hub for traders in Geneina, Zalingei, Kass, Saraf Omra and Furbaranga when availability gets thinner.

The findings from the survey find additional evidence from Map 1, which draws accessibility of markets and the catchment areas in Darfur.

The term "*accessibility*" refers to the time to reach a location of interest (*i.e.* relevant markets in Darfur), accounting for the road network, topography, land cover and specific restrictions of movement (*e.g.* checkpoints, cross-border procedures).

Accessibility in terms of ease of physical access to markets and social infrastructure strongly determines households' food security and poverty outcomes, as it contributes to the diversification of household economies, offering opportunities both for selling goods and for casual work.

It is also relevant for traders, as reaching detached markets may either be unfeasible or embed additional costs that have to be transmitted to customers. In the case of Darfur, accessibility is a key factor to understand market functioning since access to markets is challenged by poor infrastructures, flooding and insecurity.

The methodology here proposed encompasses three steps (WFP, 2014):

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[29] Mornie is located almost halfway between Geneina and Zalingei.
[30] Usually coming from Khartoum factories.

Map 1 - Market catchment areas
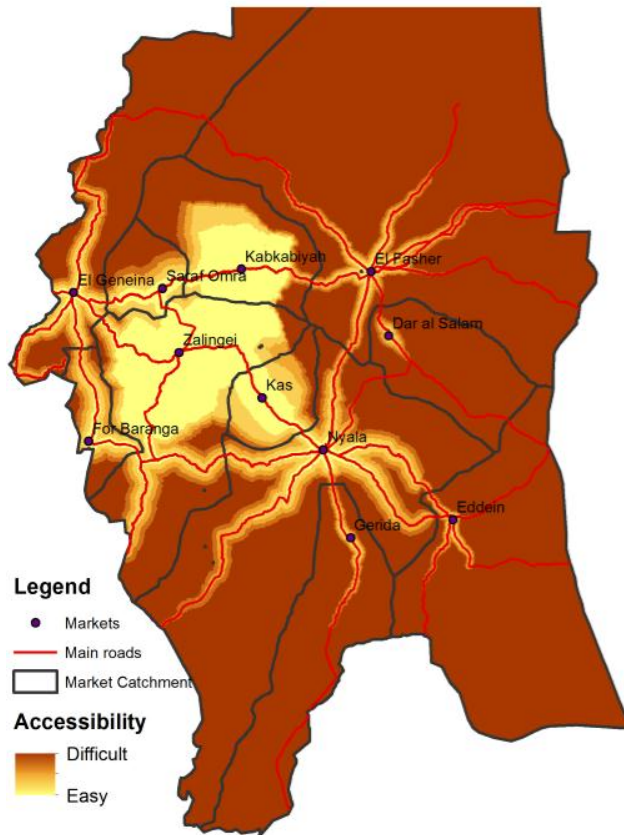
Source: Global Administrative Units (GAUL) - FAO 2013;
GlobCover2009 Land Cover Map - ESA 2010;
LandScan™2011 Global - Oak Ridge National;
GTOPO30 global digital elevation model (DEM) – USGS;
Road and Market Network – WFP;
River and Surface Water Body Network (RWDB2) - African Water
Resource Database FAO 2007.

The first step is to calculate the shortest travel-time (and distance) from each point in the map to the market locations, taking into account the different travel speeds allowed by various surfaces and slopes (*e.g.* swamps vs. flat open ground, highway vs. single track) as well as any natural or man-made barrier encountered (national borders, rivers, mountains). This allows the identification of locations with greater accessibility problems, thus prone to chronic poverty and food insecurity, and where markets are less likely to function.

The second step, determines the catchment-area of selected markets, identifying their reach as a result of the travel-time. The assumption is that people within a catchment-area naturally refer to the closer (in terms of time) market. Of course, the catchment may change, as insecurity gets higher along the road network, or during the rainy season, when many roads get flooded.

Finally, the identified areas are modified according to a supply/demand index, which is used as a weighting factor to reiterate steps 1 and 2. This index takes into account *a)* the agricultural land in the catchment-area as a share of the whole Darfur (as a proxy of supply); and *b)* the weight of population living in the catchment area as a share of total population in Darfur (as a proxy of demand). When the index is above the unity, then the original catchment-area is deemed as a surplus area and gets expanded accordingly, while the opposite applies when the index is below the unity.

Map 1 proofs the trading sources described above quite well. The markets of Zalingei, Kass, Saraf Omra, and Kabkabia are quite connected one each other, being in the range either of Geneina or Nyala, which are their reference markets. The latter has a wider catchment area, being quite close to Eddaein, Gereida and

Dar El Salam, thus confirming how these three markets are quite disconnected from the broader trading network in Darfur. Fasher market is rather standalone, as its weak connections to other relevant markets in Darfur are challenged by increasing insecurity along the road.

Reported information collected few weeks before the survey[31] portray a worse scenario, where trading routes are further stressed by mounting uncertainty over transport time, as checkpoints and compulsory escorts dramatically delay commercial trucks. Most of the roads to Fasher required escorts for humanitarian convoys from the Government of Sudan or UNAMID. As a result, to cover the distance between Nyala and Fasher (approximately 188 Km), the transit time could be up to 1-2 days, while between Kabkabia and Fasher not only security clearance and armed escorts were mandatory, but transports were further slowed down by flooding around Kabkabia, which required heavy 6x6 trucks not available for many traders. In addition, along the eastbound route to En Nahoud (350 Km) on the way to El Obeid, commercial transports could be delayed from 1-2 days up to 14 days. Armed escorts were irregular on the Nyala-Eddaein corridor, due to the volatile security situation. However, to reach En Nahoud from Eddaein, the expected time was from 1-2 days up to 10 days. Despite the 95 Km to reach Gereida from Nyala, 1 day transit was expected for UN convoys. On the south-west route from Nyala to Geneina, escorts were needed up to Kass and Zalingei, with 2 days transit time from Nyala to Zalingei (178 Km), and an additional 1-2 days from there to move trucks to Geneina (125 Km). Reportedly, no escorts were required from Geneina to Furbaranga.

Figure 19 reports wholesale prices for millet in 10 out of the 11 markets[32], and can be read according to the above described scenario. Prices in Eddaein and Fasher are firmly above the average of the median[33] prices collected during the traders' survey.

In opposition, Geneina (that is a surplus area with prices fairly below the rest of the country), Saraf Omra (90 Km far from Geneina), and to a lesser extent Kabkabia, Kass and Zalingei, show similar prices below or nearly around the average.

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[31] Supply Corridor and Required Security Escorts Map, September 2013.
[32] The traders' survey methodology by its own nature has to tolerate a bias margin, as some of the information being asked are sensitive for traders. In particular, when asked about purchasing and selling prices, many traders tend to overestimate the former and underestimate the latter, so to artificially reduce their margins. Thence, data in Figure 19 were partially cleaned to remove several outliers found in the dataset.
[33] Medians in the distribution of millet prices by market were used in Figure 19, to further reduce the bias effect.

Naturally, the major cities have to face higher prices as a consequence of urbanization and higher inflation rates, even though this is cannot fully explain price differences. As a matter of fact, most of the differences can therefore be associated to all the factors included in the mapping exercise, thus partially unveiling the mechanism behind market functioning in Darfur.

**Figure 19 - Millet Wholesale Prices (SDG/KG)**

Source: WFP, Darfur traders' survey, December 2013.

7.3 Constraints and response capacity

Another key aspect linked to the analysis on volumes and flows is the understanding of the constraints traders have to face to implement their business. Eventually, this information would determine whether there is any response capacity to deal with market based interventions and meet the expected increase of demand, without further stressing an already weak trading environment.

More than half of the sampled traders blamed limited resources and lack of access to credit as the major limitation in their activities, which is by far considered as the most biting constraint (Figure 20). Indeed, traders have to deal with mounting costs to adapt to the volatile environment in Darfur. In other words, having trucks that can safely cross flooded areas, delaying the transportation of goods up to several days to comply with security issues and checkpoints, allowing likely losses, all determines additional costs to mitigate the risk of trade that many traders may not be able to tackle. Interestingly, the fact that specific causes were not highlighted as the first constraint, implies that traders somehow internalized these behaviours in the *status quo*, as if uncertainty was granted. However, when exploring the other causes, it is quite plain that transport costs (including fuel and checkpoints permits), insecurity issues and poor infrastructure assume a prominent role, and help contextualize the lack of resources as the core issue limiting market development.

Figure 20 - Constraints preventing business expansion
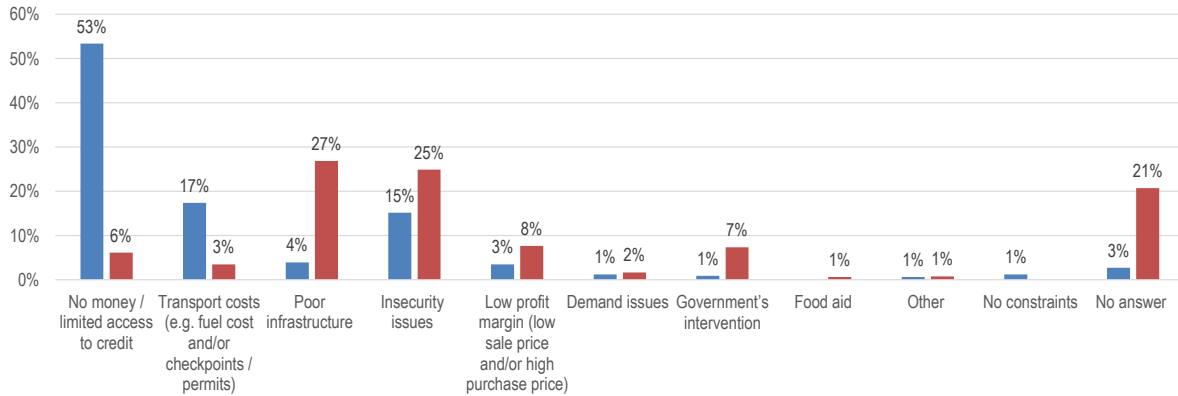
Source: WFP, Darfur traders' survey, December 2013.

Almost 30 percent of total costs were estimated to be spent equally on checkpoints or in generic transportation costs for almost half of the sample (Figure 21).

Besides, losses along the road could be estimated around 12 percent of total costs for one-fifth of the sample.
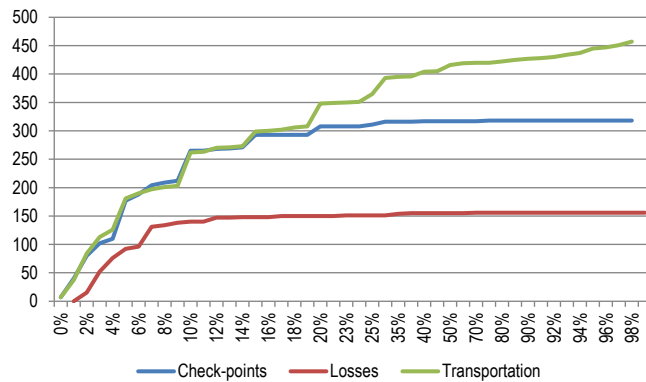
Among traders, retailers are naturally those more

Figure 21 - Estimation of check-point, losses and transportation on total costs (cumulative share by number of traders)

Source: WFP, Darfur traders' survey, December 2013.

vulnerable to insecurity. Around 40 percent of them asserted not to put in place any mitigation measure. This share gets roughly halved for specialized wholesalers, while for the other two categories in the sample it is slightly below 30 percent (Figure 22).

The higher percentage of traders with no mitigation measure are in Saraf Omra, Gereida and Dar El Salam, but also in major locations like Nyala and Fasher.

Apparently, government escorts are more accessible for larger traders[34], at least for some 40 percent of them (and almost 60 percent of the traders in Eddaein), while another one-sixth of these traders can also afford private escorts (mostly in Furbaranga, Geneina and Kabkabia).

Insurance contracts are not very common, and confined to specialized traders operating in Nyala or Geneina and dealing with sugar and pulses.

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[34] *i.e.* specialized wholesalers, generic wholesaler and wholesaler / retailer.

Figure 22 - Risk mitigation related to insecurity

Source: WFP, Darfur traders' survey, December 2013.
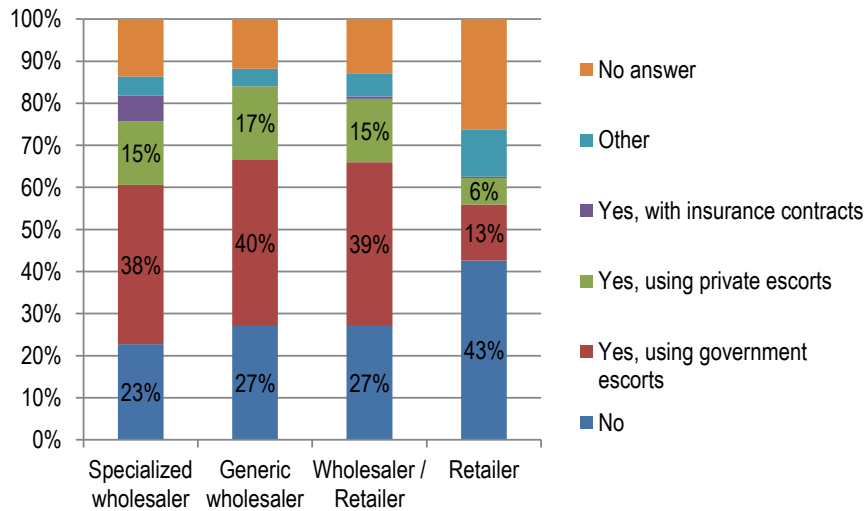
As said, another significant component of the final cost of goods relates to fuel prices. The lift of fuel subsidies prompted a significant increase of fuel (+75%) on top of already high transportation costs. However, most of this increase not only would further penalize traders, but is likely to be transmitted straight on final customers. This is definitely clear in the case of retail millet prices in Fasher (see Figure 36 and Figure 38 in the next sections), which experienced a month-on-month (m/m) increase by 17 and 16 percent between September and October 2013. In other markets the price increase of millet was similar, *e.g.* in Geneina (+34% in October), in Nyala (+17% in September), in Zalingei (+21% in September). Similar price hikes occurred for sorghum (+52% in Geneina and +10% in Nyala in October), sesame (+21% in Nyala in October; +22% in Zalingei and +20% in Fasher in September) and wheat (+15% in Fasher in September).

Figure 23 confirms the price evidence, showing how traders were to transmit fuel costs along the supply chain. For more than one-third of the sample, the transmission should have been quite limited (less than 10 percent), while for another third between 16 and 30 percent, and for another fifth of traders up to 50 percent.

The breakdown of these answers by trader category is noteworthy; for 44 percent of the specialized wholesalers, price transmission from fuel to customers would be large (up to 50%). This share decreases for the other trader categories down to the 43% of retailers claiming that the price transmission from their side would be limited. Retailers appear to be in a way trapped, on the one side by increasing wholesaling prices, and on the other, by limited purchasing capacity of households.

As a result of this stretched cost composition on top of the environmental constraints, traders have limited or null capacity to withhold increases of prices, should the market go further under pressure either as a result of shocks in the supply or in the demand. Considering the survey was carried forward in December

**Figure 23 - Fuel price transmission on food commodities**
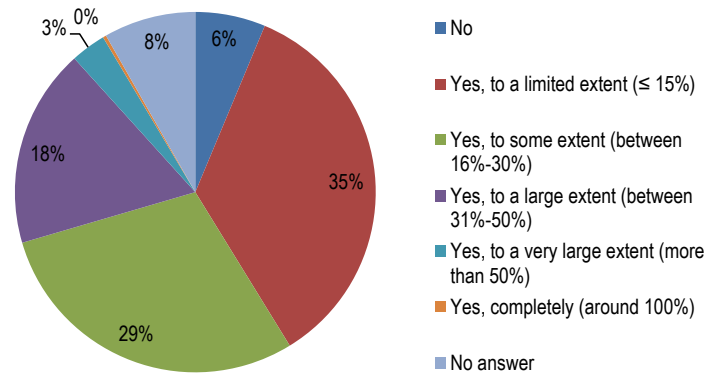
Source: WFP, Darfur traders' survey, December 2013.

2013, when the prospects for the harvest where already partially disclosed, it is clear that traders were not in the position of facing both shocks; actually, the vast majority of traders (78%) clearly admitted that in the event of a 25 percent increase of demand (possibly as a result of voucher implementation), they would have to increase prices (Figure 24).

In addition, the expected price increase would be not temporary for more than half of the interviewed traders, thus suggesting that these traders would have not only to adjust their cost structure to temporarily meet additional demand, but probably set up innovative solutions to adapt their business. Grain traders are those less equipped to that contingency, as essentially sugar, groundnut and pulse traders are the remaining traders who

Figure 24 - Expected price behaviour with a 25% increase of demand and persistence of change

Source: WFP, Darfur traders' survey, December 2013.

expected no price change occurring a 25 percent increase of demand.
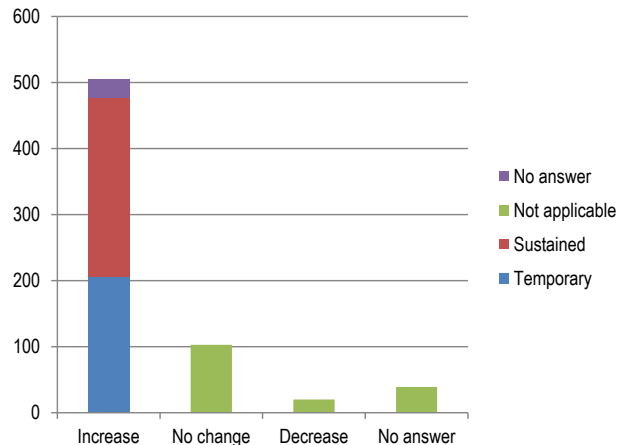
Apparently, this is commodity-specific rather than being driven by trader categories. In fact, a cross-section of some 15 percent of traders, equally balanced in the four categories, expected no price change.

Yet, despite the likely price increase, 80 percent of traders claimed to be confident to have the capacity to absorb an increased demand (Figure 25) in a decent time frame (within one or two weeks, see Figure 26); in particular, 44 percent of them could absorb up to an additional 25 percent of demand, while another 18 percent could even double their supply.

**Figure 25 - Capacity to absorb increased demand**
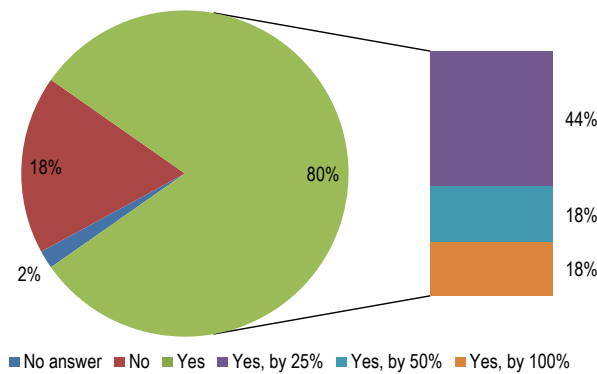
Source: WFP, Darfur traders' survey, December 2013.

Naturally, among those, wholesalers play a prominent role (24%), as opposite to retailers (12%). Again, the answer from the trading category doing both wholesaling and retailing activities are closer to bigger wholesalers rather than retailers (19%). Indeed, it is therefore recommended to also involve these traders in any voucher program, if market support is among the objectives to be pursued and to avoid benefitting only the traders that appear to already be better equipped.

At the market level, 53% of traders in Gereida were not comfortable at all with the idea of meeting additional demand, while in Fasher, Saraf Omra and Zalingei this share is 24, 29 and 28 percent, respectively. Apparently, only 10 percent of traders in Geneina, and 3 percent of traders in Nyala were in the same position. This partially corroborates the findings in section 7.2.1, as the latter two are somehow reference markets for the rest of Darfur.

Figure 26 - Timeframe to deliver in case of additional demand
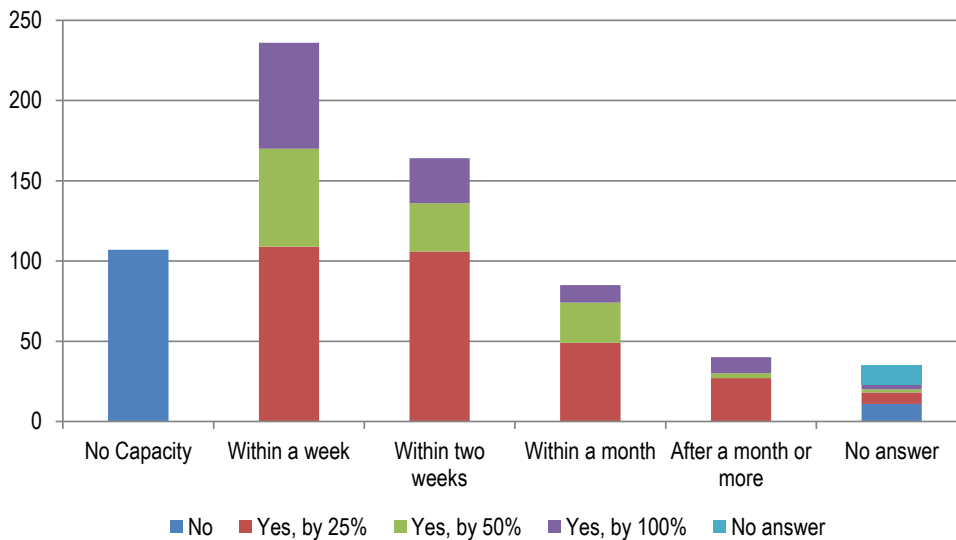
Source: WFP, Darfur traders' survey, December 2013.

7.4 Credit and stocks

Access to credit can be one of the means traders may pursue in order to be able to meet increased demand. From a wholesaler perspective, assessing whether credit is provided or not is an indirect way of analysing to what extent smaller

traders can go beyond their limited resources. For retailers, it means how far they can differ the revenue recognition to temporarily support households' limited purchasing power.

According to Figure 27, about 79 percent of the traders do provide credit to their customers. Among those, roughly 200 traders (out of 667 in the sample) provide up to 10 percent of credit, while other 150 do it up to 30 percent of their total sale.

Figure 27 – Traders providing credited and share out of total sales
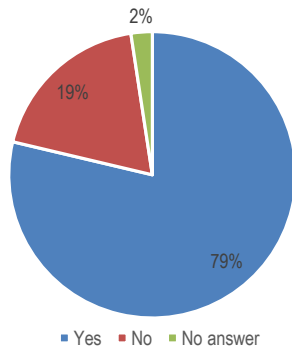
Source: WFP, Darfur traders' survey, December 2013.
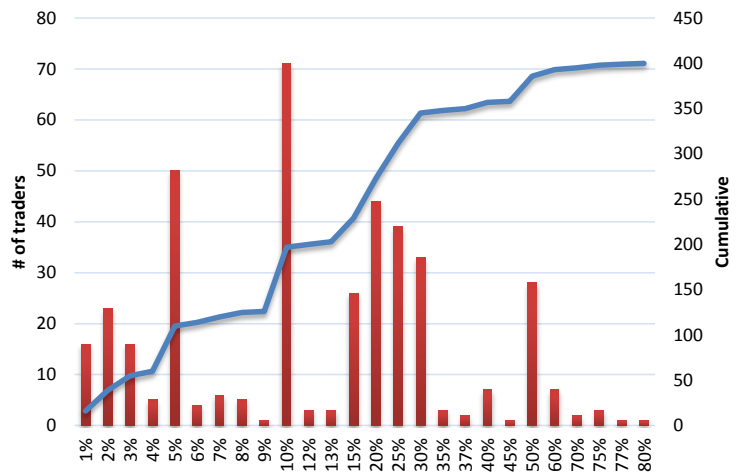
By trader category, 67 percent of the specialized traders provide credit, against an average of 80 percent for the remaining traders. Traders have therefore some room to expand their business, which can be conservatively estimated between 5-10 percent of their current sales and could be considered as an appropriate starting reference to assess traders' capacity to meet additional demand before implementing vouchers programs.

Beyond credit, stocks are another key element to control for response capacity evaluation. Limited stocks can hinder traders to meet increased demand, especially when the operational capacity of the market is so volatile that proper stock turnover is not always granted in Darfur, where transit of commercial trucks in and out markets can be significantly delayed.

The majority of traders rotate their stocks in about one week in all the markets but in Kabkabia, Zalingei and partially Geneina (Figure 28), where stocks are expected to be replenished in two weeks or more. In the case of Kabkabia, these results might have been determined by the flooding occurred few weeks before the survey[35]. However, more than one-third of the traders in Nyala and Sarf Omra may need up to a month. Specialized and generic wholesalers have lower replenishment time as compared to wholesaler / retailers and retailers. The latters have limited stocks that they are able to sell in a week time, thence appear to be less equipped to face temporary (and likely) shortages of supply.

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[35] See section 7.2.1 Catchment areas.

Figure 28 - Usual time gap between food purchasing and selling
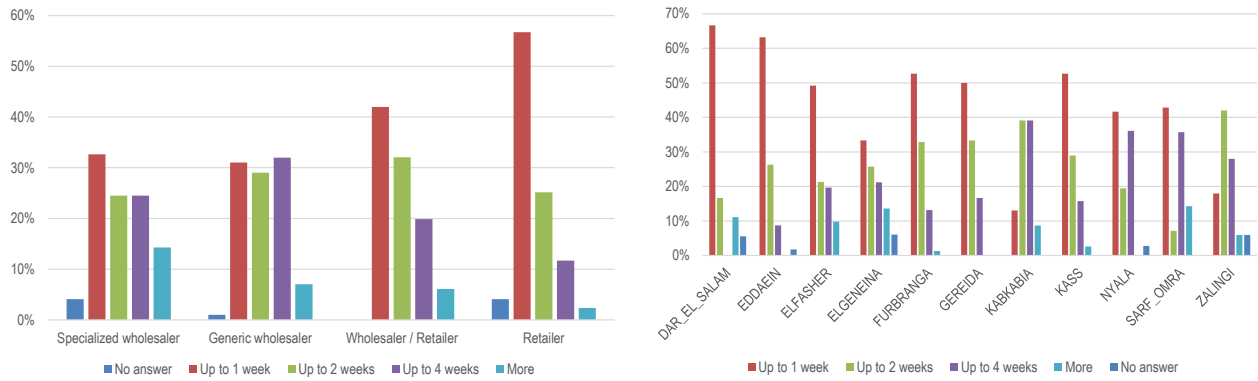
Source: WFP, Darfur traders' survey, December 2013.

Yet, half of the traders claim to have never handled poor stocks (Figure 29), and only 19 percent of them might experience stock-out for 2/3 times per month. As expected, the reason behind is often insecurity and looting (20%), which not surprising suggests that stock-out occurrence and violence are quite correlated, thence traders are more likely to fail in meeting demand should uncertainty around the market increase.

Figure 29 - Frequency and reason for poor stocks / stock out
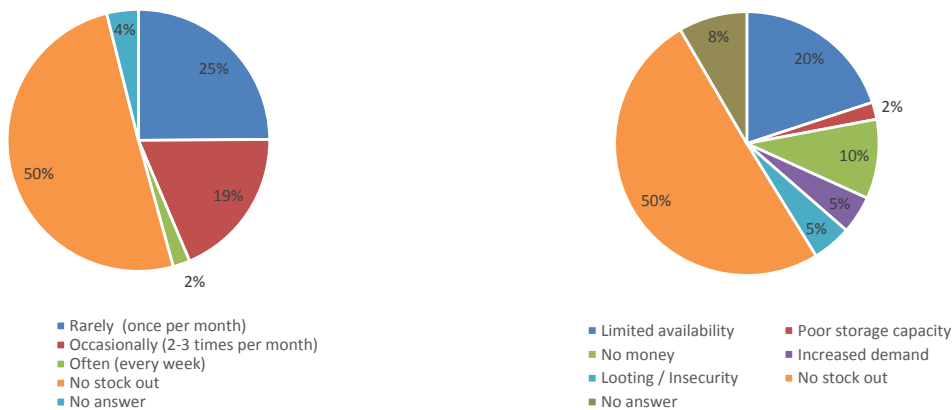
Source: WFP, Darfur traders' survey, December 2013.

7.5 Assessing asserted traders' capacity to respond

The capacity to respond plays a paramount role for decision making; thus, relying only on traders' answers may return a biased picture, as they may not be all truly reliable if they might have perceived the survey - and eventually the voucher program - as an opportunity for pursuing additional business in the future.

This section tries to assess the asserted traders' capacity to meet additional demand, should WFP stimulate the market with vouchers; the exercise here proposed exploits the information available both in the state cereal balance sheets

and the production estimates, where local production and consumption are estimated for the three Darfur states[36].

As the data is available at the state level only, the statistics here presented are computed per capita, based on the state population growth estimates, to then be consolidated at the city level[37] in Table 6 for years 2013 and 2014.

Table 6 - Cereals Supply and Consumption estimates

	2013						2014					
	Population	Supply per capita (KG)	Consumption per capita (KG)	Local supply (MT)	Consumption (MT)	Surplus/Deficit (MT)	Population	Supply per capita (KG)	Consumption per capita (KG)	Local supply (MT)	Consumption (MT)	Surplus/Deficit (MT)
EDDAEIN	459,683	64.6	142.1	29,695	65,314	- 35,619	472,168	44.1	142.1	20,839	67,088	- 46,248
ELFASHER	575,609	99.5	144.4	57,257	83,142	- 25,885	580,058	22.7	144.4	13,156	83,785	- 70,628
ELGENEINA	295,538	369.2	141.6	109,121	41,854	67,267	304,736	94.7	141.6	28,846	43,157	- 14,310
FURBRANGA	82,139	369.2	141.6	30,328	11,632	18,695	84,695	94.7	141.6	8,017	11,994	- 3,977
KABKABIA	202,071	99.5	144.4	20,100	29,188	- 9,087	203,633	22.7	144.4	4,619	29,413	- 24,795
KASS	290,056	64.6	142.1	18,737	41,212	- 22,475	297,934	44.1	142.1	13,149	42,332	- 29,182
NYALA	723,491	64.6	142.1	46,737	102,797	- 56,060	743,141	44.1	142.1	32,799	105,589	- 72,790
SARF_OMRA	214,392	99.5	144.4	21,326	30,967	- 9,641	216,049	22.7	144.4	4,900	31,207	- 26,306
ZALINGI	118,162	369.2	141.6	43,629	16,734	26,895	121,840	94.7	141.6	11,533	17,255	- 5,722

Source: Planning and Agricultural Economics Administration, Food Security Department and CBS.

While in 2013 the estimated deficit for the 9 markets reported[38] was around 46 thousand metric tons, in 2014 it has increased more than 5 times, being at 294 thousand metric tons. Thence, also the West Darfur markets located in a surplus area, may need to partially import cereals to meet their demand in 2014. On the other hand, estimated per capita consumption is the latest available from the cereal balance sheets (2012) and it is here assumed to have remained constant over the following two years; it was slightly below the 146 kilograms per year requirements in the northern states of Sudan, "*including sorghum (73 kg), millet (15 kg), wheat (55 kg), rice (2 kg), and maize (1 kg)*" (Strategic Reserve Corporation, 2010).

Figure 30 summarizes the above information. For every market, the blue markers represent the crossing points between local production and consumption in 2014, while the orange ones refer to 2013 and the greyish lines the requirements at the 146 Kg threshold.

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[36] For this exercise only, the previous administrative division of Darfur applies, thence Zalingei fits in West Darfur data, and Eddaein in South Darfur. Production data are from Planning and Agricultural Economics Administration, Department of Agricultural Statistics, Ministry of Agriculture and Irrigation, 2013, while the balance sheets are from Food Security Department, Annual Report of Situation of Food Security in Sudan 2013.

[37] Data from the Census 2008 (CBS). The projected population growth by town is assumed to be equal to the state rate, for which estimates are available online in the 'population' section at http://www.cbs.gov.sd. See also section '
9.2 Impact estimation model'.

[38] Population estimates in the Census 2008 were not available for Dar El Salam in North Darfur and Gereida in South Darfur.

Figure 30 - Consumption and local supply
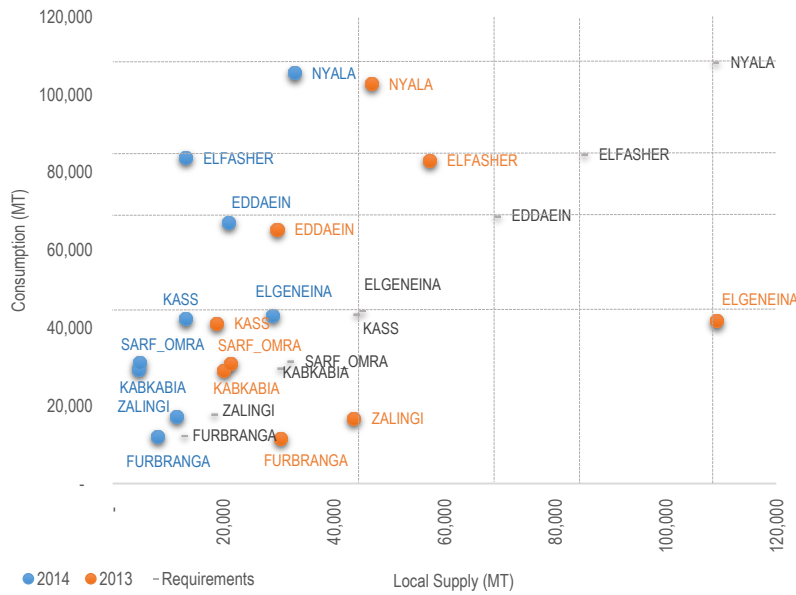
Source: Planning and Agricultural Economics Administration, Food Security Department and CBS.

All the markets moved to the left of the plot, thus showing a reduced supply from local production. In particular, the major shifts for the more populated cities are shown in Fasher, which further moved away the requirement threshold, and Geneina. Allowing that the estimated consumption is somehow close to the 146 kg requirements, it can be asserted that the reported gaps show the market role to adjust for local production shortages[39].

Against this background, six voucher expansion scenarios were built in the four major towns (*i.e.* Nyala, Fasher, Eddaein and Geneina) to assess traders' deliver capacity against an additional demand driven by 5, 10, 20, 40, 80, and 100 thousand beneficiaries. This scenarios fit well with the planned or future voucher expansion plans in Darfur, as the expected number of additional beneficiaries in Zam Zam camp close to Fasher is above 100 thousand, while in Ardamata camp close to Geneina the expected beneficiaries are 20 thousand. Additionally, it can serve to prove actual voucher size, such as in Otash camp close to Nyala (roughly 56,000 beneficiaries) and in Eddaein (some 51,000 beneficiaries)[40].

The expansion scenarios were tailored according to the following steps:

a) aggregate local production and consumption[41] figures by market were estimated as explained above from the cereal balance sheets and local production estimates;

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[39] There is a huge set of assumption behind it, as local supply may either be channeled through markets or directly consumed/stocked by households. However, filling the supply-gap between local production and consumption would require market and, in the case of Darfur, food aid. When voucher programs are considered in lieu of GFD, it can be safely assumed the supply-gap is filled only with trade.

[40] For further details, see also Table 10 in section '9.3 Impact evaluation from a trader perspective'.

[41] Human consumption only, which accounts more than 90 percent of overall consumption.

b) the assumed market capacity is estimated as the human consumption minus the local production (in the aftermaths 'supply-gap') with the limitations mentioned earlier in footnote 39;

c) the additional demand under the 6 different scenarios are computed from half of the consumption per capita, as vouchers are designed in such a way to guarantee half ration;

d) the average actual wholesaler capacity (both specialized and generic wholesaler) was computed from the traders' survey data taking into account harvest and rainy seasons, with the assumption that marketable requested cereal supply is channelled from wholesalers to retailers and eventually to consumers. This may not always be the case, as retailers often purchase locally from farmers, but can be tolerated as abrupt additional demand may require the capacity of bigger wholesalers to accommodate enhanced supply in the market as described earlier in section '7.3 Constraints and response capacity';

e) based on the average wholesaler supply and the supply-gap, the hypothetical number of traders that would be needed to sustain consumption was estimated by market[42];

f) as the share of traders claiming to be able to deliver with an additional demand by 25 and 50 percent is known from the traders' survey sample, the hypothetical number of wholesaler estimated in point e) is reduced accordingly, and additional supplies are computed based on the average trader capacity in point d);

g) two statistics are finally computed: the first measuring the share of additional demand originated from the different voucher program scenarios on the estimated additional supply (by +25% and +50%). It is here considered a proxy of the competition level between beneficiaries and non-beneficiaries for the additional supply. In other words, as the share gets higher, it is likely that voucher program would further stress the market;

h) the second statistics measures the share of the additional supply on local production. It can be considered as the external supply share to meet additional demand. In particular, when it is above 100 percent, it means that all the additional demand is to be sustained by not local supplies. This information should therefore be assessed against the logistics scenarios described in section '7.2.1 Catchment areas'.

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[42] Unfortunately, the traders' survey was ineffective to reliably estimate the number of traders per market. Still, it makes sense to estimate the hypothetical number of wholesaler according to the overall consumption levels beyond local supply.

7.5.1 Market capacity to respond: dashboards

The figures below (Figure 31 to Figure 34) summarize the findings derived from the explained methodology. The results need to be interpreted with caution, as most of the information either are not fully reliable - because they are sensitive for traders - or the assumptions described above are too biting. Yet, in the absence of better information and with this caveat in mind, the forthcoming analysis might still be useful to support decision makers for voucher expansion programs.

In Fasher (Figure 31), the estimated market capacity is at 70.6 thousand metric tons, with 75 percent of traders claiming to be able to deliver additional 13.2 thousand MT (in case of +25% demand), and 48 percent of traders additional 17 thousand MT (+50% demand). Having more than 100,000 new beneficiaries under the voucher program implies that the '*beneficiaries/population ratio*' gets above 17 percent. In theory, based on current local supply figures, the '*additional demand on local supply ratio*' would have already exceeded the 25 percent threshold with 40,000 beneficiaries, which means that under the 100,000 beneficiaries' scenario, traders' capacity to respond should be in the order of 50 percent or more of the current local production. As a result, the competition level between beneficiaries and not beneficiaries would be quite sustained, being above 55 percent under the more conservative scenario, and 43 percent with a 50 percent demand increase. These shares are concerning, as it seems unlikely that one-fifth of the population constituting the beneficiaries share would be able to get more than half of this assumed augmented supply. Furthermore, considering the poor local production level, the whole additional supply should come from elsewhere Fasher area (respectively 101% and 129% in case traders were able to deliver with +25% and +50% additional demand), thence further stressing the already stretched logistics around the town.
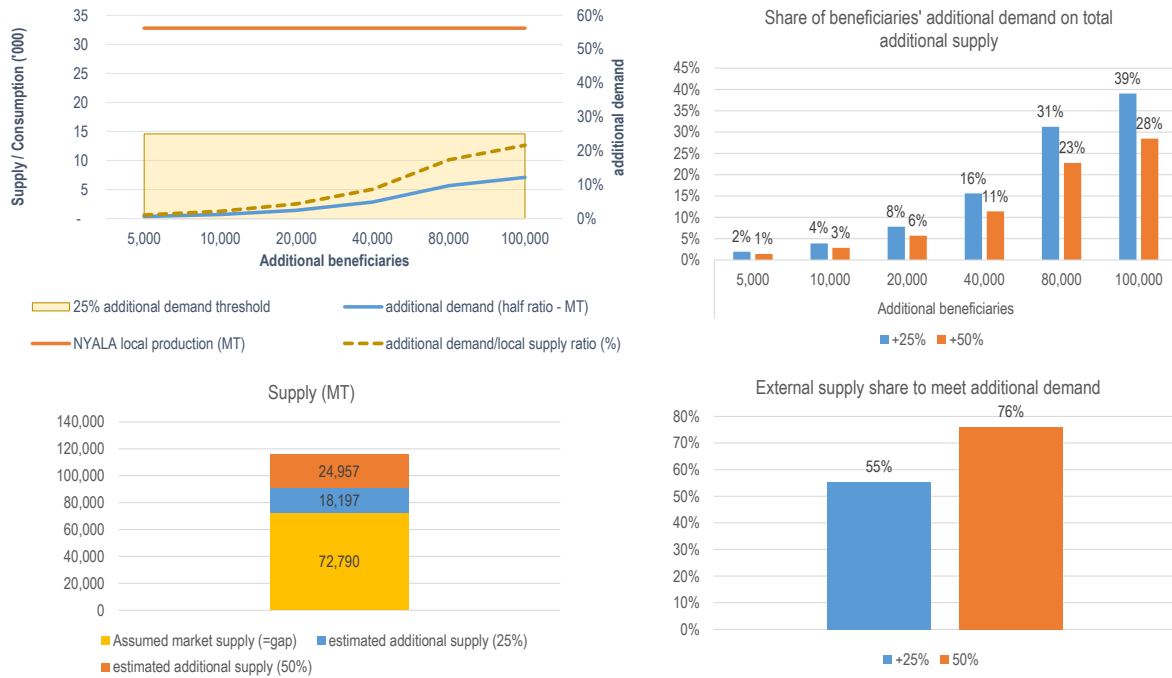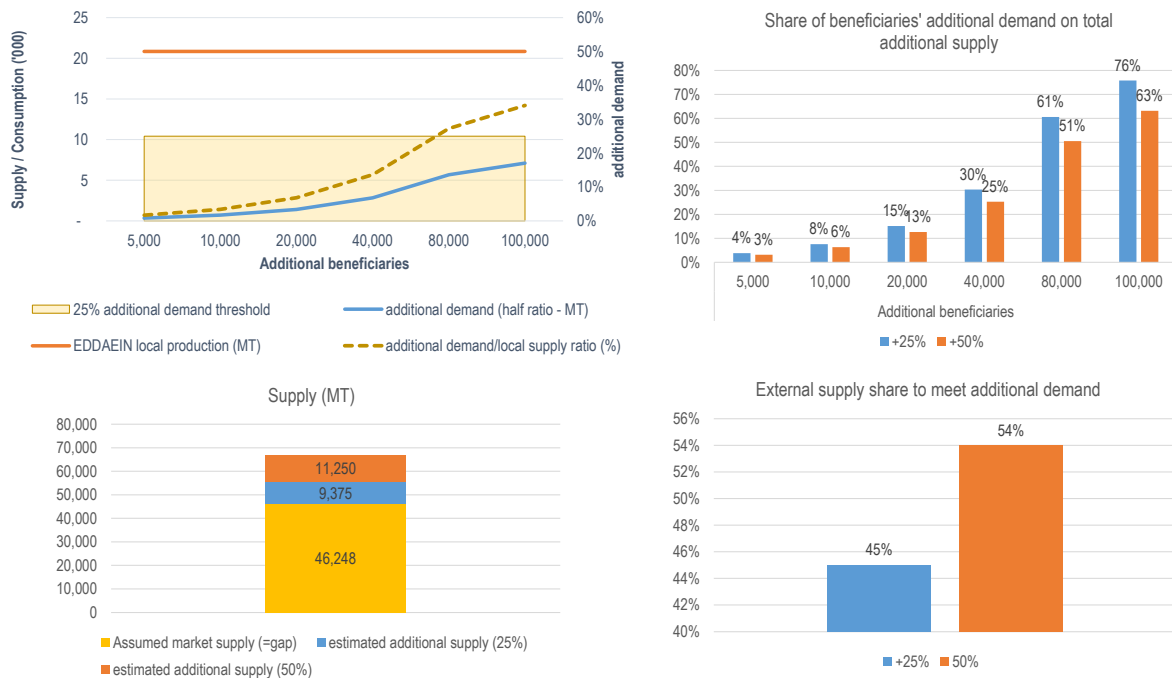
**Figure 31 - Fasher dashboard**
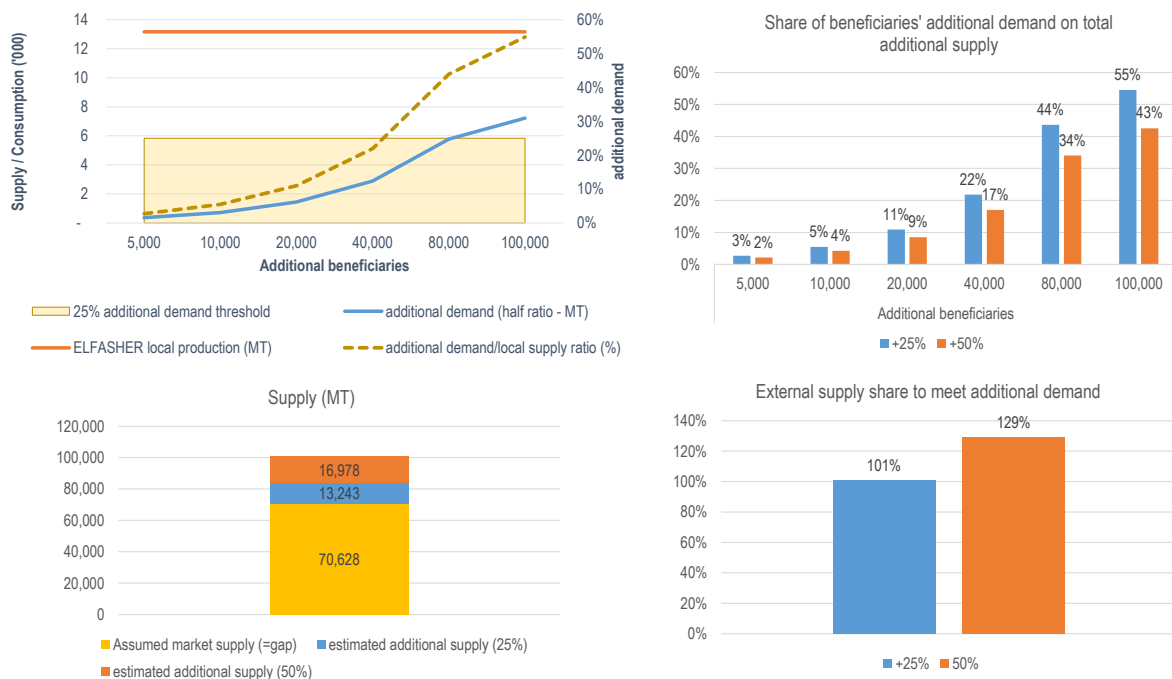
Source: Author's calculation based on WFP, Darfur traders' survey, December 2013, Planning and Agricultural Economics Administration, Food Security Department and CBS.

Even with reduced local production in 2013/14, Geneina market (Figure 32) seems fairly capable to deliver an additional 25% of cereals (3,013 MT), as only 10 percent of the required supply exceeds actual production. As a matter of fact, when the additional demand is estimated, 20,000 additional beneficiaries should be in the 25% threshold. However, the competition level (47%) given the actual harvest outcomes may trigger some pressure on prices, thence needs to be carefully monitored in the implementation phase.

Figure 32 - Geneina dashboard
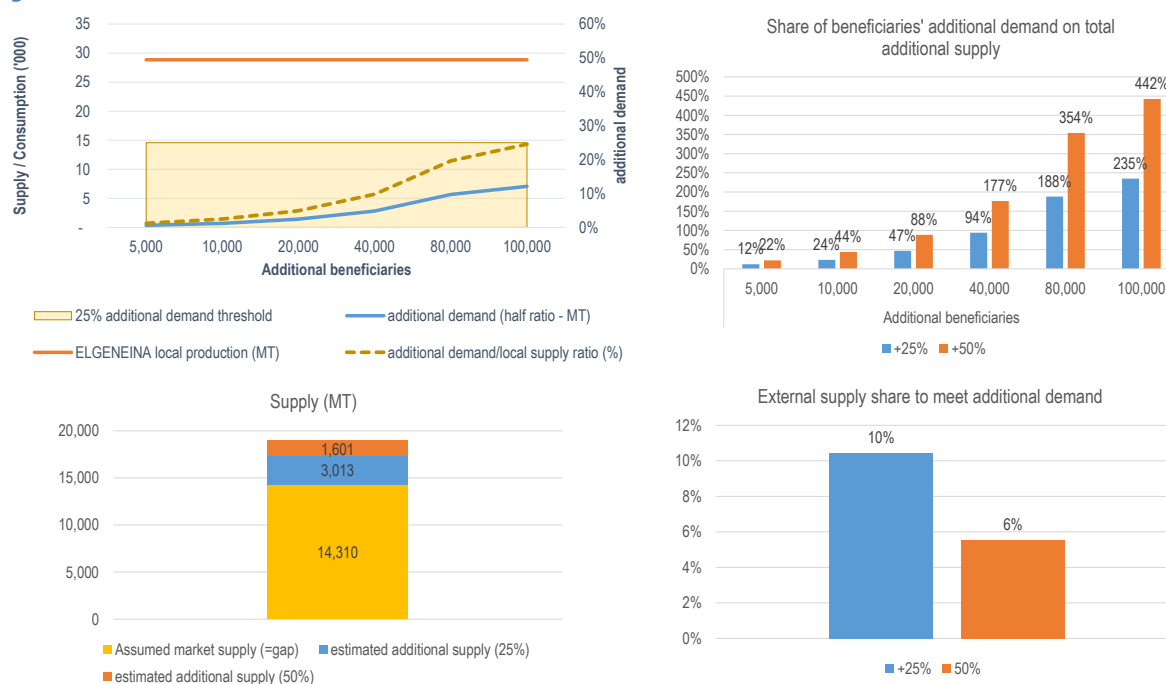
Source: Author's calculation based on WFP, Darfur traders' survey, December 2013, Planning and Agricultural Economics Administration, Food Security Department and CBS.

In Nyala (Figure 33), all plots in the dashboard return the evidence in favour of vouchers, despite the progressive security deterioration in town. Traders would be able to deliver an additional 18,167 MT (+25%), remaining below the 25 percent additional demand threshold in all the proposed scenarios. The competition level is relatively lower as compared to other markets, and should be between 16 and 31 percent should voucher program involve 40-80,000 people. Still, given current poor production, if a voucher expansion was considered, it is recommended to incrementally involve additional beneficiaries without abrupt and massive shifts from in-kind GFD, so that potential adverse impacts could be monitored as the program is implemented.

Figure 33 - Nyala dashboard

Source: Author's calculation based on WFP, Darfur traders' survey, December 2013, Planning and Agricultural Economics Administration, Food Security Department and CBS.

Finally, in Eddaein (Figure 34) the market capacity should not exceed 40/50,000 additional beneficiaries to avoid falling outside the conservative 25 percent threshold. In that case, the competition level would be quite reasonable (30% with 40,000 beneficiaries), and 45 percent of the additional demand would require trading from elsewhere. However, the volatile security situation may partially limit the assessed traders' capacity.

Figure 34 - Eddaein dashboard

8. Market performance - Price analysis

In the aftermath of the poor 2013/14 harvest season, on top of the sluggish economic performance and the mounting insecurity that is affecting part of the country, millet and sorghum prices are on the increase in most of Sudan. Actually, prices as of March 2014 have achieved crisis levels, showing in few markets dramatic month-on-month (m/m) changes (Figure 35, and see Annex 8 and Annex 9 for price trends plots).

Figure 35 - Millet and sorghum post-harvest 2013/14 prices
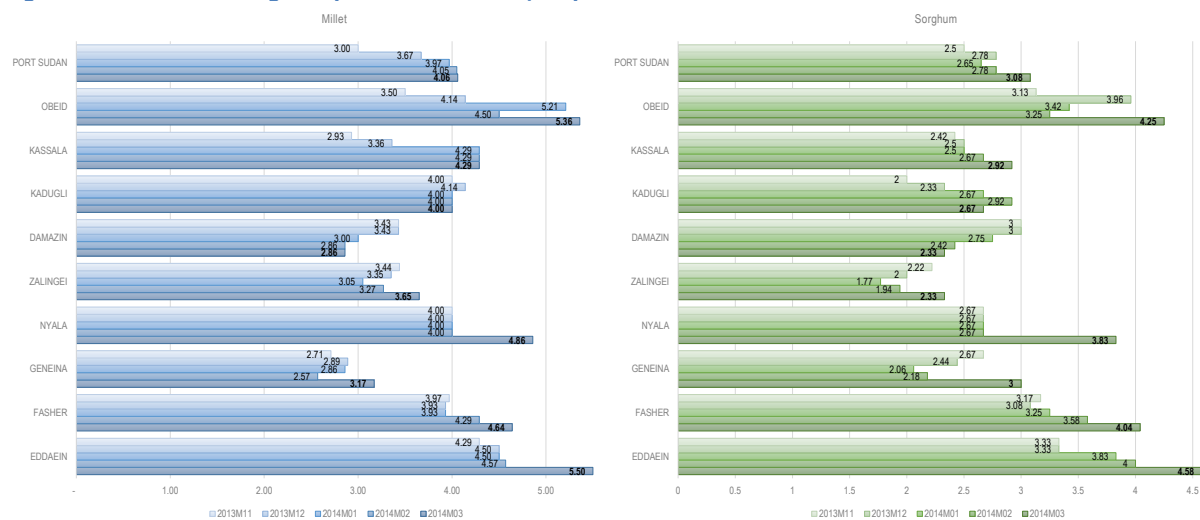
Source: WFP - VAM Food and Commodity Prices Data Store and Farmers - Food and Agriculture Realtime Messaging and Reporting Systems for Zalingei prices.

Retail prices in Darfur are among the highest reported in the whole country since the past five years, in particular in Eddaein, Nyala and Fasher. El Obeid prices are close to these record levels, as they have been experiencing skyrocketing increases in the previous months; in detail, prices as of March 2014 have dramatically boosted up in that market, showing a year-on-year (y/y) increase by 98 percent for millet and by 76 percent for sorghum. Being the natural gate to Darfur from the rest of Sudan, El Obeid lies on the major horizontal road network that connects eastbound to Kosti (and Khartoum to the north) and the major irrigated agricultural zones, and westbound to the crossroad city of En Nahoud, to eventually reach northwest Fasher and southwest Eddaein. Since Darfurian markets will have to rely significantly from the rest of the country to cover their needs (for some 294 thousand metric tons of cereals, see Table 6 in section '7.5 Assessing asserted traders' capacity to respond'), price tensions from El Obeid are likely to be transmitted primarily to Eddaein and Fasher, as those markets are less integrated to the rest of Darfur (see section '7.2.1 Catchment areas').

Actually, the latest available sorghum prices in Eddaein and Fasher were, on average, 28 and 18 percent above the national average, while millet prices were respectively 23 and 9 percent above it. Since the onset of the 2013/14 harvest season[43], it is worth noting that the millet price ratio between these two markets went down from 74 to 7 percent, with a decreasing spread from 1.99 SDG to 0.28 SDG, thus enormously challenging households' purchasing power in Fasher.

Price tension has finally transmitted to Nyala market as well, after a short period of relatively steady prices. Indeed, the m/m price increase in March 2014 was ridiculous, being 22 percent for millet and 43 percent for sorghum.

Prices in the three major cities in Darfur have been upward converging (Figure 36), after almost a year of major price differences. The five main markets in Darfur show a long-run equilibrium tendency, with prices having the same trends in particular in the post-harvest periods and in poor production years.

Figure 36 - Millet and sorghum prices in Darfur and agricultural seasons
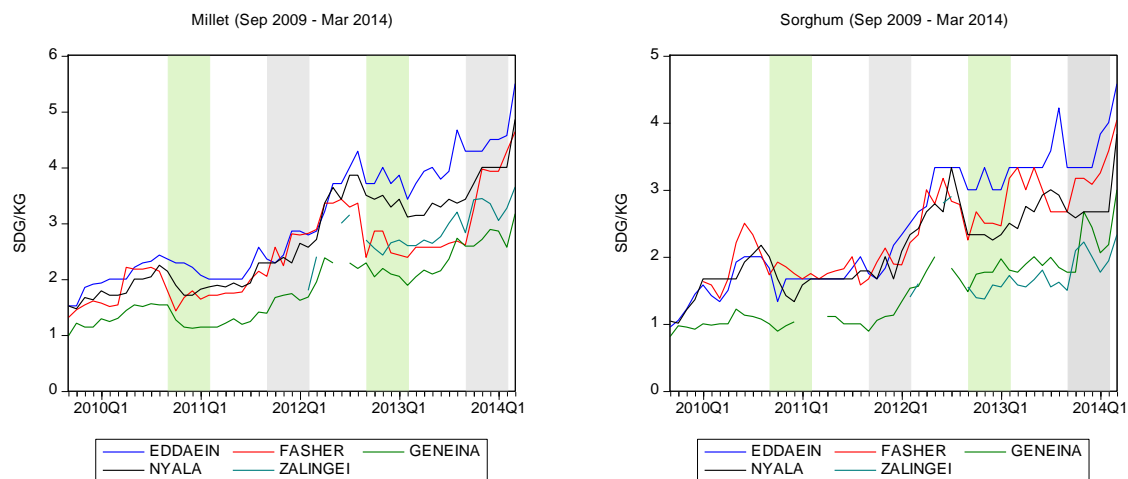
Source: WFP - VAM Food and Commodity Prices Data Store and Farmers - Food and Agriculture Realtime Messaging and Reporting Systems for Zalingei prices. Green and grey areas in the figures show harvest and post-harvest periods, respectively indicating good and poor seasons.

Occasionally, prices have diverged consistently during and after the 2012/13 bumper harvest, showing a counterintuitive tendency to diverge when the supply is fair. Most probably, having occurred an exceptional yield, the availability constraint relaxed, leaving the floor to the volatile security situation only, which have differently jeopardized trade. Quite the reverse, markets behave similarly under stressed circumstances, with Fasher, Nyala and Eddaein prices converging, and Geneina and Zalingei following the same trends. The latter two markets belong to surplus areas, thence the price level is usually lower as compared to the other monitored, with Geneina naturally leaning forward Chad, thus partially being detached from the other markets in Darfur. The recent price increase in Nyala might have also been driven by the reduced availability and prices increase in Geneina. Besides, the price causality findings from an earlier market assessment

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[43] The reference period here is from August 2013 to February 2014.

are here confirmed, with empirical evidence showing that prices in Nyala were affected by prices in El Obeid, Eddaein, and Geneina, while a two-way causality establishes between Nyala and Fasher (WFP, 2013).

8.1 Forecast and warnings

Based on the above trend description, Figure 37 plots actual and forecasted prices of sorghum and millet until the end of the year in 4 out of 5 Darfur capital cities (*i.e.* Eddaein, Geneina, Fasher and Nyala).

In addition, it shows which markets are experiencing high food prices by means of the ALert for Price Spikes indicator (ALPS). This index detects abnormal price increases as compared to the historical trend. The extent of the departure of actual prices from their usual pattern determines the level of the warning for each market, spanning from '*No stress*' to '*Stress*', '*Alert*' and eventually '*Crisis*' (WFP, 2014b).

Price forecasts were computed using three methods, namely the Simple Exponential Smoothing[44], the Double Exponential Smoothing[45] (both adjusted to take into account the seasonal dimension) and the Seasonal Holt-Winters smoothing[46]. The lines plotted in 'purple' show only the forecasts derived from the method having the lowest Root Mean Squared Error (RMSE), while the dashed lines show the 95 percent confidence intervals, and are henceforth named upper and lower bands[47].

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[44] The Simple Exponential Smoothing (SES) method smooths the price series using a weighted moving average of all previous observations, allowing for a higher weight to more recent ones, and thence being more responsive to changes occurred in the recent past. It can also be presented under the ARIMA(0,1,1) model features.

[45] Differently from the SES, the Double Exponential Smoothing (LES) takes into account not only the varying mean, but also the trend. This includes a major drawback, as the trend tends to dominate the forecasts after a few periods. It can be also presented under the ARIMA(0,2,1) model features.

[46] The Holt-Winters method tracks the seasonal pattern as well, introducing a third equation, namely the seasonal component to the level and trend components. It is often considered as one of the best methods for short term seasonal forecasts.

[47] The upper and lower bands are computed as the actual forecasts plus or minus two times the Root Mean Squared Error.

Figure 37 - Price forecasts and alert indicators
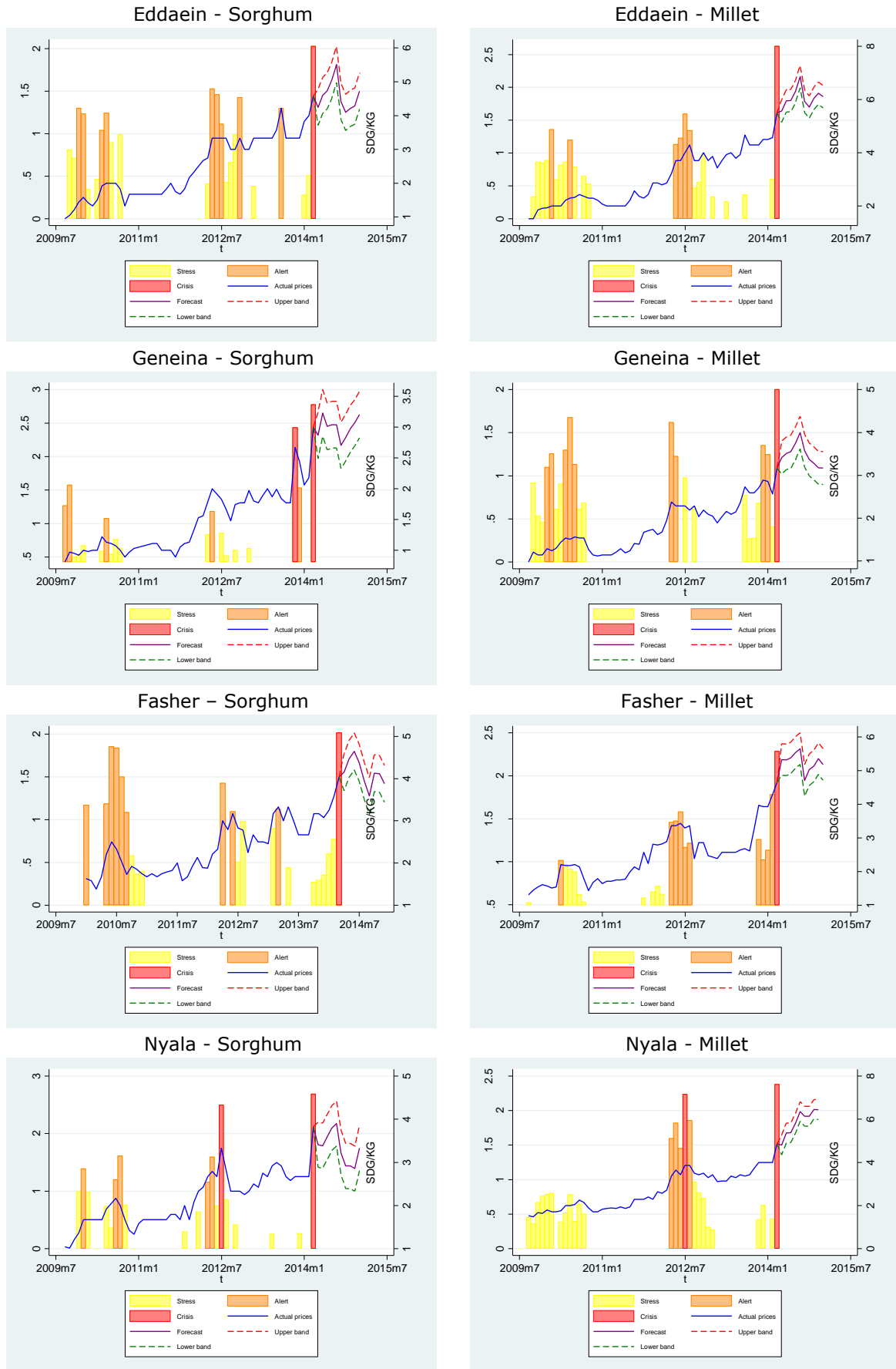
Source: WFP - VAM Food and Commodity Prices Data Store.

At glance, prices are getting feverish in all markets, showing 'crisis' levels everywhere. As already discussed, while in some markets the warning dates back since the end of 2013, with prices progressively worsening in Fasher (millet and sorghum) and Geneina (millet), other markets suddenly moved from no alarm or minimum levels of stress into a crisis almost in a month (Nyala and Eddaein).

Considering the recent price behaviour, it is likely that prices will follow patterns in between the forecasted lines and the upper band lines reported in the panes. In that case, not only households' purchasing power will be seriously affected, but in the specific also beneficiaries within the voucher programs will be challenged should the voucher value not be adjusted accordingly. However, as the situation at the time of writing appears quite volatile and about to further deteriorating, from a funding perspective it would be recommended to reconsider the scheduling of new voucher programs.

9. Impact of food assistance programs on local prices

The aim of this part of the report is to provide an estimate of the impact of food assistance in Darfur, and in particular in Fasher area, where the bulk of market-based interventions are. This section tries to bridge an econometric model with the results provided from an *ad hoc* tailored impact section of the traders survey, where traders were asked to provide a personal judgment of the impact WFP is having on the market in general, and on their business in particular.

The section is organized as follows. The first part provides an overview of the programs WFP has been implementing around the North Darfur capital city; then an impact evaluation model is presented taking the steps from a simple supply-demand approach; the third part presents the results of the econometric model while the last provides an overview of the findings from a trader perspective, controlling for participant and non-participant traders to the voucher program. Concluding remarks try to summarize the overall findings.

9.1 Overview of WFP operations in Fasher

WFP pioneered its marked based interventions in Sudan within the North Darfur state, implementing vouchers to support the purchasing power of its beneficiaries since May 2011. At the onset of the program, the number of beneficiaries in the IDP camps targeted with vouchers for a 4-month seasonal support was tiny as compared to the bulk of beneficiaries receiving in-kind food aid (35 vs. 286 thousands), being about 11 percent of the whole food assistance provided in the area.

At the beginning of the following year, this share increased quite significantly, with 104 thousand beneficiaries permanently being reached by the voucher program in
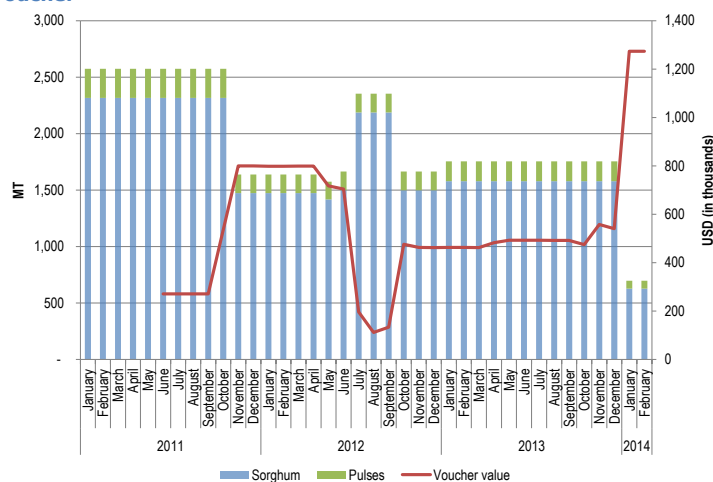
Figure 38 - Beneficiaries by transfer modality and staple food prices

Source: WFP.

Abushouk and Alsalam camps. Since then, around 30-36 percent of the overall food assistance was channelled through vouchers, with people living in Zamzam, Abushouk, Elsalam, Tawila, Shangil camps still reached by GFD. In January 2014, the program included also Zamzam camp, overthrowing the previous balance between these two different food assistance options, making voucher beneficiaries 72 percent of the overall caseload assisted by WFP around Fasher (Figure 38). A similar pattern is portrayed by the metric tons of sorghum and pulses and the overall value of vouchers distributed. The dip in July-September 2012 refers to the temporary drop of cereals from the vouchers (Figure 39).

Figure 39 - Actual distributed quantity of food and total value of voucher

Source: WFP.

It is clear that the inclusion of Zamzam camp increased dramatically the value of vouchers being redeemed in the market. At the same time, as a counter effect, the amount of food aid available in the camps reduced by 60 percent, with a likely spill over effect both on the overall sorghum supply in the market, and on the prices of locally produced food (*i.e.* sorghum and millet).

However, when evaluating the impact of vouchers in the market, it would not be fair assessing it as a standalone exogenous factor affecting prices. The provision of food aid also plays a role, as leakages on the market are well documented. By looking back at Figure 38, the price patterns of millet, sorghum and sorghum food aid are plotted against the number of WFP beneficiaries. At glance, the recent price increase of the three commodities is quite striking, with the likely inference that the inclusion of Zamzam camp has triggered prices upwards. However, there are a number of other indicators to be factored into the analysis before providing a clear judgment on the side effects on the market. In particular, the recent price increase is relatively smaller as compared to the one that occurred in September 2013, when the central Government announced a drastic cut in fuel subsidies,

transmitting additional costs along the food value chains. Moreover, the harvest estimates for the 2013/14 season were particularly poor if compared to the bumper crop of the previous year (23%), and only 52 percent with regards to the 5-year average.

Thence, the impact analysis presented in the next paragraph will take into account all these factors.

9.2 Impact estimation model

9.2.1 Theoretical background

Conceptually, the model used to estimate the impact is grounded on the theoretical background sketched in Figure 40, where demand and supply curves are shown to describe the expected impact on prices in case of supply changes. The supply curve is estimated quite inelastic in North Darfur, as prominently determined by local harvest results, and to a limited extent to the amount of food aid available. The crop season in the Greater Darfur and in the rest of Sudan – whether extensively good or poor - determines the room for markets to adapt to potential demand stimulation via vouchers.

Figure 40 - Model representation
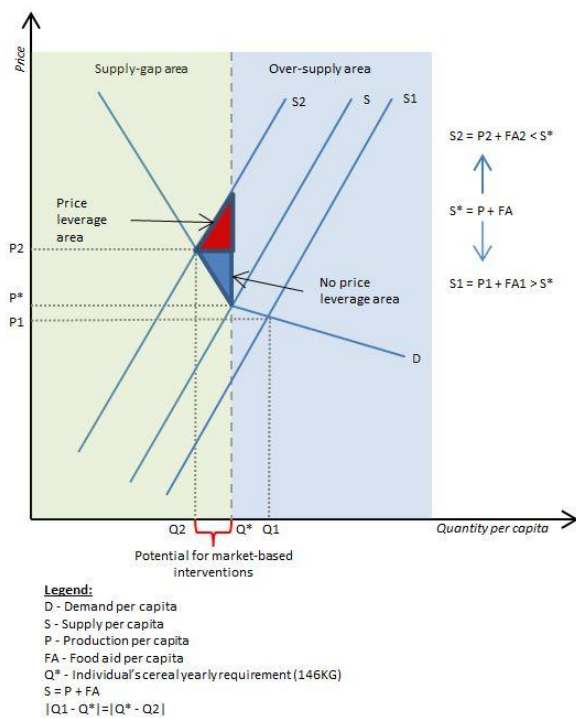
Thence, the local supply per capita curve (S) may either shift to the left (S2) - when the harvest is poor and/or when food aid is reduced, or to the right (S1), when opposite circumstances apply.

The demand per capita curve is portrayed with a cusp corresponding to the quantity of cereals equivalent to 146KG (Q*), here considered as the individual's yearly requirements (FAO, 2010)[48]. At this point, the demand slope is assumed to flatten, as from here onwards safety-first needs may have been secured and people should be more in the condition of adapting their demand to price changes.

At the core of this analysis, the area on the left (in light green) of the individual's requirement is considered corresponding to a supply-gap, meaning that local

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[48] See also '7.5 Assessing asserted traders' capacity to respond' section.

cereal supply is below the needs, whereas the area on the right (in light blue) is labelled as over-supply area. As a matter of clarification, at this point trade is still not considered. However, the potential for trade is highlighted with the two triangles in the figure. When the supply per capita is in the supply-gap area, there is additional potential for markets to fill the gap in case the households' purchasing power is adequate, food is available and markets are properly functioning. Vouchers are expected to help removing the first constraining condition; however, if the remaining two constraints bite, there is potential for vouchers to shoot prices up (price leverage area in the figure). Conversely, if the supply quickly adapts to the additional demand, vouchers may not have an additional leverage on prices.

9.2.2 Explaining the model

The model here used to estimate the impact on local prices derives from the background provided in the previous two paragraphs. Prices of millet and sorghum are expected to be influenced by the overall supply per capita, being the sum of local production and food aid per capita; the spill-over effects of in-kind food on the market, which is captured in the model by the price of sorghum food aid; the value of vouchers to be redeemed in the market; the cut in fuel subsidies; and the occurrence or not of a supply-gap, which captures the demand-side. Similarly, the price of sorghum food aid is determined by a reduced number of covariates, specifically the amount of metric tons provided as GFD and the fuel subsidy, as other factors related to adjustments of the demand and supply may be lagged in a program implementation perspective. The three prices are considered mutually correlated[49].

More analytically, the model can be described as follows:

$$p_m = p_{sfa} + GFD_{capita} + P_{capita} + S_{gap} + F + V_{capita}$$

$$p_{sfa} = GFD_{capita} + F$$

$$p_s = p_{sfa} + GFD_{capita} + P_{capita} + S_{gap} + F + V_{capita}$$

Where p_m, p_{sfa} and p_s are the prices of millet, sorghum food aid and of sorghum in SDG per KG, GFD is the per capita food aid in KG, P is the local cereal production per capita in KG, S_{gap} is the supply-gap expressed as a dummy variable, F is the fuel subsidy cut occurred in September 2013 expressed as a dummy variable as well, V is the voucher value per capita.

Considering that *a)* millet and sorghum price equations above share the same covariates while sorghum food aid differs, and *b)* the error terms are correlated should unobserved factors influence the dependent variables, a Seemingly

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[49] The price correlation between millet and sorghum is 0.7582, between millet and sorghum food aid is 0.8614, between sorghum and sorghum food aid is 0.8256. All are significant at the 95 percent level.

Unrelated Regression (SUR) was run in order to have more efficient estimates as compared to an OLS regression[50].

Monthly prices collected by WFP CO from Jan 2011 to Feb 2014 were used in the model. Table 7 summarizes the rest of the data. Per capita supply and demand in Fasher were computed from the overall yearly North Darfur state estimates available from the Sudan National Bureau of Statistics, with the population in Fasher being estimated from a 2008 census survey[51]. The assumption behind is that the pace of population growth in the whole North Darfur state mirrors exactly the one in the capital city. This may be unlikely, as urbanization phenomena should have occurred, but can be tolerated as more recent data is not broadly available.

Table 7 - Fasher numbers

Census Data	North Darfur (ρ)	Fasher	Average beneficiaries (φ)		Beneficiary caseload share on total Fasher population	Production MT (φ)			Per capita supply (KG)			Demand	Estimated per capita supply Surplus/Deficit (KG)
			Voucher	In-kind		Millet	Sorghum	Total	Millet and Sorghum production	Sorghum Food Aid	Total	Per capita cereal needs (KG)	
2008	2,113,626	545,251				39,362	14,140	53,502	25.31				
2009	2,140,392	552,156 (*)				82,674	19,362	102,036	184.80				
2010	2,163,041	557,999 (*)				16,588	2,221	18,809	33.71				
2011	2,188,028	564,444 (*)	58,000	268,667	57.9%	79,914	21,460	101,374	179.60	3.86	183.46	146	37.46
2012	2,208,499	569,725 (*)	91,333	183,167	48.2%	34,254	13,376	47,630	83.60	2.91	86.51	146	-59.49
2013	2,231,305	575,609 (*)	85,000	195,000	48.6%	164,116	57,837	221,953	385.60	2.74	388.34	146	242.34
2014	2,248,551	580,058 (*)	200,000	77,500	47.8%	39,000	12,000	51,000	87.92	1.08	89.00	146	-57.00

Source: (φ) WFP; (ρ) Sudan National Bureau of Statistics; (φ) State Ministry of Agriculture and ACFSAM Report 2014 ; (*) estimated, based on 2008 Census data in Fasher.

While the population living in Fasher area is estimated at 580 thousands people, making some 26 percent of the overall population in North Darfur, the average yearly caseload being assisted by WFP weights almost half of it.

Production estimates for North Darfur were used to compute the per capita production in Fasher. The harvests in the area for the 2013/14 growing season was as poor as 2011/12, while the seasons 2010/11 and 2012/13 in particular were good.

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[50] A seemingly unrelated regression (SUR) is a system of equations where cross-equation errors are correlated.
[51] In detail: Fasher urban 128,908; Fasher rural 280,485; Taweela 49639; Koarma 45,048; Shangil 41,171; Kuma 69,198.

Figure 41 - Cereal production in Fasher and vegetation growth
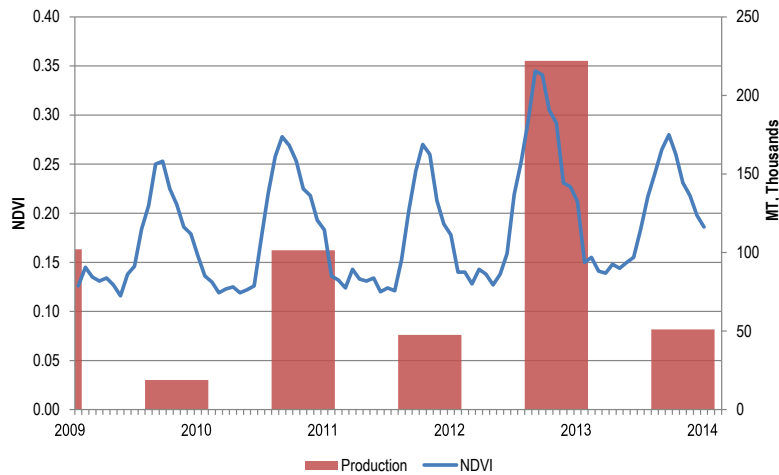
Source: State Ministry of Agriculture and ACFSAM report 2014, Spot-Vegetation.

The outcomes were finally triangulated with satellite data measuring amount and vigour of vegetation cover (known as NDVI) in the catchment area of Fasher, as defined earlier in the market catchment area section, showing a good fit of the production estimates (Figure 41). As the growing season spans from May to October, it is expected that most of the price effects are carried forward to the next year, when the rainy season usually starts. Thence, for the sake of this discussion, a supply gap was associated with prices in 2012 and 2014.

9.2.3 Empirical results and discussion

Most of the empirical results corroborate the aforementioned framework (Table 8). Millet price is positively and statistically significantly affected by all the covariates. In detail, faint local production determining the supply-gap pushes prices up the most, followed by the cut of fuel subsidies. In-kind food aid also has a price leverage effect, both directly, considering the substitution effect of food aid when swapped for millet, and indirectly, via price transmission. The same sign attached to the two food aid-related covariates is counterintuitive, and can be explained conjecturing that price transmission takes place in two steps, from sorghum food aid to sorghum, and eventually to millet, as will be explained below. Indeed, also vouchers tend to play a role in millet price changes, even though to a lesser extent. This is not surprising, as the additional demand may not be fully accommodated by enhanced supply.

Table 8 - Coefficients and elasticities

	SUR estimates		Price elasticities to	
millet price (SDG/KG)	Coef.	Std. Err.	Coef.	Std. Err.
sorghum food aid (SDG/KG)	0.5319325 ***	0.1246	0.432243 ***	0.1013
in-kind food aid (KG/capita)	0.3016396 **	0.1425	0.376283 **	0.1782
production (KG/capita)	0.0017843 **	0.0008	0.147097 **	0.0679
supply gap (yes/no)	0.8532733 ***	0.2561	0.101715 ***	0.0298
fuel subsidy cut (yes/no)	0.787724 ***	0.1715	0.026884 ***	0.0054
voucher value (USD/capita)	0.3186823 ***	0.0959	0.089362 ***	0.0263
intercept	-0.4430957	0.7078		
sorghum food aid price (SDG/KG)	Coef.	Std. Err.	Coef.	Std. Err.
in-kind food aid (KG/capita)	-0.5562432 ***	0.0975	-0.83789 ***	0.1582
supply gap (yes/no)	0.3802379 **	0.1923	0.016661 **	0.0077
intercept	3.842754 ***	0.3180		
sorghum price (SDG/KG)	Coef.	Std. Err.	Coef.	Std. Err.
sorghum food aid (SDG/KG)	0.4175545 ***	0.1277	0.364371 ***	0.1114
in-kind food aid (KG/capita)	-0.242562 *	0.1460	-0.32597 *	0.1966
production (KG/capita)	0.0025823 ***	0.0008	0.217411 ***	0.0713
supply gap (yes/no)	0.4408137 *	0.2625	0.061077 *	0.0358
fuel subsidy cut (yes/no)	-0.0579531	0.1757	-0.00236	0.0072
voucher value (USD/capita)	0.0518431	0.0983	0.016022	0.0302
intercept	1.591802 **	0.7255		

Note: (***), (**) and (*) indicate significance levels at 1% , 5% and 10% respectively

Source: Authors' calculation.

As a matter of fact, the production effect is positive but very limited, while its low elasticity is more interesting, confirming the assumption of the model. Indeed, the increased use of vouchers has an impact on millet prices. This has to be read in combination with the decreased amount of food aid sold in the market, which determines a small shift towards the left of the supply curve (Figure 40). In this light, markets in Fasher are unable to fully absorb the increased demand, thus driving prices up. Having controlled for supply-gaps, this happens not necessarily all the times, but when local production is poor.

Sorghum food aid price has a lower fit in the model, as most of the variation is explained by the intercept. However, and as expected, GFP reduces prices. In other words, the price of sorghum food aid amplifies when the contribution of food assistance to the overall supply outcomes weakens, or vice versa, it tends to reduce with expanding food aid being distributed. The supply-gap partially offsets the inverse relation between quantities and prices of food aid available on the market, keeping prices up even when food aid distributions increase. This explains also why the price of sorghum food aid is quite similar to sorghum prices during reduced supply (years 2012 and 2014)[52], whereas in other years it drifts apart.

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[52] This is driven either by poor production and/or reduced food aid available.

Similarly, sorghum price is not only directly lowered by in-kind distributions, but also indirectly, as the significant and positive coefficient follows the pattern of changes in sorghum food aid price. In other words, when the GFD share of supply gets more prominent, a reduction in the cost of sorghum is expected and the other way round. The supply-gap triggers sorghum price up as well, even though with a lower magnitude when compared to millet. The impact of vouchers on sorghum is practically nil as the demand for sorghum is barely affected by the enhanced purchasing power of beneficiaries, thence remaining close to the no leverage area described in Figure 40.

Most of these findings are better captured in Figure 42, showing price elasticities to the different covariates in the model.

Figure 42 - Elasticities
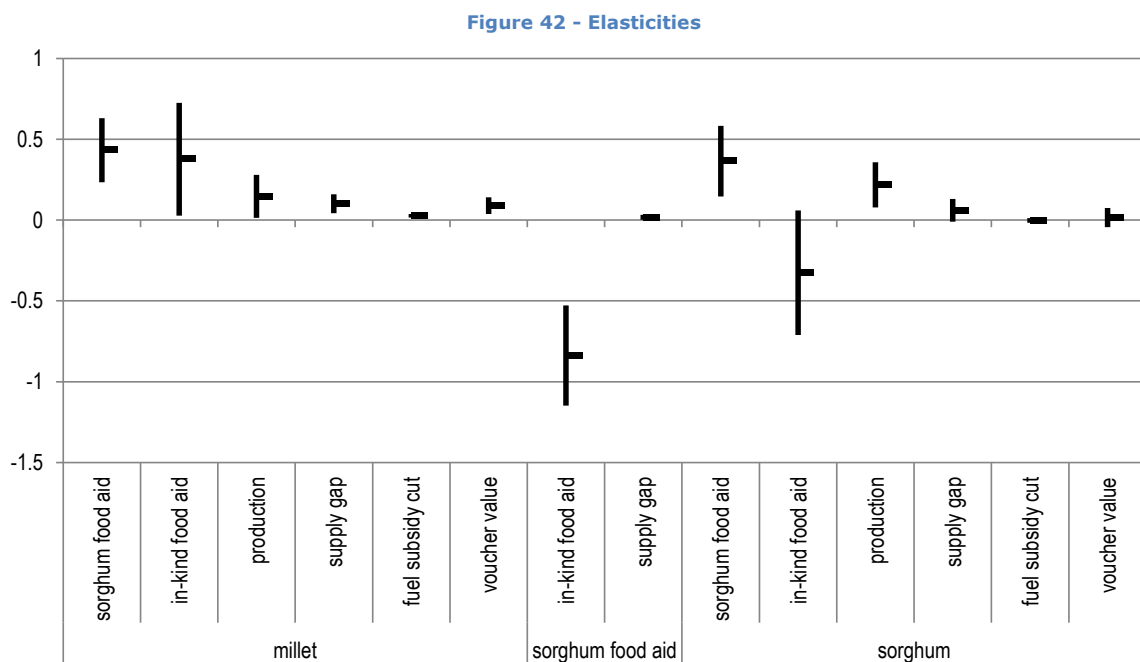
Source: Authors' calculation.

It is interesting how these elasticities change during a supply-gap, in particular for those variables that are more directly linked with WFP operations and the overall supply (Table 9).

Both in-kind food aid and production have noteworthy impacts on prices when per capita supply exceeds the demand. They positively affect prices for millet and sorghum, and negatively for sorghum food aid.

Table 9 - Elasticities in the supply-gap

		Per capita supply	
		Surplus	Deficit
millet	in-kind food aid	0.4414639 **	0.2645453 **
	production	0.2045924 **	0.0485328 **
	voucher value	0.0777316 ***	0.1092992 ***
sorghum food aid	in-kind food aid	-0.9496547 ***	-0.6462921 ***
sorghum	in-kind food aid	-0.3722742 *	-0.2466024
	production	0.2966009 ***	0.0816561 ***
	voucher value	0.0130751	0.0210747

Source: Authors' calculation.

Interestingly, during a supply-gap, these elasticities reduce quite a lot. This implies that prices get more sensitive to supply changes. The value of vouchers behaves the opposite, with prices being slightly more elastic with supply gaps. However, the elasticity difference between the two supply scenarios is almost none.

Figure 43 - Visualization of elasticities in the supply-gap
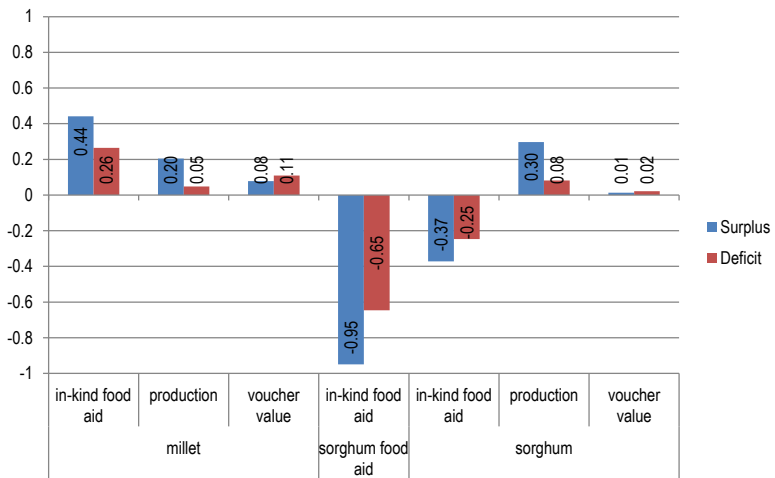
Source: Authors' calculation.

According to the model and the findings, the expansion of the voucher program in Fasher has to be evaluated against the current background of a supply-gap. Even though food aid makes up only a very limited share in the overall supply in the area, its decline in favour of voucher program in Zamzam contributes to further reducing the supply. However, the impact evaluation of WFP operations is more complex; vouchers are indeed likely to increase the price (of millet in particular), but against a baseline scenario already influenced by GFD. In other words, prices are already artificially lowered, refraining also the cereal trade to develop beyond production uncertainties. When market support becomes an additional goal of food assistance program design, and provided that beneficiary targeting is appropriate, some initial tension on prices has therefore to be allowed to develop new trade equilibria. Still, the current expansion is probably not timely, in particular when local production is that poor (see back Table 2).

It has otherwise worth mentioning that shifting from GFD to vouchers a camp like Zamzam is a daunting task, with a beneficiary caseload fairly above 100 thousands people, and has to be planned ahead in time, much before reliable projections for the coming harvest are disclosed.

Still, according to the findings in section '7.5.1 Market capacity to respond: dashboards', the current number of beneficiaries in Fasher challenges traders' capacity to respond, as their capacity to respond, assessed against current local production, should be in the order of 50 percent or more in order to meet such an additional demand. In view of all the factors described in the assessment, it may be worth considering a contingency plan should the price increase continue, both to defend households' purchasing power and to avoid translating price pressure on vulnerable people currently not receiving support from WFP.

9.3 Impact evaluation from a trader perspective

From a trader perspective, the impact of WFP programming was controlled with a section in the traders survey, differentiated between participant and not participant traders (Figure 44). The share of participant traders is particularly tiny, which is explained by the fact that market-based interventions were only recently introduced in Nyala, and the massive expansion in Fasher dates back to January 2014 only, thence after the data collection. Among traders, those mostly involved are in particular generic wholesaler and wholesaler/retailer categories.

Figure 44 - Overview of participant traders in the sample
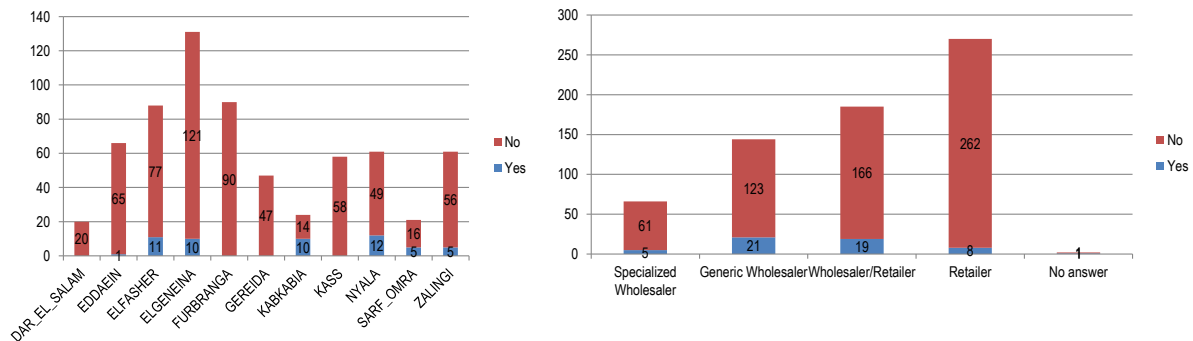
Source: WFP, Darfur traders' survey, December 2013.

From a cross-market overview, retailers in the sample have been involved only in Nyala, while most of the existing knowledge was accrued with long-lasting experiences dealing with generic wholesalers, and with wholesaler/retailers to a lesser extent (Figure 45). Those traders are mostly based in Fasher, Kabkabia, Geneina and Sarf Omra, while the others have been dealing with WFP vouchers only since a year or less.

Table 10 describes the planned number of beneficiaries by locality according to the available resources as of September 2013. The bulk of the beneficiaries are in North Darfur, spanning from 38 thousand in Dar El Salam to 70 thousand in Kabkabia; with Fasher (*i.e.* Abu Shouk) being in the middle of this range before the inclusion of Zamzam camp.

In West Darfur, the numbers in front of the planned expansion were so tiny and limited to the small Sultan House camp that a wider impact is utterly unexpected. In fact, most of the traders sampled there were either not interested in expanding their business or not fascinated by such small numbers at the time of the data collection.

On the other hand, in most of the camps insisting around Nyala (*i.e.* Otash, Dereige and Sakaley & Mosey), market based interventions started only by mid-2013, prompted by very favourable supply conditions after the bumper harvest 2012/13. Interestingly enough, in Eddaein many non-participant traders were concerned about late payment, should they consider being part of a voucher program.

Figure 45 - Involvement in the C&V programme (months)

Legend (top chart):
- ZALINGI
- SARF_OMRA
- NYALA
- KABKABIA
- ELGENEINA
- ELFASHER
- EDDAEIN

Legend (bottom chart):
- Retailer
- Wholesaler / Retailer
- Generic wholesaler
- Specialized wholesaler
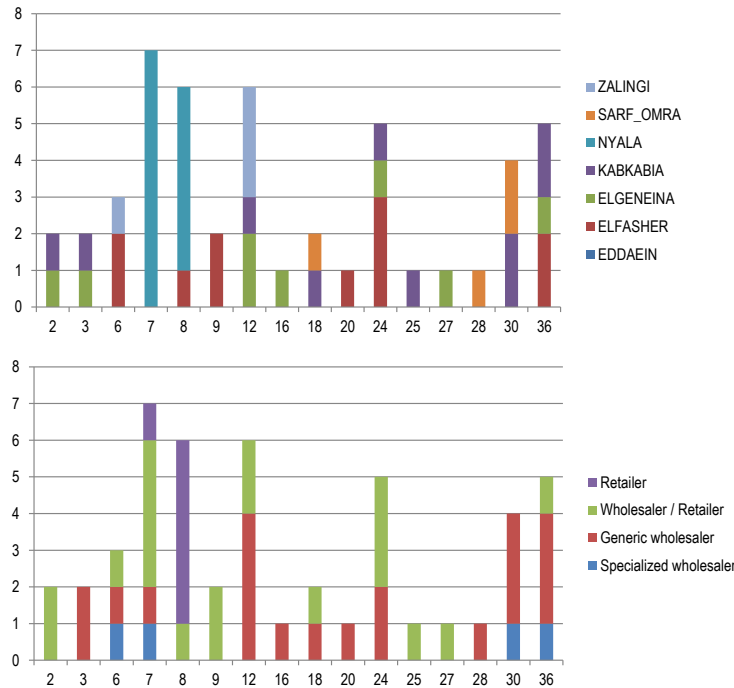
Source: WFP, Darfur traders' survey, December 2013.

Table 10 - Planned number of beneficiaries according to funding resources as of September 2013

	Location	# of beneficiaries	Planned Expansion Year
North Darfur	Abu Shouk	47,278	
	Zamzam	117,540	2014
	El Salam	37,879	
	Saraf Omra	54,807	
	Kabkabiya	69,728	
	Total North Darfur	**327,232**	
West Darfur	Ardamata	19,448	2014
	Dorti	5,952	2014
	Sultan House	4,179	
	Total West Darfur	**29,579**	
South Darfur	Otash	56,530	
	Dereige	20,766	
	Sakaley & Mosey	11,568	
	Eddaein	51,408	
	Total South Darfur	**140,272**	

Source: WFP, 2014 EMOP.

9.3.1 Non participant traders

Most of the traders interviewed[53] did not provide any answer when asked whether WFP is currently affecting prices (57%). This result reduces where WFP operates the most, in particular in North Darfur (*e.g.* Fasher, Kabkabia, Sarf Omra) and in Nyala and Eddaein. It has to be stressed that some questions aimed at estimating an impact among traders embed a certain degree of bias, as WFP may be perceived as an attractive opportunity to be chased in terms of business.

Yet, according to non-participant traders, only 15 percent of the interviewed argue that WFP is not affecting market prices; above the average answers - within the range of 20-30% - were collected in Kabkabia, Eddaein, Fasher, Gereida and Nyala, while in Sarf Omra the no-impact answer jumps to 44 percent (Figure 46).

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[53] As already mentioned earlier in the paper, traders were selected with a purposive sampling methodology, so no statistically meaningful inference for the traders population can be drawn.

Figure 46 - WFP operations having an impact on prices
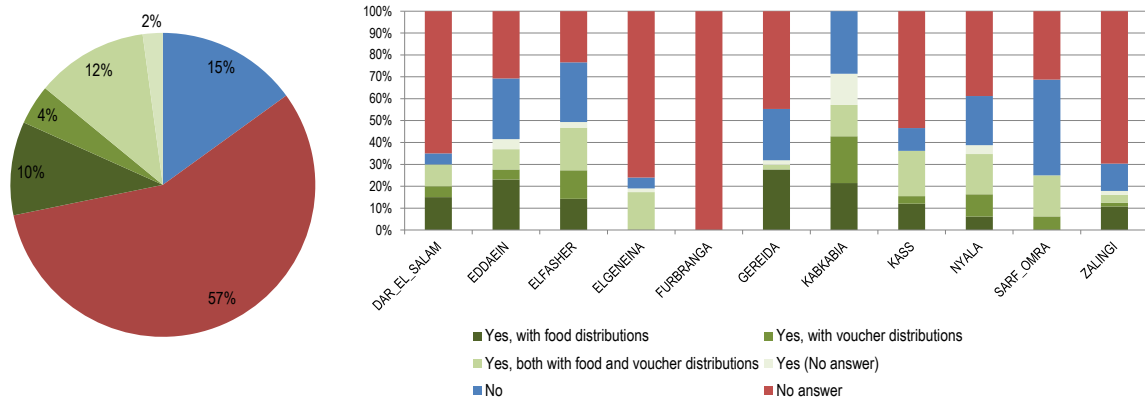
Source: WFP, Darfur traders' survey, December 2013.

In Fasher only, half of the 77 non participant traders either declared that WFP is either not having any impact on prices (27%) or did not provide an answer (23%). Thence, for the other half, there is causality between WFP operations and price changes. In detail, for some 14 percent of them, food distributions affect the market, while for 13 percent voucher distributions are to be blamed. For the remaining traders (23%), there is an impact with no distinction between the two transfer modalities; it can therefore be inferred that a fairly equivalent impact perception of WFP operations in Fasher exists, while no clear cut-off between the two can be derived.[54]

In the remaining markets in North Darfur, 20 out of 50 traders state that WFP affects prices (mostly in Kabkabia and Dar el Salam) while 12 declare the opposite (mostly in Sarf Omra) and 18 did not provide any answer.

In South Darfur, almost one-third of the traders admit that prices are being affected by WFP, and in particular by in-kind distributions, fairly balanced between Gereida, Kass and Nyala (spanning from 32 to 39 percent). At the state level, for half of them no answer was provided.[55] In Eddaein, 41 percent of the 71 traders were on the same page, mostly with regards to in-kind food distributions.

Again, in West Darfur traders seem to be not fully aware of the topic, as so far C&V programs were definitively residual in terms of numbers; in Geneina, only 19 percent about a price effect attached to WFP operations, while in Furbanga none. The same applies to Zalingei (18%).

Moving from an overall market perspective into the actual business every interviewed trader is involved in, the 19 percent of traders asserted to get positive returns from WFP operating in their areas (Figure 47). Apparently, traders dealing with WFP may establish occasional (9%) or more stable (6%) links with other traders to meet an augmented demand. Interestingly, among those negatively affected, only 2 percent of traders within all the markets blame WFP of dumping

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[54] The equivalence is on the occurrence of an impact, while an estimation of the severity of the impact itself is not provided here.
[55] In detail, for 55 out of 154 WFP affects prices, for 28/154 WFP does not affect prices, for 71/154 no answer was provided.

prices, which was quite unexpected. Even though at the market level results are quite biased by the high drop-out rate to this question (61%), it is worth mentioning the high number of traders in Kabkabia with positive returns (64 percent).

Figure 47 - WFP operations having a specific impact on traders' business
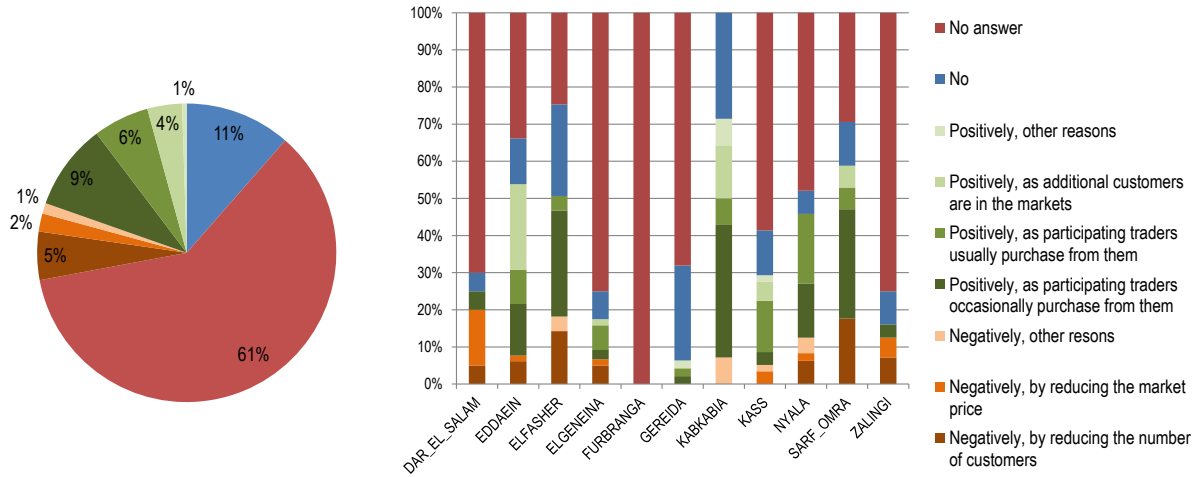
Source: WFP, Darfur traders' survey, December 2013.

Actually, many traders perceive the voucher program in terms of business opportunity in case additional camps were to be included. This applies widely in North Darfur, where knowledge of voucher dynamics may be accruing among traders, in particular in Kabkabia (64% of traders), Sarf Omra (56%), and Fasher (44%); elsewhere, similar results record in Eddaein (54%) and Gereida (60%), while in Nyala and Kass the quota drops to 35 and 34 percent, respectively.

Figure 48 - Likely outcomes deriving from WFP voucher expansion to additional camps
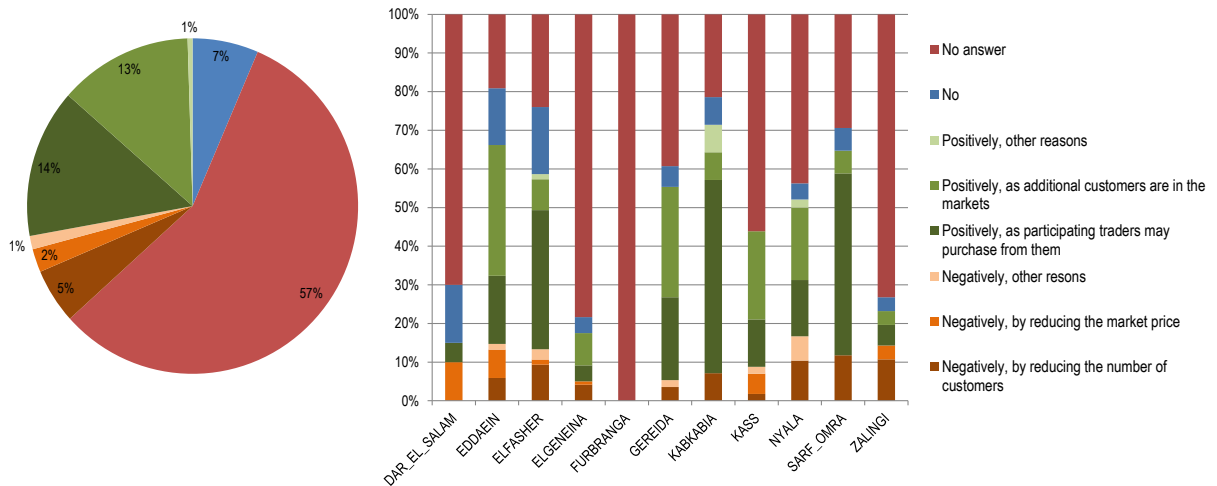
Source: WFP, Darfur traders' survey, December 2013.

9.3.2 Participant traders

Among participant traders, on average generic wholesalers claim to have achieved the highest business expansion, reporting an impressive boost in the number of customers after the inclusion in the voucher program (Table 11).

Table 11 - Customers before and after Voucher program inclusion

Trader	Statistics	Before	After
Specialized Wholesaler	Mean	2,783	8,458
Specialized Wholesaler	Max	6,000	24,000
Specialized Wholesaler	Min	10	12
Specialized Wholesaler	Range	5,990	23,988
Generic Wholesaler	Mean	379	11,435
Generic Wholesaler	Max	1,500	124,000
Generic Wholesaler	Min	30	34
Generic Wholesaler	Range	1,470	123,966
Wholesaler/Retailer	Mean	859	3,286
Wholesaler/Retailer	Max	2,000	19,000
Wholesaler/Retailer	Min	20	25
Wholesaler/Retailer	Range	1,980	18,975
Retailer	Mean	500	1,000
Retailer	Max	500	1,000
Retailer	Min	500	1,000
Retailer	Range	-	-
Total	Mean	863	7,422
Total	Max	6,000	124,000
Total	Min	10	12
Total	Range	5,990	123,988

Source: WFP, Darfur traders' survey, December 2013.

There is a big range in the answers, as the number of interviewed traders participating in the WFP voucher programmes was limited, and results may not be meaningful if broken down at the market level.

In general, all traders have gained from the inclusion in the program, in particular generic wholesalers, even though such an extraordinary achievement in the sales may be biased by the presence of outliers in the data.

Retailers seems to be not as much benefitting. Still, they have doubled the number of customers with the voucher programs.

Again, wholesaler / retailers, appear to be the category closer to final customers; ideally, their involvement in C&V could assist bigger traders, other that expanding - from a trader perspective - the benefits in the market.

Among the 81 respondents, 21 were concerned about late payments, 9 respectively for low agreed prices and limited caseload of beneficiaries redeeming vouchers in their shop, while 17 had no major concerns.

10. Concluding remarks and recommendations

In 2014, WFP is planning to assist with market based transfer modalities more than half million people in Darfur. The bulk of the beneficiaries are in North Darfur, with the inclusion of 117.5 thousand people in Zamzam camp in January 2014, on top of the almost 209.6 thousand already being assisted. In South Darfur (including Eddaein), the caseload is actually set at 140.2 thousand people, while in West Darfur, with the planned expansion to Dorti camp (5,952) and Ardamanta camp (19,448), the voucher programme will have up to 29.5 thousand beneficiaries.

As these are significant numbers, WFP CO called for a comprehensive market assessment in Darfur to inform about the market functioning and support program design.

The report first analysed the broader context in which operations take place, including the overall macroeconomic performance of Sudan, with an in-depth analysis of the agricultural setting. Then, both demand- and supply-side were considered to provide ground to market based activities; an empirical model discussed food security in a number of sentinel sites being monitored by WFP, including IDP camps and mixed communities, focusing on those indicators that are useful to provide insights on the leverage that vouchers might return to food security. The study investigated also market structure and conduct by means of primary data collection in December 2013; the data informed on key facts from a programme design perspective, including volumes and flows of traded commodities, traders' constraints and response capacity should demand exogenously increase (*e.g.* in case vouchers were implemented), credit and stock strategies. Most of this information were also controlled using state balance sheets and actual production data to derive likely scenarios in different markets should voucher programmes assist 5, 10, 20, 40, 80 and 100 thousand additional beneficiaries. Finally, with the 3-year experience and the very recent expansion to a much larger number of beneficiaries, the last part of this report tried to assess the impact WFP voucher programme has been having in Fasher.

From a households' perspective, implementing market based interventions in Darfur is well grounded, as the purchasing power leverage may be effective to improve food security. However, there are two major factors predominantly affecting market functioning in Darfur, and in turn challenging C&V; agricultural performance and insecurity.

After a very positive crop occurred in 2012/13, the last harvest was meagre in the whole of Sudan, with sorghum and millet production being respectively down by 50 and 67 percent year-on-year. While Darfur generally makes only a limited contribution to Sudan's overall production of sorghum, its share for millet is significant. Locally, production of these two staple foods echoed the national performance (-73 and -69 percent respectively y/y, with sorghum being 59 percent below the previous 5-year average, and millet -44 percent). Since Darfur

has to rely on imports from other Sudanese states, a nation-wide availability issue will trigger sorghum prices almost everywhere up. Even worse, as Darfur is the major producer of millet and the 2013/14 harvest resulted in a considerable failure, most households will have to substitute millet for sorghum, thus adding further fuel to the fire. Given the poor economic performance of Sudan, with both GDP and the exchange rate on the decline, adding up food imports on the trade balance may be challenging. This may also negatively affect the National Reserve Authority that may face challenges to release enough food stocks to prevent skyrocketing prices.

While the agricultural production has been alternating between negative and positive harvests in the past 4 years, insecurity worsens dramatically in Darfur, and further challenges an already stretched logistic situation. Commodities can be moved with several delays within the region, and traders have to face additional costs and losses. In particular, Fasher and Eddaein markets appear to be quite logistically departed from the rest of Darfur, and commodities arriving from central Sudan (*i.e.* El Obeid) get more and more expensive. Conversely, other minor markets are more linked to Geneina (*i.e.* Zalingei, Sarf Omra, Kabkabia), which generally is a surplus area. Nyala is the major hub for traders in Darfur, should local supply sources fail elsewhere.

Traders have little capacity to buffer against this overall environment, as many of them have relied on limited supply sources; thence most of the cost they have to face to adjust to the actual circumstances are transmitted along the supply chain to the final customers. Surprisingly, traders are quite confident to be able to deliver additional supply, in case demand would enhance by 25 percent, allowing for increasing prices. However, given the actual figures and the planned expansion plan of the WFP voucher programme in Darfur, traders' confidence must be handled with caution.

As a matter of fact, the report tried to assess actual traders' capacity to respond. It would be definitively challenging to have more than 100 thousand additional beneficiaries in Fasher, as the competition level for grains supply is already tight between beneficiaries and non-beneficiaries. In addition, given the 2013/14 harvest results, most of the additional supply would need to arrive from elsewhere, thus further challenging traders' capacity to bring food in Fasher markets. The impact section showed that WFP is having also a direct impact on prices there. However, this impact should be considered both with regards to vouchers and to in-kind food aid. In that perspective, a minimal negative effect deriving from the voucher programs could be generally tolerated to support market development. Yet, holding the current bad harvest prospects, shifting from in-kind to vouchers would have a two-fold negative impact, as more food would be demanded and less sorghum food aid would trickle down to the market. With the currently rising prices, WFP should not only adjust the value of vouchers to food inflation, but also consider the risk that a number of households, with borderline purchasing power, would not be able to satisfy their needs on the market.

In Geneina, traders may be capable to meet the additional demand for 20 thousand beneficiaries. Thence the voucher expansion plan seems to be well grounded, even though the recent price upsurge should probably advise for a gradual implementation, with Dorti camp to come first, and Ardamata camp to follow closer to the 2014/15 cropping season, when harvest prospects will be disclosed and hopefully prices may have relaxed.

While no expansion plan is being considered, Nyala seems to be quite conducive to host additional voucher programs, despite the overall mounting insecurity in the city. However, it seems wise to reconsider ideal timing of any forthcoming plan, perhaps to the next season, as the very recent price increase occurred in March 2014 might be sustained, and price transmission and upward convergence is occurring almost everywhere in Darfur. Similarly this applies to Eddaein, where market capacity should not exceed 40/50,000 additional beneficiaries.

Currently, prices in all markets in Darfur are at ALPS crisis levels, and the prospects before the next harvest season are even worse, suggesting further caution when designing market based activities.

The assessment therefore recommends WFP CO to:

a) Link up with national and state authorities to disclose if any plan related to the use of strategic reserves is under consideration or ongoing, to be able to forecast whether the recent price upsurge will likely hold until the next season;

b) Monitor the current price increase with weekly reports, to be ready to consider programmatic implications such as transfer values, budget effects and number of beneficiaries reached. It may be worth considering a contingency plan should the price increase continue, both to defend households' purchasing power and to avoid translating price pressure on vulnerable people currently not receiving support from WFP;

c) Include in the Food Security Monitoring System those camps with ongoing voucher programs or likely to be included in the next future.

d) Provided the actual on-going voucher programmes and the current overall trading capacity, consider to balance the number of beneficiaries within Darfur states, thus temporarily slowing down the expansion plans in North Darfur to allow market functioning to adjust to the current beneficiaries' caseload.

e) Taking into account usual price patterns and to avoid the misconception among beneficiaries that vouchers drive prices up, explore the feasibility of implementing next voucher programs at the beginning of the harvest season, when price increase usually relent, if the prospects are fair;

f) Establish an agreement with the Sudan Meteorological Authority (SMA) whose Agro-Meteorological Unit runs a rainfall and NDVI-based agricultural monitoring system and would be able to produce focused and tailored products tracking the development of the cropping season in Darfur (and also elsewhere in Sudan). This could be enhanced by the acquisition of additional ground rainfall data from the State Ministries of Agriculture which could be incorporated in the system run by the SMA. This information would allow the CO to have advanced information on the likely outcome of the following harvest, well before official estimates are disclosed, and support program design in tailoring the expansion of the voucher programs with a proper knowledge of the on-going agricultural season;

g) In a market strengthening perspective, consider involving the category here labelled as wholesaler / retailer in the voucher programme as they often share similar coping behaviours as compared to more specialized wholesalers; this would likely expand the positive effect of market based programmes also. Conversely, retailers seems to be not adequately equipped to meet WFP requirements.

References

Bizzarri, M. (2013). Comparative Evaluation of Cash Voucher and In-Kind Activities in North and West Darfur . GenderConsult.

Buchanan-Smith, M., Fadul, A., Tahir, A., & Aklilu, Y. (2012). *On the Hoof. Livestock Trade in Darfur.* United Nations Environment Programme (UNEP).

Castro, M. (2010). *Poverty in Northern Sudan, Estimates from the NBHS 2009.*

CBS. (2013). Foreign Trade Statistical Digest. *Statistics Directorate, 50*(4).

Central Bank of Sudan. (2012). *Annual Report.* Retrieved from http://www.cbos.gov.sd/en

DTIS. (2008). *Revitalizing Non-Oil Exports.* Diagnostic Trade Integration Study (DTIS) for the Integrated Framework Program.

El Dukheri, I. (2007). *Sudan Grain Market Study.* WFP.

El Dukheri, I., Damous, H., & Khogali, A. (2004). *Rationale for a Possible Market Support Program in Darfur.* CARE.

Faki, H., Nur, E., Abdelfattah, A., & A Aw-Hassan, A. (2012). *Poverty Assessment Northern Sudan.* Aleppo: ICARDA.

FAO. (2010). *Assessment MissionReport 2009/2010: Crop Production and Food Security Assessment for the Northern States of Sudan.* Federal Ministry of Agriculture and Forestry, Government of National Unity and Sudan FAO SIFSIA.

FSTS. (2014). *CFSAM: Annual Crop and Food Supply Assessment Mission, Sudan.* Ministry of Agriculture and Irrigation. Food Security Technical Secretariat.

FSTS. (2014b). *Monitoring of Agricultural Season.* Ministry of Agriculture and Irrigation, General Secretary Office. Food Security Technical Secretariat.

FSTS. (2014c). *Food Security Situation.* General Secretary Office. Food Security Technical Secretariat.

GAPAE. (2012). *Annual Report of Food Security in Sudan for 2011.* Ministry of Agriculture and Irrigation. General Administration of Planning and Agricultural Economics.

GAPAE. (2013). *Annual Report of Food Security in Sudan for 2012.* Ministry of Agriculture and Irrigation. General Administration of Planning Agricultural Economics.

iDMC. (2013). *Sudan: A Worsening Displacement Crisis in Need of a Comprehensive Response.* Norwegian refugee Council.

IMF. (2013). *World Economic Outlook.*

IMF and WB. (2013). *Heavily Indebted Poor Countries (HIPC) Initiative and Multilateral Debt Relief Initiative (MDRI).* Statistical Update.

MFNE. (2012). *The Real Sector: Current Situation, Challenges and Future Vision.* Khartoum: Ministry of Finance and National Economy.

PAEA. (2013). *Time Series of the Main Food and Oil Crops by Production Centres and Mode of Irrigation.* Ministry of Agriculture and Irrigation, DEpartment of Agricultural Statistics. Planning and Agricultural Economics Administration.

Rabe-Hesket, S., & Skrondal, A. (2008). *Multilvevel and Longitudinal Modeling Using Stata* (Vol. Second Edition). College Station, Texas: Stata Press.

Raudenbush, S., & Bryk, A. (2002). *Hierarchical Linear Models.* Thousand Oaks, CA: Sage.

Roberts, J. (2004). An Introductory Primer on Multilevel and Hierarchical Linear Modeling. *Learning disabilities: A Contemporary Journal, 2(1)*, 30-38.

SICP. (2011). *Poverty in Sudan.* The Sudan Institutional Capacity Programme.

Sikainga, A. (2009). The World's Worst Humanitatian Crisis: Understanding the Darfur Conflict. *Origins, 2*(5).

Strategic Reserve Corporation. (2010). *Results of the Cereal Availability Study in the northern States of Sudan.* Khartoum: Food-Security Technical Secretariat of the Ministry of Agriculture (FAO-SIFSIA/Sudan Integrated Food Security Information for Action).

United Nations Security Council. (2013). *Report of the Secretary-General on the African Union - United Nations Hybrid Operation in Darfur.* S/2013/225.

WFP. (2013). *Nyala Market Assessment.* Rome: Food Security Analysis.

WFP. (2014). *Advanced GIS training: GIS Execrises for Humanitarian Response Accessibility.* Rome: Analysis and Nutrition Service.

WFP. (2014b). *Technical Guidance Note 'Calculation and use of the Alert for Price Spikes (ALPS) indicator.* Rome: Analysis and Nutrition Service.

Woolridge, J. (2002). Econometric Analysis of Cross Section and Panel Data. *MIT Press*.

Annexes

Annex to Section 6

Annex 1 - Random slopes by Location

round number
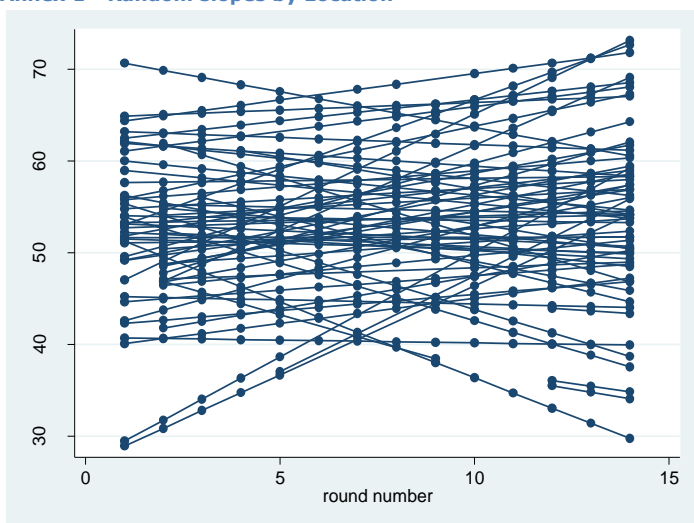
Annex 2 - Overall households monitored per location in the 14 FSMS rounds

Location		North Darfur	South Darfur	West Darfur	Central Darfur	East Darfur	Total	Location		North Darfur	South Darfur	West Darfur	Central Darfur	East Darfur	Total
abata (residents)					301		301	koroly (camp)			325				325
abbasi (camp)		353					353	kulbus (residents)				324			324
abu ajura (mixed)			325				325	kunjara		75					75
abu shouk (camp)	**	361					361	lagaro (camp)			350				350
abu sufyan (mixed)		318					318	malha (residents)		355					355
al batery (camp)			375				375	marsus1 (residents)		150					150
al karanik (camp)					349		349	mornei (camp)				734			734
al mazroub (residents)						277	277	muhajiriye (residents)						238	238
al neim (camp)						403	403	mukjar (camp)					430		430
au camp (camp)			150				150	nena (residents)		346					346
azerni (mixed)				350			350	nertiti (camp)					352		352
beida (mixed)				351			351	otash (camp)	**		403				403
broush (residents)		325					325	rwanda (camp)		353					353
dagagg (residents)		325					325	saboon el fag (mixed)			251				251
dar es salam (camp)			350				350	sala (mixed)				369			369
delej (mixed)					325		325	saraf omra (mixed)	**	841					841
dito dagama (camp)			350				350	sayah (residents)		328					328
dorti (camp)	*			679			679	selea (mixed)				344			344
dorti flata (residents)				348			348	selea (mixed)						324	324
duma (camp)			264				264	shaddad (camp)		321					321
el ferdous (residents)					302		302	shearia (residents)						300	300
el serif (camp)		150					150	singita (residents)			226				226
feina (mixed)			251				251	um baloula (camp)			350				350
frock (residents)		300					300	um dukhun (mixed)					665		665
furbaranga (camp)				355			355	um keddada (residents)		349					349
furbaranga (residents)				460			460	um kesharok		70					70
garsila (camp)				365			365	um ketera		70					70
goz laban (residents)		328					328	um marahik (residents)		352					352
gur lumbung (mixed)			150				150	um shalaya (camp)					456		456
habila (mixed)				350			350	um shalaya (residents)					350		350
kandobi (mixed)				326			326	um tajouk (mixed)				351			351
kassab (camp)		381					381	umbaro (residents)		249					249
kebkabiya (mixed)	**	838					838								
								Total		7,538	4,120	5,341	3,593	1,844	22,436

Note: * refers to the locations where C&V is under consideration from 2014, while ** refers to the locations where C&V programmes have been already implemented. Other locations beyond the sentinel sites under the FSMS are either under the design or implementation phases.

Annex 3 - Household Status by Round

round number	household demographics/circumstances, household residence status								
	Missing	IDPs in camps	IDPs outside camps	Refugees inside camps	Residents	Returnees	Nomads	Refugees outside camps	Total
round 1 (feb 2009)	3	458	163	59	0	392	27	3	1,105
round 2 (may 2009)	7	638	229	59	0	574	43	2	1,552
round 3 (aug 2009)	10	573	247	51	683	26	1	5	1,596
round 4 (nov 2009)	4	577	268	50	682	45	4	0	1,630
round 5 (feb 2010)	2	549	270	51	691	34	12	0	1,609
round 6 (may 2010)	2	539	216	51	562	7	3	1	1,381
round 7 (aug 2010)	3	739	226	81	606	25	0	0	1,680
round 8 (nov 2010)	0	521	179	80	629	18	0	1	1,428
round 9 (feb 2011)	2	616	173	79	620	50	2	3	1,545
round 10 (may 2011)	1	629	213	82	738	68	11	0	1,742
round 11 (nov 2011)	0	645	231	42	775	29	16	1	1,739
round 12 (feb 2012)	2	644	283	80	761	40	0	2	1,812
round 13 (may 2012)	0	584	228	80	848	63	2	0	1,805
round 14 (nov 2012)	0	585	176	51	954	40	5	1	1,812
Total	36	8,297	3,102	896	8,549	1,411	126	19	22,436

Annex 4 - Livelihoods composition by Round

round number	household main income source								
	Other	Agricultural	Livestock	Social protection (including Food Aid, Remittances and Gifts)	Agricultu	Salary	Petty trade	Other trade	Building Sector	Total
round 1 (feb 2009)	50	93	19	172	39	173	378	91	36	1,051
round 2 (may 2009)	73	149	28	77	92	242	218	350	191	1,420
round 3 (aug 2009)	39	106	33	74	330	293	263	223	116	1,477
round 4 (nov 2009)	69	140	63	82	254	293	243	272	104	1,520
round 5 (feb 2010)	64	138	63	71	95	250	302	366	161	1,510
round 6 (may 2010)	57	148	51	59	83	214	239	275	166	1,292
round 7 (aug 2010)	73	135	42	91	389	280	251	196	138	1,595
round 8 (nov 2010)	60	151	55	58	294	243	226	164	70	1,321
round 9 (feb 2011)	57	212	51	92	111	270	247	269	138	1,447
round 10 (may 2011)	101	293	57	95	103	338	264	255	208	1,714
round 11 (nov 2011)	6	230	93	109	324	344	271	203	120	1,700
round 12 (feb 2012)	8	353	58	117	140	353	249	285	197	1,760
round 13 (may 2012)	7	292	51	107	155	355	303	296	190	1,756
round 14 (nov 2012)	2	508	47	83	190	351	291	168	100	1,740
Total	666	2,948	711	1,287	2,599	3,999	3,745	3,413	1,935	21,303

Annex 5 - Actual and Predicted FCS by FSMS round and location

Graphs by location
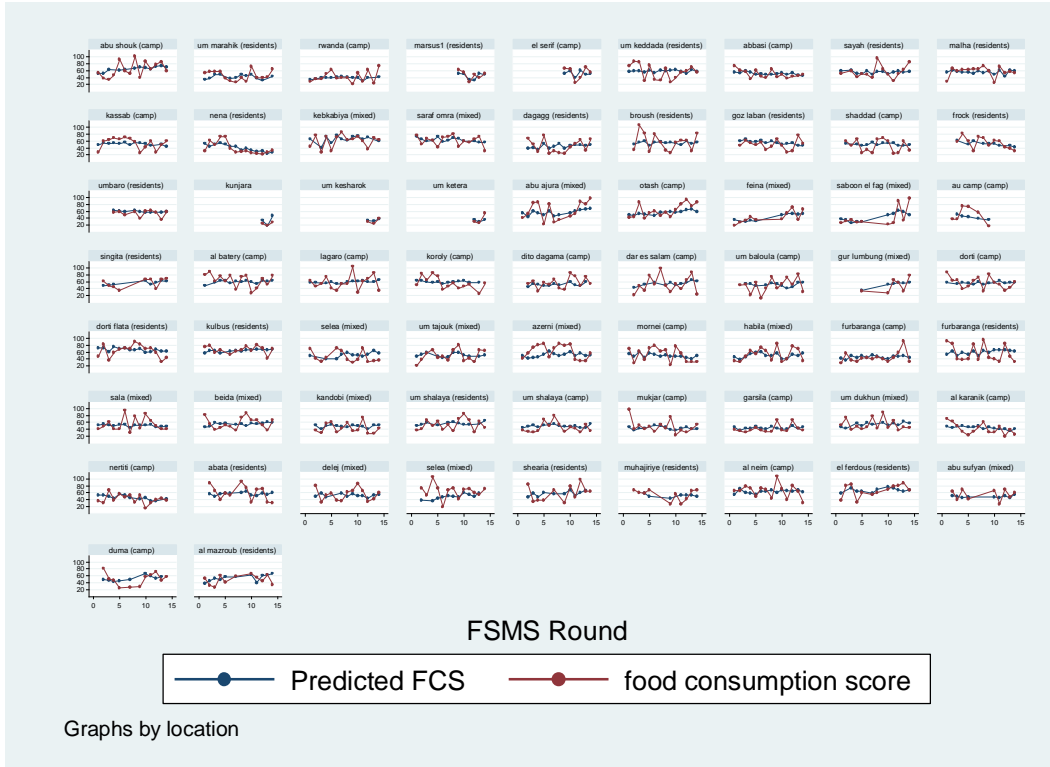
Annex 6 - Livelihoods by community type

Graphs by community type
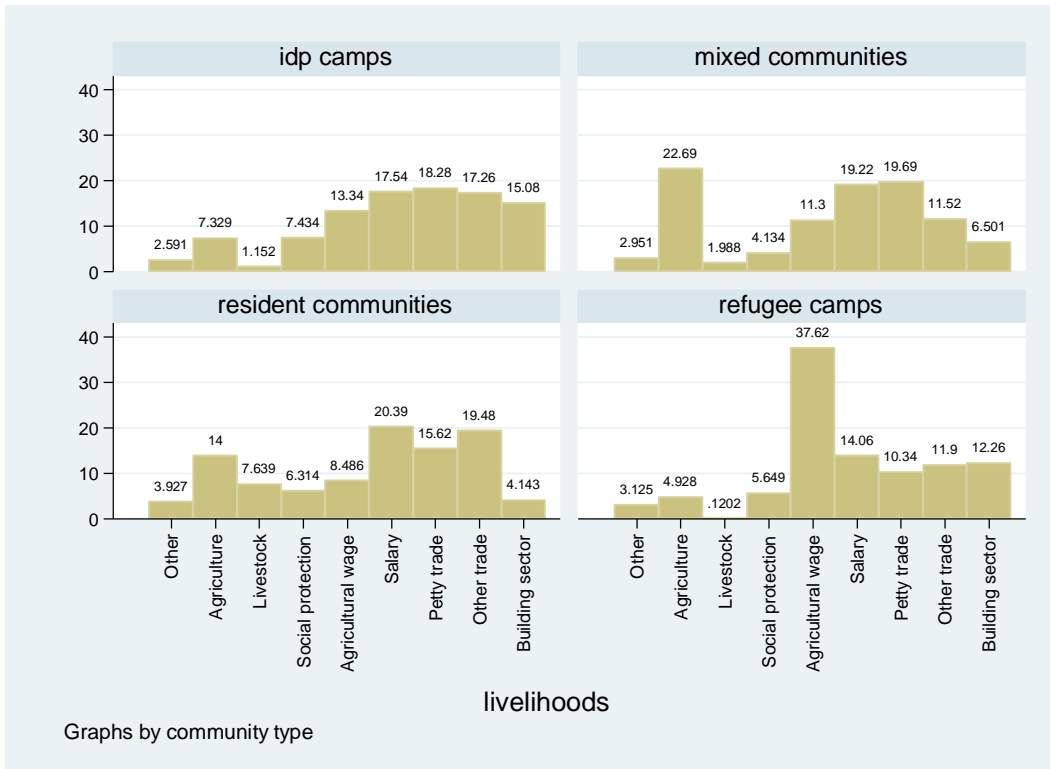
Annex to Section 7

Annex 7 - Ability to link up with other traders (by trader category and commodity)
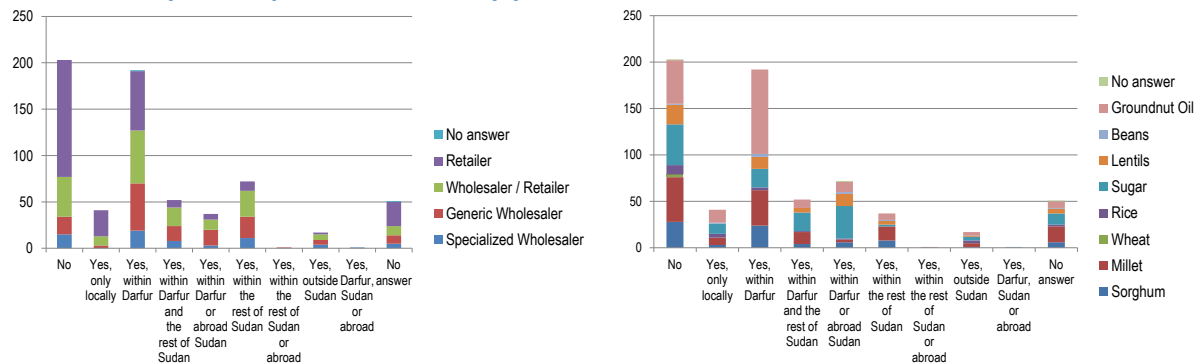
Annex to Section 8

Annex 8 - Millet price trends in Sudan (SDG/KG)
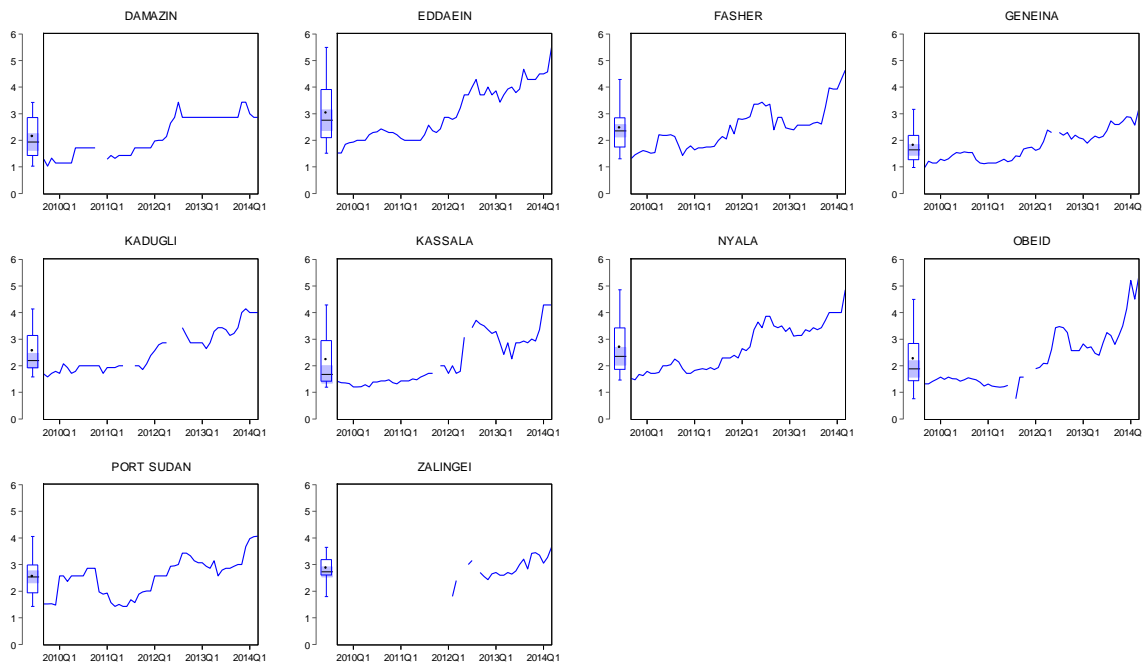
Source: WFP - VAM Food and Commodity Prices Data Store and Farmers - Food and Agriculture Realtime Messaging and Reporting Systems for Zalingei prices.

Annex 9 - Sorghum price trends in Sudan (SDG/KG)
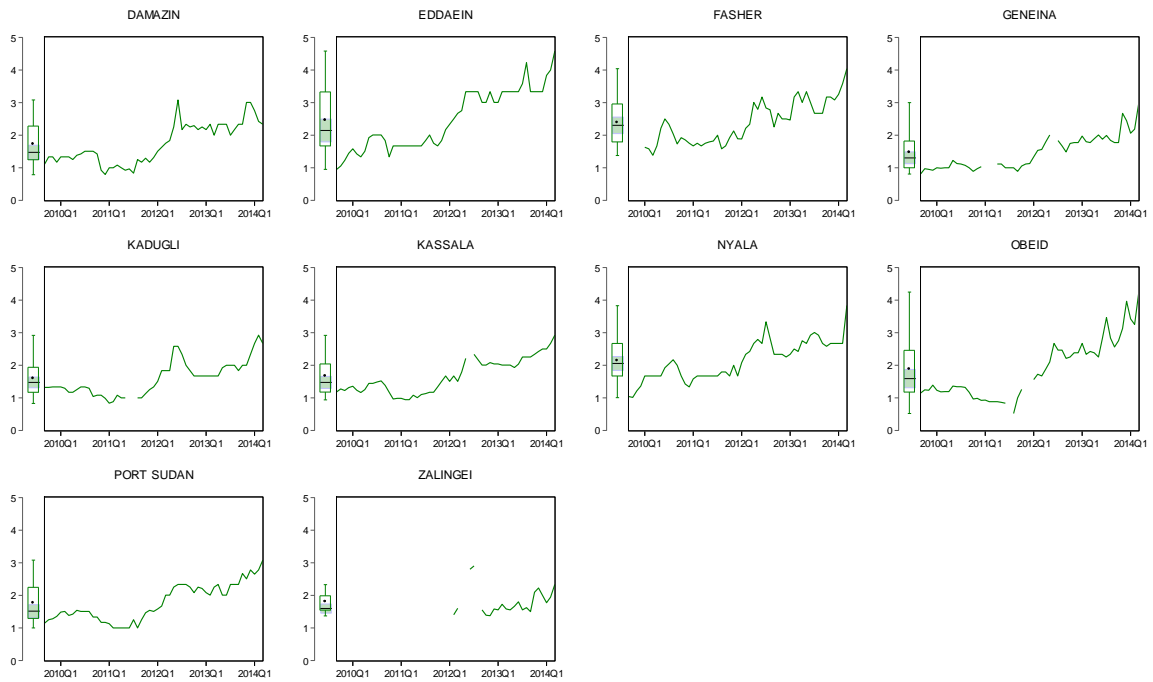
Source: WFP - VAM Food and Commodity Prices Data Store and Farmers - Food and Agriculture Realtime Messaging and Reporting Systems for Zalingei prices.

Darfur Market Assessment 2013

Traders' Survey

المسح الخاص بالتجار

	Section 1 – Preliminary information		القسم 1 — معلومات أولية
1.1	Interviewer Name اسم العداد		
1.2	Date التاريخ		
1.3	Market name if applicable اسم السوق ان وجد		
1.4	City/Village المدينة/القرية		
1.5	Locality المحلية		
1.6	State الولاية		
1.7	Team Leader Name اسم رئيس الفريق		

Interviewer Signature توقيع العداد

Questionnaire Approved by the Team Leader

اعتمد الاستبيان بواسطة رئيس الفريق

Note for the enumerator: Please read the following consent form before starting the interview. ملحوطة للعداد: الرجاء قراءة نموذج الموافقة التالية قبل بدء المقابلة.

MY NAME IS………….. I AM PART OF A TEAM OF THE UNITED NATIONS WORLD FOOD PROGRAMME THAT IS CONDUCTING A SURVEY ON FOOD MARKETS. I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT MARKETS, WHICH WILL TAKE ABOUT **FORTHY** MINUTES. YOUR NAME WILL **NOT** BE RECORDED AND ANY INFORMATION THAT YOU PROVIDE WILL BE CONFIDENTIAL AND WILL NOT BE DISCLOSED TO OTHER PEOPLE. YOUR PARTICIPATION IS VOLUNTARY AND YOU CAN CHOOSE NOT TO ANSWER ANY OR ALL OF THE QUESTIONS IF YOU WISH; HOWEVER WE HOPE YOU WILL PARTICIPATE SINCE YOUR VIEWS ARE IMPORTANT.

DO YOU HAVE ANY QUESTIONS?

MAY I BEGIN THE INTERVIEW NOW?

اسمي هو: ------- أنا عضو في فريق برنامج الأغذية العالمي التابع للأمم المتحدة الذي يقوم باجراء مسح خاص بأسواق الغذاء. أود أن أطرح عليك بعض الأسئلة عن الأسواق والتي ستستغرق حوالي أربعون دقيقة. لن يتم تسجيل اسمك و أي معلومات تقدمها ستكون سرية ولن يتم افشاؤها لأشخاص آخرين. ان مشاركتك هي مشاركة تطوعية ويمكنك اختيار عدم الاجابة على أي سؤال أو على كل الآسئلة اذا اردت ذلك، ولكننا نأمل أن تشارك نظرا لأن أراءك مهمة.

هل لديك أي سؤال؟

هل أبدأ المقابلة الآن؟

Section 2 – General characteristics of the trader القسم 2 – الخصائص العامة للتاجر

2.1	Which is the trading activity you are involved in? ما هو النشاط التجاري الذي تمارسه؟	☐ 1	Specialized Wholesaler تاجر اجمالي متخصص *Purchasing from traders, selling to other traders, specialized in one/two commodities, using wholesale units (e.g. sacks, jerry can), selling the whole unit and not part of it* الشراء من التجار، البيع لتجار آخرين، متخصص في سلعة واحدة/سلعتين، يستخدم وحدات البيع بالجملة (مثل الجوالات، الجركانات) يبيع الوحدة بأكملها وليس جزءا منها.
		☐ 2	Generic Wholesaler تاجر اجمالي عام *Purchasing from traders, selling to other traders, specialized in many commodities, using wholesale units (e.g. sacks, jerry can), selling the whole unit and not part of it* شراء من التجار، البيع لتجار آخرين، متخصص في عدة سلع، يستخدم وحدات البيع بالجملة مثل (الجوالات والجركانات) يبيع الوحدة بكاملها وليس جزءا منها.
		☐ 3	Wholesaler/Retailer تاجر اجمالي/تجزئة *Purchasing from traders, selling to other traders/customers, specialized in many commodities, using both retail and wholesale units (e.g. malwa and sacks), selling small quantities of the commodity* شراء من التجار، والبيع لتجار آخرين وزبائن، متخصص في بيع عدة سلع، ويستخدم كل من وحدات البيع بالتجزئة ووحدات البيع بالجملة (مثل الملوة والجوالات) يبيع كميات صغيرة من السلعة
		☐ 4	Retailer تاجر تجزئة *Purchasing from traders, selling to ultimate customers* يشتري من التجار ويبيع الى الزبائن.
		☐ 77	Other اخرى (حدد) *(specify)*
	Note for the enumerator: ملحوظة للعداد: ***one tick allowed*** مسموح بخيار واحد	☐ 99	**No answer → DROP THE INTERVIEW** اترك المقابلة لا توجد اجابة ----

2.2	Can you please indicate which commodity you normally trade? هل يمكن أن تذكر في أي سلعة تتاجر عادة؟	☐ 1	Sorghum ذرة
		☐ 2	Millet دخن
		☐ 3	Wheat قمح
		☐ 4	Rice أرز
		☐ 5	Sugar سكر
		☐ 6	Lentils عدس
		☐ 7	Beans فاصوليا
		☐ 8	Groundnut Oil زيت فول
		☐ 9	Groundnuts فول سوداني
		☐ 77	أخرى (حدد – يمكن اختيار عدة مواد) Other *(specify – multiple items allowed)*
	Note for the enumerator: ملحوظة للعداد: ***multiple ticks allowed*** مسموح بعدة خيارات	☐ 99	**No answer** لا توجد اجابة

2.3	Indicate the most important commodity you trade (in terms of amount of money invested yearly) أذكر أهم سلعة تتاجر فيها (من حيث مقدار المال المستثمر سنويا)	☐ 1	Sorghum ذرة
		☐ 2	Millet دخن
		☐ 3	Wheat قمح
		☐ 4	Rice أرز
		☐ 5	Sugar سكر

		☐	6	Lentils عدس
		☐	7	Beans فاصوليا
		☐	8	Groundnut Oil زيت فول
Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح باختيار واحد		☐	99	**No answer → DROP THE INTERVIEW** لا توجد اجابة --- اترك المقابلة

NOTE FOR THE ENUMERATOR: HENCEFORTH, REFER ONLY TO THE COMMODITY TICKED IN QUESTION 2.3

ملحوظة للعداد: من الآن فصاعدا اشر فقط الى السلعة المختارة في السؤال رقم 2.3

2.4	Has the most important commodity traded *(see question 2.3)* changed in the past year (same period)? هل تغيرت أهم سلعة يتم الاتجار فيها (راجع السؤال رقم 2.3) في السنة الماضية (في نفس الفترة)؟	☐	1	Yes نعم	
			2.4.1	If so, which one was your most important commodity last year? اذا كان الأمر كذلك، ماهي أهم سلعة بالنسبة لك في العام الماضي؟ *Note for the enumerator:* ملحوظ للعداد *one tick allowed* مسموح باختيار واحد	
				☐ 1 Sorghum ذرة	
				☐ 2 Millet دخن	
				☐ 3 Wheat قمح	
				☐ 4 Rice ارز	
				☐ 5 Sugar سكر	
				☐ 6 Lentils عدس	
				☐ 7 Beans فاصوليا	
				☐ 8 Groundnut Oil زيت فول	
				☐ 9 Groundnuts فول سوداني	
				☐ 77 Other اخرى (حدد) *(specify)*	
				☐ 88 **Not Applicable** لاينطبق	
				☐ 99 **No answer** لا توجد اجابة	
		☐	2	No لا	
	Note for the enumerator: ملحوظة الى العداد *one tick allowed* مسموح باختيار واحد	☐	99	**No answer** لا توجد اجابة	

2.5	Trader sex نوع التاجر *Note for the enumerator:* ملحوظة للعداد *Please refer to the respondent* الرجاء الرجوع الى الشخص الذي تتم مقابلته	☐	1	Male ذكر
		☐	2	Female انثى

2.6	What is your position in the shop ما هو مركزك في الدكان؟ *Note for the enumerator:* ملحوظة للعداد *one tick allowed, please refer to the respondent* مسموح باختيار واحد، الرجاء الرجوع الى الشخص المجيب.	☐	1	Major holder مالك أساسي
		☐	2	Holder's relative قريب المالك
		☐	3	Clerk كاتب
		☐	77	Other أخرى (حدد) *(specify)*
		☐	99	**No answer** لا توجد اجابة

2.7	Please provide information on the ownership status of the premises الرجاء تقديم معلومات عن حالة ملكية المباني	☐	1	Owned ملك
		☐	2	Rented مستأجر
		☐	3	Open air stall كشك في الهواء الطلق
		☐	77	Other اخرى (حدد) *(specify)*

	Note for the enumerator: ملحوظة للعداد: **one tick allowed, please refer to the major holder of the trading activity** مسموح باختيار واحد، الرجاء الرجوع الى المالك الرئيسي للنشاط التجاري	☐	99	**No answer** لا توجد اجابة

2.8	When the major holder of the trading activity started his trading business? متى بدأ المالك الرئيسي للنشاط التجاري أعماله التجارية؟ *Note for the enumerator:* ملحوظة للعداد: **one tick allowed** مسموح باختيار واحد	☐	1	Less than 1 year ago منذ أقل من سنة
		☐	2	Between 1-5 years ago منذ ما بين 1-5 سنوات
		☐	3	More than 5 years ago منذ أكثر من خمسة سنوات
		☐	99	**No answer** لا توجد اجابة

Section 2 – Remarks   القسم 2 – ملاحظات

Section 3 – Volumes and Flows   القسم 3 – الكميات والانسياب

3.1	Please, provide an estimate both in the harvest and rain seasons of the average quantities sold per week of the most important commodity (*see question 2.3*) الرجاء تقديرا لمتوسط الكميات المباعة في الاسبوع من السلعة الأكثر أهمية في كل من موسم الحصاد وموسم الأمطار (أنظر السؤال 2.3)

3.1.1 **Harvest Season** موسم الحصاد	3.1.2 **Rain Season** موسم الأمطار
Quantity: الكمية Unit: الوحدة	Quantity: الكمية Unit: الوحدة

Note for the enumerator: ملحوظة للعداد:
Report below the unit of conversion into KG (for cereals, pulses, sugar and dry fruits) or LITER (for Oil)
اذكر أدناه وحدة التحويل الى كلغ (بالنسبة للحبوب، البقوليات، السكر، والفواكه الجافة) أو لتر (بالنسبة للزيت)

☐ لتر or LITER ☐ كلغ of KG [____] = 1 واحدة Unit 1

Some possible examples for the enumerator (please note that the below is not a closed list, but examples provided as a reference):
بعض الامثلة الممكنة للعداد (الرجاء ملاحظة أن المذكور أدناه ليس قائمة مغلقة، بل أمثلة مقدمة للرجوع اليها)

1 وحدة = 3.5 كلغ اذا كانت الوحدة ملوة   1 وحدة = 50 كلغ اذا كانت الوحدة جوالا
1 وحدة = 16 ليتر اذا كانت الوحدة جركانة   1 وحدة = 100 كلغ اذا كانت الوحدة جوالا
1 وحدة = 18 لتر اذا كانت الوحدة جركانه   1 وحده = 1000 كلغ اذا كانت الوحدة طن

1 Unit = 3.5 KG if the unit is Malwa   *1 Unit = 50 KG if the unit is Sack*
1 Unit = 16 LITERS if the unit is Jerry-can   *1 Unit = 100 KG if the unit is Sack*
1 Unit = 18 LITERS if the unit is Jerry-can   *1 Unit = 1000 KG if the unit is Ton*

3.2	Please, indicate if the sales in this period of the year have increased, decreased, or remained the same compared to the same period one year ago? الرجاء توضيح اذا كانت المبيعات قد زادت، انخفضت أو بقيت على حالها خلال هذه الفترة من السنة مقارنة بنفس الفترة من السنة الماضية؟

☐	1	No change لا تغيير	☐	99	**No answer** لا توجد اجابة
☐	2	Increased زادت	☐	3	Decreased انخفضت

		If increased, to what extent? ذا كانت قد زادت، الى أي مدى؟			If decreased, to what extent? اذا كانت قد انخفضت، الى أي مدى؟
3.2.1.a	☐ 1	To a limited extent *(below or equal 15%)* الى حد محدود (15% أو أقل)	**3.2.1.b**	☐ 1	To a limited extent *(below or equal 15%)* الى حد محدود (15% أو أقل)
	☐ 2	To some extent *(between 16%-30%)* الى حد ما (بين 16%-30%)		☐ 2	To some extent *(between 16%-30%)* الى حد ما (بين 16%-30%)
	☐ 3	To a large extent *(between 31%-50%)* الى حد كبير (بين 31%-50%)		☐ 3	To a large extent *(between 31%-50%)* الى حد كبير (بين 31%-50%)
	☐ 4	To a very large extent *(more than 50%)* الى حد كبير جدا (أكثر من 50%)		☐ 4	To a very large extent *(more than 50%)* الى حد كبير جدا (أكثر من 50%)
	☐ 88	**Not applicable** لا ينطبق		☐ 88	**Not applicable** لا ينطبق
	☐ 99	**No answer** لا توجد اجابة		☐ 99	**No answer** لا توجد اجابة

		Which is the main reason for the increase? ماهو السبب الرئيسي للزيادة؟			Which is the main reason for the decrease? ما هو السبب الرئيسي للانخفاض؟
3.2.2.a	☐ 1	More availability of the product زيادة توفر المنتج	**3.2.2.b**	☐ 1	Less availability of the product قلة توفر المنتج
	☐ 2	Less competition between traders منافسة أقل بين التجار		☐ 2	More competition between traders زيادة المنافسة بين التجار
	☐ 3	More demand زيادة الطلب		☐ 3	Less demand قلة الطلب
	☐ 4	Enhanced security along trading routes تحسن الوضع الأمني على الطرق التجارية		☐ 4	Reduced security along trading routes تدني المستوى الأمني على الطرق التجارية
	☐ 5	Improved infrastructures تحسن البنى التحتية		☐ 5	Deteriorated infrastructures تدهور البنى التحتية
	☐ 77	*Other (specify)* أخرى (حدد)		☐ 77	*Other (specify)* أخرى (حدد)
	☐ 88	**Not applicable** لا ينطبق		☐ 88	**Not applicable** لا ينطبق
	☐ 99	**No answer** لا توجد اجابة		☐ 99	**No answer** لا توجد اجابة

3.3		Which are the main two sources of supply for the most important commodity traded *(see question 2.3)*? ماهما المصدران الرئيسيان لأهم سلعة يتم الاتجار فيها (انظر السؤال رقم 2.3)	**3.3.1** Specify the origin (town/state) حدد المصدر(المدينة /الولاية) *e.g. Nyala / South Darfur* مثال نيالا/جنوب دارفور *note for the enumerator:* ملحوظة للعداد: *multiple locations allowed* مسموح باختيار عدة مواقع	**3.3.2** Specify the number of suppliers حدد عدد الموردين
	☐ 1	Factories المصانع		
	☐ 3	Farmers المزارعين		
	☐ 4	Middlemen (*Sababa*) الوسطاء		
	☐ 5	Traders التجار		
	☐ 77	Other أخرين		
	☐ 99	**No answer** لا توجد اجابة		

3.4	Would you have other potential suppliers *(see question 3.3.2)*? هل لديك موردين محتملين آخرين (انظر السؤال رقم 3.3.2) *Note for the enumerator:* ملحوظة للعداد: *one tick allowed* مسموح باختيار واحد	☐ 1	No لا
		☐ 2	Yes, but a limited number *(between 1 and 3)* نعم، ولكن عدد محدود (بين 1 و3)
		☐ 3	Yes, a fairly high number *(between 4 and 9)* نعم، عدد كبير بعض الشيء (بين 4 و9)
		☐ 4	Yes, many *(more than 10)* نعم، عدد كبير (أكثر من 10)
		☐ 99	**No answer** لا توجد اجابة

3.5	When the local production is poor, would you be able to meet the demand linking up with those other suppliers?	☐ 1	No لا
		☐ 2	Yes, within Darfur نعم داخل دارفور *(specify the location)* حدد الموقع
		☐ 3	Yes, with the rest of Sudan نعم داخل بقية الأماكن في السودان *(specify the location)* حدد الموقع

عندما يكون الانتاج المحلي متدنيا، هل ستتمكن من تلبية الطلب بالارتباط مع أولئك الموردين الآخرين؟ *Note for the enumerator:* ملحوظة للعداد: ***multiple ticks allowed; multiple locations allowed;*** مسموح بعدة خيارات، مسموح باختيار عدة مواقع		☐ 4	نعم خارج السودان Yes, outside Sudan *(specify country and location)* حدد البلد والموقع
		☐ 99	**No answer** لا توجد اجابة

3.6	Whom are you currently selling the most important commodity traded *(see question 2.3)*? لمن تبيع حاليا أهم سلعة تتاجر فيها (انظر السؤال رقم 2.3)؟			**3.6.1** Specify the origin of the trader (town/state) or the name of the agency/company *e.g. Nyala / South Darfur* حدد الموطن الاصلى للتاجر (المدينة/الولاية) أو اسم الوكالة/الشركة مثل: نيالا/جنوب دارفور *Note for the enumerator:* ملحوظة للعداد: ***multiple locations allowed*** مسموح اختيار عدة مواقع
		☐ 1	تجار اجمالي Wholesalers	[ ]
		☐ 2	تجار تجزئة Retailers	[ ]
		☐ 3	Government حكومة	[ ]
		☐ 4	International Companies شركات دولية	[ ]
		☐ 5	Relief agencies وكالات اغاثة	[ ]
		☐ 6	Households أسر	[ ]
		☐ 77	Other أخرى	[ ]
	Note for the enumerator: ملحوظة الى العداد: ***multiple ticks allowed*** مسموح بعدة خيارات	☐ 99	**No answer** لا توجد اجابة	

3.7	Do you usually trade outside Sudan *(e.g. Chad, South Sudan)* هل تتاجر عادة خارج السودان (على سبيل المثال: تشاد، جنوب السودان)	☐ 1	Yes
			3.7.1 How? كيف *Note for the enumerator:* ملحوظة للعداد: ***two ticks allowed*** مسموح بخيارين	**3.7.2** Specify town and country حدد المدينة والبلد *Note for the enumerator:* ملحوظة الى العداد: ***multiple locations allowed*** مسموح باختيار عدة مواقع
			☐ 1 Selling بيع	[ ]
			☐ 2 Buying شراء	[ ]
			☐ 88 **Not applicable** لا ينطبق	
			☐ 99 **No answer** لا توجد اجابة	

			3.7.2	If compared to the volume of your overall trading activity, to what extent trading with foreign countries is relevant? اذا تمت مقارنة حجم نشاطك التجاري العام، الى أي مدى تكون التجارة مع دول اجنبية ذات علاقة بنشاطك التجاري؟
4.2				*Note for the enumerator:* ملحوظة الى العداد: **one tick allowed** مسموح باختيار واحد
			☐ 1	To a limited extent *(below or equal 15%)* الى درجة محدودة (15% أو أقل)
			☐ 2	To some extent (between 16%-30%) الى حد ما (بين 16%-30%)
			☐ 3	To a large extent *(between 31%-50%)* الى حد كبير (بين 31-50%)
			☐ 4	To a very large extent *(more than 50%)* الى حد كبير جدا (أكثر من 50%)
			☐ 88	**Not applicable** لا ينطبق
			☐ 99	**No answer** لا توجد اجابة
	☐	2	No	لا
Note for the enumerator: ملحوظة الى العداد: **one tick allowed** مسموح باختيار واحد	☐	**99**	**No answer**	لا توجد اجابة

Section 3 – Remarks	القسم 3 – ملاحظات

Section 4 – Constraints and response capacity		القسم 4 – القيود والقدرة على الاستجابة	
	☐	1	No money / limited access to credit لا يوجد مال/ محدودية الحصول على الدين
	☐	2	Transport costs (*e.g.* fuel cost and/or checkpoints/permits) تكاليف الترحيل (مثل تكلفة الوقود و/أو نقاط التفتيش/التصاريح
	☐	3	Poor infrastructure ضعف البنى التحتية
	☐	4	Insecurity issues مسائل انعدام الآمن
	☐	5	Low profit margin (low sale price and/or high purchase price) تدني هامش الربح (تدني سعر البيع و/أو ارتفاع سعر الشراء)
4.1 What are the two most important constraints preventing you expanding your business? ماهما القيدين الأكثر اهمية اللذان يمنعانك من توسيع عملك؟	☐	6	Demand issues الأمور المتعلقة بالطلب
	☐	7	Few people are controlling the market عدد قليل من الأشخاص يتحكمون في السوق
	☐	8	Government's interventions (*e.g.* restriction to trade and/or release of stocks from the Strategic Reserves) تدخلات الحكومة (مثل: تقييد التجارة و/أو توريد مخزونات من المخزون الاستراتيجي)
	☐	9	Food aid عون غذائي
	☐	77	Other أخرى (حدد) *(specify)*
Note for the enumerator: ملحوظة الى العداد: **two ticks allowed** مسموح باختيار خيارين	☐	**99**	**No answer** لا توجد اجابة
4.2 According to your opinion, would the sale PRICE of the most important commodity increase, decrease or stay put if DEMAND on this market would be 25% higher in the coming six months? حسب رأيك، هل سيرتفع أم سينخفض أم سيبقى سعر بيع السلعة الأكثر أهمية على ما هو عليه اذا	☐	1	Increase سوف يرتفع

4.2.1 If you expect an INCREASE of prices, do you think it will be temporary (until supply has increased) or sustained (for the period of the demand increase)? اذا كنت تتوقع ارتفاع الاسعار، هل تعتقد أنه سيكون مؤقت (حتى يزيد الامداد) ام سيستمر (خلال فترة زيادة الطلب)؟

Note for the enumerator: ملحوظة الى العداد: **one tick allowed** مسموح بخيار واحد

☐	1	Temporary	مؤقت

		☐	2	Sustained سيستمر
ارتفع الطلب في هذا السوق بنسبة 25% في الأشهر الستة القادمة؟		☐	88	**Not applicable** لا ينطبق
		☐	99	**No answer** لا توجد اجابة
		☐	2	No change لا تغيير
		☐	3	Decrease سينخفض
Note for the enumerator: ملحوظة الى العداد: *one tick allowed* مسموح باختيار واحد		☐	**99**	**No answer** لا توجد اجابة

4.3	Would you be able to absorb an increased demand… هل ستتمكن من استيعاب زيادة الطلب	**4.3.1**	…by 25%? بنسبة 25%	**4.3.2**	…by 50%? بنسبة 50%	**4.3.3**	…by 100%? بنسبة 100%
		☐ 1	Yes نعم	☐ 1	Yes نعم	☐ 1	Yes نعم
		☐ 2	No لا	☐ 2	No لا	☐ 2	No لا
	Note for the enumerator: ملحوظة الى العداد: *one tick allowed for each question* مسموح بخيار واحد لكل سؤال	☐ 99	**No answer** لا توجد اجابة	☐ 99	**No answer** لا توجد اجابة	☐ 99	**No answer** لا توجد اجابة

4.4	Assuming that the demand from your (existing and new) customers would increase suddenly by the highest percentage you are able to absorb (*see question 4.3*), in what time frame would you have the capacity to deliver? بافتراض أن الطلب من (زبائنك الحاليين والجدد) سيزيد فجأة بمعدل أكبر نسبة مئوية تستطيع استيعابها (انظر السؤال رقم 4.3)، في أي مدى زمني ستكون لك القدرة على التوريد؟ *Note for the enumerator:* *one tick allowed; tick 'No capacity' if all the answers in question 4.3 are 'No'.*	☐	1	No capacity لا توجد قدرة
		☐	2	Within a week خلال اسبوع واحد
		☐	3	Within two weeks خلال اسبوعين
		☐	4	Within a month خلال شهر واحد
		☐	5	After a month or more بعد شهر أو أكثر
		☐	99	**No answer** لا توجد اجابة

4.5	Given your actual delivery capacity, how much more food would you be able to deliver in a week time? اذا أخذنا في الاعتبار قدرتك الفعلية للتوريد، ما كمية الغذاء الذي ستتمكن من توريده في فترة أسبوع واحد؟ *Note for the enumerator::* *the unit must be the same defined in question 3.1* يجب أن تكون الوحدة هي نفسها التي تم تحديدها في السؤال رقم 3.1	*Harvest season* موسم الحصاد	*Rain season* موسم الأمطار
		Quantity: الكمية: ____ Unit: الوحدة: ____	Quantity: الكمية: ____ Unit: الوحدة: ____

Section 4 – Remarks

القسم 4 – ملاحظات

Section 5 – Credit and stocks strategy   القسم 5 – الدين واستراتيجية المخزونات

5.1	Do you provide credit to some of your customers? هل تقدم الدين لبعض زبائنك؟	☐	1	Yes **5.1.1** If so, what share (in percentage) of the value of your total sales is currently sold on credit? اذا كان الامر كذلك، ما هي النسبة المئوية من قيمة اجمالي مبيوعاتك يتم بيعها حاليا بالدين؟ ____ %
		☐	2	No لا
	Note for the enumerator: ملحوظة الى العداد: *one tick allowed* مسموح باختيار واحد	☐	**99**	**No answer** لا توجد اجابة

5.2	Have there been any changes in the number of credit requests compared to the same period of one year ago? هل يوجد تغيير في عدد طلبات الدين مقارنة بنفس الفترة من العام الماضي؟ *Note for the enumerator:* ملحوظة الى العداد: *one tick allowed* مسموح باختيار واحد	☐	1	Yes, less نعم، أقل
		☐	2	Yes, more نعم/ أكثر
		☐	3	No, same number لا، نفس العدد
		☐	**99**	**No answer** لا توجد اجابة

5.3	Where do you stock your commodities? أين تقوم بتخزين سلعك؟ *Note for the enumerator:* ملحوظة الى العداد: *multiple ticks allowed* مسموح بعدة خيارات	☐	1	No stocks لا توجد مخزونات
		☐	2	In my house في منزلي
		☐	3	In the shop في الدكان
		☐	4	In my warehouse في مستودعي
		☐	5	In a warehouse belonging to other companies/traders في مستودع مملوك لشركات/تجار آخرين
		☐	6	In a public warehouse في مستودع عام
		☐	77	Other أخرى (حدد) *(specify)* [ ]
		☐	**99**	**No answer** لا توجد اجابة

5.4	Is there a time gap between purchasing and selling your food items? هل يوجد فاصل زمني بين شراء وبيع موادك الغذائية؟ *Note for the enumerator:* ملحوظة الى العداد: *one tick allowed* مسموح باختيار واحد	☐	1	Yes نعم **5.4.1 If so, specify in number of weeks** اذا كان الأمر كذلك، حدد عدد الاسابيع [ ] weeks اسابيع
		☐	2	No لا
		☐	**99**	**No answer** لا توجد اجابة

5.5	What is your current stock level of the most important commodity in terms of quantities and duration? ما هو مستوى مخزونك الحالي من السلعة الأكثر أهمية من حيث الكمية والفترة الزمنية؟ *Note for the enumerator:* ملحوظة الى العداد: *The unit should be the same as per question 3.1* يجب أن تكون الوحدة هي نفسها كما في السؤال 3.1	[ ] الكمية/وحدة Quantity /units [ ] أسابيع weeks		
		☐	**99**	**No answer** لا توجد اجابة

5.6	Have you ever experienced poor stocks/stock out?	☐	1	Yes

				كيف كان ذلك؟ How often?
		☐	1	Rarely (1 per month or less) (نادراً (مرة في الشهر أو أقل)
5.6.1		☐	2	Occasionally (2-3 times per month) أحياناً (2-3 مرات في الشهر)
		☐	3	Often (every week) دائماً (كل أسبوع)
		☐	**88**	**Not applicable** لا ينطبق
		☐	**99**	**No answer** لا توجد اجابة

هل حدث أن عانيت من قلة المخزون/انتهاء المخزون؟

				لماذا Why?
		☐	1	Limited availability of the product محدودية توفر المنتج
		☐	2	Poor storage capacity ضعف امكانية التخزين
		☐	3	No money عدم وجود المال
5.6.2		☐	4	Increased demand زيادة الطلب
		☐	5	Looting / Insecurity النهب/انعدام الأمن
		☐	77	Other *(specify)* أخرى (حدد)
		☐	**88**	**Not applicable** لا ينطبق
		☐	**99**	**No answer** لا توجد اجابة

	☐	2	No لا
Note for the enumerator: ملحوظة الى العداد: *one tick allowed* مسموح باختيار واحد	☐	**99**	**No answer** لا توجد اجابة

Section 5 – Remarks	القسم 5 – ملاحظات

Section 6 – Prices	القسم 6 – الاسعار

What are now the purchasing/selling prices for **ONE UNIT** of the most important commodity traded *(see question 2.3)*?

ماهي أسعار الشراء/البيع الحالية للوحدة الواحدة من السلعة الأكثر أهمية التي تتم المتاجرة فيها (أنظر السؤال رقم 2.3)؟

Note for the enumerator: the unit must be the same as defined in question 3.1

ملحوظة الى العداد: يجب أن تكون الوحدة هي نفسها كما حدد في السؤال 3.1

6.1	**6.1.1** **Purchasing price in SDG** سعر الشراء بالجنيه السوداني Price: السعر Units: الوحدة	**6.1.2** **Selling price in SDG** سعر البيع بالجنيه السوداني Price: السعر Units: الوحدة

6.2	To what extent is your business usually affected by the price of fuel? الى أي مدى يتأثر عملك عادة بسعر الوقود؟	☐	1	To a limited extent *(below or equal 15%)* الى حد محدود (15% أو أقل)
		☐	2	To some extent *(between 16%-30%)* الى حد ما (بين 16-30%)
		☐	3	To a large extent *(between 31%-50%)* الى حد كبير (بين 31-50%)
		☐	4	To a very large extent *(more than 50%)* الى حد كبير جدا (أكثر من 50%)
	Note for the enumerator: ملحوظة الى العداد: *one tick allowed* مسموح بخيار واحد	☐	**99**	**No answer** لا توجد اجابة

6.3	Will the recent price increase of fuel transmit on the price of the most important commodity (*see question 2.3*)? هل ستنعكس الزيادة التي تمت مؤخرا على أسعار الوقود على سعر السلعة الأكثر أهمية (انظر السؤال رقم 2.3)؟	☐	1	No لا
		☐	2	Yes, to a limited extent (*below or equal 15%*) نعم، الى حد محدود ((15% أو أقل)
		☐	3	Yes, to some extent (*between 16%-30%*) نعم، الى حد ما (بين 16-30%)
		☐	4	Yes, to a large extent (*between 31%-50%*) نعم، الى حد كبير (بين 31-50%)
		☐	5	Yes, to a very large extent (*more than 50%*) نعم، الى حد كبير جدا (أكثر من 50%)
		☐	6	Yes, completely (*around 100%*) نعم، بشكل كامل (حوالي 100%)
	Note for the enumerator: ملحوظة الى العداد *one tick allowed* مسموح بخيار واحد	☐	99	**No answer** لا توجد اجابة

6.4	Can you estimate check points/losses/transportation costs in percentage to all your costs? هل يمكنك تقدير النسبة المئوية لتكاليف نقاط التفتيش/حالات الفقدان/النقل بالنسبة لمجموع تكاليفك؟	☐	1	Check-points: نقاط التفتيش [_____] %
		☐	2	Losses: حالات الفقدان [_____] %
		☐	3	Transportation: النقل [_____] %
	Note for the enumerator: ملحوظة للعداد *two ticks allowed; the total should NOT be 100%.* مسموح باختيارين، يجب أن لا يكون الاجمالي 100%	☐	99	**No answer** لا توجد اجابة

6.5	Are you implementing any measure to mitigate the risks of losses connected with insecurity along the roads? هل تقوم بتنفيذ أي اجراء لتخفيف مخاطر الفقدان المرتبط بانعدام الأمن على الطرق؟	☐	1	No لا
		☐	2	Yes, using government escorts نعم، باستخدام الطوف الحكومي
		☐	3	Yes, using private escorts نعم، باستخدام طوف خاص
		☐	4	Yes, with insurance contracts نعم، باستخدام عقود التأمين
		☐	5	Other (*specify*) اخرى (حدد) [_____]
	Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح بخيار واحد	☐	99	**No answer** لا توجد اجابة

Section 6 – Remarks	القسم 6 – ملاحظات

Section 7 – Impact of voucher programme				القسم 7 – أثر برنامج القسائم
7.1		☐	1	نعم --- انتقل الى القسم 7أ Yes → *GO TO SECTION 7A*
	Are you involved in the WFP voucher programme? هل تشارك في برنامج القسائم الذي يقدمه برنامج الأغذية العالمي؟	☐	2	No لا
				7.1.1 If no, are you aware of this programme? اذا كانت الاجابة لا، هل تعرف هذا البرنامج؟ *Note for the enumerator:* ملحوظة للعداد *one tick allowed* مسموح بخيار واحد
				☐ 1 Yes → *GO TO SECTION 7B* نعم: انتقل الى القسم 7ب
				☐ 2 No → *DROP THE INTERVIEW* لا، اترك المقابلة
				☐ 88 **Not applicable** لا ينطبق
	Note for the enumerator: ملحوظة الى العداد *one tick allowed* مسموح بخيار واحد	☐	99	**No answer** → *DROP THE INTERVIEW* لا اجابة == اترك المقابلة

NOTE FOR THE ENUMERATOR: ASK QUESTIONS FROM THE FOLLOWING SECTION 7A ONLY IF THE TRADER HAS BEEN INVOLVED IN THE WFP VOUCHER PROGRAMME

ملحوظة للعداد: اطرح أسئلة من القسم التالي 7أ فقط في حالة <u>مشاركة التاجر</u> في برنامج القسائم الذي يقدمه برنامج الأغذية العالمي .

	Section 7A – Impact of voucher programme for PARTICIPANT TRADERS القسم 7أ – أثر برنامج القسائم على التجار المشاركين				
7.2	How long have you been involved in the WFP voucher programme in months? ما طول فترة مشاركتك في برنامج القسائم بالشهور؟				أشهر months
7.3	What is your monthly average caseload in terms of WFP beneficiaries? ما هو المتوسط الشهري لعدد المستفيدين من برنامج الأغذية العالمية؟				beneficiaries مستفيد
7.4	What are your major concerns related to the WFP voucher programme? ماهي هواجسك الرئيسية فيما يتصل ببرنامج القسائم؟ *Note for the enumerator:* ملحوظة للعداد: *multiple tick allowed* مسموح بعدة خيارات	☐	1	No concerns لا توجد هواجس	
		☐	2	Limited caseload of beneficiaries محدودية عدد المستفيدين	
		☐	3	Late payments تأخير الدفع	
		☐	4	Limited physical accessibility to the shop for a great number of beneficiaries محدودية امكانية الوصول الى الدكان بالنسبة لعدد كبير من المستفيدين	
		☐	5	Too many commodities to supply كثرة السلع التي يتعين توريدها	
		☐	6	Problems to secure adequate supply مشاكل في تأمين الامداد الكافي	
		☐	7	The running cost to implement it are too high تكاليف تنفيذ البرنامج عالية جدا	
		☐	8	The agreed prices are too low الاسعار المتفق عليها منخفضة حدا	
		☐	77	Other *(specify)* أخرى (حدد)	
		☐	**99**	**No answer** لا توجد اجابة	

7.5	Have your profits improved since your involvement in the WFP voucher programme? هل تحسنت أرباحك منذ مشاركتك في برنامج القسائم؟	☐	1	Not at all, actually they are reduced لا على الاطلاق، في الواقع لقد انفخضت	

Are you contemplating dropping out? هل تفكر في ترك البرنامج؟

Note for the enumerator: ملحوظة للعداد: *one tick allowed* مسموح بخيار واحد

7.5.1

☐	1	Yes	نعم
☐	2	No	لا
☐	**88**	**Not applicable**	لا ينطبق
☐	**99**	**No answer**	لا توجد اجابة

| | | ☐ | 2 | More or less are the same هي نفسها تقريبا | |

Are you contemplating dropping out? هل تفكر في ترك البرنامج؟

Note for the enumerator: ملحوظة للعداد: *one tick allowed* مسموح بخيار واحد

7.5.2

☐	1	Yes	نعم
☐	2	No	لا
☐	**88**	**Not applicable**	لا ينطبق
☐	**99**	**No answer**	لا اجابة

| | | ☐ | 3 | Yes, to a limited extent *(below or equal 15%)*
نعم، الى حد محدود ((15% أو أقل) | |

		☐	4	Yes, to some extent (between 16%-30%) نعم، الى حد ما (بين 16-30%)
		☐	5	Yes, to a large extent (between 31%-50%) نعم، الى حد كبير (بين 31-50%)
		☐	6	Yes, to a very large extent (more than 50%) نعم، الى حد كبير جدا (أكثر من 50%)
	Note for the enumerator: ملحوظة للعداد one tick allowed مسموح بخيار واحد	☐	99	No answer لا توجد اجابة

7.6	Can you estimate the number of your customers on a monthly basis? هل تستطيع تقدير عدد زبائنك على أساس شهري؟	☐	1	Before your involvement in the WFP voucher programme قبل مشاركتك في برنامج القسائم _____ customers زبون
		☐	2	After your involvement in the WFP voucher programme بعد مشاركتك في برنامج القسائم _____ customers زبون
	Note for the enumerator: ملحوظة للعداد write a number أكتب رقما	☐	99	No answer لا توجد اجابة

7.7	How many different commodities do WFP beneficiaries usually buy? كم عدد السلع المختلفة التي يشتريها عادة مستفيدي برنامج الأغذية العالمي؟	☐	1	Sorghum ذرة
		☐	2	Millet دخن
		☐	3	Wheat قمح
		☐	4	Rice أرز
		☐	5	Sugar سكر
		☐	6	Lentils عدس
		☐	7	Beans فاصوليا
		☐	8	Groundnut oil زيت فول
		☐	77	Other (specify, multiple items allowed) اخرى (حدد، مسموح باختيار عدة مواد)
	Note for the enumerator: ملحوظة للعداد multiple ticks allowed مسموح بعدة خيارات	☐	99	No answer لا توجد اجابة

| 7.8 | Have you ever faced any problems in securing the supply within the WFP voucher programme?
 هل واجهتك أي مشاكل في تأمين الامداد ضمن برنامج القسائم الذي يقدمه برنامج الأغذية العالمي؟ | ☐ | 1 | Yes نعم |

7.8.1	If so, how did you solve it? اذا كان الآمر كذلك، كيف حليتها؟
	Note for the enumerator: ملحوظة للعداد: one tick allowed مسموح باختيار واحد

☐	1	Occasionally linking up with other traders احيانا وتتعلق بالارتباط مع تجار آخرين
☐	2	Usually linking up with other traders عادة وتتعلق بالارتباط بتجار آخرين
☐	3	Accessing to formal credit الحصول على دين رسمي
☐	4	Asking a loan from traders/farmers (informal credit) طلب قرض من التجار/المزارعين (دين غير رسمي)
☐	88	Not Applicable لا ينطبق
☐	99	No answer لا توجد اجابة

| | | ☐ | 2 | No, never لا، على الاطلاق |
| | Note for the enumerator: ملحوظة للعداد <br> one tick allowed مسموح باختيار واحد | ☐ | 99 | No answer لا توجد اجابة |

| 7.9 | Have you employed new personnel to support you in your business since your involvement in the WFP voucher programme?
 هل قمت بتشغيل عاملين جدد لمساعدتك في عملك منذ مشاركتك في برنامج القسائم؟ | ☐ | 1 | Yes نعم |

7.9.1		7.9.2
If so, is the new hired personnel employed on a temporary or permanent basis? اذا كان الأمر كذلك، هل تم تعيين العاملين الجدد بشكل مؤقت أو دائم؟ Note for the enumerator: ملحوظة للعداد multiple tick allowed مسموح بعدة خيارات		How many? كم عددهم؟

			☐	1	On a temporary basis, when needed على أساس مؤقت، عند الحاجة
			☐	2	On a permanent basis على أساس دائم
			☐	88	**Not Applicable** لا ينطبق
			☐	99	**No answer** لا توجد اجابة

7.9.3. What is their average daily wage?   ما هو متوسط أجرهم اليومي؟

جنيه   SDG

		☐	2	No لا
Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح باختيار واحد		☐	**99**	**No answer** لا توجد اجابة

7.10	Were you able to establish new shops since your involvement in the WFP voucher programme? هل تمكنت من تأسيس دكاكين جديدة منذ اشتراكك في برنامج القسائم؟	☐	1	Yes نعم	**7.10.1** اذا كان الامر كذلك، أين؟ If so, where? *Note for the enumerator:* ملحوظة للعداد *two ticks allowed* مسموح بخيارين ☐ 1 In town, selling both to beneficiaries and to other customers في المدينة، للبيع لكل من المستفيدين والزبائن الاخرين ☐ 2 In town, but only for beneficiaries في المدينة, للبيع فقط للمستفيدين ☐ 3 In IDP camps في معسكرات النازحين **7.10.2** If so, would you consider keeping your shop in the IDP camp even beyond the WFP voucher programme? اذا كان الأمر كذلك، هل تفكر في الاحتفاظ بدكانك في معسكر النازحين حتى بعد برنامج القسائم؟ ☐ 1 Yes نعم ☐ 2 No لا ☐ 88 **Not Applicable** لا ينطبق ☐ 99 **No answer** لا توجد اجابة ☐ 88 **Not Applicable** لا ينطبق ☐ 99 **No answer** لا توجد اجابة
		☐	2	No لا	
	Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح باختيار واحد	☐	**99**	**No answer** لا توجد اجابة	

7.11	Were you trading cereals before being involved in the WFP voucher programme? هل كنت تتاجر في الحبوب قبل المشاركة في برنامج القسائم؟	☐	1	Yes نعم
		☐	3	No لا
	Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح بخيار واحد	☐	**99**	**No answer** لا توجد اجابة

7.12	Did the beneficiaries ever ask you to purchase food on credit (*e.g.* a few days before the voucher distribution)? هل حدث أن طلب منك المستفيدون الشراء بالدين (مثلا قبل أيام من توزيع القسائم)	☐	1	Yes نعم
		☐	3	No لا
	Note for the enumerator: ملحوظة للعداد *one tick allowed* مسموح بخيار واحد	☐	**99**	**No answer** لا توجد اجابة

NOTE FOR THE ENUMERATOR: ASK QUESTIONS FROM THE FOLLOWING SECTION 7B ONLY IF THE TRADER HAS NOT BEEN INVOLVED IN THE WFP VOUCHER PROGRAMME, BUT IS AWARE OF IT.

ملحوظة للعداد: اطرح أسئلة من القسم 7ب التالي فقط في حالة **عدم مشاركة التاجر** في برنامج القسائم الذي يقدمه برنامج الأغذية العالمي ولكنه على علم به.

Section 7B – Impact of voucher programme for NON PARTICIPANT TRADERS
القسم 7ب – تأثير برنامج القسائم على التجار غير المشاركين

7.13	What are the most important concerns that you may have when considering your participation in the WFP voucher programme? ما هي أهم الهواجس التي كانت لديك عندما كنت تفكر في المشاركة في برنامج القسائم؟	☐	**1**	No interest in expanding my business عدم الرغبة في توسيع أعمالي

☐	1	No interest in expanding my business عدم الرغبة في توسيع أعمالي
☐	2	Limited caseload of beneficiaries محدودية عدد المستفيدين
☐	3	Late payments تأخير الدفعيات
☐	4	Limited physical accessibility to the shop for a great number of beneficiaries محدودية امكانية الوصول الى الدكان بالنسبة لعدد كبير من المستفيدين
☐	5	Too many commodities to supply كثرة السلع التي يتعين توريدها
☐	6	Problems to secure adequate supply (*e.g. limited capacity*) مشاكل تتعلق بتأمين الامداد الكافي
☐	7	The running cost to implement it are too high تكاليف التنفيذ مرتفعة جدا
☐	8	The agreed prices are too low الاسعار المتفق عليها منخفضة جدا
☐	9	WFP requirements for trader selection are too stringent شروط برنامج الأغذية العالمي الخاصة باختيار التاجر صارمة جدا
☐	77	Other *(specify)* أخرى (حدد) [____]
☐	**99**	**No answer** لا توجد اجابة

Note for the enumerator: ملحوظة للعداد:
one tick allowed مسموح بخيار واحد

7.14 Have you ever participated in the WFP voucher programme in the past?
هل شاركت في الماضي في برنامج القسائم الذي يقدمه برنامج الأغذية العالمي؟

☐	1	Yes نعم

> **7.14.1** Why did you drop out? لماذا تركت المشاركة؟
> *Note for the enumerator:* ملحوظة للعداد:
> ***multiple ticks allowed*** مسموح بعدة خيارات
>
> | ☐ | 1 | The number of beneficiaries who redeemed their voucher at my shop was low
عدد المستفيدين الذين يشترون بقسائمهم من دكاني كان قليلا |
> |---|---|---|
>
> > **7.14.2** Why was it low? Do you have any possible explanation for that?
> > لماذا كان العدد قليل ؟ هل لديك أي تفسير محتمل لذلك؟
> > *Note for the enumerator:* ملحوظة للعداد:
> > ***Open question*** سؤوال مفتوح
> > [_____]
>
> | ☐ | 2 | Late payments تأخر الدفعيات |
> |---|---|---|
> | ☐ | 3 | Limited accessibility for a great number of beneficiaries
محدودية امكانية الوصول لعدد كبير من المستفيدين |
> | ☐ | 4 | Too many commodities to supply
كثرة السلع التى يتعين توريدها |
> | ☐ | 5 | Problems to secure adequate supply
مشاكل تتعلق بتأمين امدادات كافية |
> | ☐ | 6 | The running cost to implement it are too high
تكلفة التنفيذ مرتفعة جدا |
> | ☐ | 7 | The agreed prices are too low
الاسعار المتفق عليها منخفضة جدا |
> | ☐ | 77 | Other *(specify)* اخرى (حدد) [____] |
> | ☐ | **88** | **Not applicable** لا ينطبق |
> | ☐ | **99** | **No answer** لا توجد اجابة |

☐	2	No لا

> **7.14.3** If no, would you consider your participation with a larger caseload of beneficiaries?
> اذا كانت الاجابة لا، هل يمكن أن تفكر في المشاركة اذا كان عدد المستفيدين أكبر؟
>
> *Note for the enumerator:* ملحوظة للعداد:
> ***one tick allowed*** مسموح بخيار واحد
>
> | ☐ | 1 | Yes نعم |
> |---|---|---|

			☐	2	No لا
			☐	88	**Not applicable** لا ينطبق
			☐	99	**No answer** لا توجد اجابة
	Note for the enumerator: ملحوظة للعداد: *one tick allowed* مسموح بخيار واحد	☐	99	**No answer** لا توجد اجابة	

7. 15	Do you think that WFP is currently affecting food prices? هل تعتقد أن برنامج الأغذية العالمي يؤثر حاليا على أسعار الغذاء؟	☐	1	Yes نعم	

7.15.1 block:
اذا كان الامر كذلك، كيف؟ If so, how?

Note for the enumerator: ملحوظة للعداد:
one tick allowed   مسموح بخيار واحد

☐	1	Only with food distributions فقط بتوزيعات الغذاء
☐	2	Only with voucher distributions بتوزيعات القسائم فقط
☐	3	Both with food and voucher distributions بكل من توزيعات الغذاء والقسائم
☐	**88**	**Not applicable** لا ينطبق
☐	**99**	**No answer** لا توجد اجابة

7.15.2 block:
If you are aware of the timing of WFP distributions, do you usually change your selling prices accordingly?
اذا كنت على علم بتوقيت توزيعات برنامج الأغذية العالمي، هل تقوم عادة بتغيير أسعار البيع تبعا لذلك؟

Note for the enumerator: ملحوظة للعداد:
one tick allowed   مسموح بخيار واحد

☐	1	Yes نعم
☐	2	No لا
☐	**88**	**Not applicable** لا ينطبق
☐	**99**	**No answer** لا توجد اجابة

☐	2	No لا

| *Note for the enumerator:* ملحوظة للعداد: *one tick allowed*   مسموح بخيار واحد | ☐ | 99 | **No answer**   لا توجد اجابة |

7. 16	Is the WFP voucher programme currently affecting your business? هل يؤثر برنامج القسائم حاليا على عملك؟	☐	1	Yes, negatively نعم، بشكل سلبي	

7.16.1 block:
How?   كيف؟

Note for the enumerator: ملحوظة للعداد:
Multiple ticks allowed   مسموح بعدة خيارات

☐	1	By reducing the number of customers in my shop عن طريق تخفيض عدد الزبائن في دكاني.
☐	2	By reducing the market price عن طريق تخفيض سعر السوق
☐	77	Other (*specify*) اخرى (حدد)
☐	88	**Not applicable** لا ينطبق
☐	99	**No answer** لا توجد اجابة

		☐	2	Yes, positively نعم، بشكل ايجابي	

7.16.2 block:
How?   كيف؟

Note for the enumerator: ملحوظة للعداد:
Multiple ticks allowed   مسموح عدة خيارات

☐	1	The participating traders occasionally purchase food from my shop التجار المشاركون يشترون الغذاء أحيانا من دكاني
☐	2	The participating traders usually purchase food from my shop التجار المشاركون يشترون الغذاء عادة من دكاني
☐	3	There is an above-the-average number of customers coming in my shop when WFP distributes vouchers هناك عدد فوق المتوسط من الزبائن يأتون الى دكاني عندما يوزع برنامج الأغذية العالمي القسائم.
☐	77	Other (*specify*) أخرى (حدد)

					☐	88	Not applicable لا ينطبق
					☐	99	No answer لا توجد اجابة
	☐	3	No لا				
Note for the enumerator: ملحوظة للعداد: *one tick allowed* مسموح بخيار واحد	☐	99	No answer لا توجد اجابة				

7. 17		☐	1	Yes, negatively نعم، بشكل سلبي		
			7.17.1	How? كيف؟ *Note for the enumerator:* ملحوظة للعداد: *Multiple ticks allowed* مسموح بعدة خيارات		
				☐	1	Reducing the number of customers in my shop تخفيض عدد الزبائن في دكاني
				☐	2	Reducing the market price تخفيض سعر السوق
				☐	77	Other (*specify*) أخرى (حدد)
				☐	88	Not applicable لا تنطبق
				☐	99	No answer لا توجد اجابة
	If in the future WFP expands the use of vouchers to additional IDP camps, do you think it will affect your business? اذا قام برنامج الأغذية العالمي في المستقبل بتوسيع استخدام القسائم للمزيد من معسكرات النازحين، هل تعتقد أن ذلك سيؤثر على عملك؟	☐	2	Yes, positively نعم، بشكل ايجابي		
			7.17.2	How? كيف؟ *Note for the enumerator::* ملحوظة للعداد:: *Multiple ticks allowed* مسموح بعدة خيارات		
				☐	1	Participating traders may purchase food from my shop قد يشتري التجار المشاركون الغذاء من دكاني
				☐	2	There will be additional customers in the market that may purchase food in my shop سيكون هناك المزيد من الزبائن في السوق والذين يمكن أن يشتروا الغذاء من دكاني
				☐	77	Other (*specify*) اخرى (حدد)
				☐	88	Not applicable لا ينطبق
				☐	99	No answer لا توجد اجابة
		☐	3	No لا		
	Note for the enumerator: ملحوظة للعداد: *one tick allowed* مسموح بخيار واحد	☐	99	No answer لا توجد اجابة		

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Market Questionnaire

استبيان السوق

	Section 1 – Preliminary information	القسم 1 – معلومات أولية	
1.1	Interviewer Name اسم العداد		
1.2	Date التاريخ		
1.3	Market name if applicable اسم السوق ان وجد		
1.4	City/Village المدينة/القرية		
1.5	Locality المحلية		
1.6	State الولاية		
1.7	Team Leader Name رئيس الفريق		

Interviewer Signature   توقيع العداد

Questionnaire Approved by the Team Leader اعتماد الاستبيان بواسطة رئيس الفريق

Note for the enumerator: Please read the following consent form before starting the interview. :ملحوظة للعداد
الرجاء قراءة نموذج الموافقة التالية قبل بدء المقابلة.

MY NAME IS………... I AM PART OF A TEAM OF THE UNITED NATIONS WORLD FOOD PROGRAMME THAT IS CONDUCTING A SURVEY ON FOOD MARKETS. I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT MARKETS, WHICH WILL TAKE ABOUT TWENTY MINUTES. YOUR NAME WILL **NOT** BE RECORDED AND ANY INFORMATION THAT YOU PROVIDE WILL BE CONFIDENTIAL AND WILL NOT BE DISCLOSED TO OTHER PEOPLE. YOUR PARTICIPATION IS VOLUNTARY AND YOU CAN CHOOSE NOT TO ANSWER ANY OR ALL OF THE QUESTIONS IF YOU WISH; HOWEVER WE HOPE YOU WILL PARTICIPATE SINCE YOUR VIEWS ARE IMPORTANT.

DO YOU HAVE ANY QUESTIONS?

MAY I BEGIN THE INTERVIEW NOW?

اسمي هو: ------- أنا عضو في فريق برنامج الأغذية العالمي التابع للأمم المتحدة الذي يقوم باجراء مسح خاص بأسواق الغذاء. أود أن أطرح عليك بعض الأسئلة عن الأسواق والتي ستستغرق حوالي عشرون دقيقة. لن يتم تسجيل اسمك و أي معلومات تقدمها ستكون سرية ولن يتم افشاؤها لأشخاص آخرين. ان مشاركتك هي مشاركة تطوعية ويمكنك اختيار عدم الاجابة على أي سؤال أو على كل الأسئلة اذا اردت ذلك، ولكننا نأمل أن تشارك نظرا لأن أراؤك مهمة.

هل لديك أي سؤال؟

هل أبدأ المقابلة الآن؟

Section 2 – General characteristics of the trader	القسم 2 – خصائص عامة للتاجر

2.1	To the best of your knowledge, provide an estimate of the number of food traders operating in this market by type حسب علمكم، قدم تقديرا لعدد تجار الغذاء العاملين في هذا السوق حسب اصنافهم.	Specialized Wholesaler تاجر اجمالي متخصص	*Purchasing from traders, selling to other traders, specialized in one/two commodities, using wholesale units (e.g. sacks, jerry can), selling the whole unit and not part of it* الشراء من التجار، والبيع لتجار آخرين، متخصص في سلعة واحدة/سلعتين، يستخدم وحدات بيع الجملة (مثل جوالات، جراكانات)، يبيع الوحدة بأكملها وليس جزء منها.	
		Generic Wholesaler تاجر اجمالي عام	*Purchasing from traders, selling to other traders, specialized in many commodities, using wholesale units (e.g. sacks, jerry can), selling the whole unit and not part of it* يشتري من التجار، يبيع لتجار آخرين، متخصص في عدة سلع، يستخدم وحدات البيع بالجملة (مثل الجوالات والجراكانات)، يبيع الوحدة بكاملها وليس جزء منها.	
		Wholesaler/Retailer تاجر اجمالي/تجزئة	*Purchasing from traders, selling to other traders/customers, specialized in many commodities, using retail units (e.g. malwa), selling small quantities of the commodity* يشتري من التجار، يبيع لتجار آخرين وزبائن، متخصص في عدة سلع، يستخدم وحدات البيع بالتجزئة (مثل الملوة) يبيع كميات صغيرة من السلعة.	
	Note for the enumerator: ملحوظة للعداد: **Use the total row to double-check the figures by trader category. As a rule of thumb you may expect an incremental number of traders from specialized wholesalers to retailers** استخدم الاجمالي في السطر المبين للتأكد من الارقام حسب فئة التاجر. وكقاعدة عامة، قد تتوقع عدد متزايد للتجار من تجار جملة متخصصين الى تجار تجزئة	Retailer تاجر تجزئة	*Purchasing from traders, selling to ultimate customers* يشتري من التجار ويبيع للزبائن المستهلكين.	
		Other *(specify)* أخرى (حدد)		
		Total الاجمالي		

2.2	How many days a week does this market operate? كم يوما في الاسبوع يعمل هذا السوق؟ *Note for the enumerator:* ملحوظة للعداد: **One tick allowed** مسموح بخيار واحد	☐	1	Daily يومي
		☐	2	Every other day يوم بعد يوم
		☐	3	Twice per week مرتين في الاسبوع
		☐	4	Once per week مرة واحدة في الاسبوع
		☐	77	Other (*specify*) أخرى (حدد)
		☐	**99**	**No answer** لا توجد اجابة

Section 2 – Remarks   القسم 2 – ملاحظات

SECTION 3 – COMMODITIES IN THE MARKET	القسم 3 – السلع الموجودة في السوق

3.1	What commodities are usually traded and are available to consumers in this market? ما هي السلع التي تتم المتاجرة فيها ومتوفرة للمستهلكين في السوق؟	*Commodity* السلع		*Yes* نعم	*No* لا
		2.1.1	Sorghum ذرة	☐	☐
		2.1.2	Millet دخن	☐	☐
		2.1.3	Wheat قمح	☐	☐
		2.1.4	Sugar سكر	☐	☐
		2.1.5	Rice أرز	☐	☐
		2.1.6	Lentils عدس	☐	☐
		2.1.7	Beans فاصوليا	☐	☐

	2.1.8	Groundnut Oil زيت فول		☐	☐
	2.1.9	Groundnuts فول سوداني		☐	☐
	2.1.10	Powder Milk حليب بودرة		☐	☐
	2.1.11	Vegetables خضروات		☐	☐
	2.1.12	Fruit فواكه		☐	☐
	2.1.13	Meat لحم		☐	☐
Note for the enumerator: ملحوظة للعداد: **apply a tick to all the commodities listed, either yes or no** ضع علامة صاح لكافة السلع المذكورة سواء كانت الاجابة نعم أو لا.	2.1.77	Other أخرى *(specify)* (حدد)		☐	☐

		Commodity السلعة		*Not traded* لاتتم المتاجرة فيها	تتم المتاجرة فيها *Traded*	
					Harvest season موسم الحصاد	*Rainy season* موسم الأمطار
3.2	When commodities are usually available in decent amount to meet consumers demand in this market? متى تكون السلع عادة متوفرة بكميات معقولة لتلبية طلبات المستهلكين في هذا السوق؟	3.2.1	Sorghum ذرة		☐	☐	☐
		3.2.2	Millet دخن		☐	☐	☐
		3.2.3	Wheat قمح		☐	☐	☐
		3.2.4	Sugar سكر		☐	☐	☐
		3.2.5	Rice أرز		☐	☐	☐
		3.2.6	Lentils عدس		☐	☐	☐
		3.2.7	Beans فاصوليا		☐	☐	☐
		3.2.8	Groundnut Oil زيت فول		☐	☐	☐
		3.2.9	Groundnuts فول سوداني		☐	☐	☐
		3.2.10	Powder Milk حليب بودرة		☐	☐	☐
		3.2.11	Vegetables خضروات		☐	☐	☐
	Note for the enumerator: ملحوظة للعداد: **apply at least one tick under the 'traded' options to the commodities listed in question 3.1 under the 'yes' column. Otherwise tick 'not traded' if the commodity was under the 'no' column in question 3.1** ضع علامة صاح واحدة على الأقل تحت خيارات يتم الاتجار فيها بالنسبة للسلع المذكورة في السؤال 3.1 تحت عمود نعم. أو ضع صاح على "لايتم الاتجار فيها" اذا كانت السلعة تحت العمود "لا" في السؤال رقم 3.1.	3.2.12	Fruit فواكه		☐	☐	☐
		3.2.13	Meat لحم		☐	☐	☐
		3.2.77	Other *(specify)* اخرى (حدد)		☐	☐	☐

		Commodity group مجموعة السلعة		*Unit* الوحدة	*Rainy season* موسم الامطار	*Harvesting season* موسم الحصاد
3.3	Can you estimate the volumes traded in this market by season of the following commodity groups? هل يمكنك تقدير حجم السلع التي تتم المتاجرة فيها في هذا السوق حسب موسم مجموعات السلع التالية؟	3.3.1	Cereals حبوب				
		3.3.2	Sugar سكر				
		3.3.3	Pulses بقوليات				
		3.3.4	Groundnut Oil زيت فول				

Note for the enumerator: ملحوظة للعداد:
Report below the unit of conversion into KG (for cereals, pulses, sugar, groundnut oil)
اذكر أدناه وحدة التحويل الى كيلوغرام (بالنسبة للحبوب، البقوليات، السكر، زيت الفول)

Cereals: 1 Unit حبوب: 1 وحدة = _____ KG

Sugar: 1 Unit سكر: 1 وحدة = _____ KG

| Pulses: 1 Unit وحدة 1 :بقوليات | = | | KG |
| Groundnut Oil: 1 Unit =وحدة 1 :زيت فول | | | LT |

Some possible examples for the enumerator (please note that the below is not a closed list, but examples provided as a reference):

1 Unit = 50 KG if the unit is Sack
1 Unit = 100 KG if the unit is Sack
1 Unit = 1000 KG if the unit is Ton

بعض الآمثلة المحتملة بالنسبة للعداد (الرجاء ملاحظة أن ما يلي ليس قائمة مقبولة، بل أمثلة مقدمة للعمل على ضوئها)
1 وحدة = 50 كلغ اذا كانت الوحدة جوالا
1 وحدة = 100 كلغ اذا كانت الوحدة جوالا
1 وحدة = 1000 كلغ اذا كانت الوحدة طنا

| **Section 5 – Remarks** | القسم 5 – ملاحظات |

SECTION 4 – PRICE SETTING AND COMPETITION
القسم 4 – وضع الاسعار والمنافسة

4.1	Are prices controlled and enforced? هل يتم التحكم في الاسعار وتوضع موضع التنفيذ؟ *Note for the enumerator:* ملحوظة للعداد *One tick allowed* مسموح بعلامة صاح واحدة	☐	1	No لا
		☐	2	Yes, but not enforced at all نعم، ولكن لا يتم تنفيذه على الاطلاق
		☐	3	Yes, but only partially enforced نعم، ولكن يتم تنفيذها جزئيا
		☐	4	Yes نعم
4.2	What is the level of competition at the retail level? ما هو مستوى المنافسة على مستوى بيع التجزئة؟ *Note for the enumerator:* ملحوظة للعداد *One tick allowed* مسموح بعلامة صاح واحدة	☐	1	High, many retailers selling the same commodity عالية، العديد من تجار التجزئة يبيعون نفس السلعة
		☐	2	There is one dominant trader, who is followed by all the others in terms of pricing هناك تاجر واحد مسيطر على السوق، يتبعه الآخرون فيما يتعلق بالأسعار
		☐	3	Low, there are only a few retailers متدنية، هناك عدد قليل فقط من تجار التجزئة.
4.3	What is the level of competition at the wholesale level? ما هو مستوى المنافسة على مستوى البيع بالجملة؟ *Note for the enumerator:* ملوحظة للعداد *One tick allowed* مسموح بعلامة صاح واحدة	☐	1	High, many wholesalers selling the same commodity عالية، عدة تجار اجمالي يبيعون نفس السلعة
		☐	2	There is one dominant wholesaler, who is followed by all the others in terms of pricing هناك تاجر اجمالي واحد مسيطر على السوق، يتبعه الآخرون فيما يتعلق بالأسعار
		☐	3	Low, there are only a few wholesalers متدنية، هناك عدد قليل فقط من تجار الجملة

4.4	Do you think that WFP voucher programme has an impact on the market? هل تعتقد أن لبرنامج القسائم الذي يقدمه برنامج الأغذية العالمي تأثير على السوق؟	☐	1	Yes, positive نعم، ايجابي		
					How? كيف؟	
				☐	1	Participating traders link up with other traders to secure supply يرتبط التجار المشاركون بتجار أخرين لتوفير الامداد
				☐	2	There is an above-the-average number of customers in the market when WFP distributes markets هناك عدد فوق المتوسط من الزبائن في السوق عندما يقوم برنامج الأغذية العالمي بتوزيع القسائم في الأسواق
				☐	77	Other *(specify)* اخرى (حدد)
		☐	2	Yes, negative نعم، سلبي		
					How? كيف	
				☐	1	The number of customers in the shops not participating in the WFP voucher programme tends to reduce

				يميل عدد الزبائن الى الانخفاض في الدكاكين غير المشاركة في برنامج القسائم الذي يقدمه برنامج الأغذية العالمي
	☐	2	Traders tend to adjust the price according to the timing of WFP voucher distributions يميل التجار الى تعديل السعر حسب توقيت توزيع القسائم.	
	☐	77	Other (specify) أخرى (حدد)	
☐	3		Don't know لا أعرف	
Note for the enumerator: ملحوظة للعداد: One tick allowed مسموح بخيار واحد	☐	**99**	**No answer** لا توجد اجابة	

Section 4 – Remarks	القسم 4 – ملاحظات

SECTION 5 –COSTS AND CONSTRAINTS	القسم 5 – التكاليف والقيود

			Constraints قيود		SDG جنيه	Quantity الكمية	Unit الوحدة
5.1	Which of the following permits and fees are collected and enforced for traders operating on this market? أي من التصاريح والرسوم التالية يتم تحصيلها وتنفيذها على التجار العاملين في هذا السوق؟ Note for the enumerator: ملحوظة للعداد: **multiple ticks allowed; the units should be the same specified in question** مسموح بعدة اختيارات، يجب أن تكون الوحدات مماثلة لما تم تحديده في السؤال	☐	1	License Fee رسوم الرخصة				
		☐	2	Market Tax/Fee رسوم السوق/ضريبة			
		☐	3	Sales Tax ضريبة البيع			
		☐	4	Rent ايجار			
		☐	5	Zakat زكاة			
		☒	77	Other (specify) أخرى (حدد)			

5.2	What are the major constraints limiting the activity of this market? ما هي القيود الرئيسية التي تقيد نشاط هذا السوق؟	☐	1	No money / limited access to credit لا يوجد مال، محدودية الحصول على دين
		☐	2	Transport costs (e.g. fuel cost and/or checkpoints/permits) تكاليف النقل (مثل تكلفة الوقود و/أو نقاط التفتيش/التصاريح)
		☐	3	Poor infrastructure ضعف البنى التحتية
		☐	4	Insecurity issues مسائل انعدام الأمن
		☐	5	Low profit margin (low sale price and/or high purchase price) هامش ربح ضئيل (تدني سعر البيع و/أو ارتفاع سعر الشراء)
		☐	6	Demand issues مسائل الطلب
		☐	7	Few people are controlling the market عدد قليل من الاشخاص يسيطرون على السوق
		☐	8	Government's interventions (e.g. restriction to trade and/or release of stocks from the Strategic Reserves) تدخلات الحكومة (مثل تقييد التجارة و/أو جلب كميات من المخزون الاستراتيجي)
		☐	9	Food aid اغاثة غذائية
		☐	77	Other (حدد) أخرى (specify)
	Note for the enumerator: ملحوظة للعداد: multiple ticks allowed مسموح بعدة خيارات	☐	**99**	**No answer** لا توجد اجابة

Section 5 – Remarks	القسم 5 – ملاحظات

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