



Drivers of Malnutrition in South Sudan

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Questions

What are the drivers of malnutrition in South Sudan?

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1. Summary

This rapid review synthesises the literature from academic, policy and NGO sources on the drivers of malnutrition in South Sudan. The conflict and lack of a resolution is the key driver and much of the other issues are closely connected to the conflict. UNICEF argue that the main contributing factors to high malnutrition rates in South Sudan are the unprecedented high levels of food insecurity, widespread conflict and insecurity, population displacement, poor access to services, high morbidity, extremely poor diet (in terms of both quality and quantity), low coverage of sanitation facilities and poor hygiene practices (UNICEF, 2017c).

Key findings are as follows:

- The population of South Sudan mainly relies on farming, fishing or herding for their livelihoods, but displacement due to conflict has forced people to abandon their source of income and food.
- Displacement also puts a strain on the resources available in areas hosting those displaced.
- The forced migration of cattle herders leads to the spread of bovine diseases, the loss of cattle and less production of milk.
- The return of people to their areas of origin puts a strain on food resources as food production does not match the population numbers.
- The conflict and resulting insecurity makes it difficult to deliver aid to much of the country leading to malnutrition and the lack of treatment for the same.
- Structural constraints connected to historic poor governance, corruption, the lack of investment in infrastructure, and striking inequality across the country also drive food insecurity.
- Fighting has restricted the planting of seeds, meaning that even though there was decent rainfall in 2018 not enough crops were planted to take advantage.
- Due to the disrupted planting, harvesting, and increased transportation costs as a result of the conflict food prices have increased dramatically. As a result, many in South Sudan only eat one, nutrient-poor, meal a day.
- South Sudan's health system is in dire condition as a result of the conflict, which means people are not being treated at the early stages of malnutrition or for diseases that exacerbate malnutrition, such as cholera.
- Conflict in South Sudan has severely restricted access to safe water and basic sanitation facilities. This has resulted in people getting water directly from contaminated rivers or streams, which has led to the spread of diseases that result in dehydration and prevent people from absorbing nutrients from food.
- The conflict has also resulted in the loss of skills and equipment necessary to produce larger harvests, which in turn results in less food available for the population.
- Local seeds are more resilient to floods and other adverse weather conditions, however there are no community stores for seeds and they can be lost as a result of the conflict.
- Due to poor crop and livestock production many people have resorted to negative livelihood strategies such as distress sales of seeds and livestock.

- The rainy season is starting later than it did in previous generations, but with harder and more damaging rains, which results in later planting and flash flooding that damage or destroy crops.
- Migration due to the conflict spreads animal diseases and the government does not have the capacity to monitor, control and respond to these diseases.
- The Fall Armyworm was first reported in South Sudan in 2017 and has spread across the country, it has led to significant crop loss in the major staple crops in South Sudan maize and sorghum.

Overview of the Situation

UNICEF (2018:1) estimates that in South Sudan 7.1 million people (63% of the population) are facing crisis or, in the absence of humanitarian assistance, acute food insecurity outcomes. Of those facing food scarcity, 155,000 are estimated to be in catastrophe and 2.3 million in emergency (UNICEF, 2018). In seven out of the country's ten states, more than 15% of people are malnourished, which is above the global emergency threshold. Moreover, it is estimated that over 360,000 children under the age of five are suffering from severe acute malnutrition. In the worst hit states, such as Greater Northern Bahr el Ghazal, 72% of the population are food insecure and more than 25,000 children suffer from severe acute malnutrition.¹ Across the country almost three million children are severely food insecure, more than 1.1 million children are acutely malnourished, whilst almost 280,000 are severely malnourished (UNICEF, 2017a: 4). In February 2017, famine was declared in parts of Unity State, South Sudan. During this period, 45.2% of the country faced acute food insecurity at crisis levels or worse.² According to Care more than half the population of South Sudan face severe food insecurity in 2018.³

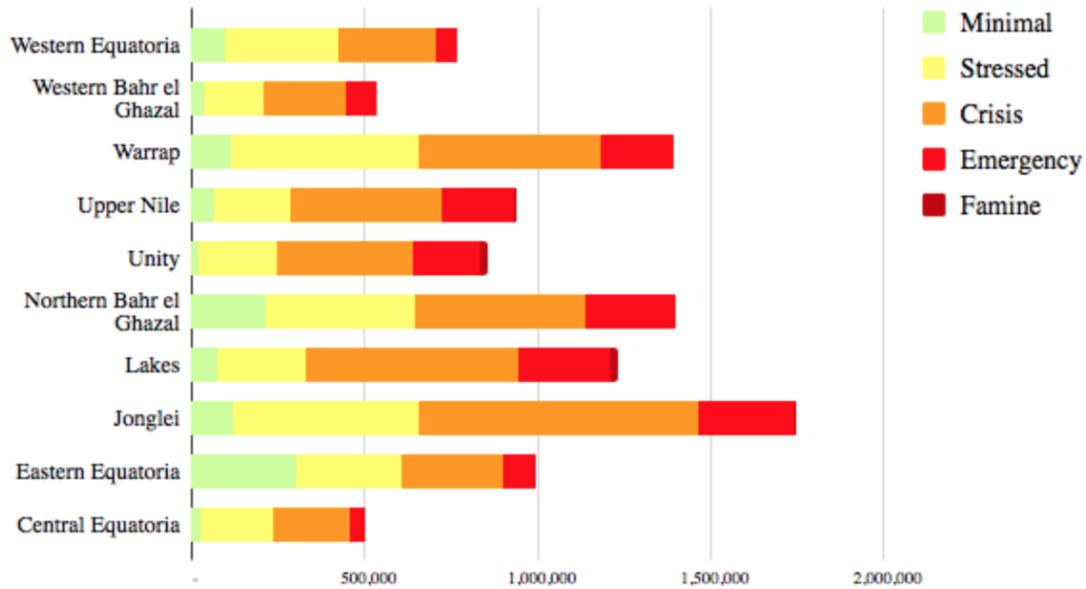
Although the Integrated Food Security Phase Classification (IPC) – South Sudan's official source for food insecurity data – has not currently declared famine, this is not the only situation where food insecurity threatens lives. Any classification of IPC 3 upwards means people need aid to survive, are struggling to get enough to eat, and are dependent on humanitarian aid that is increasingly difficult to access. For famine to be declared, 20% of the population in a specific county must be facing these catastrophic levels of food insecurity. So, while famine has not been declared, it is possible that many people are experiencing famine-like conditions at home – they simply do not represent a big enough proportion of the population for a famine declaration (Oxfam, 2018: 2). Figure 1 and 2 demonstrate the high level of food insecurity in South Sudan as of September 2018.

¹ https://www.unicef.org/southsudan/stories_2016-malnutrition-crisis.html

² <https://www.actionagainsthunger.org.uk/our-work/emergencies/south-sudan-crisis>

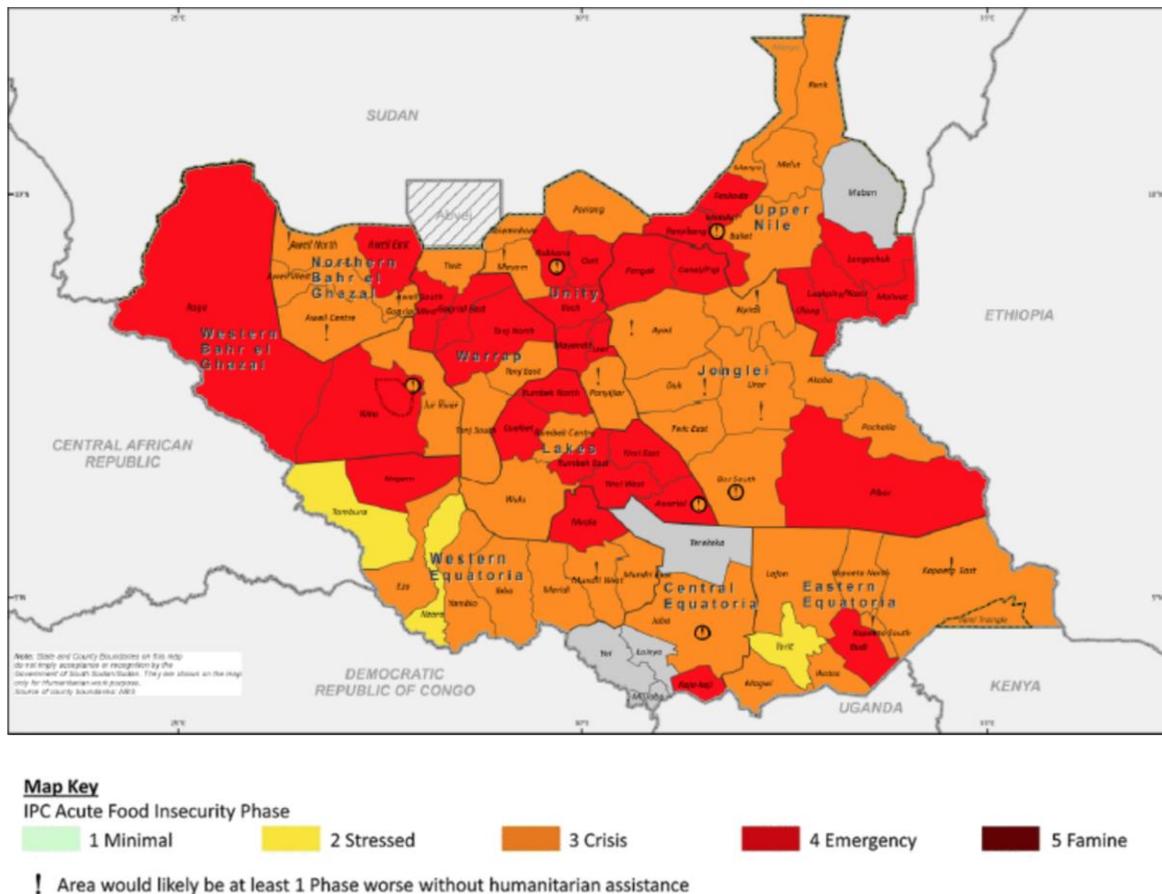
³ <https://www.care.org/newsroom/press/press-releases/four-years-south-sudan-conflict-hunger-and-malnutrition-continue-rise>

Figure 1: Food insecurity South Sudan as of September 2018



Source: <http://www.ipcinfo.org/ipcinfo-website/ipc-alerts/issue-10/fr/>

Figure 2: Food insecurity in South Sudan in September 2018

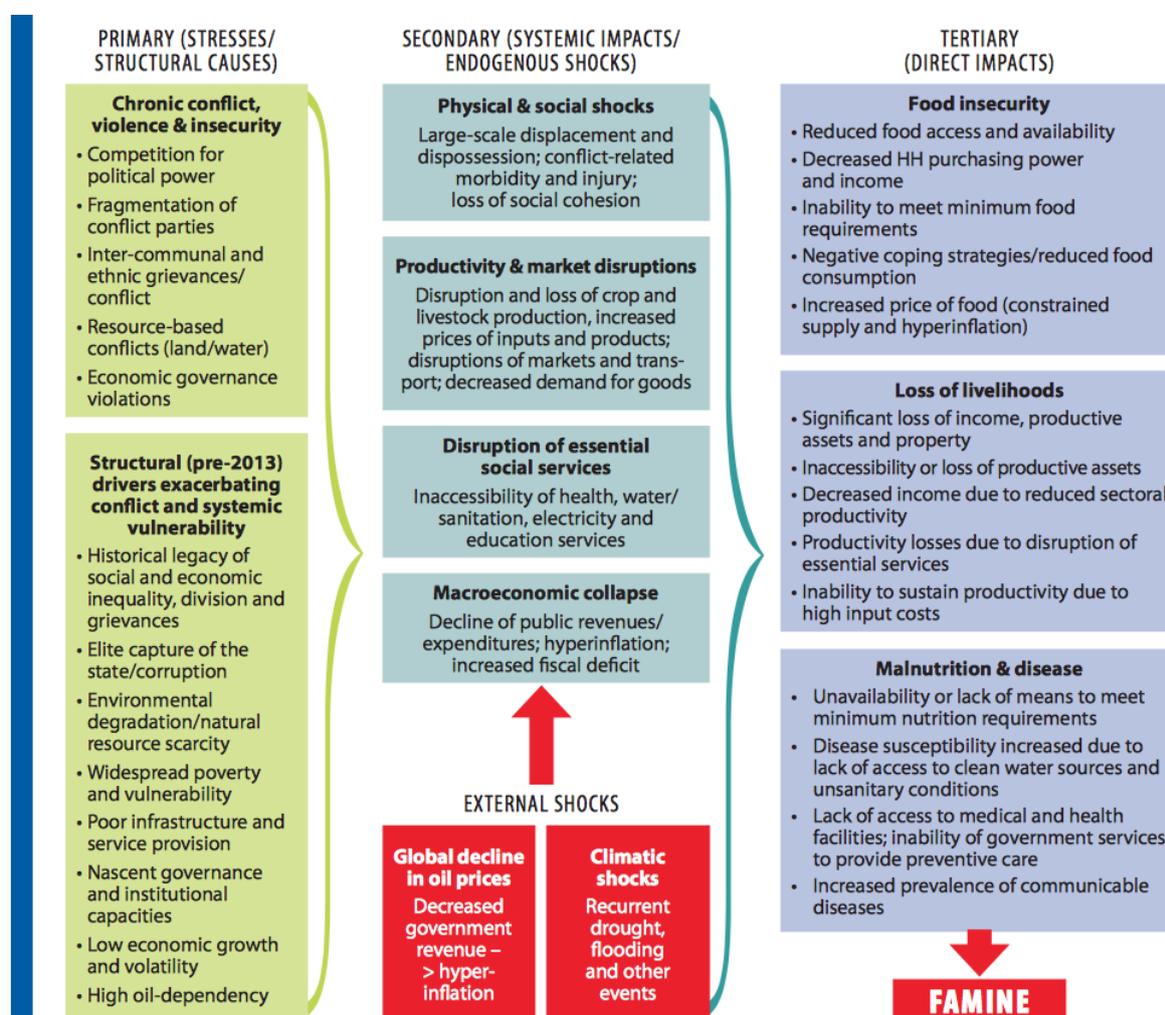


Source: <http://www.ipcinfo.org/ipcinfo-website/ipc-alerts/issue-10/fr/>

2. Conflict

Conflict is the main driver of malnutrition in South Sudan, as the conflict and the failure to reach a political solution not only directly leads to factors that drive malnutrition, it also prevents solutions to the other factors from being implemented. Therefore, although this section focuses on the direct impact of conflict, all the sections that follow link back to conflict. The UNDP (2017) argue that conflict and structural constraints are the primary drivers that lead to malnutrition and then famine. Figure 3 below maps out the drivers and how they interconnect towards famine. At present, localised conflict is occurring throughout South Sudan. The post 2015 peace accord dynamics have resulted in a mutually-reinforcing conflict involving several new actors beyond the two key principal players of the August 2015 peace accord. Disputes continue to evolve, with opposition groups are simultaneously factionalising and localising meaning the conflict is intensifying and affecting more of the population, which in turn further drives the dynamics that lead to malnutrition (UNDP, 2017).

Figure 3: Overview of Famine Causation in South Sudan



Source: UNDP, 2017: 8

UNDP (2017: 9-10) also list a number of structural constraints that drive food insecurity that are linked to the conflict, these are:

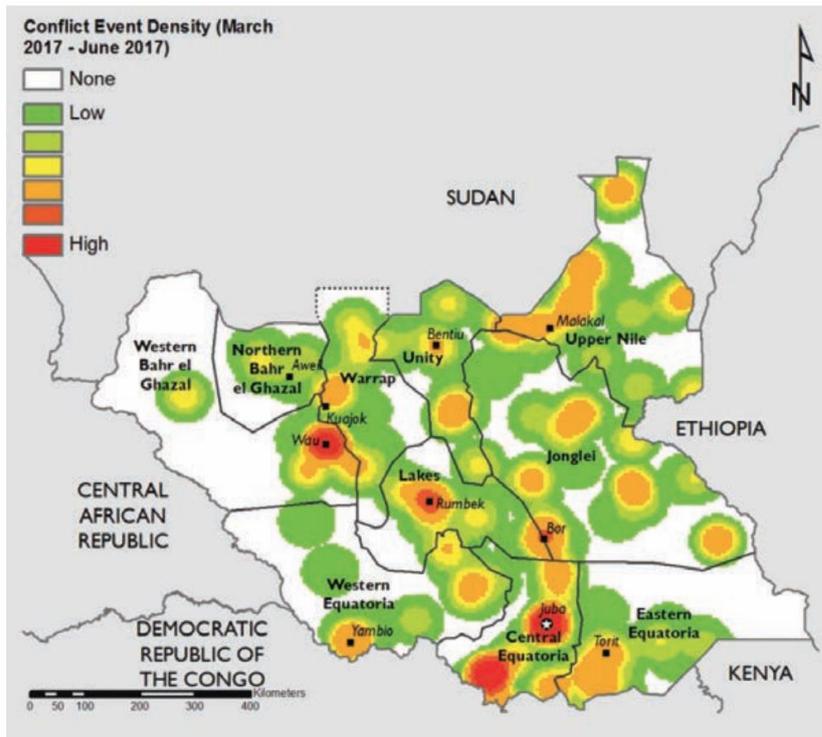
- Historical legacies of deep social and economic inequality in resource distribution and political representation, and grievances and societal cleavages across ethnic, tribal and communal lines;
- Insufficiency of the post-2011 political settlement to accommodate and manage grievances and conflicts among political elites, and to enable a unitary vision for inclusive recovery and development;
- Widespread poverty due to historically low levels of economic productivity, growth and sectoral development exacerbated by repeated conflicts and lack of investment;
- Low human development (illiteracy, high endemic disease and mortality) among the population due to poor availability and access to social services;
- Low social cohesion and collective coping capabilities due to legacies of past conflict and forced displacement;
- Poor governance, pervasive corruption, nepotism and patronage, and tribalism;
- Very low levels of capacity within state institutions at all levels;
- Undeveloped and poor-quality national infrastructure (roads, power, water);
- Oil-dependent national economy (accounting for almost the totality of exports and 60% of GDP).

The insecurity and restrictions due to armed groups also means that many of the most vulnerable are not receiving aid, which further drives malnutrition. Aid workers are routinely targeted by all sides and aid convoys are often attacked and looted – as a result by the end of 2017, 95 aid workers had been killed since the conflict started in 2013 (UNICEF, 2017a: 4). 1,159 humanitarian access incidents were reported in 2017, well above the 908 reported the previous year. Nearly half of the cases involved violence against humanitarian personnel and assets (Oxfam, 2018: 7). The violence that aid workers face have disrupted relief operations and prevented aid from reaching core communities, whilst important emergency nutrition supplies have also been looted. Figure 4 demonstrates how conflict is occurring across the entire country. The security situation across South Sudan remains volatile due to intermittent clashes between the government forces and different armed groups, particularly in Upper Nile, Jonglei, Western Bahr Ghazal and the Greater Equatoria region. While efforts have been made to bring forward the peace process, this has resulted in little change to the security situation on the ground. The ongoing violence limits humanitarian access to the affected areas leaving vulnerable people without humanitarian assistance (UNICEF, 2017b).

At the same time, these attacks against aid workers have also resulted in the evacuation of humanitarian staff, which has prevented important assistance from being delivered. For example, following an attack on the International Committee of the Red Cross (ICRC) compound in Leer on 10 April 2018, the ICRC evacuated its personnel from Juba and suspended operations in Leer – including the planned distribution of seeds and tools for up to 16,000 people in need of agricultural assistance (USAID, 2018: 2). Care argue that without a permanent ceasefire and a

sustainable peace agreement humanitarian actors will be unable to provide lifesaving assistance to the most vulnerable who suffer from severe malnutrition.⁴

Figure 4: Distribution and Density of Conflict Events, March 1 to June 30, 2017



Source: UNDP, 2017: 9

The vast majority of the population relies on farming, fishing or herding for their livelihoods, but fighting has forced some four million people to abandon their homes and with it their source of income and food. Additionally, areas hosting these displaced people are under considerable strain to provide food and food resources are scarce (UNICEF, 2017a). The constant displacement of people due to conflict means that aid is needed in new areas, whilst the level of self-subsistence farming is constantly decreasing. The migration of cattle herders also results in cattle loss, the spread of bovine diseases, as well as less production of milk, thus further worsening food security (USAID, 2018). Additionally, the high number of returnees to certain areas also puts strain on the food supply and due to damaged properties and people living with family it results in large households, with a mean household size of 10, leading to household rations being shared amongst too many people. Due to the conflict there is also an absence of men from the household and as men can earn more than women this also puts a stress on the household's ability to purchase food during periods of scarcity (Paul et al., 2014).

Although 2018 saw heavy rainfall as opposed to 2017's dry spells, due to conflict there were not the crops for the rain to fall on, resulting in low production of food in South Sudan. Food production has plummeted as a result of continuous fighting. Those that have not fled are only

⁴ <https://www.care.org/newsroom/press/press-releases/four-years-south-sudan-conflict-hunger-and-malnutrition-continue-rise>

able to cultivate small areas around their homes due to insecurity, meaning they do not have enough food for their families, let alone to trade or sell. Many villages have been burnt down by warring parties, meaning that even if people do manage to return it takes along time to actually rebuild their livelihoods (Oxfam, 2018). According to UNDP (2017: 10) over 50% of all harvests have been lost in areas affected by violence since 2013 due to inaccessibility or loss of farmland and livestock, non-availability of essential inputs and the destruction of agricultural infrastructure and equipment.

3. Inflation

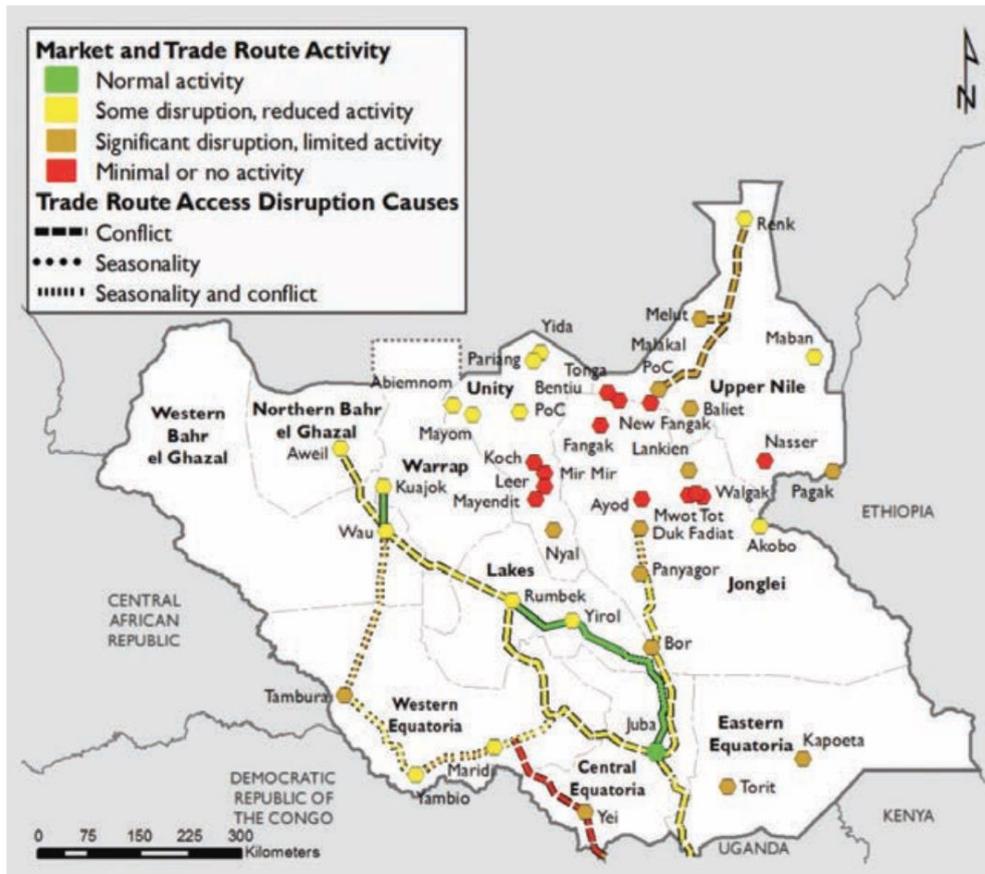
The economic crisis in South Sudan has led to an inflation rate which has at times reached as high as 800%, which has plunged millions of people deeper into poverty and food insecurity. For example, in January 2015 a 3.5 kilo bag of sorghum cost 16 South Sudanese Pounds in Juba stores, whereas in October 2017 it cost 395 pounds, and during the lean season in June 2017 the price was as high as 462 pounds (UNICEF, 2017a: 4). As a result of the conflict government revenues have collapsed due to the disruption of oil production, which accounted for over 90% of receipts and has thus resulted in the depreciation of the South Sudanese Pound. As a result of declines in oil production and agricultural productivity, GDP has contracted significantly, which has led to a decline in household purchasing power and a sharp increase in poverty. Additionally, this impacts on the ability to import food to cover for the loss of production, as the increase in poverty and decline in government revenues makes importing too expensive (UNDP, 2017: 12).

In early 2018, 55% of households in the three Equatoria regions⁵ reported less purchasing power than in early 2017, whilst 60% of households reported that the markets were their main source of food commodities, making inflation a direct inhibitor to access to food. As a result, 97% of households surveyed in the capital Juba reported only eating one meal a day (USAID, 2018: 3). Due to the disrupted planting and harvesting as a result of the conflict food prices have increased dramatically. Moreover, the conflict has also increased the transportation costs of food, adding to the price for the end user, as roads are closed and rivers obstructed – illustrated in Figure 5. Additionally, access restrictions, informal levies, and seizure/ theft of goods have all added to the price of goods (UNDP, 2017).

From a diet perspective this has resulted in very restricted diets meaning that the population is not getting enough nutrients. According to Oxfam (2018: 5), 85% of a family's income is spent on food in South Sudan, as demonstrated in Figure 6.

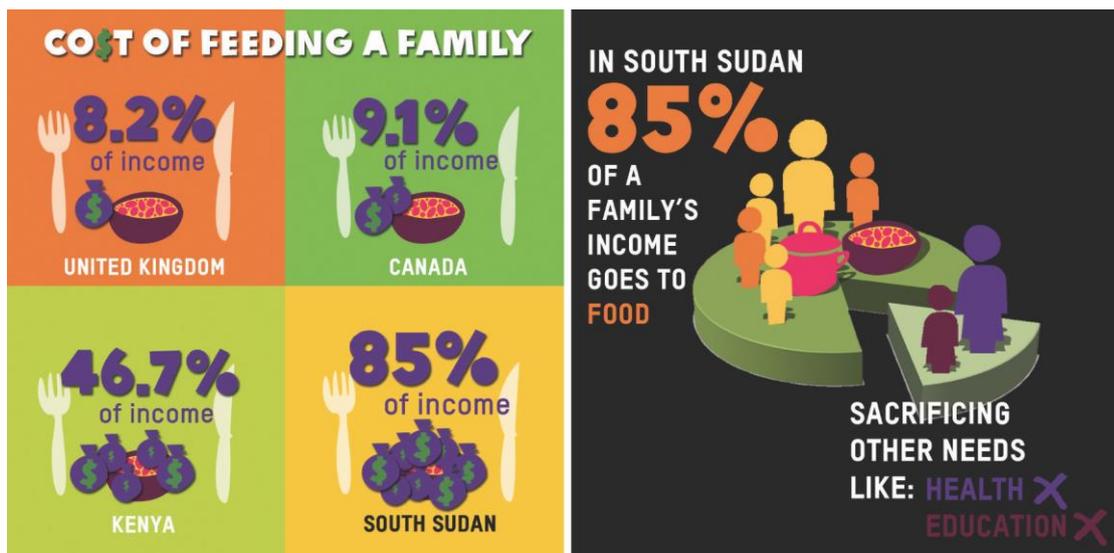
⁵ See map on p. 3.

Figure 5: Market and Trade Route Activity



Source: UNDP, 2017: 11

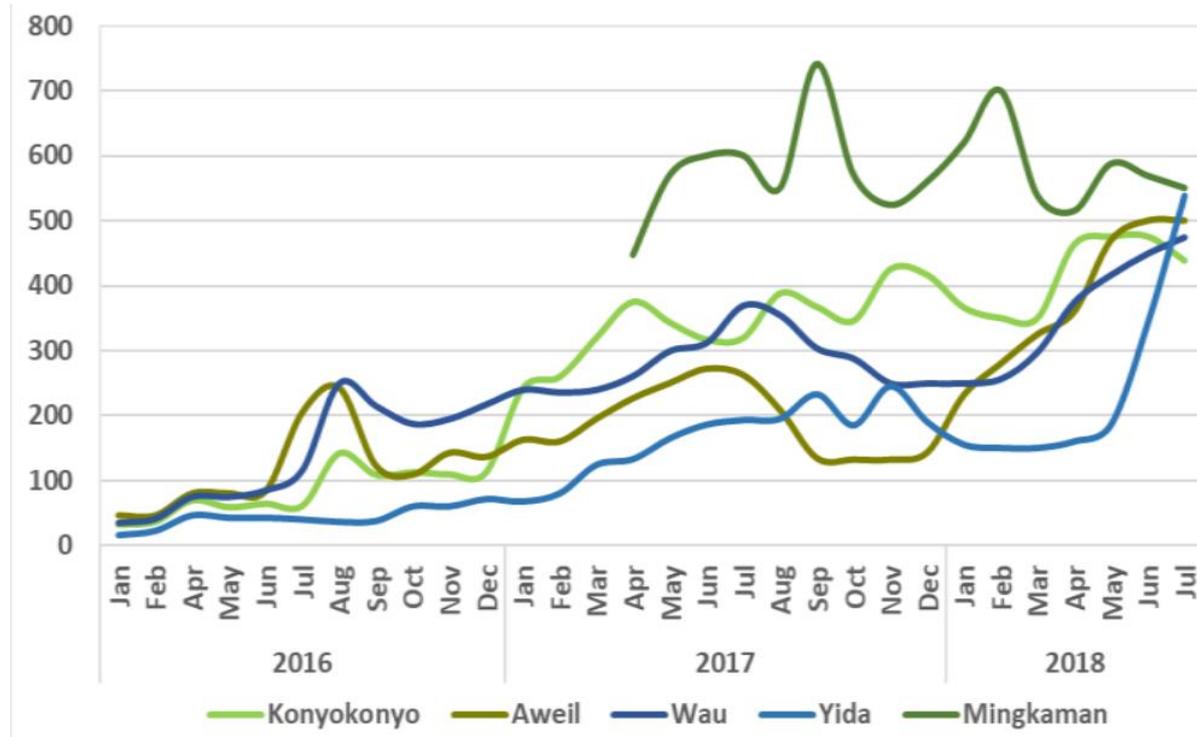
Figure 6: Percentage of income spent on food



Source: Oxfam, 2018

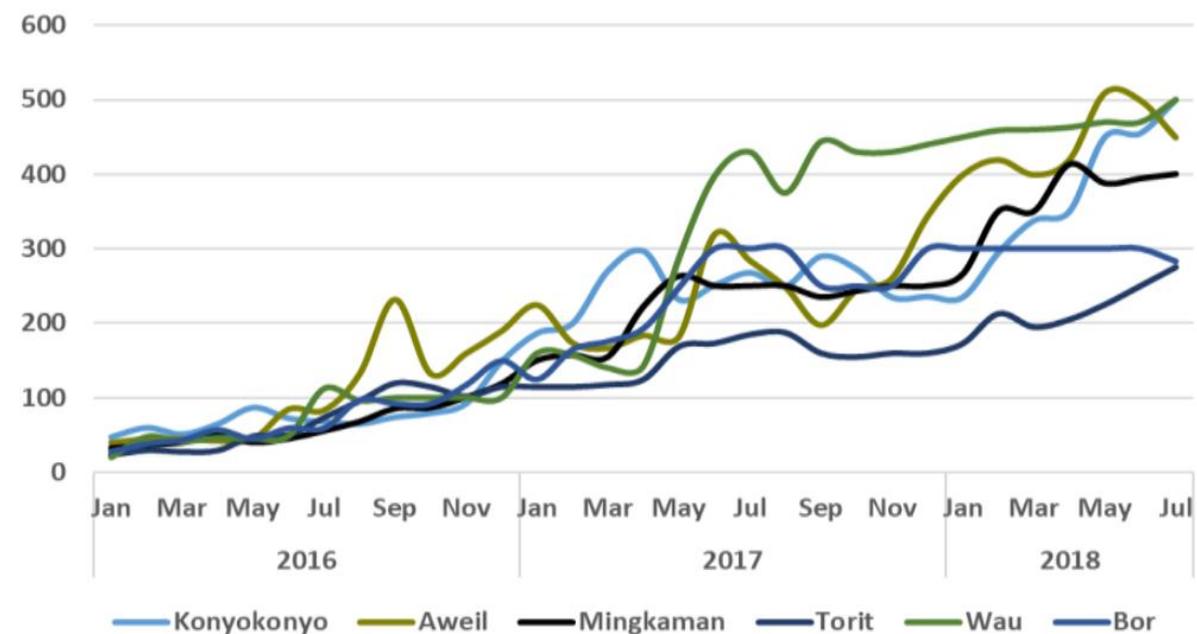
Although food prices differ drastically during different times of the year due to availability and the food market is not stable, there has been a significant year on year increase in food prices, as demonstrated in the two graphs below.

Figure 7: White Sorghum price in South Sudanese Pounds per 3.5kg bag



Source: WFP, 2018: 2

Figure 8: Field Beans price in South Sudanese Pounds per kg



Source: WFP, 2018: 3

4. Health and Water, Sanitation and Hygiene (WASH)

South Sudan's health system, which was not in good shape before the conflict, is currently at breaking point. Health facilities have been routinely looted or destroyed as part of the conflict, whilst health workers have not been paid. Not only does the lack of health facilities prevent people from being treated at the early stages of malnutrition, it also results in diseases that exacerbate malnutrition, such as cholera, going untreated and spreading across the country (UNICEF, 2017a). A survey conducted by the International Rescue Committee (IRC) in Aweil South County showed that nearly 60% of severely malnourished children were not receiving treatment through static facilities. Caregivers identified the distance and inaccessibility of facilities and the cost of reaching them, as some of the main obstacles to getting care (IRC, 2018: 3). In a study of household eating patterns in Warrap and Northern Bahr-el-Gazal States, it was found that women often eat last, even if they are pregnant or breastfeeding, resulting in them having the smallest portion. This not only has a detrimental impact on their nutrition, but also that of their unborn or breastfeeding children (Paul et al., 2014).

The conflict has severely restricted access to safe water and basic sanitation facilities and fighting has also made it impossible to repair or maintain facilities in some areas. Whilst in safer areas the influx of people has put a strain on the system. This has resulted in people getting water directly from contaminated rivers or streams (UNICEF, 2017a). Water and sanitation are crucial to tackling the crisis in South Sudan, as unsafe water, poor sanitation and hygiene can be deadly when paired with hunger. They can cause diarrhoea, cholera, etc., which in turn result in dehydration and prevent people from absorbing nutrients from food. This creates a vicious cycle, as malnutrition weakens the immune system making the body more susceptible to disease.⁶ In 2017 South Sudan was in the middle of the most severe and protracted cholera outbreak in its history, with 13,880 cholera cases and 243 cholera deaths reported by July, 2017 (UNICEF, 2017b: 1). Natural and health emergencies including drought, flooding and cholera outbreaks have created additional demands for access to basic WASH services, while putting strain on the limited existing facilities and services. Moreover, the current economic crisis has jeopardised the operation and maintenance of WASH facilities (UNICEF, 2017b). Access to safe water supply and proper sanitation are key drivers of nutrition in Sudan. Some two thirds of the population practice open defecation (toilet in the open), which contributes to contamination of water sources resulting in disease outbreak such as diarrhoea. Diarrhoea and vomiting leads to people not taking enough nutrients from the food and also leads to loss of appetite.⁷

In many parts of South Sudan wild plants are a critical part of the regular local diet, however due conflict many people are relying predominantly on what they can forage. This has led to people eating less preferable plants that have fewer nutrients and often result in diarrhoea, which further worsens malnutrition. When this is paired with the failing health system it further exacerbates malnutrition as people are eating to prevent hunger, but are not gaining adequate nutrients and are losing nutrients through sickness (Oxfam, 2018).

⁶ <https://www.oxfamamerica.org/explore/stories/years-of-conflict-puts-south-sudan-on-the-brink-of-famine/>

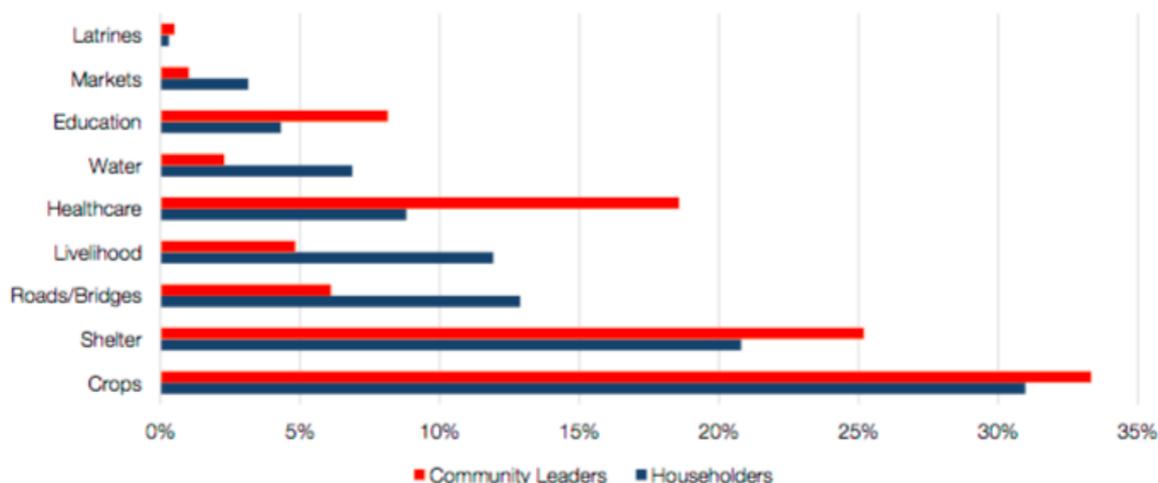
⁷ https://medium.com/@UNICEF_Sudan/diarrhoea-a-key-driver-of-malnutrition-in-sudan-4e1c61fbf507

5. Climate and Farming

According to the Food and Agriculture Organisation of the United Nations (FAO) up to 90% of South Sudan's population is reliant on farming, fishing or herding to meet their food and income needs, which makes the country extremely vulnerable to adverse conditions.⁸ Moreover, South Sudan is one of the most vulnerable countries to climate change due to the dependence of its population on climate-sensitive natural resources for their livelihoods (BRACED, 2018).

The rainy season is starting later than it did in previous generations, but with harder and more damaging rains, which results in flash flooding that damage or destroy crops before food can be harvested. These conditions prevent people from being able to feed themselves and from building up financial assets. Additionally, they are no longer getting the early rains that used to soften the soil for early tilling and allowing crops to start growing by March and April. Due to the lack of early rains the plants do not get to a good size by the time the heavy rains come, and thus flash flooding occurs when plants are still small and leaves are commonly shredded or the entire plant is washed away (BRACED, 2018). Irregular rains have also reduced the quantity and quality of crops, making the lean season particularly bad.⁹ Farmers in South Sudan largely rely on rain-fed crop production, which means that delayed rains can result in poor or no harvests and heavy rains can waterlog fields and destroy stocks. Additionally, the conflict often means farmers are forced from their fields during key times in the planting season, resulting in loss of production.¹⁰ Figure 9 below demonstrates that crop damage and destruction is the most critical negative impact of flooding for the community in South Sudan.

Figure 9: Most Important Services or Activities Impacted by Flood Destruction or Disruption



Source: BRACED, 2018: 20

One of the issues following the conflict is those returning to farming land are no longer using animals to plough larger areas of land, as many lack skills or ploughs. This means that crops are

⁸ <http://www.fao.org/emergencies/countries/detail/en/c/147627/>

⁹ <https://www.msf.org/south-sudan-malnutrition-rise-pibor>

¹⁰ <http://www.fao.org/emergencies/countries/detail/en/c/147627/>

not as large, resulting in harvests too small to last through the lean season.¹¹ Local varieties of seeds have been proven to be the most resilient to adverse weather conditions, however, there is no community storage or market system and these can be lost as a result of conflict, or even eaten when there is no other food. As a result many people have to use less resilient types of seeds that they are given or buy in the market, which leads to a higher loss of crops (BRACED, 2018). Due to poor crop and livestock production many people have resorted to negative livelihood strategies such as distress sales of seeds and livestock, and the sale of natural resources, including charcoal, grass and firewood, which contribute to environmental degradation. This short-term fix heightens food insecurity in the long-term (UNDP, 2017).

According to FAO endemic diseases (such as haemorrhagic septicaemia, contagious bovine pleuropneumonia, anthrax and *peste des petits ruminants*) are undermining livestock production and threatening the livelihoods of 65% of South Sudan's population. Migration due to the conflict has further spread diseases whilst the government does not have the capacity to monitor, control and respond to these diseases. Additionally, it takes a significant amount of time to grow the herd back the most severe point of crises, which thus has repercussions for nutrition long after the crises has ended.¹²

Native to the Americas, Fall Armyworm was first reported in South Sudan in 2017 and the pest has now spread across the entire country, with the highest level of infestation recorded in the Eastern Equatoria and Central Equatoria regions. The Fall Armyworm feeds on more than 80 host plants, but prefers the major staple crops in South Sudan maize and sorghum. The reported data from the Greater Equatoria and Bahr el Ghazal regions indicate that yield losses in maize could be between 20-50% and the losses in the more resilient sorghum 10-30%. However, FAO have been training local communities management techniques to lower the damage from the pest.¹³

Grünewald (2010) argues that food aid weakens local resilience, as due to the geographic and climatic dynamics the local population formed strong social systems and sophisticated survival mechanisms, which have been weakened by the aid system. With the migration of people and the urbanisation of the population a massive effort is needed to grow the economy at both the rural and urban levels (long term development efforts), however these remain under-financed and the largest amount of resources continues to go to food aid (short term solution).

¹¹ <https://www.clovekvtsni.cz/en/multi-sectoral-interventions-are-key-to-preventing-undernutrition-in-south-sudan-2250gp>

¹² <http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1154585/>

¹³ <http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1154585/>

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Key websites

- BRACED: <http://www.braced.org>
- FAO South Sudan: <http://www.fao.org/south-sudan/en/>
- UNICEF South Sudan: <https://www.unicef.org/southsudan/>

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