

South Sudan: Impact of a Continued Internal Conflict on Food Security and Poverty

Summary

South Sudan is a fragile country beset by conflicts. The oil shutdown accompanied by a border closure in 2012 was resolved, but ongoing military clashes between factions of the ruling party have affected livelihoods since December 2013. Before the onset of these conflicts, large parts of the population were food insecure (2 out of 3 people) and lived in poverty (1 out of 2 people). This note estimates and juxtaposes the impact of the oil shutdown and the ongoing military conflict on livelihoods based on food price changes, predicted harvest losses and displacement. The resulting poverty estimates help to understand the structural implications of these conflicts. But to validate these numbers, test the underlying modeling assumptions and inform a policy response, new data needs to be collected urgently.

In 2012, the oil shutdown and border closure reduced GDP by 50 percent, affected consumption of 3.8m people leading to an additional 310,000 poor people, and enlarged the gap separating the poor from attaining minimum subsistence levels by at least 180m SSP from 1.42bn SSP to 1.6bn SSP. The ongoing internal conflict is estimated to have reduced GDP by only 15 percent and adversely affected consumption levels of only 2.7m people. However, the impact on those affected is significantly more severe—exacerbated especially due to displacement—and is estimated to have resulted in about 710,000 additional poor people living in considerably deeper poverty conditions. Hence, the gap separating the poor from attaining minimum subsistence levels widened by at least 821m SSP and is estimated to total 2.24bn SSP.

Thus, the internal conflict might appear less severe in terms of macro-economic indicators compared to the oil shutdown; but the impact on livelihoods is devastating for affected households. In addition, the geographical focus of the internal conflict can potentially deepen economic divisions in the country.

The emergency food security situation demands a concerted immediate response on humanitarian grounds. Adverse effects of food aid on food production incentives can be mitigated by purchasing food surplus production, by addressing transport constraints and through forward contracts on future harvests. A structural response needs to provide a social safety net and address constraints to agricultural production through sector-specific support, macro-economic and exchange rate policies to improve competitiveness and productivity.



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1 Background

This brief provides an analysis of the impact of two recent conflicts on food security and poverty. In the first section, an overview of food security will be presented including a detailed account of the four components of food security in South Sudan: availability, access, utilization and stability. Subsequently, the two conflicts in South Sudan are analyzed with respect to its impact on poverty and food security based on updated and new simulations incorporating price, harvest loss and displacement effects. The simulations shed light on the structural implications of the conflicts but because of limited accuracy they do not aim to replace updated poverty numbers retrieved from new data collection. The final section outlines policy options for the immediate response, a follow-up response and a structural response.

South Sudan became independent in 2011 with a GDP of around 2,000 USD per capita. South Sudan is a land-locked country emerging from multiple decades of civil war and economic neglect. Compared to its neighbors in East Africa, South Sudan has a significantly higher GDP per capita. However, oil revenues contribute around 60 percent to GDP. Thus, GDP per capita can be deceiving in assessing living standards of South Sudan's population.

Half of South Sudan's population lived in poverty in 2009. Poverty is concentrated in rural areas with 55 percent living in poverty. With a rural population of 84 percent, most of the poor are in rural areas. Urban centers have a considerably lower poverty of 24 percent. Poverty also has a strong geographical bias with higher poverty in the northern states of South Sudan except Upper Nile.¹ While the latest direct poverty estimates are based on data collected in 2009, it can be assumed that poverty rates did not change significantly until 2012.

Two major conflicts in South Sudan derailed its efforts to improve livelihoods and increase food security. At independence, South Sudan prioritized freedom, equality, justice, peace and prosperity for all in its Development Plan 2011 – 13. It explicitly references high poverty and past conflicts to motivate improvement of livelihoods. Despite substantial efforts, the conflict with Sudan in 2012 leading to border closure and oil shutdown as well as the internal conflict within South Sudan, triggered in December 2013, worsened livelihoods, poverty and food security.

The occurrence of these conflicts suggests that South Sudan is in a conflict trap. Fragile countries often relapse into conflict. In the last decade, 9 out of 10 conflicts happened in countries with previous conflicts.² Conflicts reduce income lowering opportunity costs to participate in renewed conflicts.³ In addition, food insecure young men can be an easy target to promise a better life if participating in rebel groups. A sustainable solution for food security is key to help South Sudan escaping the conflict trap.⁴

Sustainable food security requires a set of programs and policies over different time horizons. The current crisis in South Sudan exacerbated the number of food insecure people. This demands immediate attention and humanitarian relief. As these interventions can have adverse effects on agricultural production in the next season, a follow-up response needs to be designed to mitigate those effects. Finally, food security in the medium and long-term can be achieved by increased agricultural production but requires a structural response to create a more conducive environment.

¹ World Bank (2012a).

² Walter (2010).

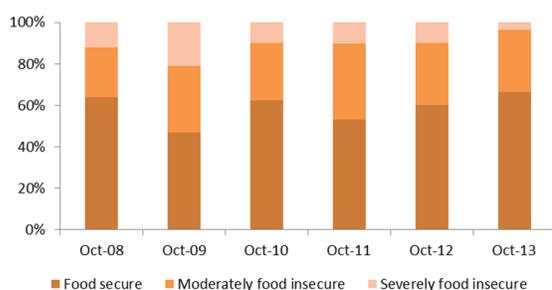
³ Collier (2007).

⁴ World Bank (2011b).

2 Food Security in South Sudan Pre-Crisis

A large proportion of South Sudan's population suffers from food insecurity. Household food security status is determined by three main dimensions: 1) food consumption, based on dietary diversity and frequency; 2) food access, based on resources like income available for acquisition of a nutritious diet; 3) coping strategies derived from the frequency and severity of different coping strategies employed by households. Based on these

Figure 1: Food security from 2008 to 2013 based on food availability, utilization and stability.



Source: FAO/WFP, 2014.

criteria, households are classified into three categories: severely food insecure, moderately food insecure and food secure.⁵ Over the past four years, 40 – 50 percent of the population has been persistently classified as food insecure (Figure 1); reflecting a similar dismal situation of living standards as poverty.⁶ After independence, the food security situation improved continuously from 53 percent of the population being food secure in 2011 to 67 percent in 2013 – largely due to a good harvest in 2012/13.

The remainder of this section looks at the three main dimensions to food security (food availability, food accessibility, food utilization) and food stability.

2.1 Food Availability

Low food production: Agricultural production is highly insufficient in large parts of the country. For cereal equivalents alone, it was estimated that production (including both traditional and mechanized) will fall short of national consumption needs by 408,000 metric tons during 2013/14 even before the current conflict broke out (Figure 2).

Box 1: Dimensions of Food Security

Food availability: The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

Food access: Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

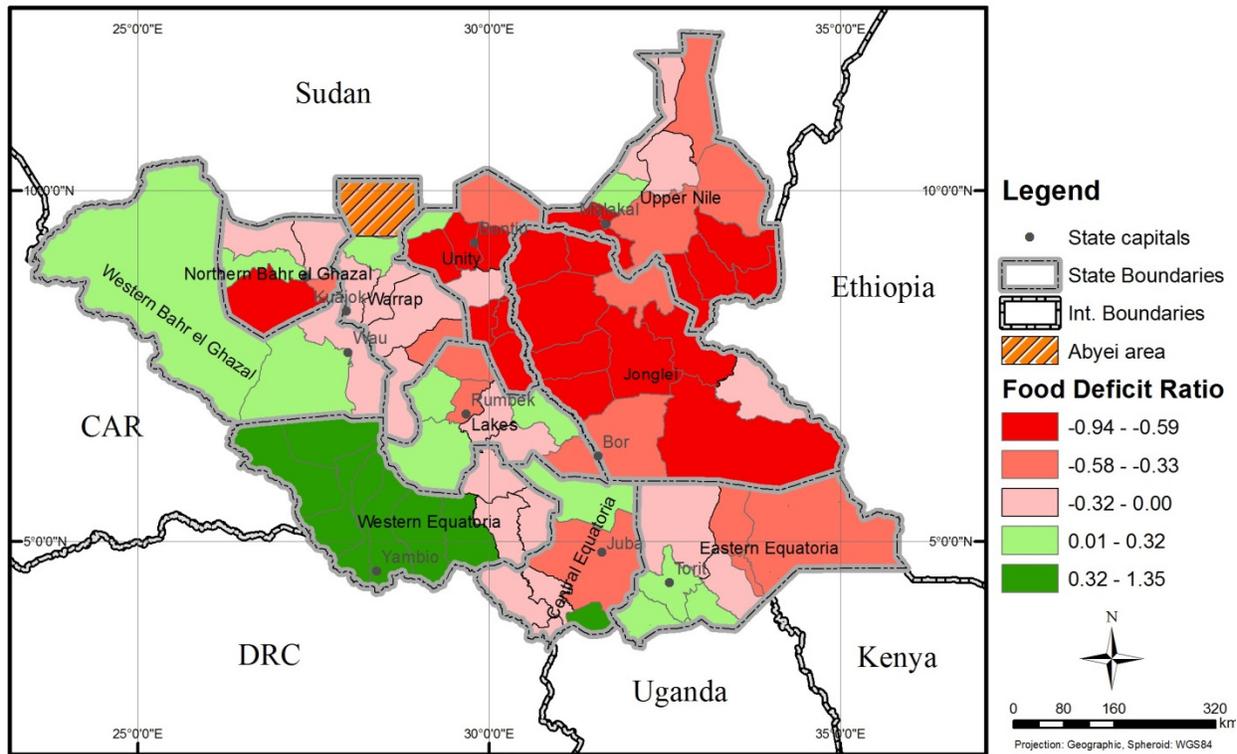
Food utilization: Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

Food stability: To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

⁵ WFP, 2013.

⁶ See Box 6 for an overview of data collection efforts to assess food security in South Sudan.

Figure 2: Food Deficit Map estimated before outbreak of the current conflict. Green areas indicate a surplus in staple grain production, red areas indicate a deficit. The numbers indicate the ratio of surplus or deficit. The Map does not reflect the World Bank or its partners' views of South Sudan's territorial claims.



Source: Authors' calculations based on WFP/FAO (2013, 2014).

Food Imports: South Sudan imports large quantities of food from Uganda and Kenya. In 2012, 28 percent of imports were food products (12 percent of GDP); mainly imported from Kenya and Uganda, a share that highlights the dependency of South Sudan on imports for basic needs.⁷ Imports are largely financed by foreign exchange obtained from oil exports. The volatility of oil exports as well as commodity price shocks contribute to South Sudan's vulnerable food availability.

Food Aid: South Sudan receives large amounts of food aid. WFP estimates that one in four people in South Sudan depend on food aid. In June 2013, 32 percent of households received food assistance at least in the three preceding months. Humanitarian assistance with seeds and tools were received by 9 percent of households with considerable regional variation with 27 percent in Warrap but only 5 percent in Unity.⁸

2.2 Food Access: Higher Prices and Diminished Purchasing Power

The extent to which food access is affected by higher market prices depends on the share of households that rely on markets to meet consumption needs. If households generally rely on own food production (subsistence farming, hunting, and gathering), they may be less vulnerable to macroeconomic shocks. Similarly, at the national level, if the country as a whole would be self-sufficient in food production and not reliant on imports from neighboring countries, a drop in the exchange rate

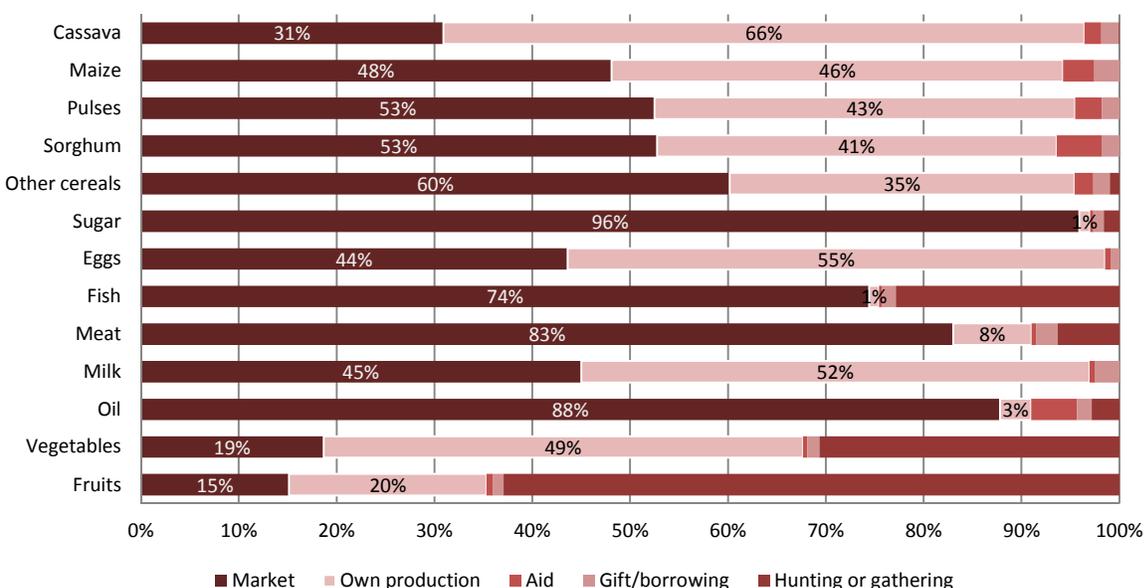
⁷ World Bank (2014a).

⁸ WFP (2013b).

would not have dramatic effects on food prices, food availability and accessibility. However, own production of food depends on security with protection from displacement, looting and theft.

Even many of South Sudan’s rural households depend on markets for accessing food. Although 80 percent of South Sudan’s population produces food for own consumption, the quantities produced are small and vary seasonally. Especially in the lean period (April – May), market purchases are overwhelmingly the primary source of food for most South Sudanese households covering 58 percent of total dietary energy consumption requirements.⁹ But also throughout the whole year, rural households depend on markets for a considerable part of their consumption. For the main staples cereals and tubers, such as maize, sorghum and cassava, 40-60 percent of rural households report that markets are their main source of these goods (Figure 3). More than 80 percent of surveyed households reported “high prices” as a major shock, further suggesting high reliance on markets.

Figure 3: Sources of food for rural households.



Source: WFP Food Security Monitoring Survey (2011-2012), four rounds of quarterly sample of 2,500 rural households in 100 different locations throughout South Sudan.

Food is generally available in markets, especially in urban areas. While food production in South Sudan is insufficient to meet domestic demands, food imports compensate unmet demands to a certain extent. Imported foods are available all year in urban markets.¹⁰ Less evidence is available for rural markets but the reliance on markets even by rural households indicates that food products are available.

High poverty rates especially in rural areas contribute to food insecurity. In rural areas, 55 percent of the population lives in poverty. The poverty rate is mainly based on a food poverty line ensuring a caloric intake of 2,400 calories per person per day. With more than half of the rural population unable to

⁹ Analysis by FAO and WFP of the National Household Baseline Survey (NHBS). It should be noted that the survey was conducted during the lean period (April-May) when supplies from own production are generally low or have been completely exhausted. Consequently, market purchases tend to be higher relative to other periods of the year.

¹⁰ Price data is available for a variety of food products for different urban markets from the Consumer Price Index and the High Frequency Survey, both conducted by the National Bureau of Statistics.

cover this caloric intake by own production and/or purchase, limited household endowments contribute to food insecurity.

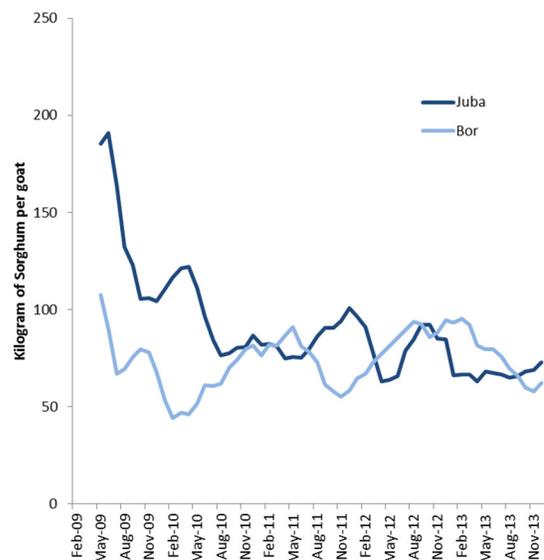
Changes in macroeconomic conditions can impact even pastoralists and people not directly linked to the modern cash economy, particularly because of the relative increase in prices of imported goods in comparison to domestically produced goods. Estimates of terms of trade for pastoralist's show that the price of grain staples have increased more than the price of livestock. While both grain (sorghum, maize, wheat, etc.) and livestock prices have increased, livestock prices have increased at a slower pace than cereal prices since mid-2011, leading to a deterioration of the terms of trade for pastoralists who depend on the sale / exchange of their livestock for purchasing grain. This can be linked to the depreciation of the exchange rate and the difficulties of importing food from Sudan. Figure 4 illustrates an example of the extreme reduction in terms of trade for pastoralists trading goats for sorghum, experienced in Wau during 2011 and Figure 5 represents a similar relationship for Bor and Juba over a three year period. In early 2009, a medium male goat was worth 130 kg of sorghum in Juba and 90 kg in Bor. By December 2013 a male goat was worth less than 79 kg and 77 kg, respectively.

Figure 4: Declining terms of trade for pastoralists: example from Wau during 2011



Data source: WFP VAM

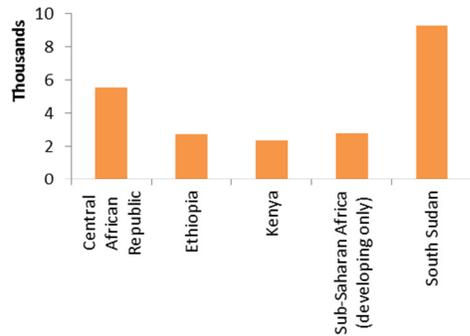
Figure 5: Terms of trade for pastoralists: 4-months averages for select locations for kilogram of Sorghum per medium male goat.



High transportation costs exacerbate food prices. South Sudan is a land-locked country. While in the past Sudan was the main supplier of both food and fuel for South Sudan, since independence imports are mainly coming through Kenya and Uganda. An insufficiently maintained road network within South Sudan especially affects prices in the northern states, which historically were supplied by Sudan but closed borders and insecurity limit trade between the neighbors. Benefits from surplus production in some counties are limited because poor infrastructure and weak market integration are obstacles to transportation of food from surplus areas (chiefly in the south) to deficit areas, which are largely in the distant north of the country.¹¹

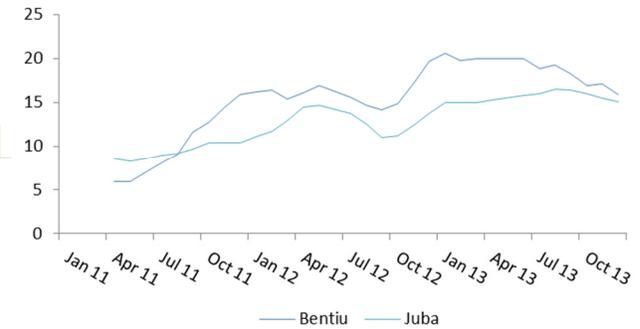
¹¹ FEWS NET.

Figure 6: Cost to Import a container in US\$, 2012.



Source: World Bank Indicators.

Figure 7: Prices in SSP for Sorghum in a northern state border town (Bentiu) and in Juba as 4-month moving average.

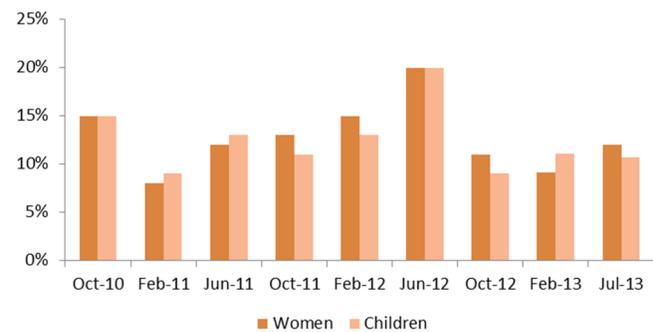


Source: Authors' calculations based on WFP data.

2.3 Food Utilization and Malnutrition

Malnutrition levels are high across South Sudan, although they fell notably in late 2012 as a consequence of the favorable harvest. The most complete data on nutrition is from the Sudan Household Health Survey (SHHS) from 2010 which suggest that 28 percent of children under 5 are underweight, 31 percent are stunted and 23 percent are wasted.¹² These are high levels in a global context. Using Global Acute Malnutrition as indicator, as collected through the Food Security Monitoring Survey (FSMS), malnutrition rates for both men and women reached peak levels in June 2012 but then improved in the second half of the year with the improved harvest.

Figure 8: Malnutrition among women and children.



Source: Global Acute Malnutrition, Food Security Monitoring Survey, 2010 - 2013.

Improved nutrition with good harvests indicates limited food intake as a driver of malnutrition rather than food utilization. The food utilization dimension typically deals with knowledge and habits, e.g. whether nutritious food is available and accessible as well as whether the household has the knowledge to decide what food to purchase. Also decisions about preparation of food and how to consume and allocate it within the household contribute to food utilization. While poor food utilization contributes to malnutrition, South Sudan's malnutrition is unlikely to be driven by food utilization but due to limited intake of food and limited dietary diversity as nutrition improves with good harvests (Figure 8).

3 Impact of two recent conflicts

The nature of the conflict influences the impact on food security. South Sudan experienced two different types of conflict. The first conflict with Sudan led to shutdown of oil production and to the closure of the border. The impact of this conflict on food security and poverty is estimated by adding price substitution effects estimated from a demand system to the methodology described in Cali &

¹² FAO/WFP (2013 / 2014).

Varela (2014). The results of the analysis are used as a benchmark for the impact of the second conflict. The second – and ongoing – conflict only marginally affected oil production, but military clashes on the ground led to large displacement and destruction. Based on a demand system including price substitution effects, the impact of the internal conflict is compared to the oil shutdown / border closure conflict. The baseline poverty rate before both conflicts is estimated by adjusting household consumption by real GDP growth rates.¹³ The impact of the oil-shutdown is assumed to be transient, thus, the baseline poverty from before the oil-shutdown is used to estimate the impact of the internal conflict.

3.1 Impact of the Oil Shutdown and Border Closure

The disputes between South Sudan and Sudan in 2012 led to oil shutdown and border closure. With independence, South Sudan received 75 percent of the oil reserves of former united Sudan. Without large-scale refineries in place, South Sudan exported the crude oil via pipelines in Sudan through Port Sudan. Disagreement about transit fees as well as accusations of theft motivated South Sudan to shutdown oil production and exports in early 2012. This triggered subsequent military clashes and a closure of the border between the neighbors. The dispute between South Sudan and Sudan caused large shocks to the macroeconomic environment in South Sudan with a collapse of GDP and government revenues, a depletion of foreign currency and an increase in food prices (Box 2).

Box 2: Macro-economic and fiscal impact of the oil shutdown and border closure.

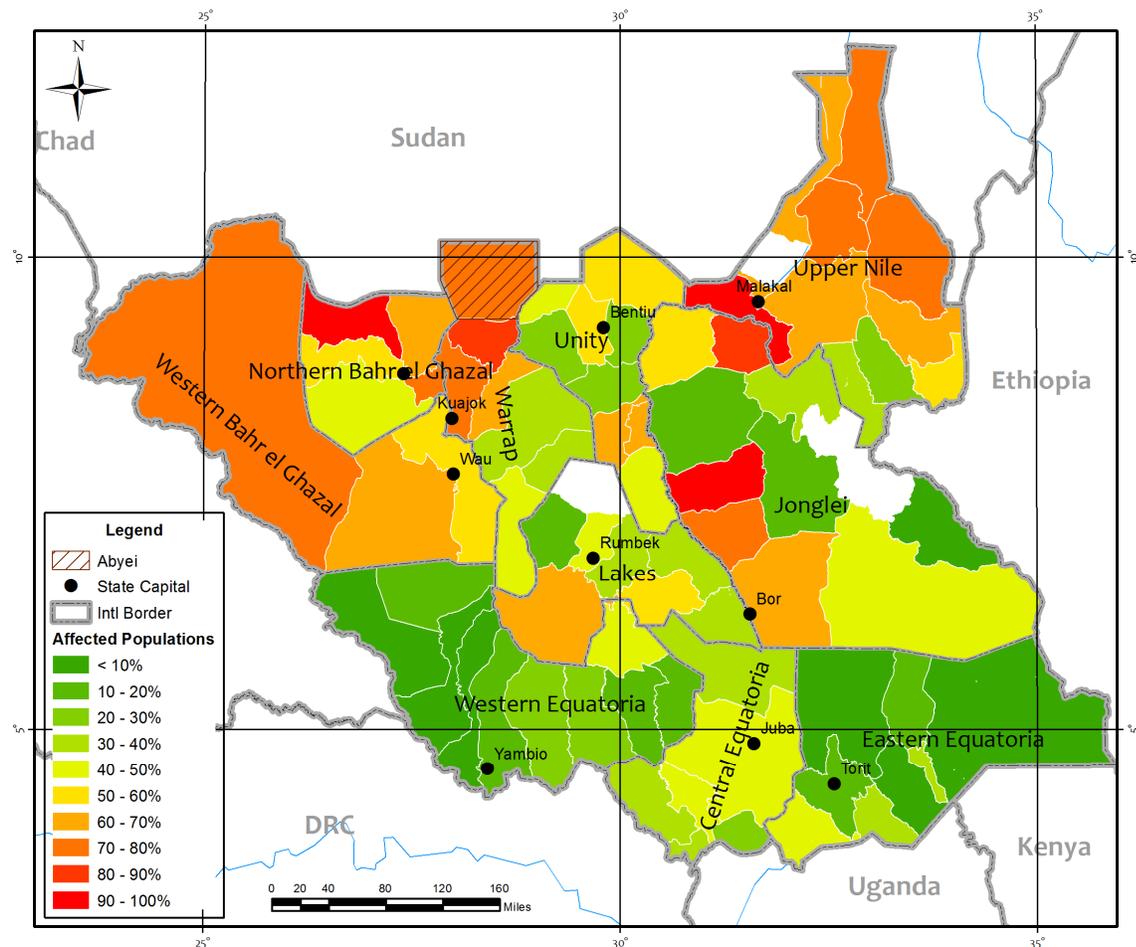
- **GDP.** The GDP dropped by almost 50 percent largely driven by the oil shutdown as oil contributed around 60 percent to GDP.
- **Prices.** The dispute led to a near complete closure of the Sudan-South Sudan border and thus shut down an important source of key staples for much of the country. This increased prices – especially for food products in geographically isolated areas in the northern states of South Sudan.
- **Budget.** The lack of oil revenues rendered government expenditures unsustainable forcing cuts in spending. This caused a contraction of the economy as a whole affecting people’s ability to purchase food in markets.
- **Foreign Currency.** The collapse of oil exports depleted foreign exchange weakening the domestic currency. This compromises the amount of food the country can afford to import affecting food prices.

The increase of food prices immediately affected almost 40 percent of the population. The gradual imposition of trade restrictions between Sudan and South Sudan between 2011 and 2012 culminating in the complete border closure in early 2012 obstructed the influx of important staple food products, particularly sorghum: the preferred staple food for much of South Sudan. While trade with Uganda and Kenya has somewhat compensated for the reduced supply from Sudan, food prices increased drastically especially in the northern states which are poorly connected to the southern area of the country. The border closure also restricted fuel that is used by mechanized farmers in the Renk area reducing food supply. Food supply was further reduced by the closure of the Agricultural Bank restricting commercial farmers’ access to inputs. Finally, the devastation of agricultural production by quelea quelea birds

¹³ The growth rates for private household consumption in real terms for 2009, 2010 and 2011 are 0.73%, 7.14% and 5.24%.

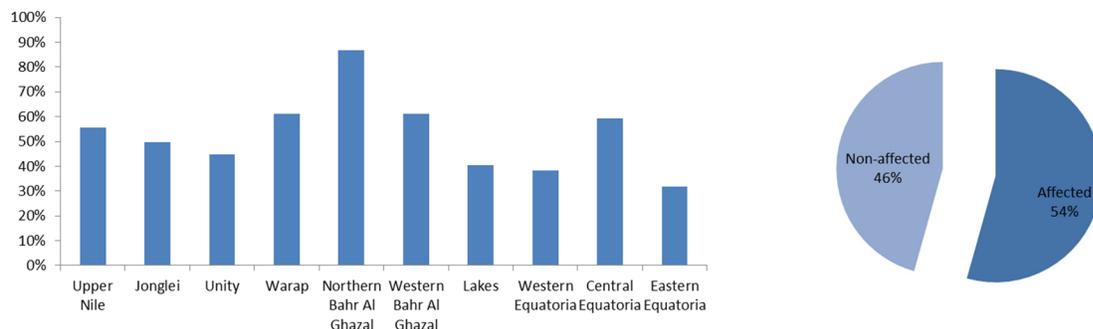
increased as the north stopped controlling the birds. These factors increased food prices negatively affecting consumption of about 3.8 million people¹⁴ (Figure 9 and Figure 10).¹⁵

Figure 9: Proportion of the population by county that lost at least 10% of consumption due to the oil shutdown.



Source: Author's calculations following Cali & Varela (2014) based on NBHS 2009 and HFS data.

Figure 10: Affected population, which lost at least 10% of consumption by the oil-shutdown, by state and nation-wide.



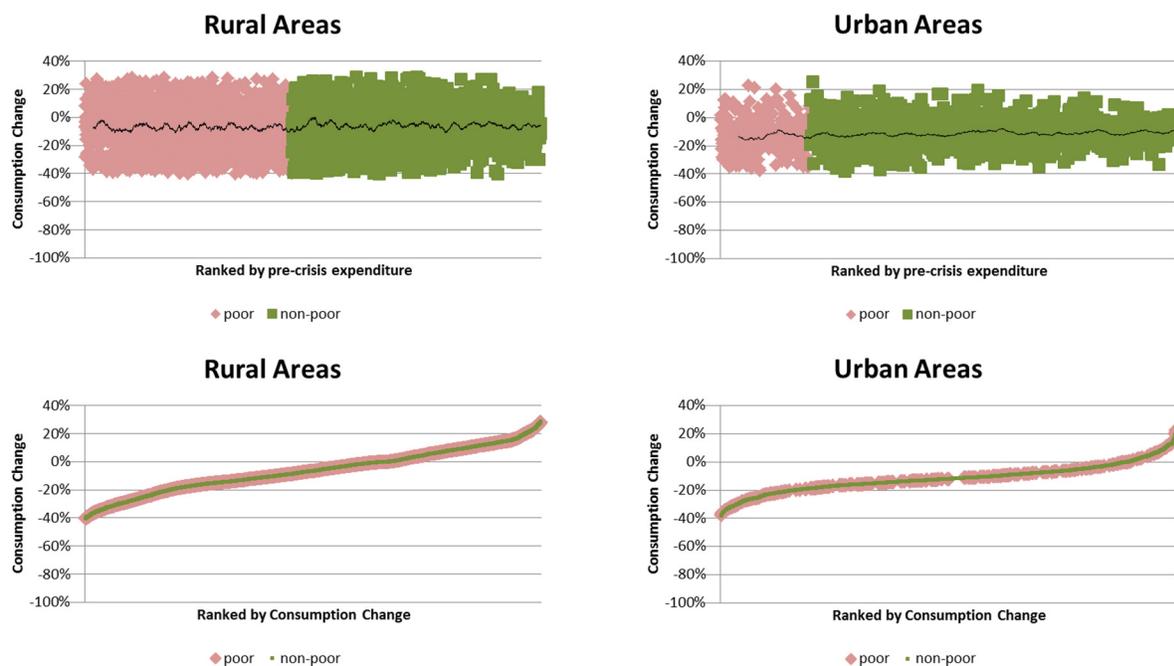
Source: Authors' calculation based on NBHS 2009.

¹⁴ Note that throughout the note, population estimates from 2008 are used.

¹⁵ Affected households are defined as households, which suffer from a loss of consumption of at least 10 percent.

The high food prices affected consumption for all households – urban and rural. The most severely affected households in rural and urban areas lost consumption of up to 40 percent (Figure 11). Both poor and non-poor households are affected; but urban households on average are affected slightly more severely (Figure 23 in the appendix). Some rural and urban households gained consumption due to the change in prices. This effect is more pronounced for rural households, which more often rely on self-produced food. The net effect on consumption put an additional 308,542 people into poverty, which translates to an additional 4 percentage points of poverty nationwide.

Figure 11: Impact of the conflict on consumption for rural households (left) and urban households (right) ranked by pre-crisis expenditure (top) and by severity of the impact (bottom). Each dot corresponds to a household with its change of consumption indicated by the y-axis. The trend-lines are moving averages over 60 households.¹⁶



Source: Authors' calculations based on NBHS 2009 data.

Food security still improved from 60 percent to 67 percent due to a good harvest. The closure of the border limited food availability especially in the northern states of South Sudan. In addition, the exchange rate was weakened making imports more expensive. While this has a negative impact on food availability, a good harvest in 2012/13 reduced food insecurity compared to the previous year as reported by WFP. It is important to note that the simulation only considers price changes due to the border closure and does not incorporate price changes due to a good harvest. Thus, the additional poverty estimated might not have been realized if other factors – like a good harvest – mitigated the effect of the border closure. Hence, in absence of the conflict and assuming all other factors remained constant, it is safe to predict that food security would have improved even further than observed in 2013.¹⁷

¹⁶ Note that these figures do not incorporate sampling weights. Compare with Figure 23 in the appendix presenting the average change over households by percentiles incorporating sampling weights.

¹⁷ WFP 2014.

The conflict was defused in September 2012 but still had economic repercussions. In Addis Ababa, both countries signed an agreement regarding resumption of oil exports and border trade to help restore peace. This allowed GDP to recover from its collapse; to regain fiscal balance and to replenish foreign reserves. Also, a considerable amount of short-term loan obligations needed to be fulfilled. While it takes some time to return to a normal state, the short duration of the conflict minimized long-term effects.

3.2 Impact of the Internal Conflict

Starting in December 2013, an internal strife between factions of the ruling party triggered military clashes leaving thousands dead, hundreds of thousands displaced and destroying complete towns.

The initial fighting spread rapidly from Juba and escalated into a civil war, with military operations concentrated in Jonglei, Upper Nile and Unity States. While a cessation of hostilities agreement was signed in Addis Ababa in February 2014, military clashes continued to affect six out of the ten states in South Sudan. An undefined number of people have been killed during the conflict. As of September 2014, violence had internally displaced approximately 1.3 million people in South Sudan while 450,000 people fled to neighboring countries.¹⁸ The conflict has seen the towns of Bor, Malakal and Bentiu change hands a number of times and has caused significant damage to roads and telecommunications networks while destroying public, commercial and residential buildings. The conflict has already left profound marks on the macro economy and fiscal position with reduced GDP, increases in prices and renewed fiscal pressures (Box 3).

Box 3: Macro-economic and fiscal impact of the internal conflict in South Sudan.¹⁹

- **GDP.** Lower oil production, displacements of people, loss of assets and livelihoods opportunities, especially in agriculture, and destruction of market infrastructure are estimated to cost 15 percent of South Sudan's potential GDP.
- **Prices.** While prices have remained broadly stable in less affected areas, prices in towns targeted by the military action increased considerably, like Malakal, Upper Nile State, showing an average increase of 32.6 percent within two months since the onset of the conflict.²⁰
- **Budget.** Net government oil revenue is projected to decrease by around 25 percent. Purchase of military equipment, the cost of running military operations, and compensation for damages caused by the conflict are likely to put pressure on public expenditures. As a result, the fiscal balance is expected to swing from a small surplus to a deficit of around SSP 3 billion (US\$ 1 billion at official exchange rate).

The conflict has potentially affected consumption of 2.7 million people. The conflict exacerbated insecurity leading to a loss of harvest in the conflict-affected areas as well as massive displacement. Food prices also increased with peaks observed in the most conflict-affected states. While households relying on markets for food suffer mainly from an increase of food prices, subsistence farmers are less affected by market price changes but depend on their harvest. A new simulation helps to understand the impact of price changes, harvest loss and displacement on poverty (Box 4). The estimates indicate

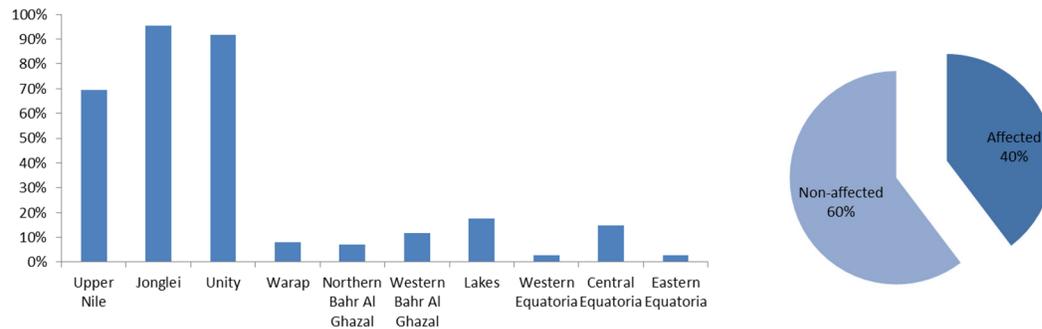
¹⁸ UNOCHA 2014c.

¹⁹ World Bank (2014c).

²⁰ High Frequency Survey (HFS) conducted by NBS in collaboration with the World Bank.

that 2.7 million of people (40% of the population) would be affected by at least 10% of consumption losses (Figure 12).²¹

Figure 12: Affected population by the internal conflict, by state and nation-wide.



Source: Authors' calculation based on NBHS 2009.

Box 4: Simulation of the conflict impact on consumption and poverty.

Based on the NBHS 2009 data, the impact of the conflict on consumption and poverty is estimated by a new simulation extending the price effect model (World Bank, 2014c) with price substitution effects, a loss of harvest and a displacement effect. The three impact channels, price changes, harvest losses and displacement are modeled separately. Price increases reduce the consumption of households purchasing these items. Households producing these items are subject to consumption gains as they can potentially sell these items for higher prices in the market. In addition, households respond to price changes by altering their consumption bundle. More expensive items are avoided and substituted for by less expensive – but usually similar – items.

The change in prices due to the conflict is estimated by the difference of average prices two months before and two months after 15th December 2013 based on the HFS data collected by NBS supported by World Bank.²² The price changes are estimated separately for the three greater regions in South Sudan: Greater Equatoria, Greater Bahr El Ghazal and Greater Upper Nile. The proportional loss / gain of consumption per household is modeled as a consumption variation. For each household, the consumption variation is calculated by multiplying the consumption share with the price change, by item. As own-produced items are considered negative expenditure, a price increase for an own-produced item translates into a negative consumption variation. The behavioral changes of households responding to price changes are incorporated by estimating cross-elasticities for groups of similar items and adjusting the consumption variation accordingly. The elasticities are estimated from a demand system model for South Sudan.²³

The loss of harvest effect is modeled by removing food consumption derived from own production depending on observed reduction in planting by IPC. In three states (Upper Nile, Jonglei, and Unity), a reduction of planting by 30% was observed. For those states, 30% of consumption from own production is removed.^{24,25} The simulation does not consider coping mechanisms undertaken by households like depleting savings, increased supply of wage labor or sales of assets.

²¹ Affected households are defined as households, which suffer from a loss of consumption of at least 10percent.

²² Seasonal price increases are not adjusted for due to difficulties to estimate a differential price change as, e.g. the prices in the previous year were affected by the oil shutdown. Thus, the impact of the conflict also incorporates – to a certain extent – coinciding factors influencing prices.

²³ Deaton & Muellbauer (1980), Friedman & Levinsohn (2002), Poi (2012).

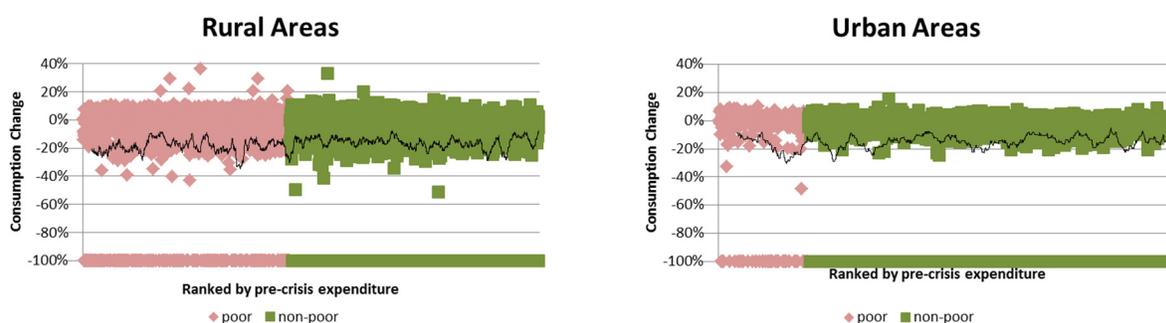
²⁴ An additional loss of income effect for commercial farmers is not modeled as data for sales from own-production is unavailable.

Displacement is modeled as a complete loss of consumption for displaced households. In absence of more detailed data describing the characteristics of displaced households, the simulation assumes that each household in a county has equal probability to be displaced with the probability set to be proportional to the observed number of IDPs in the county (UNOCHA; September 2014).²⁶

All effects are aggregated by calculating the consumption variation for price changes only for the fraction of own-produced food items, which were not modeled as being lost. The consumption reduction from the harvest loss can be converted to a share of household consumption and added to the consumption variation. Thus, the consumption variation now reflects the aggregated losses/gains from both effects at the household level. Household consumption can be updated accordingly while eliminating consumption completely for displaced households. Household expenditures are obtained in original 2009 prices. This allows calculating poverty statistics based on the original poverty line in 2009 prices.

The conflict deteriorates consumption most severely in conflict-affected areas; leaving an additional 710,000 households in poverty. Displaced households are subject to consumption losses of up to 100% affecting previously poor and non-poor as well as urban and rural households equally (Figure 13).²⁷ For non-displaced households, more rural households are more strongly affected with losses of up to 40% of consumption. In contrast, fewer urban households are affected with lower severity (compare with Figure 24 in the appendix). Some households have consumption gains profiting from an increase in prices of goods they produce themselves. Consequentially, more rural households are subject to consumption gains than urban households. In general though, poor and non-poor households are affected equally. The conflict pushes additional 710,000 households into poverty (net); this increases the poverty rate by 9 percentage points.

Figure 13: Impact of the conflict on consumption for rural households (left) and urban households (right) ranked by pre-crisis expenditure (top) and by severity of the impact (bottom). Each dot corresponds to a household with its change of consumption indicated by the y-axis. The trend-lines are moving averages over 60 households.²⁸

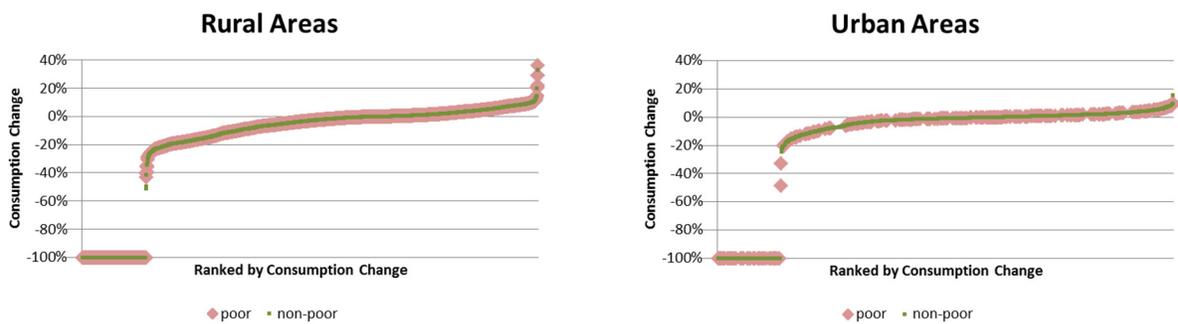


²⁵ As part of the humanitarian response, seeds and planting tools were distributed at large scale among IDPs. This possibly led to the observed increases of about 15% in planting in Warrap and Lakes. Thus, the estimated net planting losses of 30% in Upper Nile, Jonglei and Unity also include the mitigating humanitarian response. The simulation accommodates this by applying the net average harvest loss to non-displaced households.

²⁶ Due to data limitations with limited sample size at the county level, the flow of displaced person across county boundaries cannot be modeled explicitly. Therefore, the results cannot be disaggregated beyond state-level.

²⁷ Note that this is a direct consequence from the assumptions of the simulation.

²⁸ Note that these figures do not incorporate sampling weights. Compare with Figure 24 in the appendix presenting the average change over households by percentiles incorporating sampling weights.

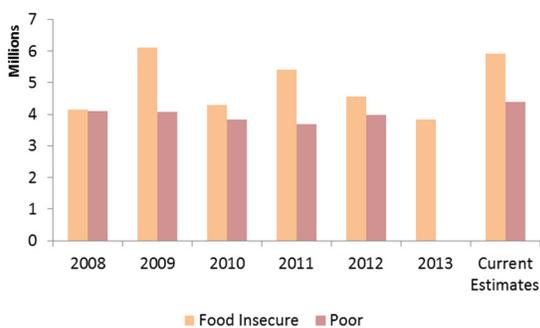


Source: Authors' calculations based on NBHS 2009 data.

Food security is affected by lower food production and disrupted trade flows. The conflict directly affects food production by displacing farmers, destroying productive farm assets and – most severely – by disrupting harvest and potentially planting season. In addition, insecurity slowed or halted domestic trade in insecure areas and increased the number of IDPs, who are mostly food insecure. As most people depend on markets for their basic consumption, the disruption of trade flows and physical destruction of markets affects food availability in large parts of the country, which are not self-sufficient.

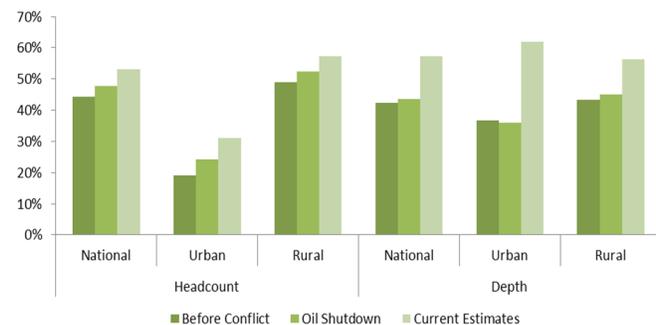
Food insecurity is expected to rise from a pre-conflict level of 40 percent to 63 percent based on IPC estimates. About 4.4 million people (40 percent) were expected to be food insecure before the conflict. The conflict is estimated to increase the number of food insecure people by 2.1 million.²⁹ Thus, food insecurity increased much more significantly compared to poverty (Figure 14). The moderate increase in poverty is not surprising as large parts of the population already were poor before the conflict. Rather, poverty depth increased because of reduced consumption for already poor households (Figure 15).³⁰

Figure 14: Poverty and food security. Poverty estimate for 2012 reflect the oil-shutdown impact; current estimates incorporate the impact of the military conflict.



Source: Poverty based on authors' calculations using NBHS 2009 data; Food Insecurity based on WFP/FAO 2013/14 and IPC September 2014.

Figure 15: Poverty headcount and depth before the conflict (estimated for 2011), at the oil-shutdown and currently; for national, urban and rural households.



Source: Authors' calculations based on NBHS 2009 data.

The poverty depth of urban households increased more considerably than for rural households. The gap between the consumption of a poor household and the poverty line is called poverty depth. Especially for the urban population, average poverty depth increased considerably with the inner conflict (Figure 16). While urban and rural households were modeled to be affected equally by

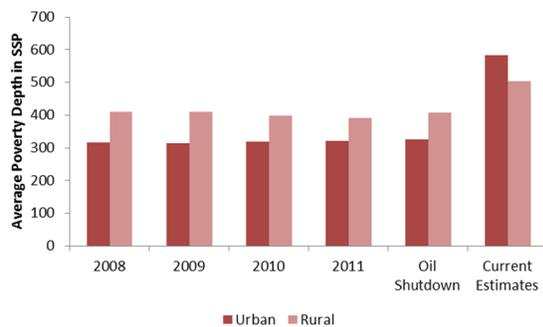
²⁹ WFP / FAO (2014a) and IPC 2014. Population under stress, crisis, emergency and famine are considered food insecure.

³⁰ See Table 1 for a state-specific decomposition of the poverty indicators by rural and urban areas.

displacement, lower urban poverty implies that more urban households above the poverty line suffer from total consumption loss due to displacement. This is reflected in the relatively larger increase of the poverty head count for urban compared to rural household and results in a larger poverty depth.

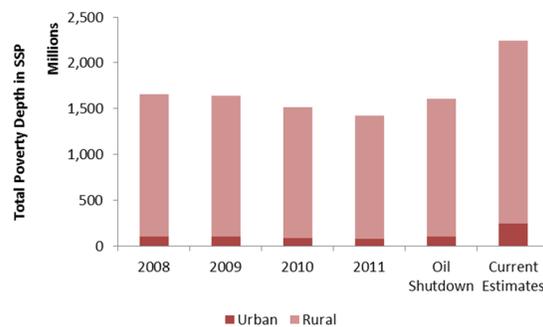
Costs for poverty eradication increased from 1.66 billion SSP in 2008 to 2.24 billion SSP. The sum of all gaps for all poor households amounts to the theoretical annual costs required to eradicate poverty. Since 2008, total poverty depth shrank from 1.66 billion SSP to 1.42 billion SSP in 2011 (Figure 17). The oil shutdown added 180 million SSP (13%) while the current conflict increased costs since 2011 by two thirds (58%, 821 million SSP). The increased costs due to the oil-shutdown are largely explained by increased poverty as the average poverty depth per capita remained constant. In contrast, the current conflict exacerbated average poverty depth emphasizing the dual impact of the current conflict: increasing the number of poor households and at the same time increasing poverty depth.

Figure 16: Average annual poverty depth in SSP for urban and rural areas.



Source: Authors' calculations based on NBHS 2009 data.

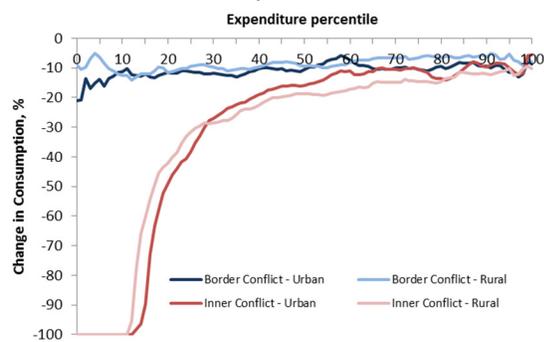
Figure 17: Total annual poverty depth in million SSP for urban and rural areas.



Source: Authors' calculations based on NBHS 2009 data.

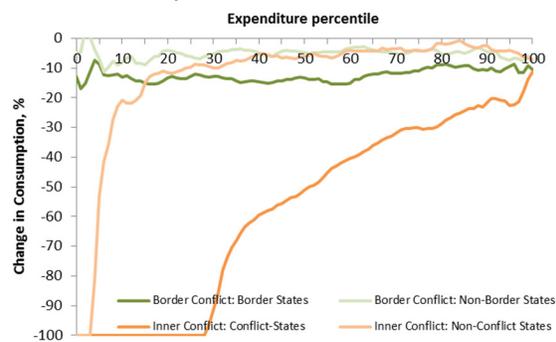
The impact of a conflict on GDP does not necessarily indicate the hardship it imposes on the population. The oil shutdown and border closure reduced GDP by 50 percent. In contrast, the current military conflict leads to an estimated loss of potential GDP of 15 percent. However, the internal conflict affects the population much more severely even though the number of affected people is lower (2.7m in the inner conflict vs. 3.8m in the oil shutdown). Incidence Curves help to clarify the population-wide impact of the two conflicts as it compares, e.g., the bottom 10 percent before the conflict with the bottom 10 percent after the conflict. The border closure conflict deteriorated expenditures generally across the population (Figure 18). The impact was stronger for the population in border states with an average expenditure loss of about 13% compared to an average loss of 5% for non-border states (Figure 19). In contrast, the internal conflict creates a new group of displaced poor, which lost their complete livelihoods in the conflict, both in rural and urban areas (Figure 18). The impact is strongly concentrated on states with military clashes with an average expenditure loss of 58% compared to 13% in the remaining states (Figure 19). Thus, the internal conflict imposes much stronger hardship on a geographically focussed area than the oil shutdown despite the much stronger impact of the oil-shutdown on GDP.

Figure 18: Incidence Curve for population-wide consumption losses within expenditure groups due to the border closure and the internal conflict by urban/rural.



Source: Authors' calculations based on NBHS 2009 data.

Figure 19: Incidence Curve for consumption losses within expenditure groups due to the border closure and the internal conflict by border and conflict-affected states.



Source: Authors' calculations based on NBHS 2009 data.

3.3 Limitations

The presented poverty numbers are estimated by a model with a given set of assumptions. The poverty estimates presented in this note are inferred by applying growth rates and shocks to the household consumption data collected in 2008. Applying real GDP growth rates to household consumption assumes constant inequality as the same growth rates are applied to rich and poor households. While this assumption certainly does not hold in reality, it allows evolving poverty numbers over time despite severe data constraints. In addition, the applied private consumption growth rates are projection itself as part of the national account estimates. For the last two years, the two shocks / conflicts are modeled explicitly to understand the conceptual consequences on poverty. The models are based on required assumptions and simplifications. Thus, the poverty estimates cannot replace accurate poverty numbers retrieved from new data collection. Instead, the poverty estimates can help understanding the possible impact on poverty and its general magnitude as well as the structural implications of the shocks.

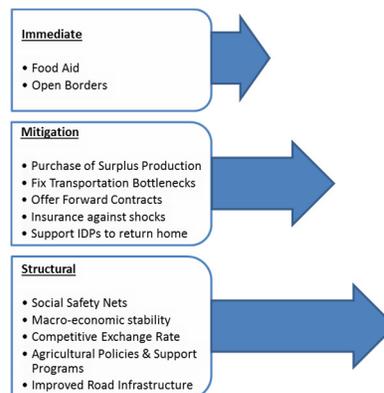
The poverty estimates reflect the direct impact without considering mitigating mechanisms like coping strategies and humanitarian. Displaced households are modeled to lose their complete livelihood. While the number of productive assets a household can rescue upon displacement is limited, households mitigate the impact of displacement by employing coping strategies. Coping strategies depend on the type of displacement settlement but always includes daily labour, small business activities as well as selling livestock and fishing.³¹ In addition, the humanitarian response provides households with food, assets like seeds and non-food items as well as cash. The simulation does not include the mitigating effect of these measures to emphasize the direct impact on poverty and its costs for society.

New household consumption data is needed to update poverty numbers in South Sudan. While the estimates can help to shed light on the structural implications of the impact of the conflict on poverty, the results are conditional on a set of assumptions and simplifications (as discussed above). Only new collection of household consumption data can be used to retrieve new accurate poverty numbers in South Sudan.

³¹ South Sudan CCCM / DTM Unit, 2014.

4 Response to the Crisis

The crisis demands a phased response to tackle immediate needs, mitigation of adverse effects and long-term structural change. While the oil shutdown and border closure affected food security, a good harvest partially compensated for the losses. However, the current internal conflict devastates livelihoods especially of the rural poor population. In this emergency, immediate needs must be responded to – the primate of humanitarian assistance. While humanitarian assistance is – unquestionably – necessary to ensure survival of people, if not managed well it can have adverse effects on incentives for sustainable and independent livelihoods as well as subsistence agricultural production. Therefore, a concurrent mitigation response mitigates those adverse effects and creates an incentive framework for agricultural production for the following seasons. These measures aim to increase food security robustness across large parts of the population. Future shocks – especially natural shocks like flood and drought – cannot be avoided. Thus, a social safety net can help to reduce liquidation of productive assets to compensate for negative shock. In the long-term, robust self-sufficient food surplus production is important, which will contribute to economic diversification and growth. While South Sudan has a large agricultural potential, structural policies are essential to tap into the potential for increased and robust food security. Concurrent implementation of all three responses ensures timely impacts although the structural response has a medium or longer term horizon.



Linking humanitarian interventions with longer-term development plans is important. Linkage ensures that immediate efforts lay the ground work for longer term work and are sustainable, coherent and coordinated. Lessons can be learned from other similar countries in terms of the instruments that can be used in South Sudan. Options will need to be priced and will require conversation among donors and the Government.

4.1 Immediate Response

The immediate response includes food aid especially for emergency food insecurity. Currently, WFP estimates that more than 7 million people are food insecure. More than 1 million people are in emergency phase requiring direct assistance to ensure their very survival. Humanitarian organizations are already on the ground and distributing food aid to a large number of beneficiaries.³²

IDPs are one of the hardest hitting populations and will require concerted efforts in terms of food insecurity. Insecurity has prevented many IDPs especially in camps from going to markets. Thus, focus is required on strategies for how to bring markets to IDPs in camps. A clear understanding of the typologies of markets in terms of their functionality paired with an analysis of bottlenecks helps to create targeted interventions to ensure market functionality and encourage creation of new markets accessible for IDPs.

Open borders with Sudan relax food prices especially in northern South Sudan. The northern states of South Sudan usually rely on food imports from Sudan. With closed borders, proximity to Sudan increases

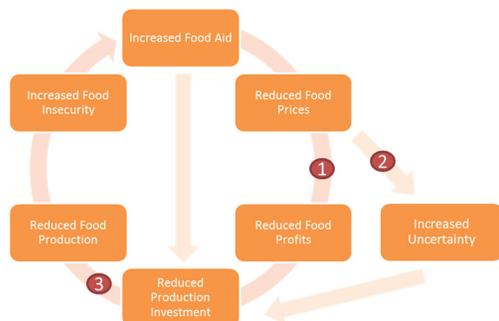
³² WFP (2014).

prices and, hence, reduces consumption and food intake especially for urban populations, which rely more on food markets. Open borders increase trade to a certain extent and relax prices so that households can afford larger food intake. However, open borders can impose security threats especially if used for illicit trade, e.g. for weapons. Therefore, close monitoring of the border is an essential ingredient to prevent negative repercussions.³³ Currently, humanitarian organizations are negotiating with South Sudan’s authorities to open borders for humanitarian work. The momentum can be used to extend the scope for commercial purposes.

Alongside humanitarian corridors, secure corridors for traders increase food availability. In addition to closed borders with neighboring countries, insecure areas within South Sudan prevent traders to deliver food and other goods to food-deficient areas. As for humanitarian work, secure corridors can be created for traders to reach markets lacking supplies. Especially local surplus areas can gain market access through such corridors ensuring that surplus farmers can market their products.

Humanitarian assistance comes in different programs often including market assessments. The humanitarian emergency response targets specific parts of the population with different programs. In an emergency, IDPs and other very vulnerable groups receive direct food assistance. While market assessments are conducted to assess whether cash-for-food voucher programs are possible, in conflict situations markets can be destructed and, hence, direct food assistance be more appropriate. The necessity of direct food assistance cannot be refused, but possible adverse effects should be observed.³⁴

Additional supply of food at no cost distorts the food market by reducing prices. Reduced prices render agricultural production less profitable. In countries with high production costs like South Sudan, this can make agricultural production unprofitable. Even if a market assessment is conducted and deems market supply insufficient, often markets exist but can be constrained by low supply or high transportation costs. Direct food aid in these cases will not only reduce sales of farmers (by reduced prices) but also reduce incentives to engage in surplus production for the next season. In addition, food aid generally reduces the outlook for sales of agricultural goods in the next season and, thus, reduces incentives to invest into agricultural production. Also for subsistence farmers, the availability of food aid makes it less profitable to invest labor and capital into farming.³⁵ While direct emergency humanitarian needs must be fulfilled – often by direct food assistance as the only option, it is paramount to mitigate those distorting effects in a mitigation response to escape the trap of food dependence.



³³ Cali and Varela (2014).

³⁴ WFP (2014a).

³⁵ Levinsohn and McMillan (2007).

Box 5: World Bank's contribution to the immediate response including mitigation measures.

Since 2008, World Bank has an ongoing Emergency Food Crisis Response Project (EFCRP) totaling about \$18 million funded through Trust Funds with recently received additional financing from IDA of \$9 million. The EFCRP includes components on: (i) Support to Agriculture Productivity, which includes provision of inputs (seeds and tools), technical advice on production and postharvest management, and low-cost food storage facilities at the household and community levels; and (ii) Strengthening Community Safety Nets, which provides temporary jobs and income for food insecure people through cash-for-work activities, including construction of access roads to agricultural areas, grain storage facilities, and markets. For the current crisis, the additional financing supports the Safety Net component adding direct food support for vulnerable persons who cannot work due to area insecurity or other incapacities. IDA can finance direct food support as it is implemented as a productive measure. First, it protects socioeconomic assets by preventing negative coping strategies, such as selling productive assets and incurring debt, which would undermine future production and productivity. Second, it allows for more rapid re-engagement in production and rebuilding of livelihoods when security improves. Proper targeting of direct food aid as well as complementing direct food aid with food voucher-for-work or cash-for-work programs can minimize adverse effects.

4.2 Mitigation Response

Special programs can mitigate adverse effects of food aid. The main goal of such programs is to maximize existing agricultural production capacity for the next season. Setting incentives right is an important component.

Food purchase programs support farmers in regions receiving direct food aid. Often, farmers can be remotely isolated – especially in South Sudan with its history of conflict and higher insecurity along the main roads. Market access of surplus production by these farmers can quickly become the main barriers even if food prices decrease only marginally as high transportation costs can become higher than profits. After investing labor and capital in production but not being able to sell the surplus will make it rational to avoid surplus production in the next season. Therefore, surplus production is purchased from farmers – even if they are localized in remote and isolated regions.³⁶ WFP implemented the Purchase For Progress program, which includes a component to purchase harvest from farmers. While an evaluation of the program is still underway, high costs and low profitability are known to impact the scalability of such programs. While not very cost-effective in the short-term, such programs aim to set incentives right for the longer-term.

Careful programming of food purchase programs limits negative side effects. Since many regions in South Sudan are food deficient (Figure 2), food purchase programs in these regions can actually exacerbate local food shortages, and raise prices in the local markets for consumers who are not recipients of food aid. Thus, a balance needs to be struck between food imports and local food purchases to supply direct food assistance programs.

Transportation costs are reduced by fixing major bottlenecks for transportation like collapsed bridges. The desolate state of road infrastructure in South Sudan and its challenging climate with harsh rainy seasons makes market access for local production a binding constraint. Often, the collapse of a bridge can make a whole region inaccessible. Local community programs help to identify such bottlenecks and

³⁶ WFP (2012) and WFP (2013).

fix them. The WFP program ‘Cash-for-Assets’ is a good example where community assets are (re-) built by the local population for cash. Targeted community-based public works programs to enable market access improve livelihoods generally as well as food security.³⁷

Forward contracts to buy food at market prices increase investment in agricultural production. The availability of food aid darkens the outlook of sales for agricultural products in the next season. Given scarce resources, it is not surprising that farmers will reconsider whether investment of labor and capital in agricultural production is beneficial. Forward contracts to ensure purchase of agricultural production in the next season defuse uncertainty about the market and encourage investment in agricultural production. The WFP started the Purchase-For-Progress (P4P) program in 2008 in a number of pilot countries including South Sudan. The program offers forward contracts but also training for farmers in post-harvest handling and warehouse management. A final evaluation is planned to be conducted in 2014. Such programs have the ability to mitigate market distortions from food aid with minimal side effects.³⁸

Insurance products for farmers can improve welfare. Natural shocks like flood and drought as well as shocks from military actions destroy significant parts of the harvest and devastate livelihoods. Given the decade-long history of conflict in South Sudan and especially the current conflict leading to large-scale displacement and destruction, the risk level in South Sudan is substantially higher than in neighboring countries. While farmers only have limited means to mitigate against those risks, insurance products and programs minimize the impact of the risks on livelihoods and incomes.³⁹ While insurance is not a direct mitigation measure to the aforementioned adverse effects of food aid, direct food aid potentially puts farmers’ profits at risk.⁴⁰ As this can push the risk above accepted risk levels, a general reduction of uncertainty and risk helps to mitigate unbearably high risk levels.

IDPs returning home can re-engage in agricultural production. A large number of IDPs was engaged in subsistence farming. The displacement directly affects their ability to maintain their fields and follow the agricultural cycles. To minimize the impact on agricultural production next season, specific programs targeting IDPs can encourage them to return if security allows. Ideally, targeted programs compensate for the loss of agricultural assets to reduce the long-term impact of the displacement on agricultural production.⁴¹

4.3 Structural Response

Greater education and awareness programs are required to increase resilience. Generally, agricultural activities are at risk of shocks. Seasons of good harvests must be used to implement pre-cautionary measures for negative shocks in the future. Education and awareness of precautionary measures such as saving food and storing it adequately during good harvest increases resilience of households.

A safety net increases resilience of the most vulnerable groups. Safety nets ensure adequate consumption levels of beneficiaries and prevent litigation of productive assets necessary to escape poverty. Public work programs improve local infrastructure while supporting income of the program

³⁷ World Bank (2014b).

³⁸ WFP (2012) and WFP (2013a).

³⁹ Hill (2010); exemplary experiences in Sub Saharan Africa can be found in Hill and Torero (2009).

⁴⁰ While insurance against military damage would be a direct mitigation measure, it is very difficult to insure against risks that tend to affect large parts of a country.

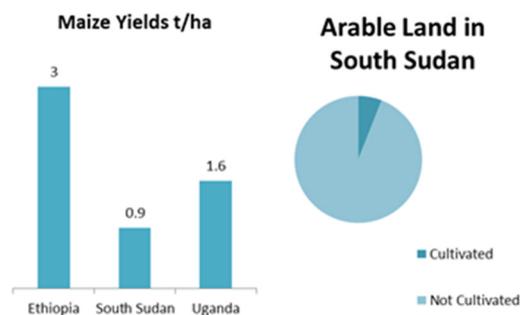
⁴¹ WFP (2014) and UNOCHA (2014a, b)

participants but mainly support households with members able to work. Hence, voucher or cash transfers complement public work programs to ensure that also the most vulnerable households without members able to work are supported. As the estimates of the affected population show, a geographical targeting of beneficiaries in the most affected states is sufficient while a more elaborate targeting method (like PMT) can reduce inclusion errors in less affected states.

Removal of barriers allows tapping into South Sudan’s agricultural potential. The immediate response addresses emergency relief while the follow-up response mitigates adverse effects of emergency aid relief and provides an incentive scheme to enhance agricultural production. In the long term, these policies will not suffice to enable South Sudan’s agricultural potential.

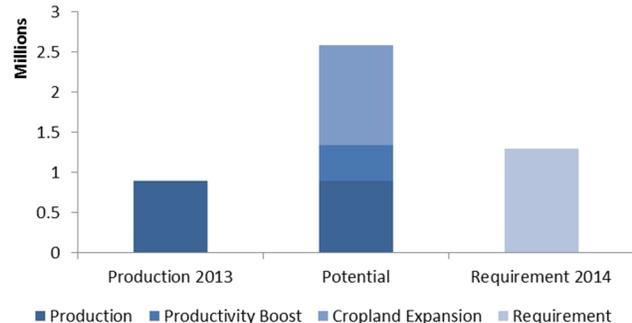
South Sudan has a huge but largely unrealized agricultural potential. South Sudan has 2.7 million ha of land under cultivation (Figure 20). Given the abundance of arable but not cultivated land (47 million ha), a modest expansion to 6.3 million ha would increase the share of cultivated land from 4 percent to 10 percent of total land area. This would still leave 85 percent of arable land uncultivated. This modest cropland expansion would increase agricultural output to 240 percent. Yields in South Sudan of around 0.8 – 0.9 t per ha are currently significantly below yields of neighboring countries (Uganda: 1.6 t per ha, Kenya: 2 t per ha, and Ethiopia: 3 t per ha). An increase of productivity by 50 percent paired with the cropland expansion would boost agricultural production by 360 percent (Figure 21).⁴²

Figure 20: Yields for Maize in t/ha (left) and fraction of cultivated arable land in South Sudan (right).



Source: Adapted from World Bank (2012b).

Figure 21: Estimated agricultural potential for South Sudan for cereal net production in tons.



Source: Authors’ estimation based on World Bank (2012b).

Macroeconomic stability and a competitive exchange rate will improve agricultural competitiveness.

The exchange rate in South Sudan is over-valued.⁴³ This makes imported products, such as agricultural goods, relatively inexpensive, rendering domestic food production uncompetitive. In the medium-term, convergence of official and market exchange rate would level the playing field allowing domestic agricultural production to compete with imports.⁴⁴

Additional agricultural policies and programs will be needed to improve agricultural production.

In the longer run, a myriad of policies and programs need to be implemented to improve competitiveness of the agricultural sector. Those include agricultural support and extension services as well as seed production and quality control. Moving towards commercial farming, private sector policies will have to

⁴² World Bank (2012b).

⁴³ World Bank (2014a, b).

⁴⁴ World Bank (2014b).

improve the business climate; land policies as well as transport and trade policies will have to be improved. These policies would allow moving agricultural production from subsistence to commercial and – in several years – towards export markets.⁴⁵

A rural road construction and maintenance strategy is required to allow better market access. A sequencing of feeder roads after construction of major trunk roads reduces costs for building feeder roads in a second step as transportation of machinery and materials becomes less expensive. In addition, trunk roads will give access to feeder roads so that feeder roads allow market access to considerably larger areas. However, the focus on trunk roads will reduce transportation costs for imports rendering domestic produce less competitive. Thus, a too pronounced focus on international and domestic major roads should be avoided. A more suitable strategy would prioritize areas with high agricultural potential and ensure that these areas are well connected to local markets by constructing and maintaining feeder roads. For example, connecting surplus production areas by road to Juba allows cost-efficient Nile-based transportation to food deficient areas. Thoughtful rural roads can encourage the creation of new rural markets reducing substantial travel costs of the rural population. In general, a detailed analysis and trade-off with higher costs for construction and maintenance should allow setting priorities for rural road construction.

⁴⁵ World Bank (2011a, 2012b, 2013, 2014b, 2014d).

5 Supplementary Information

Box 6: On-going efforts to collect data relevant for monitoring food security in South Sudan.

In a food insecure environment, access to continuous data is necessary to monitoring the rapidly changing situation. Efforts to monitor indicators related to food insecurity in South Sudan include the following:

The Food Security Monitoring Survey (FSMS) is carried out four times a year by WFP and its partners. It is the most comprehensive effort carried out on a regular basis.

The Consumer Price Index is collected by the National Bureau of Statistics (NBS) once a month and monitors the price of the typical consumption basket for households. In June 2011, price collection was expanded from Juba alone to include Wau and Malakal. NBS now publishes an index for all of South Sudan, and three separate regional indices for Juba, Wau and Malakal. The index does not collect prices from rural areas.

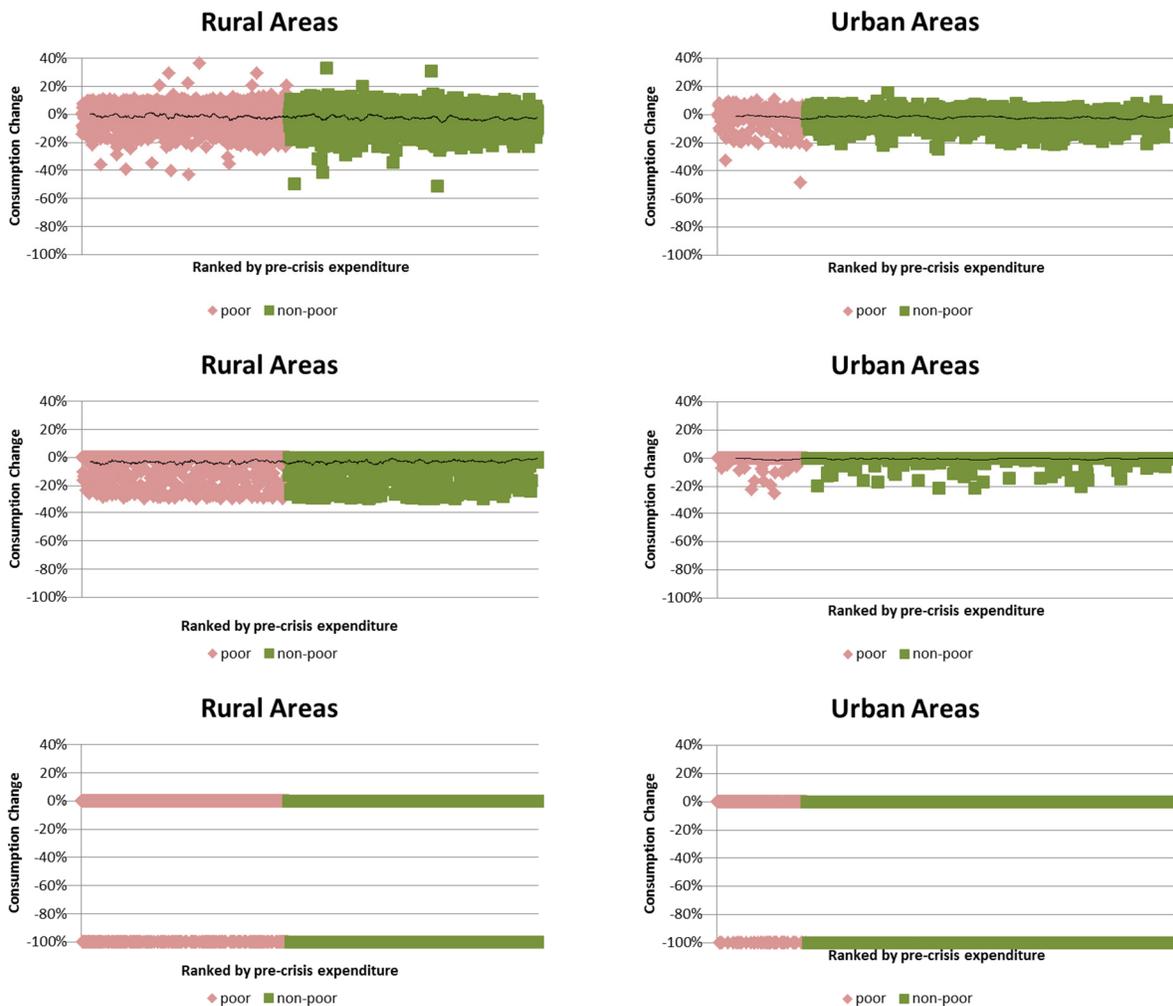
WFP's food security analysis work, commonly known as VAM (Vulnerability Analysis and Mapping) collects prices for key staple foods in South Sudan from the following eight towns: Aweil Town, Bentiu, Bor, Konyokonyo (Juba), Kuajok, Malakal, Rumbek and Wau. While covering a broader geographic area than the CPI collection by NBS, this survey also lacks coverage of rural areas.

The High Frequency South Sudan Survey (HFSSS) The World Bank and the South Sudan National Bureau of Statistics (NBS) are currently piloting the use of handheld tablet computers to collect high frequency data on economic and social indicators in four of the country's state capitals – Juba, Malakal, Rumbek and Wau. The HFSSS project is collecting parallel market exchange rate and market price data for a subset of products from the Consumer Price Index (CPI) daily to track movements in the exchange rate and inflation. A household survey module is collecting monthly data on household assets and resources, food consumption, hunger, health, community security, and household perceptions about well-being and government service delivery. Completed survey forms are uploaded directly from the tablet computers to a central server via the mobile phone network, where analysis of the data can be done in real time. This innovative data collection method eliminates the need to print paper survey forms, reduces enumerator error, eliminates the need for data entry, and makes data available in real time for analysis. Despite the current conflict, data collection still continues in most towns.

South Sudan Food Security Technical Secretariat (FSTS): The South Sudan Food Security Technical Secretariat (FSTS) is the technical arm of the Food Security Council (FSC). The Secretariat is located within the South Sudan National Bureau of Statistics and is tasked with the collection, compilation, storage and analysis of food security data, and the dissemination of processed information to government institutions and other stakeholders to inform decisions on all matters of food security in South Sudan.

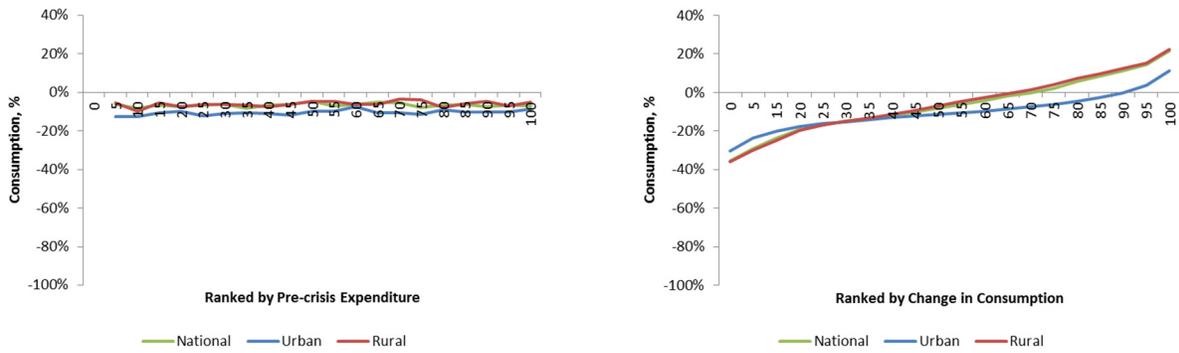
FSTS monitors and publishes retail and wholesale prices for key agricultural products at their Crop & Livestock Market Information System (CLiMIS, <http://www.southsudan-climis.org/>). The secretariat provides information on the food security status of South Sudan on regular basis through the production of Food Security Bulletins, Agrometeorology Bulletins and Policy Briefs and special reports to inform the public and decision makers of prevailing food security situations in all ten States. The secretariat is also responsible for coordinating activities of food security with major government institutions, UN and other agencies and all stakeholders within South Sudan.

Figure 22: Impact of the conflict on consumption for rural households (left) and urban households (right) ranked by pre-crisis expenditure for change of prices (top row), loss of harvest (middle row) and displacement (bottom row). Each dot corresponds to a household with its change of consumption indicated by the y-axis. The trend-lines are moving averages over 60 households.⁴⁶



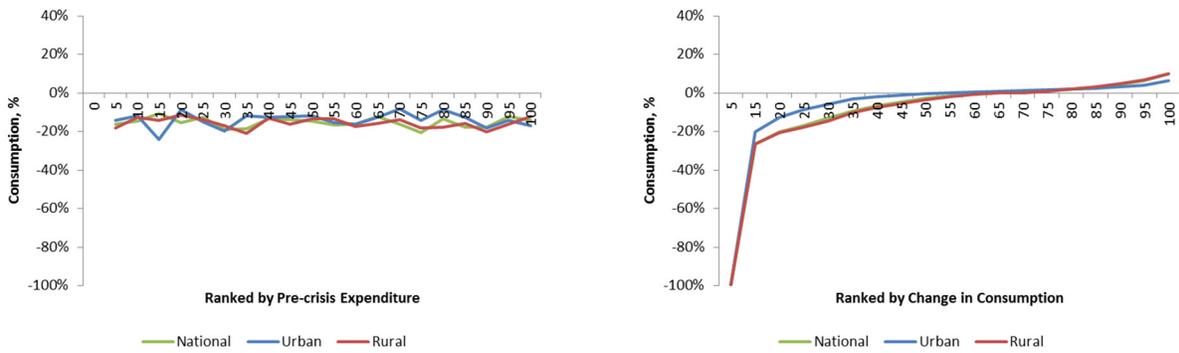
⁴⁶ Note that these figures do not incorporate sampling weights.

Figure 23: Change in household consumption due to the oil-shutdown ranked by pre-crisis expenditure (left) and by the severity of the impact (right).



Source: Authors' calculation based on NBHS 2009 data.

Figure 24: Change in household consumption due to the military conflict ranked by pre-crisis expenditure (left) and by the severity of the impact (right).



Source: Authors' calculation based on NBHS 2009 data.

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