Key considerations: Alleviating chronic food insecurity in South Sudan

The Republic of South Sudan has experienced chronic food insecurity for decades and particularly in the last five years. This chronic food insecurity is a result of a combination of factors, including protracted conflicts, socio-economic fragility, lack of infrastructure, climate change and conflicts and wars in Sudan, Ukraine and the Middle East. In response, the South Sudan Government, UN agencies and international and national non-governmental actors have adopted measures to deal with the ongoing humanitarian crisis. Investing in the agricultural sector may offer a sustainable route to potentially alleviate the chronic food insecurity crisis.

This brief describes the scale of the food insecurity facing populations in South Sudan. It also analyses the causes of food insecurity, responses by government and non-government actors and partners, and offers considerations for these actors to support ending food insecurity, especially via bolstering agriculture and livelihoods. This brief draws on published texts, grey literature (especially government and non-governmental organisation reports), print and online media releases, and discussions with politicians and civil servants from institutions that focus on food insecurity in South Sudan.

Key considerations

- **Investing in agriculture, especially subsistence activities that most South Sudanese rely on, can help alleviate chronic food insecurity over the medium- to long-term.** In addition to strengthening immediate humanitarian responses, more resources should be committed to bolstering this crucial sector.

- **Scaling up investment in agriculture could involve reviewing and potentially resuming paused agricultural schemes as well as establishing new nutrition-sensitive initiatives.** Design all efforts to support equitable, sustainable and nutrition-sensitive outcomes that benefit all people, especially the most vulnerable.

- **Harnessing South Sudan’s abundant water resources could help boost agriculture and provide access to clean water, if done sustainably and equitably.** Water infrastructure projects can be contentious and should be designed carefully in partnership with communities and with social and ecological considerations in mind.

- **Strengthening subsistence fishing as well as sustainable aquaculture could improve household food security and nutrition.** Interventions such as providing fish preservation equipment and training could help.

- **Designing market-based interventions carefully could help get surplus crops and livestock to markets, potentially raising government revenues and reducing poverty.** However, this must be approached cautiously to avoid disrupting the subsistence agricultural systems that are crucial for food security, especially among vulnerable populations.

- **Building climate-resilient infrastructure, such as flood-resistant roads, in rural areas could support food security.** This infrastructure would enable people to move more easily to more food secure areas in times of flood or drought. The roads and other infrastructure would also provide channels for households to move surplus produce to markets and help raise household incomes.

- **Introducing climate-smart agricultural practices and crops could help mitigate the increasing flood and drought risks that threaten food production and security.** Existing cropping and husbandry practices could be enhanced for example, by integrating flood-resistant rice and drought-resistant yams or cassava, and exploring other adaptive measures.
- **Enhancing regional trade and infrastructure connections could help small-scale economic activities that support livelihoods and boost incomes.** Key commodities include gum arabic, cattle, hides and fish that some households already trade on a small-scale basis.

- **Investing further in nutrition-sensitive healthcare, especially for pregnant women and young children, is critical.** Priorities include enhancing community management of acute malnutrition programmes and nutrition monitoring systems.

- **Advancing sustainable peace is fundamental to improving food security.** The government should fully implement the Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS) and support local peacebuilding beyond only dialogues, including by engaging youth and providing economic opportunities in their communities. Careful natural resource management is also key to preventing conflicts.

**Scale of food insecurity**

A significant proportion of the population of South Sudan has faced acute food insecurity over the last five years. Between 2019 and 2023, data indicate that more than half of people in South Sudan (54%) were food insecure, as defined under the Integrated Food Security Phase Classification (IPC) three or higher (Figure 1). Phase 3 classification of this standardised scale for measuring food insecurity means the population are in crisis mode and are barely able to meet their minimum food needs. The map in Figure 2 shows the level of food insecurity according to the IPC classification, as of late 2023. Nearly the entire country was classed as being in crisis, while several areas were under emergency classification, and no area could be considered as facing ‘minimal’ food insecurity.

**Figure 1. Acute food insecurity affecting the South Sudan population, 2019-2023**

![Chart showing the percentage of the population facing acute food insecurity from 2019 to 2023. The chart indicates a gradual increase in food insecurity from 2019 to 2023, with a peak in 2022.](chart)

Source: Authors’ own. Created using data from Integrated Food Security Phase Classification (IPC) reports 2019, 2020, 2021, 2022, and 2023.1-6
In the context of South Sudan, the most severe food insecurity has multiple and interrelated causes. Some parts of the country, such as counties around the Sudd wetlands, have experienced extensive flooding that has damaged houses, destroyed road networks, disrupted food production and caused people to be displaced for long periods. Together with existing vulnerabilities, such as lack of market access, baseline health problems and food insecurity, the flooding has worsened the food insecurity situation and induced more acute malnutrition.

There are two wars happening in South Sudan: a conventional war, fought by conventional political/military parties and communal conflicts. The conventional conflict among political parties started in 2013 and is being fought along ethnic lines, Dinka and Nuer. The communal conflict is not along ethnic lines and is mostly among cattle herders within a given area over cattle raiding, grazing land, water points or revenge. Conflicts have also caused the displacement of people and their animals, disrupted livelihoods and forced people to survive on wild food. For example, the war that broke out in 2013 – and escalated in 2016 – displaced millions more people into refugee camps in neighbouring countries. Regularly occurring epidemics of infectious diseases such as cholera (a recent outbreak was declared in Malakal, Upper Nile province in March 2024) and contagious bovine pleuropneumonia among animal populations further hinder people’s ability to farm. Low agricultural productivity can also result from crop pests and diseases, further contributing to widespread food insecurity. More on the specific drivers of food insecurity is presented in the next section.
Drivers of food insecurity in South Sudan

This section presents the state of food insecurity in South Sudan, especially due to protracted conflict and fragility.

Socio-political drivers

South Sudan has been engaged in multiple internal and external conflicts for decades. Following a period of colonial exploitation, which itself inflamed tensions between the north and south, the first war started in 1955 as a struggle for independence of the southern region from what was then Sudan. The war ended in 1972 with the signing of the Addis Ababa Agreement, which paved the way for the establishment of an autonomous southern regional government. In 1983, the Government of Sudan defied the peace deal, igniting the second war, which ceased in 2005 with the Comprehensive Peace Agreement (CPA). During the second Sudanese war, large areas of the country held by rebel forces (Sudan People’s Liberation Movement, SPLM), suffered chronic famine conditions in part because food was used as a weapon by the warring factions. For example, the infamous 1998 Sudan famine affected the entire Bahr el Ghazal region, killing an estimated 70,000 people and displacing many more. Insecurity in areas occupied by rebels made it difficult for ordinary people to farm, while the government cut off some areas from trade, movement or aid. A concomitant drought and a slow response from the international community compounded the famine. Mainly in response to this humanitarian crisis, the UN initiated Operation Lifeline Sudan (OLS), a groundbreaking programme that enabled the delivery of food to hungry populations in the midst of war.

In 2011, South Sudan seceded from Sudan after an internationally supervised referendum. Food insecurity remains a pressing issue due to the prolonged legacy of conflict, asset depletion and climate change. In 2013, the country descended again into war with catastrophic humanitarian repercussions, including acute and widespread food insecurity. In 2015, the warring parties agreed to a peace deal, the Agreement on the Resolution of the Conflict in the Republic of South Sudan (ARCSS), which subsequently collapsed in 2016. In 2018, the parties signed the Revitalised Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS). At the peak of the conflict, however, an estimated 7.1 million South Sudanese people were in crisis, with many out of reach of humanitarian organisations and facing acute food insecurity due to the fighting.

The implementation of the R-ARCSS has led to a substantial reduction of violence and the formation of the Revitalised Transitional Government of National Unity (RTGoNU) in 2020. However, some armed groups refused to sign the agreement. One group in particular, the National Salvation Front (NAS), continues to engage in sporadic armed attacks against the government army in confined areas of Yei district, in Central Equatoria state and in small parts of Western Equatoria state. While the security situation has improved overall, data provided by UN Human Right Divisions suggests that incidents of violent conflict remain an important issue. Inter-communal conflicts – often among cattle-keeping communities and between cattle-keeping and farming communities over land use – as well as road ambushes and armed robberies remain a persistent problem.

Displacement in South Sudan is significant, with 2.3 million internally displaced people and 2.4 million refugees in neighbouring countries, including Uganda, Sudan, Ethiopia, Kenya and the Democratic Republic of Congo. More than half of those displaced have been children. Many of the internally displaced people and refugees have been forced to relocate to camps and other spaces where they rely on humanitarian assistance. Compounding matters, the country has been receiving large numbers of returnees and refugees from the ongoing Sudan conflict. Many of these new arrivals are experiencing ‘widespread severe food insecurity and acute malnutrition.’ As of 29 January 2024, more than five million people were reported to have fled from Sudan into South Sudan.
There are ongoing efforts to alleviate the suffering by government institutions, especially the Ministry of Humanitarian Affairs and Disaster Management and the Relief and Rehabilitation Commission (the Ministry’s operational arm), as well as by humanitarian agencies. However, there are still formidable challenges, including the difficulty of mobilising resources and enhancing resilience. The government lacks resources and capacity to handle humanitarian crises, while humanitarian agencies are overwhelmed by the sheer scale of need.

**Protracted insecurity**

Security is a major challenge to food security in South Sudan. The insecurity is fuelled by disputes between the government army, the South Sudan People’s Defence Forces (SSPDF) and rebel groups (e.g., NAS) as well as inter-communal conflicts involving armed militias.

Although the major armed groups and political parties signed a peace agreement in 2018, there are still groups that continue to wage war against government forces. These include a hold-out group of the NAS concentrated mainly around Yei County of Central Equatoria state and in parts of Western Equatoria state, and intermittent battles between other armed proxy groups, either allied to the government or the main armed opposition rebel group (SPLM). There have been on-and-off talks with the hold-out groups, with limited success.

Inter-communal conflicts are also a long-standing challenge that have become more lethal in recent years due to the proliferation of weapons across the population. Data from 2020 and 2021 show increasing numbers of civilians falling victim to violent incidents perpetuated by armed civilians. These conflicts are persistent, especially among cattle-keeping communities, some of whom often engage in cattle rustling and theft. A drive for revenge, lack of economic opportunities for young people and resource competition between herders and farming communities can also trigger violence. In 2022, more than half of all recorded violent incidents in the country were reported in Warrap, Jonglei and Eastern Equatoria states, which have a large population of cattle farmers. Since the signing of the R-ARCSS in 2018, community-based militias have also been responsible for most of the violent incidents and civilian deaths. These communal conflicts exert enormous negative impacts on livelihoods, including the loss of cattle and other resources, and the disruption of agricultural activities.

Communal conflicts have also been driven partially by changes in formal governance structures. Before 2015, South Sudan had 10 states each divided into counties, payams and bomas as units of local government, in addition to two administrative areas (Abyei Special Administrative Area and Greater Pibor Administrative Area). In 2015 and 2017, this structure changed to 28 states and then 32 states, respectively. President Salva Kiir Mayardit reverted the structure back to 10 states and three administrative areas (Abyei, Pibor and Ruweng) in early 2020. This resulted in the removal from office of a great number of governors, county commissioners and constitutional post holders from the defunct states. This created power vacuums at state and county levels and increased communal conflicts where armed civilians fought due to disputes over issues such as grazing land, water points cattle raiding and revenge killing. Although the new governors and commissioners were appointed in late 2020, the communal conflicts that started in the transition had already become deeply entrenched. Although the violence peaked from 2020 to 2022, it has gradually reduced since then, primarily because politically conflicting parties to the agreement have mostly honoured the ceasefire. Figure 3 shows the number of armed violent incidents and number of victims per year – people killed, injured, abducted or subjected to conflict-related sexual violence.
Climate change

South Sudan is extremely vulnerable to environmental shocks. The Global Climate Risk Index ranks the country among the most vulnerable because of frequent occurrences of natural hazards, including floods, droughts and climate-related epidemics. The country has recorded widespread flooding for the last four consecutive years, with over 750,000 people affected each year. According to UNICEF, ‘in recent years up to half of all counties in South Sudan were affected by floods. The inhabitants of Jonglei, Unity and Upper Nile states were the hardest hit, and represented 75% of the affected population.’

The negative impacts of flooding are escalating. These impacts include death, displacement of people and animals, infrastructure damage and disruption to trade and agricultural and other economic activities. Some of the displaced pastoralists have moved to crop-growing areas leading to conflicts with local communities, especially in the states of Eastern Equatoria, Central Equatoria and Western Equatoria.

Due to the erratic weather patterns in South Sudan, droughts have been affecting parts of the state of Eastern Equatoria and other places, and there was below-average rainfall during the 2023 farming season. This is consistent with forecasts produced by the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC), which predicted that parts of South Sudan and countries in the Horn of Africa would receive insufficient rainfall in 2023. Therefore, ‘drier-than-average conditions and severe rainfall deficits in South Sudan negatively impact agricultural production’, resulting in acute food insecurity, malnutrition and high humanitarian needs for the year 2024.

In 2020, South Sudan, along with other countries in the Greater Horn of Africa, faced a locust invasion – its first in more than 70 years. Crops and grazing land were destroyed, with the most affected communities being in Central Equatoria, Eastern Equatoria, Jonglei, Northern Bahr el Ghazal and Upper states. Locust-related issues will likely worsen in the future as warmer temperatures and altered rainfall patterns due to climate change may expand locust-suitable habitats and weaken agricultural systems.
While South Sudan is particularly vulnerable to climate shocks because much of the population relies on subsistence agriculture and there is limited access to markets, this may also be an opportunity. Many people are largely self-reliant and thus not vulnerable to outside price shocks and trade disruptions. This means that equitable and context-appropriate improvements and changes could potentially boost their ability to respond appropriately to food security.

**Economic dimension of food security**

South Sudan is landlocked and one of the poorest countries in the world. According to the World Bank, about 82% of the population live below the national poverty line, while a large proportion of people rely on subsistence and non-cash-based activities. Life expectancy in South Sudan is only 58 years and is in part due to one of the highest under-five mortality rates globally at nearly one in 10 children.

According to the IPC, between July 2023 and June 2024 in South Sudan, an estimated 1.65 million children under five and 870,000 pregnant or lactating women were expected to be acutely malnourished and in need of treatment. Increasing food insecurity also often exacerbates gender-based violence due to the stressors and frustrations it causes to households.

Research in Pibor and Akobo counties in Jonglei State found that severe food insecurity was exposing women to increased risks of violence due to being forced to forage for wild food, firewood and water for their families.

In South Sudan, 60% of the gross domestic product (GDP) and more than 95% of the national income is generated from crude oil, but none of this income is invested in agriculture. However, poor security, flooding, poor governance and fluctuations of global oil prices have had a significant negative impact on the oil sector over the years.

South Sudan has been experiencing runaway inflation and depreciation of its currency. Market prices of basic commodities, such as food, clothing, soap and salt, have been increasing, making it difficult for ordinary people to afford them. Given the very nascent diversity of industry unrelated to subsistence living, the country heavily relies on imported goods mostly from neighbouring countries. Movement of these goods – and humanitarian relief – is often challenging due to poor infrastructure (especially road networks), conflict and flooding.

Due to its economic crisis, South Sudan has been unable to provide adequate basic services to its citizens. Healthcare is critically deficient and depends on external funding. The poor state of sanitation and health services, including low immunisation coverage, has not improved preventable endemic diseases, such as measles, malaria and other waterborne diseases. This, in turn, has amplified malnutrition due to food insecurity. The situation deteriorated further during the COVID-19 pandemic when the government implemented COVID-19 preventive measures. These measures included lockdowns from mid-April 2019 to December 2020, strict travel restrictions and measures to prevent large gatherings. The measures contributed to shortages of food in the market, high prices and disruptions to humanitarian food aid distribution.

Lockdowns were also associated with a drastic drop in household income sources, losses in family businesses and school dropouts, the effects of which are still being felt.

Against this background, South Sudan could take robust measures to reduce its dependence on oil. Such dependence is not sustainable in the short- or long-term as it is highly exposed to external fluctuation and global shocks, while corruption surrounds its production. The agriculture sector presents hope for addressing the country’s economic challenges. At present, it contributes only 9% towards GDP, but investments have the potential to support a large proportion of the country’s population, as more than 78% of South Sudanese engage in agricultural activities and so depend on it for their livelihood. There is a need not just to increase agricultural production, but to ensure systems are nutrition-sensitive and climate-smart. This might be achieved through a range of approaches from diversifying the types of foods grown – for example, integrating flood and drought resistant rice, yams and cassava – to agroecological or other improved and sustainable production techniques. Improved veterinary
services and vaccination of livestock against common diseases can also improve agricultural output and food security.  

For agricultural improvements to be sustained, multisectoral challenges need to be addressed. After all, conflicts in rural areas, impacts of climate change (especially flooding and droughts) and displacement of people and animals have been the main reasons behind a decrease in agricultural production over the past five years.

Farmers also face other challenges, including inadequate access to basic tools and production techniques, and difficulties in reaching the markets due to insecurity and poor road networks. The difficulties in the rural areas have led to the migration of many people, especially youth of both genders (ages from 16 to 30), to urban areas where jobs are scarce. The service sector, a major source of jobs in other countries, is weak in South Sudan. This sector is dominated by foreigners, many of whom employ people from their countries. The few opportunities for local people are selling food, construction, motorcycle transport and other small-scale trades. The public sector is the largest employer in urban settings, where workers are often underpaid and receive their salaries irregularly. As a result, many young people are under-employed or unemployed.

Unemployment, which leaders of the country often talk about during public events (e.g., Governors’ Forum held in December 2023), poses significant challenges not only for people’s individual well-being, but also broader security concerns. For example, insecurity can breed more insecurity as men and boys are coerced or forced to join armed groups. Lack of economic opportunities for youth can drive them to engage in negative activities, such as addiction to alcohol or other harmful substances, while girls may resort to prostitution or underage marriage.

**External wars**

Some of South Sudan’s challenges are amplified by events occurring abroad, particularly the ongoing wars in Sudan, Ukraine and the Middle East.

**Sudan war, April 2023 to present**

South Sudan has remained economically dependent on Sudan since seceding in 2011 and consequently the ongoing war in Sudan has directly affected the country. For instance, South Sudan exports its crude oil through pipelines which pass through Sudan to terminals at Port Sudan. The risk of disruption to this activity – and thus the revenue it provides – remains high. Cross-border trade has also been disrupted severely, especially for states bordering Sudan in which nearly 50% of the country’s population lives and which are dependent on goods and services from Sudan. Also, the flight of refugees and returnees into South Sudan from Sudan has worsened existing humanitarian challenges and contributed to low agricultural productivity.

**Ukraine war, February 2022 to present**

Like many low-income countries dependent on assistance from donors, South Sudan is affected by the ongoing conflict in Ukraine. The war has significantly affected grain prices and flows globally, especially to low-income countries. Reports show that the conflict in Ukraine continues to have negative repercussions on agricultural commodities and food access in the Horn of Africa. Food aid has also been curtailed; for instance, the World Food Programme suspended support to 1.7 million people in South Sudan in 2022 due to donors diverting humanitarian funding to the war in Ukraine. Furthermore, despite exporting crude oil, South Sudan needs to import fuel. Along with other countries in the region, it has experienced notable increases in the price of fuel as well as rising inflation rates. This has placed a huge burden on the most vulnerable households, further impacting their ability to secure food. In East Africa overall, currencies continue to depreciate against the US dollar, with the South Sudan pound depreciating the most.
Conflicts in the Middle East, October 2023 to present

The ongoing conflicts in the Middle East, including attacks on shipping in the Red Sea, are having a negative economic impact on supply chains, including the exportation of crude oil from South Sudan and the importation of food into the country. The ripple effects of the conflicts will affect the economies of poor countries, including landlocked South Sudan, which is economically dependent on crude oil transported through the Red Sea and which presently has only one transportation route.

Responses to food insecurity

Government actions

The government has undertaken measures to address chronic food insecurity in the country. The Ministry of Agriculture and Food Security is the government agency tasked most directly with ensuring food and nutrition security. The ministry’s mandate is to ‘develop agriculture by ensuring that an effective organisational structure is put in place and is manned by staff capable of planning, coordinating, implementing, monitoring, and evaluating agricultural development programs.’ Another ministry with a key role in improving food production in South Sudan is the Ministry of Livestock and Fisheries, which is in charge of ‘protecting, promoting, exploiting and developing, on a sustainable basis, the livestock and fisheries resources, for the socio-economic prosperity of the people of South Sudan.’ Furthermore, the Ministry of Humanitarian Affairs and Disaster Management is a policymaking body mandated to oversee humanitarian work, and the Relief and Rehabilitation Commission (RRC) is its operational arm.

The Ministry of Agriculture and Food Security has been advocating for, and collaborating with, development partners to align their policies, strategies, plans and budgets with the South Sudan Government’s agencies. The ministry is providing direct oversight of projects worth USD 370 million. These include eight ongoing donor-funded projects and two projects in the pipeline. The ongoing projects are the Emergency Locust Response Project (ERLP); Resilient Agricultural Livelihoods Project (RALP); South Sudan Livelihoods and Resilience Project (SSLRP); South Sudan Safety Net Project (SSSNP); Agricultural Markets, Value Addition and Trade Development Project (AMVAT); Build Resilience for Food and Nutrition Security in the Horn of Africa (BREFONS); Strengthening Emergency Preparedness and Response to Food Crisis; and the South Sudan Emergency Food Production Programme (SSEFPP). The two pipeline projects are Rural Enterprise for Agricultural Development (READ) and the International Fund for Agricultural Development 12 Grant.

The South Sudan Government has a well-articulated vision in the Agenda 2030 to prioritise building a ‘prosperous, productive and innovative nation’ in part through increasing agricultural productivity to enhance food and nutrition security. Despite this, the country still lacks resources to achieve this vision and has allocated a very limited budget to the agriculture sector. The country is also overwhelmed by the challenges it faces. International donors are often mistrusting of the South Sudan Government’s agencies due to short track records and untested accountability mechanisms as well as instances of misuse.

Humanitarian organisation actions

There are many humanitarian organisations operating in South Sudan. These organisations serve the population with life-saving assistance and help build capacity to support vulnerable communities. Among the biggest humanitarian agencies that deal with food issues are the World Food Programme (WFP) and the Food and Agriculture Organization of United Nations (FAO).

The WFP focuses on five vital areas – distributing food aid, supporting climate resilience efforts, offering cash transfers, providing school meals and, in partnership with UNICEF, supporting nutrition and treatment for malnourished children and mothers. In 2023, the WFP estimated that 7.7 million people were facing severe food insecurity and asserted that it managed to provide
aid to 5.6 million people in the previous year in the country. Moreover, it reported that it succeeded in supporting 500,000 people a month in areas accessible only by air.\footnote{66}

The FAO in South Sudan takes the leading role in the ‘coordination and monitoring of humanitarian interventions in agriculture and livestock sectors in addition to collecting, analysing and disseminating high-quality, up-to-date information on food security, nutrition and natural resources.’\footnote{67} Also, the FAO engages in emergency and development interventions by providing lightweight crop, vegetable and fishing kits to help the production of nutritious food for consumption and sale. The FAO also conducts livestock vaccinations and veterinary treatments to protect vital livelihood assets, and it provides vouchers to enhance the nutrition and income-generation capacity of vulnerable displaced and host community families. The FAO also engages in long-term interventions which focus on crops, livestock, fisheries and forestry, and the interaction of these interventions with the environment.\footnote{67}

Despite the efforts of humanitarian agencies, there are still immense challenges. For example, as noted above, the WFP was forced to suspend food assistance to 1.7 million South Sudanese people in 2022 when malnutrition rates were at their highest due to donor funds being diverted to the crisis in Ukraine.\footnote{24} In October 2023, the WFP announced a funding shortfall of USD 536 million over the following six months, with food assistance reaching only 40% of the targeted population. Furthermore, those receiving aid were only receiving half rations, further entrenching food insecurity,\footnote{68} which was also compounded by soaring global food prices due to the Russia-Ukraine war, and climate change impacts in the form of localised floods, drought and conflict.\footnote{69}

The presence of multiple global crises has led to a diversion of focus and resources. This is likely to compromise the overall quality of programmes aimed at addressing food insecurity. Consequently, efforts and capacities to reach those who are particularly marginalised and at heightened risk of food insecurity, such as people with disabilities, may be reduced.

**Prospects for improving food security**

**Focus on agriculture**

South Sudan has abundant natural resources, which, if managed carefully and inclusively, could contribute to ensuring all its people can access food and nutrition security. At the same time, these resources could enable the country to wean itself from its current and unsustainable dependence on oil revenues.\footnote{70} In contrast to some of its neighbours, the country also has plentiful water resources.\footnote{71} Furthermore, livestock rearing and fisheries remain largely subsistence-oriented. Current revenues from oil sales could be used to further develop these sectors into even more viable livelihood opportunities for households as well as scaled-up production systems with the potential to generate revenues to supplant oil over time. Some key sectors are described below with the view to identifying sustainable opportunities for development.

**Crop production**

More than 90% of South Sudan’s land is arable, with over 50% of it suitable for crop production. So far, only 4% of the arable land is being cultivated. The main reasons for the low levels of cultivation are rudimentary farming practices, absence of infrastructure and the lack of access to financial services and private sector markets.\footnote{71} Over 78% of South Sudanese people are engaged in subsistence agricultural activities and yet generate just 15% of the national GDP.\footnote{72} Up to 95% of the population depends on farming, fishing or herding to meet their food and income needs.\footnote{51} With robust and targeted investments, bumper harvests are possible and could improve the livelihoods of millions of Sudanese.

Before the war between 1983 and 2005, there were several agricultural schemes in operation or planned. Some are still currently operational, albeit at low capacity. To support food and nutrition security, these schemes could potentially be rehabilitated or revived, while new schemes could also be started. Large-scale schemes will need both government and foreign
investments. Revitalising these agricultural schemes is in line with government’s agricultural strategy, which focuses on investment, promotion of trade, production, job creation and export of various agricultural products that include but are not limited to fruits, vegetables, natural honey, hides, oilseeds and gum arabic.\(^7\)

However, it is critical that there is a balance between agricultural schemes that prioritise scaled production and cash crops, whether for domestic consumption or export, and initiatives designed specifically to enhance livelihoods and nutrition. Thus, existing or defunct schemes could be reviewed and adapted to support these objectives, while entirely new initiatives could also be promoted. In all cases, the aim should be to encourage sustainable, inclusive and nutrition-sensitive operations and outcomes. For instance, provisions must be made to ensure that women are able to access benefits directly; women are the heads of most households and farm a significant proportion of the mostly small, hand-cultivated plots that provide subsistence\(^40\). Sustainable practices, such as agroecological techniques and climate-smart agriculture could also be promoted, as could a diversity of crops with high nutritional value for consumption and domestic markets.\(^52,54\)

Some large-scale agriculture schemes that could be reviewed and reopened in South Sudan, are presented in Table 1.

### Table 1. Agriculture schemes or projects in South Sudan

<table>
<thead>
<tr>
<th>Agricultural scheme or project</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melut Sugar Scheme</td>
<td>Initially planned to cover 35,000 feddans or 14,700 ha for planting and producing irrigated sugarcane in Upper Nile state. 42 ha were cultivated between 1979 and 1980. Construction of the irrigation infrastructure started in 1979 but stopped because war began in 1983. There were plans to restart it before the country’s independence in 2011, with the help of Sudan’s Kenana Company. The initial startup was supposed to have a capacity of 40,000 tons of sugarcane. The capacity was supposed to increase to 110,000 tons, which could be enough to satisfy either 50% or 60% of sugar consumption in the country.</td>
<td>Non-operational</td>
</tr>
<tr>
<td>Aweil Rice Scheme</td>
<td>Located on the southern bank of the Lol River in Northern Bahr el Ghazal State. Founded in 1944 by British colonial officials. The scheme was expanded in 1976 by the Government of Sudan with international aid. It was at its peak in the 1980s. The scheme benefited about 1,000 tenant farmers, but it ceased operations in 1986. Partially rehabilitated in 2007. A rehabilitation project encompassing an area of 4,500 ha was conducted in 2010 and the area was to be expanded to 6,500 ha to benefit around 2,000 households. In 2012, around 600 ha were planted with rice, and the area under rice cultivation doubled in 2013. It relies on semi-natural flood irrigation without an effect on the volume of water reaching the Nile since it uses water that would otherwise evaporate.</td>
<td>Partially operational</td>
</tr>
<tr>
<td>Mangalla or Mongalla Sugar and Agro-industrial Project</td>
<td>Located in Central Equatoria, this experimental station was established in the 1950s to grow sugarcane. Production shifted to Northern Sudan after the country’s independence in 1956 to a location with much less favourable conditions requiring heavy irrigation.</td>
<td>Non-operational</td>
</tr>
<tr>
<td>Wau Fruit and Vegetable Canning Factory</td>
<td>Located in Wau, the irrigation pump had a capacity to water only 1 feddan or 0.42 ha. The potential to jumpstart the project still remains.</td>
<td>Non-operational</td>
</tr>
<tr>
<td>Penykou rice pilot project</td>
<td>Located in Jonglei state. Around 125 ha of rice were planted in 1980-1981 under irrigation, with a maximum yield of 4.5 ton per ha.</td>
<td>Non-operational</td>
</tr>
<tr>
<td>Upper Talanga Tea Project</td>
<td>A planned area of 500 ha was to be under tea cultivation in the 1980s, including 85 ha cultivated by smallholder farmers in Eastern Equatoria state. Phase 1 was completed with 80 ha for tea and 30 ha for cereals, but war ended the project.</td>
<td>Non-operational</td>
</tr>
</tbody>
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Source: Authors’ own.
Livestock

In South Sudan, livestock play a critical role in food systems as well as in the livelihoods of pastoralist and agropastoralist communities. Of the animals that go to the biggest market in Juba, about 80% of the cattle and 40% of the small ruminants (e.g., goats and sheep) are supplied from within South Sudan. The other livestock are imported from Uganda and Kenya. Although livestock are integral to the economy, livestock are also a source of intercommunal conflict. Moreover, shocks related to climate change, such as floods and drought, have exacted a toll on livestock and livelihoods of agropastoralists.74

To ensure enhancement of food security, there is a need to provide vaccination and an extension of veterinary services to improve the general health of livestock. The FAO leads in livestock vaccination and provision of other veterinary services, but it often faces a shortage of funds to cover all the livestock around the country.75 In South Sudan's agropastoral societies, livestock serves not only as a source of nutrition but also as a form of wealth. The size of a herd can determine the area of land one can cultivate. This provides a strong incentive for households to increase their herd size and maintain the health of their animals.76

Fishery stocks

Aquaculture and fishing are key sectors that could be developed to support livelihoods, food security and nutrition. Over 1.7 million people depend on fishing as a source of livelihood. Many fishing communities, however, still lack the ability to preserve their catch and adequately transform fishery resources into economic benefits.77

Efforts are needed to boost fish harvesting capabilities and fish preservation techniques to enhance local food security. Improvements in the road and transport infrastructure would help get the fish to market; for example, the recently constructed highway from Bor to Juba paves the way for fish to be exported from Bor into Uganda and the Democratic Republic of the Congo.78

Water resources

The abundant water in South Sudan has the potential to boost agricultural production and ensure the provision of clean drinking water. A study conducted by the African Development Bank estimated that 1.5 million ha of water could be used for irrigation by smallholders and commercial farmers.72

The water could be used to support farmers in lowland areas to grow rice and other crops that require lots of water. In areas next to flood plains along the Nile and other rivers, farmers could cultivate short-maturing varieties of sorghum and other crops. Around swamps and marshes, farmers could plant crops in moist soils left by receding floodwaters.72

However, it is important that any infrastructure associated with irrigation or water diversion is carefully planned and implemented as such projects can have ecological impacts as well as be politically contentious.5 Successful dyke-rehabilitation projects, for example, have been undertaken with careful attention to social and ecological considerations, including through partnership with and oversight from local communities.79

Enhance peace

Conflict is the main obstacle to development in South Sudan today. Without addressing the significant security challenges in the country, investments in food security, especially critically needed investments in sustainable and inclusive agriculture, are unlikely to reach their potential for shoring up food security for all in South Sudan. Farmers and pastoralists must be able to pursue their activities in peace, to feed their families and communities. Firstly, this requires the signatories of the R-ARCSS to fully implement the terms of the agreement; this has not happened yet. Secondly, South Sudan Government and United Nations Mission in South Sudan (UNMISS), plus other partners from the international community operating in the country, must work closely with local communities to advance peacebuilding to end communal conflicts. This
is happening but with limited success. Combinations of approaches to enhance peacebuilding are needed to yield positive results. For example, efforts to engage youth in productive activities, such as dialogue, youth economic empowerment and sports activities are some of the approaches being implemented by various organisations, and they have shown good results. Conducting intercommunal peace conferences and dialogue is also one way of maintaining sustainable peace among communities because communities are fragile and prone to violence, especially the culture of revenge. However, dialogue is not enough on its own.

Conclusion

Food insecurity in South Sudan seems to be consistent every year due to intersecting factors which include protracted conflict, climate change, economic crisis, poor infrastructure and the far away global conflicts in Sudan, Ukraine and the Middle East. Efforts are required to improve security, to adapt to climate change, to construct sustainable and inclusive infrastructure and to achieve and maintain peace domestically and globally. However, more importantly for sustainable food security, South Sudan and its partners need to invest in its agriculture potential through nutrition-sensitive and climate-smart approaches.
References


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